Usenet Newsgroup Archive: rec.radio.amateur.antenna

2008-01 - 2008-06

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Date span: 2008-01-01 through 2008-06-30

Source text: rec.radio.amateur.antenna.txt

Source item: https://archive.org/details/usenet-rec

Messages included in this PDF: 5,752

Messages are presented chronologically by archived date.

Binary or encoded payloads are not printed as blocks of encoded text; a placeholder appears where such material was detected. The original source text is unchanged.

1. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 00:13:59 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flc0k9tnb1@news.albasani.net>
Source record: 30317

Bob Bob wrote:
> John
>
> Digital systems dont work like that. You can't normally have two system
> existing in the same bandwidth/frequency and expect that they wont
> interfere with each other. ...

The router I am on right now is supporting 20+ other computers, all on
CH 6 ... ever kick a wireless card into promiscuous mode and take a look
at the packets flying about ...

JS

2. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 01:01:08 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u14jn35okhfbvprt7l79v42r8uh7is6pms@4ax.com>
Source record: 30318

On Mon, 31 Dec 2007 14:30:55 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Richard Clark wrote:
>> You've got a battery in one pocket, and a mouse in the other. Where
>> did the energy go?
>
>Unfortunately for your argument, neither a mouse nor
>a battery exists inside a transmission line. Outside
>of usually minor heat losses, nothing exists besides
>EM waves traveling at the speed of light.

So, you refuse, or cannot account for the energy? Energy is conserved
in every system, even pockets and when the units of volts in one case
are conveniently offered, your theory fails to balance the pockets.

>>>(OK now, everyone hold their breath for an answer.)

3. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 01:09:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rb4jn31q996cg8p7cod967de2tdeu92ib5@4ax.com>
Source record: 30319

On Mon, 31 Dec 2007 16:14:38 -0500, "HankG" <hank@invalid.com> wrote:

>Sorry to top post (just wanted to get your attention), but while you're at
>it, can you do anything about this M I-5 (& variations thereof). I've been
>putting in message rules but they don't seem to work. Talk about abuse.

Hi Hank,

As Ken offers, there are better readers than Outlook (the one you are
using). Mine is Agent, so I can answer for it. I used the free
version a dozen years ago, and bought the commercial version right
away. It allows for "regular expressions" in filters. With very few
of them, they wipe out a lot of trash. Of course, you have to be a
*nix wizard to know how to craft "regular expressions" but it also has
simpler rule structures that can cover a lot of ground too.

73's
Richard Clark, KB7QHC

4. Re: CQ, CQ, CQ Cecil...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 01:53:59 UTC
From: hot-ham-and-cheese@hotmail.com
Message-ID: <ee3de855-bf59-4a31-a8d2-1ee178674884@e10g2000prf.googlegroups.com>
Source record: 30320

```
On Dec 31, 1:07 am, John Smith <assemblywiz...@gmail.com> wrote:
> John Smith wrote:
>
> [...]
>
> A trip to the metal scrappers turned up a couple tubes, ends, disks ...
> maybe next weekend can do something with it all ... if you are on
> dialup, the image may take a bit to load.
>
> http://assemblywizard.atwebpages.com
>
> JS

I recall a website that used major sized hardline to construct a set
of cans for 6M.
```

5. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 01:58:11 UTC
From: Bob Bob <bob3bob3@suddenlink.net>
Message-ID: <kajo45-859.ln1@p400bob.personal.cox.net>
Source record: 30321

Yes you are right, some digital system use time diversity in turning their TX's on and off. 802.11/WiFi is one of them. When you have multiple nodes this is important. Your router situation isn't however relevant to the BPL question as that services doesnt cycle RF TX/RX. At the user level there are certainly multiple channels in use for BPL (both upload and download) but for all intents and purposes as an interfering source it "stays on".

My previous post said;

"The only situations where this will work well is if there are periods of no TXing of one station that can be exploited by the other"

John Smith wrote:

> The router I am on right now is supporting 20+ other computers, all on
> CH 6 ...

6. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 03:25:17 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flcbqv$p1p$1@news.albasani.net>
Source record: 30322

Bob Bob wrote:

[...]

And now, you have reached that magical point where theory and argument can be made to look like a bunch of hooey ...

Grab some freeware and interface an old rig to an old computers sound card ... like many are already doing ... or, just keep abreast of the subject ... you'll pick it up.

The superiority of DV to other protocols will only become more important as society becomes more dense of population.

DV is nothing but a winner--and it is only just developing with few "on board", as of yet ...

Regards,
JS

7. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 03:36:54 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flccgoqac1@news.albasani.net>
Source record: 30323

Bob Bob wrote:

[...]

On the, "only xmit voice, not dead air", of course--however, better "they" are using bandwidth "wastefully" than not at all--all sorts of refinements can come at later dates.

Most "typewriter text-packet implementations", work as such, and you must "send" the text, it is not sent character-at-a-time.

A properly configured VOX working with DV packets is only logical ...

Would be nice to have more amateurs who are working in cutting edge technologies in the service, and who have access to company resources they can borrow--however, years of working counter to this has taken its' toll ... :-(

Regards,
JS

8. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 04:37:57 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <330beadf-52b6-4091-b05f-661b0102a591@i72g2000hsd.googlegroups.com>
Source record: 30324

```
On Dec 31, 11:11 am, Roger <rspa...@elltel.net> wrote:
> Cecil Moore wrote:
> > Richard Clark wrote:
> >> To cut to the chase, Norton and Thevenin sources are appropriate to
> >> network analysis irrespective of your perception.
>
> > All my references indicate that those sources are only
> > appropriate for *steady-state* use. Roger is searching
> > for a transient state source.
>
> Right!
>
> 73, Roger, W7WKB

Odd. Cecil has not named his "references" which is
quite unusual for he truly likes to name-drop: Ramo,
Whinnery, Hecht, IEEE, ...

You would be well served to google "reflection diagram"
or "bounce diagram" where you will find fine examples
of computing re-reflection using the source impedance
of generators modelled using the Thevenin equivalent
circuit. It is not particularly complicated, though
it can be tedious.

...Keith
```

9. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 06:09:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13njm8u789agjc3@corp.supernews.com>
Source record: 30325

Keith Dysart wrote:
> On Dec 31, 11:11 am, Roger <rspa...@elltel.net> wrote:
>> Cecil Moore wrote:
>>> Richard Clark wrote:
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>>>> network analysis irrespective of your perception.
>>> All my references indicate that those sources are only
>>> appropriate for *steady-state* use. Roger is searching
>>> for a transient state source.
>> Right!
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>> 73, Roger, W7WKB
>
> Odd. Cecil has not named his "references" which is
> quite unusual for he truly likes to name-drop: Ramo,
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>
> You would be well served to google "reflection diagram"
> or "bounce diagram" where you will find fine examples
> of computing re-reflection using the source impedance
> of generators modelled using the Thevenin equivalent
> circuit. It is not particularly complicated, though
> it can be tedious.
>
> ...Keith

One of Cecil's common techniques is to declare any combination of perfect voltage source and resistance to be a "Thevenin equivalent", which he then claims relieves him of any obligation to consider the power supplied by the source or dissipated in the resistor.

Of course, that combination of components has no special properties or restrictions, and must conform to the same rules as any linear components. It is, in fact, an excellent choice for many examples and illustrations because of its bare simplicity. Only when a substitution is made for some other combination of linear components does the perfect voltage source and resistor become an "equivalent", and in that case you can correctly state that the power supplied by the perfect source and dissipated by the resistor aren't necessarily the same as for the circuit being replaced. But any analysis which isn't valid when driven by a perfect voltage source in series with a resistance (or current source in parallel with a resistance) is fundamentally flawed. Waving your hands and declaring it a "Thevenin equivalent" and therefore not subject to the rules all linear circuits must abide by is simply a way of saying your theory can't handle simple cases.

Moving on, my electrical circuits texts abound with examples in which some initial condition is assumed, then a source is "turned on" or connected with an imaginary switch at t = 0, and the transition from the initial state to steady or final state is studied -- exactly as I did in my analysis. The source is most often a perfect voltage or current source and, in the sections dealing with sine wave AC circuits, produces a sine wave. The assumption of an initial condition (usually, but not always, that all voltages and currents in the circuit are zero) is absolutely required when solving the fundamental integro-differential equations which result from circuits containing inductances and capacitances.

I'll be glad to give page references from Pearson & Maler and Van Valkenburg, but it's really not necessary since anyone having any electric circuits text can find abundant examples. It appears that some of the posters either never took a basic course in electrical circuits, or forgot some very fundamental principles which were taught. But used circuits texts can be purchased for a very modest price, so there's little excuse for remaining ignorant if a person is truly interested in learning about the topic. (There's also the Internet, but you have to be more careful in sorting out the good information from the bad, and this can be difficult if you're not already pretty well acquainted with the topic.) I'd really like it, too, since I'd be able to present an analysis now and then without having the most basic principles of linear circuit analysis questioned and debated.

I'm afraid that the fuss about the source is primarily a way to avoid confronting the facts, which are apparently disturbing to some of the imaginative alternative theories being promoted.

The SPICE simulation of the circuit I analyzed was, of course, a transient analysis. The source was a perfect voltage source which produced a sine wave beginning at t = 0 and continuously after that, just as in my analysis. For anyone having SPICE, here's the netlist:

```
* 360 degree transmission line with open end and voltage source,
* transient response showing runup

.TRAN .05 30

v0 1 0 sin(0 1 1hz)
tl1 1 0 2 0 td=1 z0=50
tl4 2 0 3 0 td=4 z0=50
rl 3 0 1meg

.PROBE
.END
```

TL_1_sec.gif is a plot of v(2), which is the junction of tl1 and tl4. TL_5_sec.gif is a plot of v(3), which is the open far end of the line. A plot of v(1) would of course show the source voltage, a constant 1 volt peak sine wave beginning at t = 0. As I mentioned, the 1 megohm terminating resistor rl is necessary to keep the version of SPICE I have from blowing up; it can be any value that's large enough to not have an

appreciable effect on the result.

Roy Lewallen, W7EL

10. M.I,5-Persecution ` th e B BC, television a nd radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 08:28:11 UTC
From: vmvfvei@gmail.com
Message-ID: <dy0800010828106348@4ax.com>
Source record: 30326
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

```
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
-= the BBC, television and. radio -=
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
```

The first incident in June 1990 was when. a BBC newsreader made what seemed to be a reaction to something which had happened in my. home, and out of context. of what they were reading. My first reaction was disbelief; nothing of the sort had. ever happened before, the idea that such a thing could occur had not crossed. my mind, yet there was no doubt of what had just taken place. My disbelief eroded. as this recurred time after time. Besides the news, offenders included. shows such as Crimewatch (!), Newsnight, and "entertainment" shows. There seems to be very. little moral understanding among the people who make these programmes; they just. assume they will never be caught, so they carry on without. a thought for the illegality or amorality of what they do. The only time I ever. heard a word raised in doubt was by Paxman being. interviewed by someone else (I think by Clive Anderson). back in 1990; referring to the "watching" he said it troubled him, and when asked by the host. what you could do about it, replied "Well, you could just switch. it off" (meaning the surveillance monitor in the studio).. He clearly didn't let his doubts stand in the way of continued surreptitious. spying from his own or other people's shows, though.

Now you're convinced this is a troll, aren't you?. This story has been the subject. of much debate on the uk.* Usenet newsgroups for over a year, and some readers believe it. to be an invention (it has even been suggested that a group of psychology students. are responsible!), others think it symptomatic of a. derangement of the author, and a few give it credence. Quite a few people. do know part or all of the story already, so this text will fill in the gaps in their knowledge. For. the rest, what may persuade you of the third possibility is that some of the. incidents detailed are checkable against any archives of radio and TV. programmes that exist; that the incidents involve named people (even if. those hiding in the shadows have. not made their identity or affiliations evident), and those people may be persuaded to come out with the truth; and that. the campaign of harassment is continuing today both in the. UK and on the American continent, in a none-too-secret fashion; by. its nature the significant risk of. exposure increases with time.

On several occasions people. said to my face that harassment from the TV was happening. On the first day I worked in Oxford, I spent the evening. in the local pub with the. company's technical director Ian, and Phil, another employee. Ian made a few references to me and said to Phil,. as if in an aside, "Is he the bloke who's been on TV?" to. which Phil replied, "Yes, I

think. so".

I made a number of efforts to find the bugs,. without success; last year we employed. professional counter-surveillance people to scan for bugs (see later) again. without result. In autumn 1990 I disposed of my TV and watched virtually no television for the. next three years. But harassment from TV stations has gone on for over. six years and continues to this day. This is something that many people. obviously know is happening; yet the TV staff have. the morality of paedophiles, that because they're getting away with it they feel no. wrong.

Other people who were involved in the abuse. in 1990 were DJs on BBC radio stations, notably disc jockeys from Radio 1 and other. stations (see the following section). Again, since they. don't have sense in the first place they can't be. expect to have the moral sense not to be part of criminal harassment.

553

11. M'I`5'Persecutio n , bugging and count er-surveillance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 08:55:10 UTC
From: emfvm@gmail.com
Message-ID: <wr0800010855093205@4ax.com>
Source record: 30327
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

-=-
-= MI5: bugging and. counter-surveillance -=
-=-

PO: >Did you ever look for the bugs in your house ? If not, why not ? I. mean if
PO: >I thought that was happening. to me, I'd search the place from top to bottom,
PO: >I mean I live there I would know if anything. was out of place. If I was
PO: >really suspicious, I would call in one of those bug. detection teams which
PO: >have those machines that pick up the transmitted. radio waves. This
PO: >reminds me of. BUGS, that new programme on BBC1 on

That's exactly what we did. We went to a competent, professional. detective agency in London, paid them over 400 quid to debug our. house. They used scanner devices which go to over 1 GHz and would pick. up any nearby transmitter in that range, they also checked the. phones and found nothing... but if the tap was at the exchange,. then they wouldn't find anything, would. they?

CS: >Doesn't this suggest to you that. there are, in fact, no bugs to be found?

You can assume that they've done this sort. of thing to other people in more "serious" cases, where. they would know the targets would suspect the presence of electronic surveillance. So. they will have developed techniques and devices which are. not readily detectable either by visual inspection or by electronic means. What those techniques might be, I couldn't. guess.

In this case, the existence of. bugging devices was clear from the beginning, and they "rubbed it in" with what was said. by the boy on the coach. It was almost as if they. wanted counter-surveillance people to be called in, who they. knew would fail to detect the bugging devices, causing loss of credibility. to the other things I would have to say relating to the harassment.

I did all the things someone in my situation would do to try to. find the bugs.. In addition to calling in professional help using electronic counter-surveillance, I made a. close visual inspection of electrical equipment,. plus any points where audio or video surveillance devices might have been concealed. Of. course, I found nothing. Normal surveillance "mini-cameras" are quite noticeable and. require visible supporting circuitry. It seems to me the best. place to put a small video surveillance device would be additional to a piece of electronic equipment. such as a TV or video. It would be necessary. to physically break in to a property to fit such. a device.

2983

12. M I-5 P ersecution ' Capit al Ra dio - Chr is Tar rant

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 09:21:39 UTC
From: evmvfe@gmail.com
Message-ID: <yb0800010921394481@4ax.com>
Source record: 30328
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

```
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
-= Capital Radio. - Chris Tarrant -=
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
```

Capital Radio. DJs have been "in on it" from the start. One of the first things I heard in the summer of 1990 was from a Capital DJ who said,. "If he listens to Capital then he can't be all. bad" (supportive, you see. We're not bastards). Much of what came over the radio in 1990 is now. so far away the precise details have been obliterated by time.. No diary was kept of the details, and although archives if. they exist may give pointers, the ambiguity of. what broadcasters said would leave that open to re-interpretation.

In spring 1994, Chris Tarrant. on his Capital morning show made an aside to someone else in the. studio, about a person he didn't identify. He said, "You know this bloke? He. says we're trying to kill him. We should be done for attempted. manslaughter".

That mirrored something I had said. a day or two before. What Tarrant said was understood by the staff member. in the studio he was saying it to; they said, "Oh no,. don't say that" to Tarrant. If any archives exist of the morning show (probably unlikely) then it. could be found there; what he said was. so out of context that he would be very hard put to find an explanation. A couple of days later, someone at the site where I was working repeated. the remark although in a different way; they said there. had been people in a computer room when automatic. fire extinguishers went off and those people were "thinking of suing for. attempted manslaughter".

Finally, this isn't confined to the established radio stations. In. 1990 after I had listened to a pirate radio station in South. London for about half an hour, there was an. audible phone call in the background, followed by total silence for a few moments, then shrieks of. laughter. "So what are we supposed to say now? Deadly. torture? He's going to talk to us now, isn't he?", which meant that they. could hear what I would say in my room.

5413

13. M.I 5`Pers ecution - cost of th e oper ation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 09:47:47 UTC
From: imivei@gmail.com
Message-ID: <sb0800010947461431@4ax.com>
Source record: 30329
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

```
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
-=. MI5: cost of the operation -=
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=

Here's what a couple of other people on. Usenet (uk.misc) had to say
regarding the cost of. running such an operation...

PO: >Have some sense, grow up and smell reality. What you are. talking about
PO: >would take loads of planning, tens of thousands of pounds and. lots of
PO: >people involved in the planning, execution and. maintenance of it. You
PO: >must have. a very high opinion of yourself to think you are worth it.

PM: >But why? And why you? Do you realize. how much it would cost to keep
PM:. >one person under continuous surveillance for five years? Think about
PM: >all. the man/hours. Say they _just_ allocated a two man team and a
PM: >supervisor. OK., Supervisor's salary, say, #30,000. a year. Two men,
PM: >#20,000 a year each. But they'd need to work in shifts --. so it would
PM:. >be six men at #20,000 (which with on-costs would work out at more like
PM: >#30,000 to the. employer.)
PM:. >
PM: >So, we're talking #30,000 x. 6. #180,000. plus say, #40,000 for the
PM: >supervisor. #220,000. Then you've got the. hardware involved. And
PM: >any transcription that needs doing. You don't. think the 'Big Boss'
PM:. >would listen to hours and hours of tapes, do you.
PM:. >
PM:. >So, all in all, you couldn't actually do the job for much less than
PM: >a quarter million a year. Over five years. What are you doing that. makes
PM: >it worth. the while of the state to spend over one and a quarter million
PM: >on. you?

Those are pretty. much the sort of calculations that went through my head
once I stopped to consider what. it must be costing them to run this
operation.. The partial answer is, there have been periods when the
intensity has. been greater, and times when little has happened. In fact,
for much of. 1993 and the first half of 1994, very little happened. Although
I don't think that was. for reasons of money - if they can tap into the
taxpayer they're not going to. be short of resources, are they?

The more. complete answer is in the enormity of what they're doing. Relative
to the cost. to British pride of seeing their country humiliated for the
persecution of their own citizens, isn't is worth the cost of. four or five
people to try to bring things to a close in. the manner they would wish? To
the government a million or two is quite honestly. nothing - if they can
convince. themselves of the necessity of what they're doing, resources will
```

not be the limiting. factor.

7843

14. M,I`5 Persecu tion h ow an d w hy di d it s tart?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 10:17:43 UTC
From: fievmemfm@gmail.com
Message-ID: <pk0800011017424756@4ax.com>
Source record: 30330
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
-= how. and why did it start? -=
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-

The. harassment didn't start by itself, so someone must have been there at the outset to give it a firm push and set the "animals" after me. It. looks as if I was set. up in June 1990, and the timing indicates someone from university was. responsible.

>One thing which has been missing from. this discussion is this simple
>prognosis: that maybe he. is right and that, despite his admitted
>mental condition, there really is a campaign against him. organised by
>now-influential ex-students of his. university.

In May or. June 1990, Alan Freeman on Radio 1 read out a letter from someone who had. known me for a few years, who wrote of the one who "wore out his welcome with random precision" (from the. Pink Floyd song). Freeman went on to say to the writer "that's. a hell of a letter you wrote there". The indication. is strongly that people I had parted from soon before nursed a grudge against me and were trying to cause trouble for. me.

The suggestion is. that Freeman might have shown the letter to other people, and things could have snowballed from there. Right. from the start the real source. (security services presumed) didn't announce themselves as the origin, but let the "talkers", the radio DJs, believe that. they were the originators. Think about it; if you announce,. "we're MI5 and we have a campaign against this bloke" then people. might not go along with it; but if you say, "everyone else is. getting at this bloke because he 'deserves' it" then people will join in. with fewer qualms.

>Why would "they" wish to. assassinate your character?

It's the classic case of hitting a cripple to prove you're stronger.. Why would the security. services expend hundreds of thousands of pounds and more than six years of manpower to try to kill. a British citizen? Because they are motivated by people who knew me at university. and feel personal animosity; because they knew me to be emotionally. weak, and it is in the nature of bullies to prey on those. known to be weak; and because they can rely on the complicity of the. establishment, which the security services manipulate and derive funding from. This. is England's biggest humiliation today, and the British security services are intent on preventing. their humiliation. becoming reality by continuing their campaign of attempted murder to suppress the truth from. becoming public.

10273

15. M I`5'Persec ution , ho w a nd wh y did it start ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 10:48:19 UTC
From: fimfefiev@gmail.com
Message-ID: <an0800011048182219@4ax.com>
Source record: 30331
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
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The suggestion is that Freeman might have. shown the letter to other people, and things could have snowballed from there. Right from the start the. real source. (security services presumed) didn't announce themselves as the origin, but. let the "talkers", the radio DJs, believe that they were the originators. Think about. it; if you announce, "we're MI5 and we have a campaign against this bloke" then people might not go along with it;. but if you. say, "everyone else is getting at this bloke because he 'deserves' it" then people will. join in with fewer qualms.

>Why would "they" wish. to assassinate your character?

It's the classic case of hitting a cripple. to prove you're stronger. Why would the security services expend hundreds of thousands of. pounds and more than six years. of manpower to try to kill a British citizen? Because they are motivated by people. who knew me at university and feel personal animosity; because they knew me to be emotionally weak, and. it is in the nature of bullies to prey on those. known to be weak; and because they can rely on the complicity of the. establishment, which the security services manipulate and derive funding from. This is England's. biggest humiliation today, and the British. security services are intent on preventing their humiliation. becoming reality by continuing their campaign of attempted murder to suppress the truth. from becoming public.

553

16. M-I 5`Persec ution . wh o kno ws abo ut it?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 11:44:28 UTC
From: vfeimvevi@gmail.com
Message-ID: <xo0800011144277988@4ax.com>
Source record: 30332
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

-=-=-=-=-=-=-=-=-=-=-=-=-
-= who knows. about it? =-
-=-=-=-=-=-=-=-=-=-=-=-=-

Many people know, both in the. establishment and media, and among the general public. Despite an absence of its target from the. UK for more than two. years, the echoes of paranoia can still be heard loud and clear from across the water. When it started in 1990,. the only people who knew were those. in BBC television who were spying on my home, and a few radio broadcasters. There were a few cases of public harassment, but. very little compared to the situation that developed a. couple of years later.

The list today includes BBC TV staff (newsreaders such as. Martyn Lewis, Michael Buerk, Nicholas Witchell), people from radio stations. such as Chris Tarrant of Capital and. Radio 1 DJs, people in the print media, but also many people in the general public. All united. in a conspiracy which breaks the laws which the UK does have regarding. harassment, and all completely uncaring for any semblance of. decency or elementary respect for individual. rights.

The. British police (obviously) do know the nature of the harassment and in all probability the identity of those behind it.. Some time ago I made a complaint to my local police station in London, without. positive result. The UK police are failing in their duty to see the law enforced in. not checking. the abuse.

2983

17. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 11:48:12 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <45965b21-865e-46ec-b523-04cba17f13ee@l1g2000hsa.googlegroups.com>
Source record: 30333

```
On Dec 31 2007, 11:37 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> On Dec 31, 11:11 am, Roger <rspa...@elltel.net> wrote:
>
> > Cecil Moore wrote:
> > > Richard Clark wrote:
> > >> To cut to the chase, Norton and Thevenin sources are appropriate to
> > >> network analysis irrespective of your perception.
>
> > > All my references indicate that those sources are only
> > > appropriate for *steady-state* use. Roger is searching
> > > for a transient state source.
>
> > Right!
>
> > 73, Roger, W7WKB
>
> Odd. Cecil has not named his "references" which is
> quite unusual for he truly likes to name-drop: Ramo,
> Whinnery, Hecht, IEEE, ...
>
> You would be well served to google "reflection diagram"
> or "bounce diagram" where you will find fine examples
> of computing re-reflection using the source impedance
> of generators modelled using the Thevenin equivalent
> circuit. It is not particularly complicated, though
> it can be tedious.
>
> ...Keith

Also, googling '"lattice diagram" reflection' will yield
a different set of interesting examples.

...Keith
```

18. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 11:49:53 UTC
From: N7ZZT - Eric Oyen <n7zzt@127.0.0.1>
Message-ID: <2Npej.26873$pq.22661@newsfe24.lga>
Source record: 30334

John Smith wrote:

> Eric Oyen - N7ZZT wrote:
>
> >> ...
>> so? how well does your assertion stand up now?
>> until you experiment and seek the truth of this problem, you just won't
>> know (and belief isn't sufficient).
>>
>>
>
> Thanks Eric!
>
> Hmmm, just beginning to look at digital, huh? You will be "hooked,"
> trust me! I only wonder what has taken us "so long?"
>
> Warm regards,
> JS ;-)

actually,
Ive been using digital for some time (vhf/uhf). it has its pluses in some situations. However, I have found that under noisy RF conditions (such as leaky tv cable, etc) that mode won't work very well (its a true binary situation, either you are locked <have signal> or not <don't have signal>). once SNR drops below about 15 DBm, you are screwed. This is from lock hours of observation and troubleshooting.

--
DE N7ZZT
Eric Oyen
Phoenix, Arizona
e-mail: n7zzt(at)hotmail(dot)com
the difference between intelligence and stupidity is that intelligence has its limits.

19. M.I'5`Persecu tion ` B ernard L evin expres ses hi s vi ews

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 12:15:56 UTC
From: iveifmviv@gmail.com
Message-ID: <fu0800011215556388@4ax.com>
Source record: 30335
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

The article of which part is reproduced below was penned by. Bernard Levin for the. Features section of the Times on 21 September 1991. To my mind, it described the situation at the time and in particular. a recent meeting with a. friend, during which I for the first time admitted to someone other than my GP that I had been subjected to a conspiracy of harassment. over the previous year and a. half.

>There is a madman running. loose about London, called David Campbell; I have
>no reason to believe that he. is violent, but he should certainly be
>approached with caution.. You may know him by the curious glitter in his
>eyes and a persistent trembling of his hands; if. that does not suffice, you
>will find him attempting to thrust no fewer than. 48 books into your arms,
>all hardbacks, with a promise that, if you should return. to the same
>meeting-place next year, he will heave. another 80 at you.
>
>If, by now, the. police have arrived and are keeping a close watch on him,
>you may feel sufficiently emboldened to examine the. books. The jackets are
>a model of. uncluttered typography, elegantly and simply laid out; there is
>an unobtrusive colophon of a rising sun, probably not picked. at random.
>Gaining confidence - the. lunatic is smiling by now, and the policemen, who
>know about such things, have significantly removed their helmets. - you
>could do worse than take the jacket off. the first book in the pile. The
>only word possible to describe the binding. is sumptuous; real cloth in a
>glorious shade of dark green, with. the title and author in black and gold
>on. the spine.
>
>Look at it more closely; your eyes do not deceive you -. it truly does have
>real top-bands and tail-bands, in. yellow, and, for good measure, a silk
>marker ribbon in a lighter green. The paper is cream-wove. and acid-free,
>and. the book is sewn, not glued.
>
>Throughout the encounter, I should have. mentioned, our loony has been
>chattering away, although. what he is trying to say is almost impossible to
>understand; after a time,. however, he becomes sufficiently coherent to make
>clear that he. is trying to sell the books to you. Well, now, such quality
>in bookmaking today can only be for. collectors' limited editions at a
>fearsome. price - #30, #40, #50?
>
>No,. no, he says, the glitter more powerful than ever and the trembling of
>his hands rapidly spreading throughout his entire body; no,. no - the books
>are priced variously at #7, #8 or #9, with the. top price #12.
>
>At this, the policemen understandably put their helmets back on;. one of

>them draws his truncheon and the other can be heard. summoning
>reinforcements on his walkie-talkie. The madman bursts into tears,. and
>swears it. is all true.
>
>And. it is.
>
>David Campbell has acquired the entire rights to the whole. of the
>Everyman's Library, which died a lingering. and shameful death a decade or
>so ago, and he proposes to start it. all over again - 48 volumes this
>September and 80 more next year, in. editions I have described, at the
>prices specified. He proposes to launch his. amazing venture simultaneously
>in Britain and the United States, with. the massive firepower of Random
>Century at. his back in this country, and the dashing cavalry of Knopf
>across the water, and no one who loves literature and courage. will forbear
>to. cheer.

At the time this article. was written I had believed for some time that columnists in the Times and other journalists. had been making references to my situation. Nothing unusual about this you may think, plenty of. people have the same sort of ideas and obviously the papers aren't writing. about them,. so why should my beliefs not be as false as those of others?

What. makes this article so extraordinary is that three or four days immediately. preceding its publication, I had a meeting with a friend, during the course of which we discussed. the media persecution, and in particular that by Times columnists. It seemed to me,. reading the article by Levin. in Saturday's paper, that he was describing in some detail his "artist's impression" of that meeting. Most. telling are the final sentences, when he writes, "The madman bursts into. tears, and swears it is all true. And it is." Although I did. not "burst into tears" (he seems to be using a bit of poetic licence. and exaggerating) I did try hard to convince my friend that it was. all true; and I am able to concur with Mr Levin, because, of course, it. is.

At the beginning of the piece Levin reveals a fear of being attacked. by the "irrational" subject of his story, saying. "I have no reason to believe that he is violent,. but he should certainly be approached with caution". This goes back to the xenophobic propaganda. of "defence" against a "threat" which was seen at the very beginning of the harassment. The. impression of a "madman running loose" who needs to. be controlled through an agency which assigns to itself the. mantle of the "police" is also one which had been expressed. elsewhere.

In the. final paragraph of this extract, his reference to Everyman's Library as. having "died a lingering and shameful death a decade or so ago" shows clearly what sort of conclusion they wish to their campaign. They. want a permanent solution, and as. they are prevented from achieving that solution directly, they waste. significant resources on methods which have been repeatedly shown. to be ineffective for such a purpose.

5413

20. M`I'5`Persecut ion . Be rnard Lev in expresse s his views

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 12:59:29 UTC
From: memfvfmi@gmail.com
Message-ID: <vk0800011259285188@4ax.com>
Source record: 30336
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

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>There is a madman running loose about. London, called David Campbell; I have
>no reason to believe that he is violent,. but he should certainly be
>approached with caution. You may know him by the. curious glitter in his
>eyes and a persistent trembling of his hands; if that. does not suffice, you
>will find him attempting to thrust no fewer. than 48 books into your arms,
>all hardbacks, with a promise that, if you should return to the. same
>meeting-place next year, he will. heave another 80 at you.
>
>If, by now, the. police have arrived and are keeping a close watch on him,
>you. may feel sufficiently emboldened to examine the books. The jackets are
>a. model of uncluttered typography, elegantly and simply laid out; there is
>an unobtrusive colophon of a rising sun,. probably not picked at random.
>Gaining confidence - the lunatic is. smiling by now, and the policemen, who
>know about such things, have. significantly removed their helmets - you
>could do worse than take the jacket off. the first book in the pile. The
>only word possible to describe the binding is sumptuous;. real cloth in a
>glorious shade of dark green,. with the title and author in black and gold
>on. the spine.
>
>Look. at it more closely; your eyes do not deceive you - it truly does have
>real top-bands and tail-bands, in yellow, and, for good measure,. a silk
>marker. ribbon in a lighter green. The paper is cream-wove and acid-free,
>and the book. is sewn, not glued.
>
>Throughout the. encounter, I should have mentioned, our loony has been
>chattering away, although what he is trying to say. is almost impossible to
>understand; after a time, however, he. becomes sufficiently coherent to make
>clear that he is trying to sell the books. to you. Well, now, such quality
>in bookmaking today can only be for collectors' limited editions. at a
>fearsome price - #30, #40,. #50?
>
>No, no, he says, the glitter more. powerful than ever and the trembling of
>his hands rapidly. spreading throughout his entire body; no, no - the books
>are priced variously at #7, #8 or #9,. with the top price #12.
>
>At this,. the policemen understandably put their helmets back on; one of

>them draws his truncheon and the. other can be heard summoning
>reinforcements on his walkie-talkie. The madman bursts into. tears, and
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>
>David. Campbell has acquired the entire rights to the whole of the
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>across. the water, and no one who loves literature and courage will forbear
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In the final paragraph of this extract, his reference to. Everyman's Library as having. "died a lingering and shameful death a decade or so ago" shows clearly what sort of conclusion. they wish to their campaign. They want a permanent solution, and as they are. prevented from achieving that solution directly, they. waste significant resources on methods which have been repeatedly shown to be ineffective for such a. purpose.

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21. M I.5 Persecution w hy won't th e Britis h p olice do thei r j ob and pu t a stop to i t?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 13:34:08 UTC
From: feieifm@gmail.com
Message-ID: <kd0800011334074829@4ax.com>
Source record: 30337
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

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-=. why won't the British police do their job and put a stop to it? -=
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
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The. British police obviously do know what is taking place. Besides my interpretations of what individual. officers have said which forces that conclusion, it would be. inconceivable for them to be unaware of something on this. scale.

If they know, then they will know that the. abusers have broken laws in the UK and abroad. Recently the UK. introduced laws against electronic spying which carry a penalty of several years jail if. caught. If the police know illegal harassment. is taking place, and do nothing about it, then they are failing in. their responsibilities.

Last Easter (1995) I went into the. local police station in London and spoke to an officer about. the harassment against me. But I couldn't provide tangible. evidence; what people said, in many cases years ago, is beyond proof, and without something to support my statements I cannot. expect a police officer to take the complaint. seriously.

The current situation with regard to the police is not. one which allows a breakthrough in dealing with the. problem. On the one hand, most individual officers at a local police station may. not know about the ongoing assaults, so a complaint at that level will not yield results.. Yet the police as an organisation do know of the harassment, and they must. be aware that a complaint has been made at a police station. So it. is clearly their duty to take preventative action. against the continuing molestation, but because the criminals are operating on. behalf of a state agency, the police are not carrying. out their duty.

2983

22. M'I`5 Persecution , wh y w on't th e Bri tish polic e do t heir jo b an d pu t a st op to it ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 13:45:09 UTC
From: fevfefefm@gmail.com
Message-ID: <zw0800011345082554@4ax.com>
Source record: 30338
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

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-= why won't the British police do their job and put a stop. to it? -=
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553

23. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 14:11:24 UTC
From: Bob Bob <bob3bob3@suddenlink.net>
Message-ID: <c9up45-tra.ln1@p400bob.personal.cox.net>
Source record: 30342

Okay so this is my last word on this useless tirade.

It appears now that like a politician or used car salesman you have made a incorrect statement (some may say lie) on how wonderful DV is at combating BPL, possibly to encourage amateurs to try it. Personally I don't condone this kind of behaviour, but maybe it has worked for you.

In my case I have to ask why I would even consider using DV for any reason. This is why I asked you to provide proof of how well it works. I was specific in my request, you waffled a reply. You failed to answer the burning question that was important to me, how well it performs compared to standard voice SSB close to the noise floor. You have to use such simple terms as "dB" when quantifying your answers. You went off on wild tangents, saying not a lot of unrelated things with no real answers. You didn't even admit to not knowing. This would have at least given you credibility.

Some may feel that the high S/N recovered audio is important and will no doubt try it because of that. Some just like to try new technology and others to discover that they need to do a better job flattening (amplitude and time delays) their TX filter passband to make multiple PSK carriers work well. I however would only be interested if by using some kind of codec magic it is possible to work further into the noise than a voice SSB signal. It is no doubt possible using more FEC and/or a narrower bandwidth, but you'd eventually get to the point where you would have to TX for a longer period than what the actual message is. This in itself might be interesting to do, but you might as well just use a text/keyboard mode.

Maybe you have a commercial interest in this mode? If you do you need a much better way of advertising it to those in the AR world that are technically oriented.

Bob VK2YQA

John Smith wrote:
> DV is nothing but a winner--and it is only just developing with few "on
> board", as of yet ...

24. M I.5'Pers ecution , wh y won 't t he British pol ice do t heir job an d p ut a st op to it ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 14:11:37 UTC
From: ifvmifivi@gmail.com
Message-ID: <no0800011411367738@4ax.com>
Source record: 30339
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

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553

25. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 14:12:48 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <78ee0c04-fa1f-47ce-889a-a8ee6449e04d@i72g2000hsd.googlegroups.com>
Source record: 30340

```
On Dec 30 2007, 6:18 pm, Roy Lewallen <w...@eznec.com> wrote:
> Keith Dysart wrote:
>
> > I predict that the pulse arriving at the left end will
> > have the same voltage, current and energy profile as
> > the pulse launched at the right end and the pulse
> > arriving at the right end will be similar to the
> > one launched at the left.
>
> > They will appear exactly AS IF they had passed
> > through each other.
>
> > The difficulty with saying THE pulses passed
> > through each other arises with the energy. The
> > energy profile of the pulse arriving at the left
> > will look exactly like that of the one launched
> > from the right so it will seem that the energy
> > travelled all the way down the line for delivery
> > at the far end. And yet, from the experiment above,
> > when the pulses arriving from each end have the
> > same shape, no energy crosses the middle of the
> > line.
>
> > So it would seem that the energy that actually
> > crosses the middle during the collision is
> > exacly the amount of energy that is needed to
> > reconstruct the pulses on each side after the
> > collision.
>
> > If all the energy that is launched at one end
> > does not travel to the other end, then I am
> > not comfortable saying that THE pulse travelled
> > from one end to the other.
>
> > But I have no problem saying that the system
> > behaves AS IF the pulses travelled from one
> > end to the other.
>
> You said that:
>
> > What will happen? Recall one of the basics about
> > charge: like charge repel. So it is no surprise
> > that these two pulses of charge bounce off each
> > and head back from where they came.
```

>
> Yet it sounds like you are saying that despite this charge repulsion and
> bouncing of waves off each other, each wave appears to be completely
> unaltered by the other? It seems to me that surely we would detect some
> trace of this profound effect.
>
> > . . .
>
> Is there any test you can conceive of which would produce different
> measurable results if the pulses were repelling and bouncing off each
> other or just passing by without noticing the other?
>
> There are equations describing system behavior on the assumption of no
> wave interaction, and these equations accurately predict all measurable
> aspects of line behavior without exception. Have you developed equations
> based on this charge interaction which predict line behavior with
> equal accuracy and universal applicability?

No equations. I expect that such equations would be more complex
than those describing the behaviour using superposition. Since
the existing equations and techniques for analysis are tractable
and produce accurate results, I am not motivated to develop an
alternate set with lower utility.

And yet the "no interaction" model, while accurately predicting
the behaviour has some weaknesses with explaining what is
happening. It is, I suggest, these weaknesses that help lead
some so far astray.

To illustrate some of these weaknesses, consider an example
where a step function from a Z0 matched generator is applied
to a transmission line open at the far end. Charge begins to
flow into the line. The ratio of the current to voltage on
the line is defined by the distributed inductance and
capacitance. The inductance is resisting the change in current
which causes a voltage to charge the capacitance. A voltage
step (call this V for later use) propagates down the line
at the speed of light. In front of this step, the voltage,
current and charge in the line is zero. After the step, the
capacitance is charged to the voltage and charge is flowing
in the inductance.

The step function eventually reaches the open end where
the current can no longer flow. The inductance insists
that the current continue until the capacitance at the
end of the line is charged to the voltage which will stop
the flow. This voltage is double the voltage of the step
function applied to the line (i.e 2*V). Once the
infinitesimal capacitance at the end of the line is
charged, the current now has to stop just a bit earlier
and this charges the inifinitesimal capacitance a bit

further from the end. So a step in the voltage propagates back along the line towards the source. In front of this step, current is still flowing. Behind the step, the current is zero and voltage is 2*V. The charge that is continuing to flow from the source is being used to charge the distributed capacitance of the line.

The voltage that is propagating backwards along the line has the value 2*V, but this can also be viewed as a step of voltage V added to the already present voltage V. The latter view is the one that aligns with the "no interaction" model; the total voltage on the line is the sum of the forward voltage V and the reverse voltage V or 2*V.

In this model, the step function has propagated to the end, been reflected and is now propagating backwards. Implicit in this description is that the step continues to flow to the end of the line and be reflected as the leading edge travels back to the source.

And this is the major weakness in the model. It claims the step function is still flowing in the portion of the line that has a voltage of 2*V and *zero* current.

Now without a doubt, when the voltages and currents of the forward and reverse step function are summed, the resulting totals are correct. But it seems to me that this is just applying the techniques of superposition. And when we do superposition on a basic circuit, we get the correct totals for the voltages and currents of the elements but we do not assign any particular meaning to the partial results.

A trivial example is connecting to 10 volt batteries in parallel through a .001 ohm resistor. The partial results show 10000 amps flowing in each direction in the resistor with a total of 0. But I do not think that anyone assigns significance to the 10000 amp intermediate result. Everyone does agree that the actual current in the resistor is zero.

The "no interaction" model, while just being superposition, seems to lend itself to having great significance applied to the intermediate results.

Partially this may be due to poor definitions. If the wave is defined as just being a voltage wave, then all is well.

But, for example, when looking at a solitary pulse, it is easy (and accurate) to view the wave as having more than just voltage. One can compute the charge, the current, the power, and the energy. But when two waves are simultaneously present, it is only legal to superpose the voltage and the current. But it is obvious that a solitary wave has voltage, current, power, etc. But when two waves are present it is not legal to.... etc., etc.
The "no interaction" model does not seem to resolve this conflict well, and some are lead astray.

And it was this conflict that lead me to look for other ways of thinking about the system.

Earlier you asked for an experiment. How about this one....

Take two step function generators, one at each end of a transmission line. Start a step from each end at the same time. When the steps collide in the middle, the steps can be viewed as passing each other without interaction, or reversing and propagating back to their respective sources. We can measure the current at the middle of the line and observe that it is always 0. Therefore the charge that is filling the capacitance and causing the voltage step which is propagating back towards each generator must be coming from the generator to which the step is propagatig because no charge is crossing the middle of the line.

Do you like it?

...Keith

26. M-I'5-Per secution . abu se in set-u p situatio ns and in publ ic

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 14:40:09 UTC
From: mifmfivi@gmail.com
Message-ID: <xq0800011440082190@4ax.com>
Source record: 30341
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

```
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
-= abuse in set-up situations and in. public -=
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
```

Strangers in the street. have recognized me on sight many times, and shown awareness. of the current thread of abuse. To give you one example, in 1992 I was seriously ill, and a manager at work somewhat. humorously said that "it wasn't. fair" that people were bullying me. A few days later, I attended for the first time a clinic in London as an outpatient,. and on my way out was accosted by someone. who asked if "they had paid my fare", with emphasis on the. word "fare". He repeated the word several times in this different context; that they should have paid my "fare", each time. emphasizing the word.

For two and a half years from the time their harassment started. until November. 1992 I refused to see a psychiatrist, because I reasoned that I was not. ill of my own action or fault, but through the stress caused by harassment, and that. a lessening of the illness would have to be consequent to a removal of its immediate cause, in other words a cessation. of harassment. I also reasoned that. since they were taunting me with jokes about mental illness, if I were. to seek treatment then the abusers would think that they had "won" and been proved "right". Remember,. the constant theme of any persecution is, "we must destroy you because. you're X", whether X is. a racial or other attribute. In this case the X was "we persecute. you because you have brain disease". The similarity of this logic to Nazi attitudes. to the mentally ill is striking.

The same. manager who'd said "it wasn't fair" asked me in winter 1992 why I didn't seek help from a. psychiatrist; was it, he asked, because "they would think they. had won" if I sought treatment? That was something I'd never said at work... again, taken separately it proves. nothing, but many such things over. a period of months proves conclusively that people in the company knew what was going on, and in quite. a lot of detail.

Usually harassment. in public lacks the level of finesse of "paying your fare". Most people's imagination does. not go beyond moronic parroting of the. current term of denigration. That is not surprising given the average level of the abusers; if they do not have. the intelligence to distinguish wrong from right then neither will they have the. capacity for anything other. than mindless repetition of a monosyllabic term calculated to fit into their. minds.

The first incidents of verbal assault. in public were in again in the summer of 1990, although they increased in frequency and venom with. time. In July

1990 the first public incident occurred on. a tube train on the Northern line. Two men and their girlfriends recognised me; the women sprang to. my defence,. saying "He looks perfectly normal, he doesn't look ill". Their boyfriends of course knew better, and followed the party line;. one of them made reference to. an "operation", apparently to work at the tube station but implicitly to a visit that I had. made to hospital a couple of weeks previously.

In August 1990 going home from college, soon after getting on. a tube train at Gloucester Road I was followed. by a group of four youths, who started a chant of abuse. That they were targeting me was confirmed by. other people in the carriage, one of whom asked the. other "who are they going on at, is it the bloke who just got on?" to which the second replied "yes,. I think so". I was tempted to reply, but as. in every other instance the abusers are enabled. in their cowardice by physically outnumbering the abused; any confrontation would result in my being beaten up, followed by. a complaint to the police that "he. attacked us", and of course he's ill, so he must have been imagining that we were getting at him. Shitty,. aren't they?

But the shittiness of the four youths on the tube train is. as nothing compared to the episode on the National Express. coach to Dover in the summer of 1992.. While going on holiday to the Continent I was verbally set upon by a couple. travelling sitting a few rows behind. The boy did the talking, his female companion contributing only a continuous. empty giggling noise. He spoke loudly to ensure other people. on the coach heard, always about "they" and "this bloke". but never naming either the abusers or the person he was talking about. He. said "they" had "found somebody from his school, and he was always really stressed. at school". They must have dug deep to find enemies there; perhaps someone who dropped. out of school, someone who didn't do too well later, who was jealous and. keen to get their own back? The boy also said "he was in. a bed and breakfast for only one night and they got him".. By a not unexpected coincidence I had been in a B&B in Oxford a week previously, which had been booked from work;. other things lead me to the conclusion that the company's. offices were bugged for most of the 2 1/2 years. that I was there, so "they" would have known a room in the. B&B had been booked. (But I'll bet "they" didn't tell the company's managers their offices were. bugged, did they?).

After a few minutes of this I went back. to where they were sitting and asked where. they were travelling. The boy named a village in France, and the. girl's giggling suddenly ceased; presumably it permeated to her brain cell what the purpose of the boy's abuse. was.

This and other set-up situations are obviously calculated to. provoke a direct confrontation. which would bring in the police, with the abusers claiming that they were the. ones attacked. Again in 1992, outside the house where I was living in Oxford I was physically. attacked by someone - not punched, just grabbed by the coat, with some verbals. thrown in for good measure. That was something the people at work. shouldn't have known about... but. soon after a couple of people were talking right in front of me about, "I heard he was attacked". The. UK police have a responsibility

for preventing assault occurring, but they do not seem. to take any interest in meeting that responsibility.. I suppose their attitude is that harassment does not come within their remit unless it involves physical assault,. and they will only become involved once that happens. That is of course. quite the wrong attitude for them to take, but. as I now understand, the police investigate only the crime they wish to investigate; if they. do not take your complaints seriously then there is nothing you can do to. make them take. action.

2983

27. M I-5 Persecution ' pu rpose in pu blicizing it ; cens orship in u k.* news groups

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 15:12:28 UTC
From: mefimvm@gmail.com
Message-ID: <ot0800011512275431@4ax.com>
Source record: 30343
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

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28. M,I`5,Pe rsecution ' my respons e to th e h arassment

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 15:40:10 UTC
From: vfvmfvfe@gmail.com
Message-ID: <yl0800011540093875@4ax.com>
Source record: 30344
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

-=-
-= my response to the harassment. -=
-=-

My first reaction in. 1990/91 was to assume that if I broke contact then they would not be able to follow and would lose interest. So. I did the things that have been. suggested by other people; I sold my television, stopped listening to the radio and tried to withdraw away. from the sources of abuse as much as possible.. I reasoned that they must have more important things to. deal with and that normal people would simply leave me alone if it were made difficult for them. to continue their harassment.

I reckoned without the sheer vindictiveness of. the abusers. They did not let. up but instead "got to" people around me, mainly people at work, to do their dirty work for them. I went to see my GP, who refused to believe. what he was being told, and. refused to direct me on to anyone who could be of practical assistance.. It was not until three years had passed that the GP admitted the matter was outside his competence and. suggested going to the police.

In the summer of 1994. we called in counter-surveillance experts from a private detective agency. to sweep our house and telephone for bugging devices. They conducted a thorough search and found nothing; but. as noted above, since the existence of surveillance was. being forced in my face by the harassers, you would expect them to have. taken the possibility of a counter-surveillance sweep into account. when planning the type of devices to be. employed.

In Easter 1995 I made. a complaint to my local Police station in London, but the police have. not expressed any intention to do anything about the continuing harassment ("we're not saying. it's happening and we're not saying it isn't happening" were the. words used). I think the officer I spoke to at. Easter wasn't aware of it happening, although other members of the police. force obviously do know.

From April. 1995 until the present time the matter has been discussed in a lot of detail on the Usenet (Internet) "uk.misc" newsgroup. That. discussion has given birth to the article which you. are now reading. My hopes in posting to Usenet were. that wider publicizing would discourage the security services from continuing. their harassment, and "draw people out" into concurring with the truth of what was being said. Neither. of those have followed, but the. discussion has served a purpose in allowing this structured report to be. created.

7843

29. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 15:42:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <obtej.374$jJ5.327@newssvr11.news.prodigy.net>
Source record: 30345

Keith Dysart wrote:
> Odd. Cecil has not named his "references" which is
> quite unusual for he truly likes to name-drop: Ramo,
> Whinnery, Hecht, IEEE, ...

I get ragged on for giving too many references and
not giving enough references. You guys please make
up your minds.
--
73, Cecil http://www.w5dxp.com

30. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 15:52:24 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c02c1624-fecf-41f2-a590-53d913b3f108@h11g2000prf.googlegroups.com>
Source record: 30346

On Jan 1, 10:42 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Odd. Cecil has not named his "references" which is
> > quite unusual for he truly likes to name-drop: Ramo,
> > Whinnery, Hecht, IEEE, ...
>
> I get ragged on for giving too many references and
> not giving enough references. You guys please make
> up your minds.

A reference backing up your claim that a well-defined
source impedance can not be used to compute transient
reflections at the source would be entirely appropriate.

And you might find googling '"lattice diagram" reflection'
to assist in understanding the counter-claim.

...Keith

31. M.I,5.Persecu tion - t heir metho ds an d tactics

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 16:07:56 UTC
From: ievimi@gmail.com
Message-ID: <qb0800011607557617@4ax.com>
Source record: 30347
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
-=. MI5: methods and tactics -=
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-

They deliberately set out to harass in a way. that would resemble the symptoms of schizophrenia, so that any report of. the harassment would be taken as indicating. mental illness and "treated" accordingly. They never show their own faces; they only work through. proxies, in the media, among the public, and by manipulating people in the workplace.. Since they do not declare their identity there. is no evidence to initiate legal action against the security services or anyone else.. The only people you can prosecute are the. proxies and they will deny knowledge of any conspiracy.

By repeatedly humiliating and abusing the. victim, they induced mental illness. This is the worst. form of human rights violation: making any statement of. the harassment appear to be symptomatic of the illness which they cause through the. harassment. That this can happen, and people collude by. silence, is absolutely horrifying.

From the beginning in June 1990 they set a. pattern of harassment which they have followed without. change for the last six years. They paint me as a "threat" to which people. must "react" (shades of Nazi persecution methods), while simultaneously. portraying their hate campaign on which they have spent over a million. pounds of taxpayers money as a "joke".

The. MI5 that breaks the law with the silent complicity of the police is the same agency that is. now seeking a role in the fight against crime. Perhaps the real joke is the proposed involvement in the. implementation of justice of an. organisation which commits criminal acts with secrecy and disinterest for. the legal process.

10273

32. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 16:21:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3Mtej.27753$4V6.24715@newssvr14.news.prodigy.net>
Source record: 30248

Keith Dysart wrote:
> And yet the "no interaction" model, while accurately predicting
> the behaviour has some weaknesses with explaining what is
> happening. It is, I suggest, these weaknesses that help lead
> some so far astray.

Everything can be understood within the context of
superposition and conservation of energy. No need
to invent any new laws of physics like EM waves
bouncing off each other in free space.
--
73, Cecil http://www.w5dxp.com

33. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 16:31:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KVtej.27755$4V6.17907@newssvr14.news.prodigy.net>
Source record: 30249

Roy Lewallen wrote:
> But any analysis which isn't valid when driven
> by a perfect voltage source in series with a resistance (or current
> source in parallel with a resistance) is fundamentally flawed.

Any model that violates the laws of physics is fundamentally
flawed. Your model has EM energy sloshing around like water.
Your model has EM energy neither flowing into the source
nor being reflected. That is a violation of the conservation
of energy principle.

> The SPICE simulation of the circuit I analyzed was, of course, a
> transient analysis. The source was a perfect voltage source which
> produced a sine wave beginning at t = 0 and continuously after that,
> just as in my analysis. For anyone having SPICE, here's the netlist:

What is it that you think you have proved? That there
is no energy in reflected waves? That EM waves don't
move at the speed of light? That the conservation of
energy principle is invalid? What?
--
73, Cecil http://www.w5dxp.com

34. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 16:40:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <82uej.27756$4V6.21035@newssvr14.news.prodigy.net>
Source record: 30250

Keith Dysart wrote:
> A reference backing up your claim that a well-defined
> source impedance can not be used to compute transient
> reflections at the source would be entirely appropriate.

I made no such claim. My claim is that *your* source
is *NOT* well-defined and is just a result of your
hand-waving fantasies. When you stop refusing to
provide a schematic, we can discuss whether it is
well-defined or not.

Again, I freely admit that you can leap tall buildings
at a single bound in your mind.
--
73, Cecil http://www.w5dxp.com

35. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 16:56:56 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fldrcq$232$1@news.albasani.net>
Source record: 30251

```
N7ZZT - Eric Oyen wrote:
> John Smith wrote:
>
>> Eric Oyen - N7ZZT wrote:
>>
>> >> ...
>>> so? how well does your assertion stand up now?
>>> until you experiment and seek the truth of this problem, you just won't
>>> know (and belief isn't sufficient).
>>>
>>>
>> Thanks Eric!
>>
>> Hmmm, just beginning to look at digital, huh? You will be "hooked,"
>> trust me! I only wonder what has taken us "so long?"
>>
>> Warm regards,
>> JS ;-)
>
> actually,
> Ive been using digital for some time (vhf/uhf). it has its pluses in some
> situations. However, I have found that under noisy RF conditions (such as
> leaky tv cable, etc) that mode won't work very well (its a true binary
> situation, either you are locked <have signal> or not <don't have signal>).
> once SNR drops below about 15 DBm, you are screwed. This is from lock hours
> of observation and troubleshooting.
>

All present apps can be improved, one way or another. I'll grant you
that the error correction routines which allow recover of "damaged"
packets need much improvement ... this will happen as digital becomes
much more accepted and in use ... stay tuned.

Regards,
JS
```

36. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 17:08:38 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flds2n$3mi$1@news.albasani.net>
Source record: 30252

N7ZZT - Eric Oyen wrote:

[...]

http://www.southgatearc.org/news/december2007/fdmdv_new_release.htm

JS

37. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 17:20:17 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <b5mdnXzghOHN6-fanZ2dnUVZ_qKgnZ2d@neonova.net>
Source record: 30253

Keith Dysart wrote:
> On Dec 30, 5:30 pm, Roger <rspa...@elltel.net> wrote:

>
>> I don't recall any examples using perfect CURRENT sources. I think a
>> perfect current source would supply a signal that could respond to
>> changing impedances correctly. It should solve the dilemma caused by
>> the rise in voltage which occurs when when a traveling wave doubles
>> voltage upon encountering an open circuit, or reversing at the source.
>>
>> What do you think?
>
> A perfect current source has an output impedance of
> infinity, just like an open circuit. The reflection
> coefficient is 1.
>
> Similar to the reflected voltage for the perfect
> voltage source, the reflected current cancels leaving
> just the current from the perfect current source.
>
> ...Keith

This disagrees with Roy, who assigns a -1 reflection coefficient when reflecting from a perfect voltage source.

The Norton or Thï¿½venin equivalent circuits seem capable of positive reflection coefficients. That is all that I am looking for.

Your search suggestion from a different posting '"lattice diagram" reflection'yields some examples that demonstrate positive reflection coefficients.

I must have missed something, because I can't understand why there is an insistence that a negative reflection coefficient must exist at the source for the 1/2 or 1 wavelength long transmission line fed at one end.

73, Roger, W7WKB

38. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 17:20:41 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fldspa$67p$1@news.albasani.net>
Source record: 30254

N7ZZT - Eric Oyen wrote:

[...]

Contrary to the rantings of self-serving hams, there are commercial
interests--the market share just makes this a "touch-and-go-operation"
in a niche which is so small ...

http://www.icomamerica.com/en/products/amateur/dstar/id1/default.aspx

Regards,
JS

39. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 18:05:28 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f10c7080-1a1a-4264-ab5e-c739b037eb17@e25g2000prg.googlegroups.com>
Source record: 30255

On Jan 1, 12:20 pm, Roger <rspa...@elltel.net> wrote:
> Keith Dysart wrote:
> > On Dec 30, 5:30 pm, Roger <rspa...@elltel.net> wrote:
>
> >> I don't recall any examples using perfect CURRENT sources. I think a
> >> perfect current source would supply a signal that could respond to
> >> changing impedances correctly. It should solve the dilemma caused by
> >> the rise in voltage which occurs when when a traveling wave doubles
> >> voltage upon encountering an open circuit, or reversing at the source.
>
> >> What do you think?
>
> > A perfect current source has an output impedance of
> > infinity, just like an open circuit. The reflection
> > coefficient is 1.
>
> > Similar to the reflected voltage for the perfect
> > voltage source, the reflected current cancels leaving
> > just the current from the perfect current source.
>
> > ...Keith
>
> This disagrees with Roy, who assigns a -1 reflection coefficient when
> reflecting from a perfect voltage source.

I don't think there is disagreement...
- perfect current source, infinite output impedance,
equivalent to open circuit, RC = 1
- perfect voltage source, zero output impedance,
equivalent to short circuit, RC = -1
- output impedance equal to Z0, RC = 0
- output impedance greater than Z0, RC > 0
- output impedance less than Z0, RC < 0

> The Norton or Thévenin equivalent circuits seem capable of positive
> reflection coefficients.

Either can be positive, negative, or zero depending
on the value of the output impedance compared to Z0.

> That is all that I am looking for.
>
> Your search suggestion from a different posting '"lattice diagram"
> reflection'yields some examples that demonstrate positive reflection
> coefficients.

This would only be because the examples happened to use
output impedances greater than Z0.

> I must have missed something, because I can't understand why there is an
> insistence that a negative reflection coefficient must exist at the
> source for the 1/2 or 1 wavelength long transmission line fed at one end.

The reflection coefficient depends on the values of line
characteristic impedance (Z0) and the output impedance of the
source.

Recall that RC = (Z2-Z1)/(Z2+Z1)

For the reflected wave arriving back at the source,
Z1 is the characteristic impedance of the line (Z0)
and Z2 is the output impedance of the source.

...Keith

40. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 18:20:19 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <gIGdnQf-_Jz_GefanZ2dnUVZ_hmtnZ2d@neonova.net>
Source record: 30256

Discussing forward and reflecting waves, when is stability reached.

Roy Lewallen wrote:

> If "stability" means steady state, a transmission line with any
> resistance at either end or both ends is less complicated to analyze
> than the particularly difficult lossless case I used for my analysis
> which never reaches a true steady state. The presence of resistance
> allows the system to settle to steady state, and that process can easily
> and quantifiably be shown. And in two special cases, the process from
> turn-on to steady state is trivially simple -- If the line is terminated
> with Z0 (technically, its conjugate, but the two are the same for a
> lossless line since Z0 is purely resistive), steady state is reached
> just as soon as the initial forward wave arrives at the far end of the
> line. No reflections at all are present or needed for the analysis. The
> second simple case is when the source impedance equals Z0, resulting in
> a source reflection coefficient of zero. In that case, there is a single
> reflection from the far end (assuming it's not also terminated with Z0),
> but no re-reflection from the source, and steady state is reached as
> soon as the first reflected wave arrives at the source.
>
> Roy Lewallen, W7EL
>

Could you better describe how you determine that the source has a Z0
equal to the line Z0? I can guess that you use a Thï¿½venin equivalent
circuit and set the series resistor to Z0.

The power output of the Thï¿½venin equivalent circuit follows the load.
Therefore, when the load delivers power, the Thï¿½venin equivalent circuit
adsorbs power. Right?

73, Roger, W7WKB

41. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 20:59:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <vb1ln3h61j47ho39diqaf5uhkl38d6hteg@4ax.com>
Source record: 30257

On Tue, 1 Jan 2008 06:12:48 -0800 (PST), Keith Dysart
<Keith.Dysart@gmail.com> wrote:

>To illustrate some of these weaknesses, consider an example
>where a step function from a Z0 matched generator is applied
>to a transmission line open at the far end.

Hi Keith,

It would seem we have either a Thevenin or a Norton source (again, the
ignored elephant in the living room of specifications). This would
have us step back to a Z0 in series with 2V or a Z0 in parallel with V
- it seems this would be a significant detail in the migration of what
follows:

>The step function eventually reaches the open end where
>the current can no longer flow. The inductance insists
>that the current continue until the capacitance at the
>end of the line is charged to the voltage which will stop
>the flow. This voltage is double the voltage of the step
>function applied to the line (i.e 2*V).

Fine (with omissions of the fine grain set-up)

However, what follows is so over edited as to be insensible:
>Once the
>infinitesimal capacitance at the end of the line is
>charged,
energy has reached the "end of the line" so to speak; and yet:
>the current now has to stop just a bit earlier
TIME is backing up? Are we at the edge of an event horizon?
>and this charges the inifinitesimal capacitance a bit
>further from the end.
BEYOND the end of the line? Just how long can this keep up?

Very strange stuff whose exclusion wouldn't impact the remainder:
>So a step in the voltage propagates
>back along the line towards the source. In front of this
>step, current is still flowing. Behind the step, the
behind the reflected step, rather?
>current is zero and voltage is 2*V.
Want to explain how you double the stored voltage in the distributed
capacitance of the line without current?
The definition of capacitance is explicitly found in the number of
electrons (charge or energy) on a surface; which in this case has not
changed.

>The charge that
>is continuing to flow from the source is being used
>to charge the distributed capacitance of the line.
It would appear now that charge is flowing again, but that there is a confusion as to where the flow comes from. Why would the source at less voltage provide current to flow into a cap that is rising in potential above it? Rolling electrons uphill would seem to be remarkable.

Returning to uncontroversial stuff:
>The voltage that is propagating backwards along the
>line has the value 2*V, but this can also be viewed as
>a step of voltage V added to the already present voltage
>V. The latter view is the one that aligns with the "no
>interaction" model; the total voltage on the line is
>the sum of the forward voltage V and the reverse
>voltage V or 2*V.
If this is the "latter view" then the former one (heavily edited above?) is troubling to say the least.

>In this model, the step function has propagated to the
>end, been reflected and is now propagating backwards.
>Implicit in this description is that the step continues
>to flow to the end of the line and be reflected as
>the leading edge travels back to the source.
This is a difficult read. You have two sentences. Is the second merely restating what was in the first, or describing a new condition (the reflection)?

>And this is the major weakness in the model.
Which model? The latter? or the former?
> It claims
>the step function is still flowing in the portion of
>the line that has a voltage of 2*V and *zero* current.
Does a step function flow? As for "zero" current, that never made sense in context here.

>Now without a doubt, when the voltages and currents
>of the forward and reverse step function are summed,
>the resulting totals are correct.
In this thread, that would be unique.

>But it seems to
>me that this is just applying the techniques of
>superposition. And when we do superposition on a
>basic circuit, we get the correct totals for the
>voltages and currents of the elements but we do
>not assign any particular meaning to the partial
>results.
Amen.

Unfortunately, more confusion:
>A trivial example is connecting to 10 volt batteries
>in parallel through a .001 ohm resistor.
Parallel has two outcomes, which one? "Through" a resistor to WHERE?
In series? In parallel?

Much to ambiguous.

>The partial
>results show 10000 amps flowing in each direction
>in the resistor with a total of 0.

This would suggest in parallel to the parallel batteries, but does not resolve the bucking parallel or aiding parallel battery connection possibilities. The 0 assignment does not follow from the description, mere as one of two possible solutions.

>But I do not
>think that anyone assigns significance to the 10000
>amp intermediate result. Everyone does agree that
>the actual current in the resistor is zero.

Actually, no. Bucking would have 0 Amperes. Aiding would have 20,000 Amperes.

However, by this forced march through the math, it appears there are two batteries in parallel; (series) bucking; with a parallel resistor.

>The "no interaction" model,
Is this the "latter" or former model?
>while just being
>superposition, seems to lend itself to having
>great significance applied to the intermediate
>results.
>
>Partially this may be due to poor definitions.
Certainly as I read it.
>If the
>wave is defined as just being a voltage wave, then
>all is well.
Still ambiguous.

And then deeper:
>But, for example, when looking at a solitary pulse,
>it is easy (and accurate) to view the wave as having
>more than just voltage. One can compute the charge,
>the current, the power, and the energy.
It would seem if you knew the charge, you already know the energy; but the power?

>But when
>two waves are simultaneously present, it is only
>legal to superpose the voltage and the current.
And illegal if only one is present? Odd distinction. Is there some

other method like superposition that demands to be used for this
instance?
>But it is obvious that a solitary wave has voltage,
>current, power, etc. But when two waves are present
>it is not legal to.... etc., etc.
>The "no interaction" model does not seem to resolve
>this conflict well, and some are lead astray.
I was lost on a turn several miles back.

>And it was this conflict that lead me to look for
>other ways of thinking about the system.

I can only hope for clarity from this point on.

>Earlier you asked for an experiment. How about this
>one....
>
>Take two step function generators, one at each end
>of a transmission line. Start a step from each end
>at the same time. When the steps collide in the
>middle, the steps can be viewed as passing each
>other without interaction, or reversing and
>propagating back to their respective sources.

Why just that particular view?

>We
>can measure the current at the middle of the line
>and observe that it is always 0.

Is it? When?

If, for some infinitesimal line section, there is no current through
it, then there is no potential difference across it.

Hence, the when is some infinitesimal time before the waves of equal
potential meet - and no current flow forever after.

>Therefore the
>charge that is filling the capacitance and causing
>the voltage step which is propagating back towards
>each generator

How did that happen? No potential difference across an infinitesimal
line section, both sides at full potential (capacitors fully charged,
or charging at identical rates). Potentials on either side of the
infinitesimal line section are equal to each other and to the sources,
hence no potential differences anywhere, No potential differences, no
current flow, no charge change, no reflection, no more wave.

The last bit of induction went to filling the last capacitance element
with the last charge of current. Last gasp. No more gas. Nothing
left. Finis.

>must be coming from the generator
>to which the step is propagatig because no charge
>is crossing the middle of the line.
>
>Do you like it?

Not particularly. What does it demonstrate?
>
>...Keith

73's
Richard Clark, KB7QHC

42. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 21:03:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <kialn35m7db5cor3vdl7obp3dccn9rusmi@4ax.com>
Source record: 30258

On Tue, 01 Jan 2008 10:20:19 -0800, Roger <rsparks@elltel.net> wrote:

>The power output of the Thï¿½venin equivalent circuit follows the load.

Hi Roger,

That doesn't describe an equivalency, merely a proportionality.

>Therefore, when the load delivers power, the Thï¿½venin equivalent circuit
>adsorbs power. Right?

What about phase?

73's
Richard Clark, KB7QHC

43. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 21:16:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <E4yej.85801$YL5.61668@newssvr29.news.prodigy.net>
Source record: 30259

Keith Dysart wrote:
>> The Norton or Thï¿½venin equivalent circuits seem capable of positive
>> reflection coefficients.
>
> Either can be positive, negative, or zero depending
> on the value of the output impedance compared to Z0.

Would you please quote a reference that addresses
the subject of reflection coefficients from Thevenin
or Norton equivalent sources?

To the best of my knowledge, there is absolutely no
requirement that a Thevenin or Norton equivalent
circuit exhibit the same reflection coefficient
at the circuit it replaces.
--
73, Cecil http://www.w5dxp.com

44. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 21:18:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <X6yej.85803$YL5.34303@newssvr29.news.prodigy.net>
Source record: 30260

Roger wrote:
> The power output of the Thï¿½venin equivalent circuit follows the load.
> Therefore, when the load delivers power, the Thï¿½venin equivalent circuit
> adsorbs power. Right?

The mere concept of a Thevenin equivalent circuit
absorbing power is contrary to the rules for the
use of a Thevenin equivalent circuit. No significance
can be automatically assigned to the power conditions
inside a Thevenin equivalent source.
--
73, Cecil http://www.w5dxp.com

45. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 21:19:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nlbikls98v415@corp.supernews.com>
Source record: 30261

Roger wrote:
>
> Could you better describe how you determine that the source has a Z0
> equal to the line Z0? I can guess that you use a Thï¿½venin equivalent
> circuit and set the series resistor to Z0.

Probably the simplest way is to put the entire source circuitry into a black box. Measure the terminal voltage with the box terminals open circuited, and the current with the terminals short circuited. The ratio of these is the source impedance. If you replace the box with a Thevenin or Norton equivalent, this will be the value of the equivalent circuit's impedance component (a resistor for most of our examples).

If the driving circuitry consists of a perfect voltage source in series with a resistance, the source Z will be the resistance; if it consists of a perfect current source in parallel with a resistance, the source Z will be the resistance. You can readily see that the open circuit V divided by the short circuit I of these two simple circuits equals the value of the resistance.

> The power output of the Thï¿½venin equivalent circuit follows the load.

Sorry, I don't understand this. Can you express it as an equation?

> Therefore, when the load delivers power, the Thï¿½venin equivalent circuit
> adsorbs power. Right?

Certainly, any energy leaving the transmission line must enter the circuitry to which it's connected. Is that what you mean?

Roy Lewallen, W7EL

46. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 21:33:58 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <3c7a8372-7a7b-42cd-a1fe-9d1a42c34057@v32g2000hsa.googlegroups.com>
Source record: 30262

On Jan 1, 1:20 pm, Roger <rspa...@elltel.net> wrote:
> Discussing forward and reflecting waves, when is stability reached.
>
>
>
>
>
> Roy Lewallen wrote:
> > If "stability" means steady state, a transmission line with any
> > resistance at either end or both ends is less complicated to analyze
> > than the particularly difficult lossless case I used for my analysis
> > which never reaches a true steady state. The presence of resistance
> > allows the system to settle to steady state, and that process can easily
> > and quantifiably be shown. And in two special cases, the process from
> > turn-on to steady state is trivially simple -- If the line is terminated
> > with Z0 (technically, its conjugate, but the two are the same for a
> > lossless line since Z0 is purely resistive), steady state is reached
> > just as soon as the initial forward wave arrives at the far end of the
> > line. No reflections at all are present or needed for the analysis. The
> > second simple case is when the source impedance equals Z0, resulting in
> > a source reflection coefficient of zero. In that case, there is a single
> > reflection from the far end (assuming it's not also terminated with Z0),
> > but no re-reflection from the source, and steady state is reached as
> > soon as the first reflected wave arrives at the source.
>
> > Roy Lewallen, W7EL
>
> Could you better describe how you determine that the source has a Z0
> equal to the line Z0? I can guess that you use a Thévenin equivalent
> circuit and set the series resistor to Z0.

This will do it. As will a Norton with the parallel
resistor set to Z0.

> The power output of the Thévenin equivalent circuit follows the load.
> Therefore, when the load delivers power, the Thévenin equivalent circuit
> adsorbs power. Right?

This apparently simple question has a very complicated
answer that depends on what precisely is meant by
"load delivers power" and "circuit absorbs power".

If by "load delivers power", you mean the reflected
wave, then this may or may not (depending on the
phase), mean that energy is transfered into the

generator.

If you mean that the time averaged product of the actual voltage and current at the generator terminals show a transfer of energy into the generator, then energy is indeed flowing into the generator.

If by "circuit absorbs power", you mean that there is an increase in the energy dissipated in the generator, this can not be ascertained without detailed knowledge of the internal arrangement of the generator and also depends the meaning of "load delivers power", discussed above.

...Keith

47. scanner antenna Ferret 8 question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 21:39:51 UTC
From: John Hand <John.Hand.1c07da6@radiobanter.com>
Message-ID: <John.Hand.1c07da6@radiobanter.com>
Source record: 30269

Thanks for reply. What is the benefit in hooking up two scanner radio optimized Ferret 8 Band antennas vertically, in parallel, and turned by a rotor? They both are still omnidirectional any way right? Why would this benefit?

JH

--
John Hand

48. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 21:43:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uuyej.85806$YL5.32731@newssvr29.news.prodigy.net>
Source record: 30263

Roy Lewallen wrote:
> If the driving circuitry consists of a perfect voltage source in series
> with a resistance, the source Z will be the resistance;

This is obviously not true and easily illustrated using
a battery.

```
| |
Gnd--||---\/\/\/\/---+---(I)---||--Gnd
| 50 ohms |
12v 12v
```

Using a 12v source and current meter (I) to test the
impedance to ground from point '+', what does that
V/I impedance measure? Can you spell infinity?

The same principle holds true for an AC source when
phase is considered. Replace the 12v battery with
a 12vac source and test the impedance at '+' with
a phase-locked 12vac source. The measured V/I will
be infinite just as it is in the DC case.

It would certainly appear that the reflection coefficient
seen by the reflections changes depending upon the phase
of the reflections. In any case, the source Z is obviously
not what the reflections encounter.
--
73, Cecil http://www.w5dxp.com

49. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 21:48:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nld8obr67okeb@corp.supernews.com>
Source record: 30264

Roger wrote:
> Keith Dysart wrote:
>> On Dec 30, 5:30 pm, Roger <rspa...@elltel.net> wrote:
>
>>
>>> I don't recall any examples using perfect CURRENT sources. I think a
>>> perfect current source would supply a signal that could respond to
>>> changing impedances correctly. It should solve the dilemma caused by
>>> the rise in voltage which occurs when when a traveling wave doubles
>>> voltage upon encountering an open circuit, or reversing at the source.
>>>
>>> What do you think?
>>
>> A perfect current source has an output impedance of
>> infinity, just like an open circuit. The reflection
>> coefficient is 1.
>>
>> Similar to the reflected voltage for the perfect
>> voltage source, the reflected current cancels leaving
>> just the current from the perfect current source.
>>
>> ...Keith
>
> This disagrees with Roy, who assigns a -1 reflection coefficient when
> reflecting from a perfect voltage source.

It appears you're confusing perfect voltage and current sources.

A perfect voltage source has a zero impedance, so if it's connected to a transmission line with no series resistance, it presents a reflection coefficient of -1. A perfect current source has an infinite impedance, so if it's connected to a transmission line with no parallel resistance, the reflection coefficient is +1, as Keith says.

> The Norton or Thï¿½venin equivalent circuits seem capable of positive
> reflection coefficients. That is all that I am looking for.

Reflection coefficients are complex numbers, so they can't properly be described as "positive" or "negative" except in the special cases of +1 and -1. In all other cases, the can only be described by their magnitude and angle, or real and imaginary component. Under normal circumstances, reflection coefficients can have any magnitude from zero to one, and any angle. A Thevein equivalent, like the circuit it's replacing, can present any possible reflection coefficient. For example, a Thevenin equivalent circuit having an impedance of 19 - j172 (that is, the

equivalent consists of a perfect voltage source in series with a 19 ohm resistance and a capacitance of 172 ohms reactance) will present a reflection coefficient of about 0.8 - j0.5 to a 50 ohm transmission line. This is also true of a Norton equivalent consisting of a perfect current source shunted by an impedance of 19 - j172 ohms.

Of course, a voltage source and series impedance not acting as an equivalent for any other circuit can also be used to drive the line, and the source impedance will equal the impedance that's in series with the perfect source. Likewise a current source with a parallel impedance.

> . . .

> I must have missed something, because I can't understand why there is an
> insistence that a negative reflection coefficient must exist at the
> source for the 1/2 or 1 wavelength long transmission line fed at one end.

No one has insisted on that at all. As I've said, any reflection coefficient can exist at the source. It depends solely on the impedances of the transmission line and the source. Both Keith and I have given the equation describing the simple relationship, and you can find it also in many references. It was -1 for my example only because I used a perfect voltage source with no series impedance.

Roy Lewallen, W7EL

50. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 21:57:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lHyej.2600$6%.1161@nlpi061.nbdc.sbc.com>
Source record: 30265

Keith Dysart wrote:
>> Could you better describe how you determine that the source has a Z0
>> equal to the line Z0? I can guess that you use a Thï¿½venin equivalent
>> circuit and set the series resistor to Z0.
>
> This will do it.

We have a black box. We use a 12vdc battery and a current
meter to measure the impedance of the black box. The
current meter reads zero when we connect the 12vdc battery
to the black box terminals. What is the impedance inside
the black box since test V/I = infinity?

What is actually in the black box is a very low source
impedance battery in series with a 50 ohm resistor.

This is what you are up against when reflections arrive
at your source. The ideal voltage source does *NOT* exhibit
zero ohms. Gary Coffman once likened it to spitting down
a fire hose.

If the reflections are in phase with the source voltage,
the source exhibits infinite ohms to the reflections and
of course, 100% re-reflection results. The reflection
coefficient encountered by the reflected waves is variable
and depends upon the relative phase between the source and
the reflections. The series resistor has very little effect
on the reflection coefficient.
--
73, Cecil http://www.w5dxp.com

51. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 22:35:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xezej.82029$Um6.1162@newssvr12.news.prodigy.net>
Source record: 30266

Roy Lewallen wrote:
> A perfect voltage source has a zero impedance, so if it's connected to a
> transmission line with no series resistance, it presents a reflection
> coefficient of -1.

But that is only when the source voltage is zero. What gives
you the right to assert such a thing when the source is turned
on? Please quote references and be specific.
--
73, Cecil http://www.w5dxp.com

52. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 22:53:01 UTC
From: Jim Higgins <invalid@invalid.invalid>
Message-ID: <30hln39osfhqhhkps398i8gms7ulvc7t2g@4ax.com>
Source record: 30267

On Mon, 31 Dec 2007 16:13:59 -0800, John Smith
<assemblywizard@gmail.com> wrote:

>Bob Bob wrote:
>> John
>>
>> Digital systems dont work like that. You can't normally have two system
>> existing in the same bandwidth/frequency and expect that they wont
>> interfere with each other. ...
>
>The router I am on right now is supporting 20+ other computers, all on
>CH 6 ... ever kick a wireless card into promiscuous mode and take a look
>at the packets flying about ...

Yes... and they don't overlap each other as BPL overlaps anything else
on the frequencies it uses.

53. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 23:00:54 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <GK2dnczMxpC7W-fanZ2dnUVZ_ruqnZ2d@neonova.net>
Source record: 30268

Roy Lewallen wrote:
> Roger wrote:
>>
>> Could you better describe how you determine that the source has a Z0
>> equal to the line Z0? I can guess that you use a Thï¿½venin equivalent
>> circuit and set the series resistor to Z0.
>
> Probably the simplest way is to put the entire source circuitry into a
> black box. Measure the terminal voltage with the box terminals open
> circuited, and the current with the terminals short circuited. The ratio
> of these is the source impedance. If you replace the box with a Thevenin
> or Norton equivalent, this will be the value of the equivalent circuit's
> impedance component (a resistor for most of our examples).
>
> If the driving circuitry consists of a perfect voltage source in series
> with a resistance, the source Z will be the resistance; if it consists
> of a perfect current source in parallel with a resistance, the source Z
> will be the resistance. You can readily see that the open circuit V
> divided by the short circuit I of these two simple circuits equals the
> value of the resistance.
>
>> The power output of the Thï¿½venin equivalent circuit follows the load.
>
> Sorry, I don't understand this. Can you express it as an equation?
>

There seems to be some confusion as to the terms "Thï¿½venin equivalent
>> circuit", "ideal voltage source", and how impedance follows these
sources.

Two sources we all have access to are these links:

Voltage source:
http://en.wikipedia.org/wiki/Voltage_source
Thï¿½venin equivalent circuit:
http://en.wikipedia.org/wiki/Th%C3%A9venin%27s_theorem

Three important observations about the ideal voltage source:

1. The voltage is maintained, no matter what current flows through the
source. Presumably, this would also mean that the voltage would be
maintained if a negative current flowed through the source. Thus, if we
set the voltage to 1 volt, the voltage would remain 1v even if we
supplied an infinite amount of power to the source.

2. The idea voltage source can ADSORB an infinite amount of power while maintaining voltage. In this capacity, it is like a variable resistor, capable of changing resistance to maintain a design voltage, no matter what current is supplied to it.

3. The idea voltage source has an infinite impedance at the design voltage, not a zero impedance as many have suggested. Zero internal resistance is assumed to reasonably allow the ideal voltage source to supply or adsorb current without changing voltage internally. It is not zero impedance with the result that voltage drops to zero if external power FLOWS INTO the ideal source.

Current flows into the ideal voltage source when the applied voltage exceeds the design voltage. At the point the current reverses, we have voltage/zero current, which is infinite impedance.

Two things to notice about the Thï¿½venin equivalent circuit:

1. It contains an ideal voltage source "IN SERIES" with a resistor. This has important implications when externally supplied voltage exceeds the design voltage. Any returning power would not only reverse the current flow in the ideal voltage source, it would develop voltage across the internal series resistor. The output Thevenin voltage would be the design voltage plus the voltage developed in the resistor.

2. The impedance of the Thevenin equivalent source would be infinite at the design voltage because a voltage will existed from the ideal source but current does not flow. This is true no matter what the design impedance is for the Thevenin source.

Please notice in the link about the Thevenin circuit, a reference to a "Thï¿½venin-equivalent resistance". This resistance uses the ideal voltage source set to zero. This appears to be the circuit that entered the discussion at some point, justifying a negative 1 reflection factor.

>> Therefore, when the load delivers power, the Thï¿½venin equivalent
>> circuit adsorbs power. Right?
>
> Certainly, any energy leaving the transmission line must enter the
> circuitry to which it's connected. Is that what you mean?
>
> Roy Lewallen, W7EL

If the rules found in the links are acceptable, I could agree that energy be allowed to enter the connected circuitry. I think we will find that the returning power from a reflected wave is either completely reflected with no change in energy, or adds to the voltage, thus increasing the current flow and power contained in the system.

73, Roger, W7WKB

54. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 23:11:35 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flehb7agn1@news.albasani.net>
Source record: 30270

Jim Higgins wrote:

> ...
> Yes... and they don't overlap each other as BPL overlaps anything else
> on the frequencies it uses.

No, microwaves, cell phones and other devices are attempting to trash
'em ...

... error control, adaptive packet length/encoding/etc. is where it is
at--for that we need to put together a team of binary savvy hams--it is
happening!

DV packets will flat tear up CW, AM, SSB--won't do FM much good
either--you may wish to stop worrying so much about BPL ... in
competition--DV will win hands down ...

Now, cut the argument anyway you would like ...

Regards,
JS

55. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 23:16:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <5Rzej.82033$Um6.16619@newssvr12.news.prodigy.net>
Source record: 30271

Roger wrote:
> If the rules found in the links are acceptable, I could agree that
> energy be allowed to enter the connected circuitry. I think we will
> find that the returning power from a reflected wave is either completely
> reflected with no change in energy, or adds to the voltage, thus
> increasing the current flow and power contained in the system.

I think you are on the right track, Roger. Another way of
saying it is: If the principles of superposition are used,
the superposition must necessarily be implemented. It appears
to me that the principles of superposition are being used but
the results of the ensuing necessary superposition are, for
some ulterior motive, being completely ignored.

When the superposition interference patterns between the source
waves and the reflected waves are taken into account, everything
becomes perfectly clear (including the deliberate obfuscations).
--
73, Cecil http://www.w5dxp.com

56. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 23:49:22 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <m4udnRBH4IYcTOfanZ2dnUVZ_jydnZ2d@neonova.net>
Source record: 30272

Keith Dysart wrote:
> On Jan 1, 1:20 pm, Roger <rspa...@elltel.net> wrote:
>> Discussing forward and reflecting waves, when is stability reached.
>>
>>
>>
>>
>>
>> Roy Lewallen wrote:
>>> If "stability" means steady state, a transmission line with any
>>> resistance at either end or both ends is less complicated to analyze
>>> than the particularly difficult lossless case I used for my analysis
>>> which never reaches a true steady state. The presence of resistance
>>> allows the system to settle to steady state, and that process can easily
>>> and quantifiably be shown. And in two special cases, the process from
>>> turn-on to steady state is trivially simple -- If the line is terminated
>>> with Z0 (technically, its conjugate, but the two are the same for a
>>> lossless line since Z0 is purely resistive), steady state is reached
>>> just as soon as the initial forward wave arrives at the far end of the
>>> line. No reflections at all are present or needed for the analysis. The
>>> second simple case is when the source impedance equals Z0, resulting in
>>> a source reflection coefficient of zero. In that case, there is a single
>>> reflection from the far end (assuming it's not also terminated with Z0),
>>> but no re-reflection from the source, and steady state is reached as
>>> soon as the first reflected wave arrives at the source.
>>> Roy Lewallen, W7EL
>> Could you better describe how you determine that the source has a Z0
>> equal to the line Z0? I can guess that you use a Thï¿½venin equivalent
>> circuit and set the series resistor to Z0.
>
> This will do it. As will a Norton with the parallel
> resistor set to Z0.
>
>> The power output of the Thï¿½venin equivalent circuit follows the load.
>> Therefore, when the load delivers power, the Thï¿½venin equivalent circuit
>> adsorbs power. Right?
>
> This apparently simple question has a very complicated
> answer that depends on what precisely is meant by
> "load delivers power" and "circuit absorbs power".
>
> If by "load delivers power", you mean the reflected
> wave, then this may or may not (depending on the
> phase), mean that energy is transfered into the

> generator.
>
> If you mean that the time averaged product of
> the actual voltage and current at the generator
> terminals show a transfer of energy into the
> generator, then energy is indeed flowing into
> the generator.
>
> If by "circuit absorbs power", you mean that
> there is an increase in the energy dissipated
> in the generator, this can not be ascertained
> without detailed knowledge of the internal
> arrangement of the generator and also depends
> the meaning of "load delivers power", discussed
> above.
>
> ...Keith

I think we will find it simpler than that.

I posted some links to descriptions of ideal voltage sources. After reading them, I am taking another look at how we define impedance from an ideal voltage source in a separate posting. You may wish to read the links, and hopefully, my posting.

Here are the links:

Voltage source:
http://en.wikipedia.org/wiki/Voltage_source

Thï¿½venin equivalent circuit:
http://en.wikipedia.org/wiki/Th%C3%A9venin%27s_theorem

73, Roger, W7WKB

57. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-01 23:57:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nlkrtfr6akn89@corp.supernews.com>
Source record: 30273

Roger wrote:
> Roy Lewallen wrote:
>> Roger wrote:
>>
>>> The power output of the Thï¿½venin equivalent circuit follows the load.
>>
>> Sorry, I don't understand this. Can you express it as an equation?
>>
>
> There seems to be some confusion as to the terms "Thï¿½venin equivalent
> >> circuit", "ideal voltage source", and how impedance follows these
> sources.
>
> Two sources we all have access to are these links:
>
> Voltage source:
> http://en.wikipedia.org/wiki/Voltage_source
> Thï¿½venin equivalent circuit:
> http://en.wikipedia.org/wiki/Th%C3%A9venin%27s_theorem

As far as I can see, I've used the terms entirely consistently with the definitions and descriptions in the linked articles. If you can find any instance in which I haven't, please point it out so I can correct it.

> Three important observations about the ideal voltage source:
>
> 1. The voltage is maintained, no matter what current flows through the
> source. Presumably, this would also mean that the voltage would be
> maintained if a negative current flowed through the source.

Actually, the wikipedia article correctly states this explicitly.

> Thus, if we
> set the voltage to 1 volt, the voltage would remain 1v even if we
> supplied an infinite amount of power to the source.

You have to be very careful with using infinite amounts of anything because the underlying mathematics runs into problems. For example, look up "impulses" in any circuits text, and you'll find situations where a pulse has zero width and infinite height yet finite area. So let's just say the voltage stays at 1 volt if you apply any finite amount of current.

> 2. The idea voltage source can ADSORB an infinite amount of power while
> maintaining voltage.

Yes, that's correct.

> In this capacity, it is like a variable resistor,
> capable of changing resistance to maintain a design voltage, no matter
> what current is supplied to it.

No, that's not correct, unless you're willing to work with negative resistances. V/I is a negative number when you supply current to a voltage source. So it doesn't in any way act like a resistance, changing or not.

> 3. The idea voltage source has an infinite impedance at the design
> voltage, not a zero impedance as many have suggested.

No, that's not correct.

> Zero internal
> resistance is assumed to reasonably allow the ideal voltage source to
> supply or adsorb current without changing voltage internally.

Yes, that's correct.

> It is not
> zero impedance with the result that voltage drops to zero if external
> power FLOWS INTO the ideal source.

Sorry, I don't understand that statement. The voltage never changes, regardless of the current flowing in or out. Review the wikipedia article or any circuits text.

> Current flows into the ideal voltage source when the applied voltage
> exceeds the design voltage.

You can't "apply" a voltage to an ideal voltage source, except through an impedance. If you did, for example by connecting it to another voltage source of different value, the conditions defined for the voltage sources are contradictory and can't exist at the same time. If you do apply a voltage through an impedance, the current is simply the voltage across the impedance divided by the impedance.

> At the point the current reverses, we have
> voltage/zero current, which is infinite impedance.

It sounds like you're trying to calculate some sort of "instantaneous impedance". This isn't a generally accepted concept, and you'll have to develop a fairly complete set of rules and mathematics to cover it.

> Two things to notice about the Thï¿½venin equivalent circuit:
>
> 1. It contains an ideal voltage source "IN SERIES" with a resistor.
> This has important implications when externally supplied voltage exceeds
> the design voltage.

Not really. The current simply equals the voltage across the resistor divided by the resistance, in accordance with Ohm's law.

> Any returning power would not only reverse the
> current flow in the ideal voltage source, it would develop voltage

> across the internal series resistor. The output Thevenin voltage would
> be the design voltage plus the voltage developed in the resistor.

Your problem here, and I suspect elsewhere, is that you've embraced the idea that there are waves of flowing and reflecting power. Your otherwise reasoned questions and arguments are a good illustration into the traps this concept leads a person into. You're seeing that in order to support this mistaken concept, you have to reject some very fundamental principles of electrical circuit operation. So you end up with only two choices:

1. Re-write a great deal of fundamental circuit theory and reject the foundation which has consistently given demonstrably correct results for over a century, or
2. Realize that the flowing-power concept is flawed and abandon it.

The choice is yours.

> 2. The impedance of the Thevenin equivalent source would be infinite at
> the design voltage because a voltage will existed from the ideal source
> but current does not flow. This is true no matter what the design
> impedance is for the Thevenin source.

You're trying to define the impedance of a source as the ratio of its voltage to the current being drawn from it. That's not the impedance of the source, it's the impedance of the load. The two are not the same. The impedance of the source is its open circuit voltage divided by its short circuit current. Another way to determine the impedance of the source is to apply various loads and see how much the voltage drops. Any test you run will confirm that the ideal voltage source has a zero resistance, as my postings, the wikipedia article, or any circuits text tell you.

> Please notice in the link about the Thevenin circuit, a reference to a
> "Thï¿½venin-equivalent resistance".

This is the resistance component of the Thevenin equivalent circuit. It's equal to the resistance of the circuitry for which the Thevenin equivalent is being substituted.

> This resistance uses the ideal
> voltage source set to zero.

Can you explain this? There is no requirement that the source be set to zero in determining or using the Thevenin equivalent resistance.

> This appears to be the circuit that entered
> the discussion at some point, justifying a negative 1 reflection factor.

My analysis did not contain a Thevenin equivalent to any circuit. It contained only an ideal voltage source.

>>> Therefore, when the load delivers power, the Thï¿½venin equivalent
>>> circuit adsorbs power. Right?

>>
>> Certainly, any energy leaving the transmission line must enter the
>> circuitry to which it's connected. Is that what you mean?
>>
>> Roy Lewallen, W7EL
>
> If the rules found in the links are acceptable, I could agree that
> energy be allowed to enter the connected circuitry. I think we will
> find that the returning power from a reflected wave is either completely
> reflected with no change in energy, or adds to the voltage, thus
> increasing the current flow and power contained in the system.

You're building a logical argument from a flawed premise. I'm afraid
you've only just begun to see the problems you'll be having as you
pursue this path.

Roy Lewallen, W7EL

58. Re: Where is the moderator?????

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 00:05:09 UTC
From: KC8QJP <kc8qjp@lycos.com>
Message-ID: <flekfu$kf8$1@news.datemas.de>
Source record: 30274
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

<nc183d@aol.com> wrote in message
news:9d02c358-99b8-4a6a-97ed-92b49650c653@u10g2000prn.googlegroups.com...
> Wake up!!!
>
> Can't you stop all these bullshit MI5 persecution posts????
>
> They're absolutely clogging up all the rec.radio listings!!!!!
>
> Please do your job!
>
>
Are you as stupid as you sound?

59. Re: Where is the moderator?????

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 00:09:55 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9A18B8CCD2621VeebleFetzer@216.250.184.7>
Source record: 30275
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

In news:flekfu$kf8$1@news.datemas.de "KC8QJP" <kc8qjp@lycos.com> wrote:

>
><nc183d@aol.com> wrote in message
> news:9d02c358-99b8-4a6a-97ed-92b49650c653@u10g2000prn.googlegroups.com.
> ..
>> Wake up!!!
>>
>> Can't you stop all these bullshit MI5 persecution posts????
>>
>> They're absolutely clogging up all the rec.radio listings!!!!!
>>
>> Please do your job!
>>
>>
> Are you as stupid as you sound?

He's just a poor googlegrouper.

--
Bert Hyman St. Paul, MN bert@iphouse.com

60. Re: Where is the moderator?????

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 00:13:16 UTC
From: KC8QJP <kc8qjp@lycos.com>
Message-ID: <flekv5$l0m$1@news.datemas.de>
Source record: 30276
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

"Bert Hyman" <bert@iphouse.com> wrote in message
news:Xns9A18B8CCD2621VeebleFetzer@216.250.184.7...
> In news:flekfu$kf8$1@news.datemas.de "KC8QJP" <kc8qjp@lycos.com> wrote:
>
>>
>><nc183d@aol.com> wrote in message
>> news:9d02c358-99b8-4a6a-97ed-92b49650c653@u10g2000prn.googlegroups.com.
>> ..
>>> Wake up!!!
>>>
>>> Can't you stop all these bullshit MI5 persecution posts????
>>>
>>> They're absolutely clogging up all the rec.radio listings!!!!!
>>>
>>> Please do your job!
>>>
>>>
>> Are you as stupid as you sound?
>
> He's just a poor googlegrouper.
>
>
> Bert Hyman St. Paul, MN bert@iphouse.com
>
>
Are you related to busther hyman?

61. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 00:28:31 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <oIOdnQdmPYczR-fanZ2dnUVZ_jadnZ2d@neonova.net>
Source record: 30277

"Cecil Moore" wrote in message
news:<5Rzej.82033$Um6.16619@newssvr12.news.prodigy.net>...
> Roger wrote:
> > If the rules found in the links are acceptable, I could agree that
> > energy be allowed to enter the connected circuitry. I think we will
> > find that the returning power from a reflected wave is either
completely
> > reflected with no change in energy, or adds to the voltage, thus
> > increasing the current flow and power contained in the system.
>
> I think you are on the right track, Roger. Another way of
> saying it is: If the principles of superposition are used,
> the superposition must necessarily be implemented. It appears
> to me that the principles of superposition are being used but
> the results of the ensuing necessary superposition are, for
> some ulterior motive, being completely ignored.
>
> When the superposition interference patterns between the source
> waves and the reflected waves are taken into account, everything
> becomes perfectly clear (including the deliberate obfuscations).
> --
> 73, Cecil http://www.w5dxp.com

I have been down wrong tracks before! I sure hope this is the right
track. Thanks.

The principles of superposition are mathematically usable, not too hard,
and I think very revealing. Yes, if we use part of the model, we must
use it all the way. To do otherwise would be error, or worse.

You have been a supporter of this theory for a long time.

73, Roger, W7WKB

62. Re: Where is the moderator?????

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 00:38:52 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9A18BDCBB90D9VeebleFetzer@216.250.184.7>
Source record: 30278
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

```
In news:flekv5$l0m$1@news.datemas.de "KC8QJP" <kc8qjp@lycos.com> wrote:

>
> "Bert Hyman" <bert@iphouse.com> wrote in message
> news:Xns9A18B8CCD2621VeebleFetzer@216.250.184.7...
>> In news:flekfu$kf8$1@news.datemas.de "KC8QJP" <kc8qjp@lycos.com>
>> wrote:
>>
>>>
>>><nc183d@aol.com> wrote in message
>>> news:9d02c358-99b8-4a6a-97ed-92b49650c653@u10g2000prn.googlegroups.co
>>> m. ..
>>>> Wake up!!!
>>>>
>>>> Can't you stop all these bullshit MI5 persecution posts????
>>>>
>>>> They're absolutely clogging up all the rec.radio listings!!!!!
>>>>
>>>> Please do your job!
>>>>
>>>>
>>> Are you as stupid as you sound?
>>
>> He's just a poor googlegrouper.
>>
>>
>> Bert Hyman St. Paul, MN bert@iphouse.com
>>
>>
> Are you related to busther hyman?

Are you as stupid as you sound?

--
Bert Hyman St. Paul, MN bert@iphouse.com
```

63. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 00:44:19 UTC
From: Lushy <david.lush@bigpond.com>
Message-ID: <D7Bej.30006$CN4.2730@news-server.bigpond.net.au>
Source record: 30279

Can you do the same for the M15 spammer as well.
Dave Lush
AU
"art" <aunwin@insightbb.com> wrote in message
news:769f6465-64de-4ea3-9d29-0153fadef349@e23g2000prf.googlegroups.com...
On Dec 30, 5:55 pm, "Ken Fowler" <ko...@yahoo.com> wrote:
> I hate to totally block people who arguably have some useful things to
> post
> to the newsgroup. But the content on the thread about travelling waves
> versus standing waves has become so dominated by one person that there is
> no way to end it except by filtering all messages to
> rec.radio.amateur.antennas to eliminate the dominant poster. So I have not
> only blocked articles from his web site, I am blocking any article which
> contains his name. So if you reply to him, I am sorry but I will not be
> able to see your remarks. I know that no one is likely to lose any sleep
> about my actions. From now on, I hope there will be articles about antenna
> construction and modelling because that will probably be all that I am
> able
> to read. 73.
>
> Ken Fowler, KO6NO

Ken
You have a direct line with Yahoo who aids and abets kb9...
If they don't care who they support then drop them.
Yahoo is probably happy with what their customers are doing
on the net. Ofcourse if MI5 can't get the other guy write
a letter to the CIA they would know what to do.
Art

64. Re: scanner antenna Ferret 8 question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 00:46:02 UTC
From: dplatt@radagast.org
Message-ID: <af3r45-ni9.ln1@radagast.org>
Source record: 30280

>Thanks for reply. What is the benefit in hooking up two scanner radio
>optimized Ferret 8 Band antennas vertically, in parallel, and turned by
>a rotor? They both are still omnidirectional any way right? Why would
>this benefit?

Stacking two omni-vertical antennas one above another can increase the gain towards the horizon (where you tend to want it) at the expense of gain at higher and lower elevation angles (where you usually don't care very much). To get this improvement, though, it's necessary to use a phasing harness which combines the signals properly in-phase and preserves the correct impedance... and this is much more easily said than done for a multi-band antenna! Do it wrongly, and you could easily end up with a system that had *less* gain towards the horizon than a single antenna would, at much greater cost.

Turning such a stacked pair (or even a single such antenna) via a rotor seems nonsensical to me in most cases. The only case in which it could make a very small amount of sense, would be if the antenna (or stacked pair) is side-mounted on a mast or tower. The presence of the mast or tower will cause the pattern to be somewhat less than truly omnidirectional... there will probably be a partial null (a "weak spot" in the pattern) in the direction of the tower. Rotating a side-mounted stacked pair so it was on the opposite side of the mast would change the "sweet spot".

The improvement in coverage would probably be small (from either stacking, or rotating). Seems like a lot of expense to go to for a small gain. From the manufacturer's point of view, it's probably a great idea... they sell two antennas instead of one :-)

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

65. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 00:54:35 UTC
From: dplatt@radagast.org
Message-ID: <bv3r45-ni9.ln1@radagast.org>
Source record: 30281

In article <30hln39osfhqhhkps398i8gms7ulvc7t2g@4ax.com>,
Jim Higgins <invalid@invalid.invalid> wrote:

>>> Digital systems dont work like that. You can't normally have two system
>>> existing in the same bandwidth/frequency and expect that they wont
>>> interfere with each other. ...
>>
>>The router I am on right now is supporting 20+ other computers, all on
>>CH 6 ... ever kick a wireless card into promiscuous mode and take a look
>>at the packets flying about ...
>
>Yes... and they don't overlap each other as BPL overlaps anything else
>on the frequencies it uses.

Correct, 802.11 access-point-to-client connections use time-division
multiplexing, coordinated by the access point. No two radios are
transmitting at the same time. If you start doing active transfers
down to 2, 3, 4, etc. of those client computers at the same time,
you can watch the bandwidth that each of them gets start to degrade.
Even if all of the clients report that they're seeing a strong signal
and are using a full-speed modulation, none of them will get more than
a fraction of the total bandwidth.

It'll get even nastier if you try to run two or more access points
(with their sets of clients) on channel 6, with overlapping coverage
zones. Each group will see the others' transmissions as noise,
resulting in poorer coverage, an increased rate of packet
retransmissions, and (likely) a fallback to a slower data-modulation
rate.

Digital modulations are useful. They are *not* a panacea for noise
and interference. When you throw together WiFi, Bluetooth, Zigbee,
frequency-hopping cordless phones, and the odd microwave oven in the
same band, the speed and reliability of wireless connections can go to
hell abruptly and thoroughly.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

66. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 01:14:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <SzBej.2623$6%.690@nlpi061.nbdc.sbc.com>
Source record: 30282

Roy Lewallen wrote:
> Your problem here, and I suspect elsewhere, is that you've embraced the
> idea that there are waves of flowing and reflecting power.

Roy, your problem is that you have embraced the idea that
reflected waves contain zero energy such that zero reflected
energy can be measured as zero reflected power passing a
measurement point. However, zero energy waves are impossible!!!

> 2. Realize that the flowing-power concept is flawed and abandon it.

Why don't you realize that reflected waves of zero energy
are impossible?

> Can you explain this? There is no requirement that the source be set to
> zero in determining or using the Thevenin equivalent resistance.

It is a requirement of the superposition principle that the
source voltage be set to zero for determining the voltage and
current due only to the reflected wave. I'm surprised you
are trying to sweep that fact under the rug.

> My analysis did not contain a Thevenin equivalent to any circuit. It
> contained only an ideal voltage source.

An ideal voltage source plus a series resistor *IS* a Thevenin
equivalent circuit. Nice try at obfuscation.

> You're building a logical argument from a flawed premise.

Nobody's premise is more flawed than yours.

You are only performing 1/2 of the pre-superposition phase.
Everything can be explained if you actually go through with
the superposition of which you are so afraid.
--
73, Cecil http://www.w5dxp.com

67. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 01:53:16 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fleqqc$g42$1@news.albasani.net>
Source record: 30283

Dave Platt wrote:

[...]

Keep telling us how difficult it is, makes us feel better,
actually--being able to do what so many consider impossible ... <GRIN>

JS

68. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 02:03:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ShCej.2480$pr6.1401@nlpi070.nbdc.sbc.com>
Source record: 30284

Roger wrote:
> The principles of superposition are mathematically usable, not too hard,
> and I think very revealing. Yes, if we use part of the model, we must
> use it all the way. To do otherwise would be error, or worse.

Roy and Keith don't seem to realize that the zero source impedance for the ideal voltage source is only when the source is turned off for purposes of superposition. They conveniently avoid turning the source voltage on to complete the other half of the superposition process. When the source signal and the reflected wave are superposed at the series source resistor, where the energy goes becomes obvious. Total destructive interference in the source results in total constructive interference toward the load. See below.

> You have been a supporter of this theory for a long time.

Yes, I have. I am a supporter of the principles and laws of physics. Others believe they can violate the principle of conservation of energy anytime they choose because the principle of conservation of energy cannot be violated - go figure.

Roger, I have explained all of this before. If you are capable of understanding it, I take my hat off to you. Here's what happens in that ideal voltage source using the rules of superposition.

1. With the reflected voltage set to zero, the source current is calculated which results in power in the source resistor. Psource = Isource^2*Rsource

2. With the source voltage set to zero, the reflected current is calculated which results in power in the source resistor. Pref = Iref^2*Rsource

Now superpose the two events. The resultant power equation is: Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A) where 'A' is the angle between the source current and the reflected current. Note this is NOT power superposition. It is the common irradiance (power density) equation from the field of optics which has been in use in optical physics for a couple of centuries so it has withstood the test of time.

For the voltage source looking into a 1/2WL open
circuit stub, angle 'A' is 180 degrees. Therefore
the total power in the source resistor is:

Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(180) or

Ptot = Ps + Pr - 2*SQRT(Ps*Pr) = 0

Ptot in the source resistor is zero watts but we
already knew that. What is important is that the
last term in that equation above is known as the
"interference term". When it is negative, it indicates
destructive interference. When Ptot = 0, we have
"total destructive interference" as defined by
Hecht in "Optics", 4th edition, page 388.

Whatever the magnitude of the destructive interference
term, an equal magnitude of constructive interference
must occur in a different direction in order to
satisfy the conservation of energy principle. Thus
we can say with certainty that the energy in the
reflected wave has been 100% re-reflected by the
source. The actual reflection coefficient of the
source in the example is |1.0| even when the source
resistor equals the Z0 of the transmission line.
I have been explaining all of this for about 5 years
now. Instead of attempting to understand these relatively
simple laws of physics from the field of optics, Roy
ploinked me. Hopefully, you will understand.

All of this is explained in my three year old Worldradio
energy article on my web page.

http://www.w5dxp.com/energy.htm
--
73, Cecil http://www.w5dxp.com

69. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 02:44:17 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <6f4c7371-e682-4d81-bb57-c1df164bd157@e6g2000prf.googlegroups.com>
Source record: 30285

On Jan 1, 3:59 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Tue, 1 Jan 2008 06:12:48 -0800 (PST), Keith Dysart
>
> <Keith.Dys...@gmail.com> wrote:
> >To illustrate some of these weaknesses, consider an example
> >where a step function from a Z0 matched generator is applied
> >to a transmission line open at the far end.
>
> Hi Keith,
>
> It would seem we have either a Thevenin or a Norton source (again, the
> ignored elephant in the living room of specifications). This would
> have us step back to a Z0 in series with 2V or a Z0 in parallel with V
> - it seems this would be a significant detail in the migration of what
> follows:

I do not think so. Regardless of the output impedance of the
generator, the step impresses some voltage V which begins
to propagate down the line. Since the experiment ends before
the reflection returns to the generator, the impedance
of the generator is irrelevant.

> >The step function eventually reaches the open end where
> >the current can no longer flow. The inductance insists
> >that the current continue until the capacitance at the
> >end of the line is charged to the voltage which will stop
> >the flow. This voltage is double the voltage of the step
> >function applied to the line (i.e 2*V).
>
> Fine (with omissions of the fine grain set-up)
>
> However, what follows is so over edited as to be insensible:>Once the
> >infinitesimal capacitance at the end of the line is
> >charged,
>
> energy has reached the "end of the line" so to speak; and yet:>the current now has to
stop just a bit earlier
>
> TIME is backing up?

Ah. The challenge of written precisely. Consider the
generator to be on the left end of the line and the open
to be at the right end. When the capacitance at the right
end charges to 2 * V, the current now has to stop a little
bit more to the left.

> Are we at the edge of an event horizon?>and this charges the inifinitesimal capacitance a bit
> >further from the end.
>
> BEYOND the end of the line? Just how long can this keep up?

Again, the poor writing meant a bit further to left
from the end.

> Very strange stuff whose exclusion wouldn't impact the remainder:>So a step in the voltage propagates
> >back along the line towards the source. In front of this
> >step, current is still flowing. Behind the step, the
>
> behind the reflected step, rather?>current is zero and voltage is 2*V.
>
> Want to explain how you double the stored voltage in the distributed
> capacitance of the line without current?

The energy formerly present in the inductance of the line
has been transferred to the capacitance.

> The definition of capacitance is explicitly found in the number of
> electrons (charge or energy) on a surface; which in this case has not
> changed.>The charge that
> >is continuing to flow from the source is being used
> >to charge the distributed capacitance of the line.
>
> It would appear now that charge is flowing again, but that there is a
> confusion as to where the flow comes from.

Using the new reference scheme, charge to the left
of the leftward propagating step continues to flow,
while charge to the right has stopped flowing.

> Why would the source at
> less voltage provide current to flow into a cap that is rising in
> potential above it?

The beauty of inductance. You get extra voltage when
you try to stop the flow.

> Rolling electrons uphill would seem to be
> remarkable.

Well yes, but they don't roll for long. And you don't
get more out than you put in. Pity. Or I could be quite rich.

> Returning to uncontroversial stuff:>The voltage that is propagating backwards along the
> >line has the value 2*V, but this can also be viewed as
> >a step of voltage V added to the already present voltage
> >V. The latter view is the one that aligns with the "no
> >interaction" model; the total voltage on the line is
> >the sum of the forward voltage V and the reverse

> >voltage V or 2*V.
>
> If this is the "latter view" then the former one (heavily edited
> above?) is troubling to say the least.

Challenges with the referent.
The former view is that a voltage of 2*V is propagating
back along the line. The latter view is that it is a
step of V above the already present V.

> >In this model, the step function has propagated to the
> >end, been reflected and is now propagating backwards.
> >Implicit in this description is that the step continues
> >to flow to the end of the line and be reflected as
> >the leading edge travels back to the source.
>
> This is a difficult read. You have two sentences. Is the second
> merely restating what was in the first, or describing a new condition
> (the reflection)?

Agreed. What is a good word to describe the constant
voltage that follows the actual step change in
voltage? The "tread" perhaps?

"The tread continues to flow to the end of the line
and be reflected as the leading edge travels back to
the source."

I am not sure that that is any clearer.

> >And this is the major weakness in the model.
>
> Which model?

The "no interaction" model.

> The latter? or the former?> It claims
> >the step function is still flowing in the portion of
> >the line that has a voltage of 2*V and *zero* current.
>
> Does a step function flow?

Perhaps the "tread"? But then should the step change
be called the "riser"?

> As for "zero" current, that never made
> sense in context here.

Somewhat clarified, I hope. But for clarity, the
current to the right of the leftward propagating
step is zero.

> >Now without a doubt, when the voltages and currents
> >of the forward and reverse step function are summed,

> >the resulting totals are correct.
>
> In this thread, that would be unique.

Or a miracle?

> >But it seems to
> >me that this is just applying the techniques of
> >superposition. And when we do superposition on a
> >basic circuit, we get the correct totals for the
> >voltages and currents of the elements but we do
> >not assign any particular meaning to the partial
> >results.
>
> Amen.
>
> Unfortunately, more confusion:>A trivial example is connecting to 10 volt batteries
> >in parallel through a .001 ohm resistor.
>
> Parallel has two outcomes, which one? "Through" a resistor to WHERE?
> In series? In parallel?
>
> Much to ambiguous.

I know. Trying to conserve words leads to confusion.
Try: negative to negative, positives connected using
the resistor.

>
> >The partial
> >results show 10000 amps flowing in each direction
> >in the resistor with a total of 0.
>
> This would suggest in parallel to the parallel batteries, but does not
> resolve the bucking parallel or aiding parallel battery connection
> possibilities. The 0 assignment does not follow from the description,
> mere as one of two possible solutions.
>
> >But I do not
> >think that anyone assigns significance to the 10000
> >amp intermediate result. Everyone does agree that
> >the actual current in the resistor is zero.
>
> Actually, no. Bucking would have 0 Amperes. Aiding would have 20,000
> Amperes.
>
> However, by this forced march through the math, it appears there are
> two batteries in parallel; (series) bucking; with a parallel resistor.

So in the end, successful communication of the schematic.

> >The "no interaction" model,
>
> Is this the "latter" or former model?>while just being
> >superposition, seems to lend itself to having
> >great significance applied to the intermediate
> >results.
>
> >Partially this may be due to poor definitions.
>
> Certainly as I read it.>If the
> >wave is defined as just being a voltage wave, then
> >all is well.
>
> Still ambiguous.
>
> And then deeper:>But, for example, when looking at a solitary pulse,
> >it is easy (and accurate) to view the wave as having
> >more than just voltage. One can compute the charge,
> >the current, the power, and the energy.
>
> It would seem if you knew the charge, you already know the energy; but
> the power?

Just energy per unit time. We know the energy distribution
on the line, so we know the power at any point and time.

> >But when
> >two waves are simultaneously present, it is only
> >legal to superpose the voltage and the current.
>
> And illegal if only one is present?

No. Legal to also compute the power.

> Odd distinction. Is there some
> other method like superposition that demands to be used for this
> instance?>But it is obvious that a solitary wave has voltage,
> >current, power, etc. But when two waves are present
> >it is not legal to.... etc., etc.
> >The "no interaction" model does not seem to resolve
> >this conflict well, and some are lead astray.
>
> I was lost on a turn several miles back.

Perhaps try again, with the clarifications.

> >And it was this conflict that lead me to look for
> >other ways of thinking about the system.
>
> I can only hope for clarity from this point on.

But given the history, disappointment will be no surprise.
Eh?

> >Earlier you asked for an experiment. How about this
> >one....
>
> >Take two step function generators, one at each end
> >of a transmission line. Start a step from each end
> >at the same time. When the steps collide in the
> >middle, the steps can be viewed as passing each
> >other without interaction, or reversing and
> >propagating back to their respective sources.
>
> Why just that particular view?

Those seem to be the common alternatives.
If there are more, please share.

> >We
> >can measure the current at the middle of the line
> >and observe that it is always 0.
>
> Is it? When?

Always.

> If, for some infinitesimal line section, there is no current through
> it, then there is no potential difference across it.

Or did you mean along it?

> Hence, the when is some infinitesimal time before the waves of equal
> potential meet - and no current flow forever after.
>
> >Therefore the
> >charge that is filling the capacitance and causing
> >the voltage step which is propagating back towards
> >each generator
>
> How did that happen? No potential difference across an infinitesimal
> line section, both sides at full potential (capacitors fully charged,
> or charging at identical rates). Potentials on either side of the
> infinitesimal line section are equal to each other and to the sources,
> hence no potential differences anywhere, No potential differences, no
> current flow, no charge change, no reflection, no more wave.
>
> The last bit of induction went to filling the last capacitance element
> with the last charge of current. Last gasp. No more gas. Nothing
> left. Finis.
>
> >must be coming from the generator
> >to which the step is propagatig because no charge
> >is crossing the middle of the line.
>
> >Do you like it?
>

> Not particularly. What does it demonstrate?

That they bounce rather than pass silently.

> >...Keith
>
> 73's
> Richard Clark, KB7QHC

...Keith

70. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 02:47:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <fdc481c6-03d4-4cc3-9f2f-491b38b24ddd@i3g2000hsf.googlegroups.com>
Source record: 30286

On Jan 1, 4:16 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> >> The Norton or Thévenin equivalent circuits seem capable of positive
> >> reflection coefficients.
>
> > Either can be positive, negative, or zero depending
> > on the value of the output impedance compared to Z0.
>
> Would you please quote a reference that addresses
> the subject of reflection coefficients from Thevenin
> or Norton equivalent sources?
>
> To the best of my knowledge, there is absolutely no
> requirement that a Thevenin or Norton equivalent
> circuit exhibit the same reflection coefficient
> at the circuit it replaces.

It happens without effort because the output impedance
of the Norton/Thevenin equivalent circuit is the same
as the circuit it replaces, otherwise it is not an
equivalent.

...Keith

71. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 02:54:25 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <477afcdc$0$2493$4c368faf@roadrunner.com>
Source record: 30287

"art" <aunwin@insightbb.com> wrote in message
news:769f6465-64de-4ea3-9d29-0153fadef349@e23g2000prf.googlegroups.com...
On Dec 30, 5:55 pm, "Ken Fowler" <ko...@yahoo.com> wrote:
> I hate to totally block people who arguably have some useful things to
> post
> to the newsgroup. But the content on the thread about travelling waves
> versus standing waves has become so dominated by one person that there is
> no way to end it except by filtering all messages to
> rec.radio.amateur.antennas to eliminate the dominant poster. So I have not
> only blocked articles from his web site, I am blocking any article which
> contains his name. So if you reply to him, I am sorry but I will not be
> able to see your remarks. I know that no one is likely to lose any sleep
> about my actions. From now on, I hope there will be articles about antenna
> construction and modelling because that will probably be all that I am
> able
> to read. 73.
>
> Ken Fowler, KO6NO

Re: "Ken
You have a direct line with Yahoo who aids and abets kb9...
If they don't care who they support then drop them.
Yahoo is probably happy with what their customers are doing
on the net. Ofcourse if MI5 can't get the other guy write
a letter to the CIA they would know what to do."

Art, I suspect the problem with MI5 is the drastic reduction in funding due to the end of the cold war. One would think with the guy going to Canada and Florida the MI6 could step in and make a good hit without the assistance of the CIA. The CIA today is rather useless, not being able to even estimate Iranian WMD capability much less using electromagnetism to effect mind control :-)

More seriously, my theory is that this MI5 is a prank that started at the psychology department of some UK university and the students carry it on as a tradition year after year. They seem very adept at making themselves unflilterable.

If MI5 could only stop him from coming back they would have 100% of my support ;-)

72. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 03:02:56 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <A9Dej.98624$MJ6.9967@bgtnsc05-news.ops.worldnet.att.net>
Source record: 30288

```
Cecil Moore wrote:
> Gene Fuller wrote:
>> Cecil Moore wrote:
>>> As you well know, the convention is to apply a negative
>>> sign to positive energy flowing in the opposite direction
>>> from the "forward" energy which is arbitrarily assigned
>>> a plus sign.
>>
>> Let's see even one reference that mentions explicitly the concept of
>> applying a negative sign to positive energy. Not power, not voltage,
>> not current, not waves, but energy.
>
> If you keep feigning ignorance like that Gene, you are
> going to lose all respect. If the Poynting vector has
> a negative sign, as used by Ramo & Whinnery, that sign
> is an indication of the *direction of energy flow*,
> see quote below.
>
> From Ramo & Whinnery:
>
> The Poynting vector is "the vector giving *direction* and
> magnitude of *energy flow*". When Ramo & Whinnery hang a
> sign on a Poynting vector in a transmission line, it is
> an indication of the direction of energy flow.
>
> For pure standing waves,
> "The average [NET] value of Poynting vector is zero
> at every cross-sectional plane; this emphasizes the
> fact that on the average as much energy is carried
> away by the reflected wave as is brought by the
> incident wave."
>
> What? Reflected waves "carrying" energy? Shame on
> Ramo & Whinnery for contradicting the rraa gurus.
>
> It is impossible to satisfy you, Gene. When I quote
> reference after reference about reflected power, you
> say power doesn't reflect. When I change it to reflected
> energy, you ask for a reference.

Cecil,

Still up to your tricks? I ask for reference on a scalar quantity, and
you respond with some stuff about vectors.
```

If you want to continue to misinterpret the experts and believe that power, energy, or whatever flows in opposite directions at a single point at the same time, go right ahead. I suppose such beliefs expounded on RRAA are quite harmless in the grand scheme of world affairs.

For future reference, however, just remember: Fields first, then power or energy. That's the way superposition really works.

(By the way, I am not the one who made the point about power vs. energy. That must have been someone else.)

73,
Gene
W4SZ

73. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 03:11:08 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b59dc960-8d21-40e1-a66a-7b42f489c3ee@c4g2000hsg.googlegroups.com>
Source record: 30289

On Jan 1, 4:57 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> >> Could you better describe how you determine that the source has a Z0
> >> equal to the line Z0? I can guess that you use a Thévenin equivalent
> >> circuit and set the series resistor to Z0.
>
> > This will do it.
>
> We have a black box. We use a 12vdc battery and a current
> meter to measure the impedance of the black box. The
> current meter reads zero when we connect the 12vdc battery
> to the black box terminals. What is the impedance inside
> the black box since test V/I = infinity?

Recall that impedance is the slope and to obtain
the slope you need to do two measurements. Only if
the entity is completely passive can you make only
one measurement because in that case the line passes
through the origin which is the implicit other
measurement.

With two measurements you will obtain the correct
impedance.

....Keith

74. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 03:42:59 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a0864458-b085-4a4a-9775-b026efb367be@e6g2000prf.googlegroups.com>
Source record: 30290

On Jan 1, 6:00 pm, Roger <rspa...@elltel.net> wrote:
> Roy Lewallen wrote:
> > Roger wrote:
>
> >> Could you better describe how you determine that the source has a Z0
> >> equal to the line Z0? I can guess that you use a Thévenin equivalent
> >> circuit and set the series resistor to Z0.
>
> > Probably the simplest way is to put the entire source circuitry into a
> > black box. Measure the terminal voltage with the box terminals open
> > circuited, and the current with the terminals short circuited. The ratio
> > of these is the source impedance. If you replace the box with a Thevenin
> > or Norton equivalent, this will be the value of the equivalent circuit's
> > impedance component (a resistor for most of our examples).
>
> > If the driving circuitry consists of a perfect voltage source in series
> > with a resistance, the source Z will be the resistance; if it consists
> > of a perfect current source in parallel with a resistance, the source Z
> > will be the resistance. You can readily see that the open circuit V
> > divided by the short circuit I of these two simple circuits equals the
> > value of the resistance.
>
> >> The power output of the Thévenin equivalent circuit follows the load.
>
> > Sorry, I don't understand this. Can you express it as an equation?
>
> There seems to be some confusion as to the terms "Thévenin equivalent
> >> circuit", "ideal voltage source", and how impedance follows these
> sources.
>
> Two sources we all have access to are these links:
>
> Voltage source:
> http://en.wikipedia.org/wiki/Voltage_source
> Thévenin equivalent circuit:http://en.wikipedia.org/wiki/Th%C3%A9venin%27s_theorem

I don't disagree with anything I read there.

But you may not quite have the concept of impedance
correct.

The impedance of the Thevenin/Norton equivalent source
is not V/I but rather the slope of the line representing
the relationship of the voltage to the current.
When there is a source present, this

line does not pass through the origin. Only for
passive components does this line pass through
the origin in which case it becomes V/I.

Because the voltage to current plot for an ideal
voltage source is horizontal, the slope is 0 and hence
so is the impedance. For an ideal current source
the slope is vertical and the impedance is infinite.

Hoping this helps clarify....

...Keith

75. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 03:49:42 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <3a781bda-4c3f-4423-99c8-b63ec99cd4c4@1g2000hsl.googlegroups.com>
Source record: 30291

```
On Jan 1, 9:03 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger wrote:
> > The principles of superposition are mathematically usable, not too hard,
> >  and I think very revealing.  Yes, if we use part of the model, we must
> > use it all the way.  To do otherwise would be error, or worse.
>
> Roy and Keith don't seem to realize that the zero source
> impedance for the ideal voltage source is only when the
> source is turned off for purposes of superposition. They
> conveniently avoid turning the source voltage on to complete
> the other half of the superposition process. When the
> source signal and the reflected wave are superposed at
> the series source resistor, where the energy goes becomes
> obvious. Total destructive interference in the source
> results in total constructive interference toward the load.
> See below.
>
> > You have been a supporter of this theory for a long time.
>
> Yes, I have. I am a supporter of the principles and laws of
> physics. Others believe they can violate the principle of
> conservation of energy anytime they choose because the
> principle of conservation of energy cannot be violated -
> go figure.
>
> Roger, I have explained all of this before. If you are
> capable of understanding it, I take my hat off to you.
> Here's what happens in that ideal voltage source using
> the rules of superposition.
>
> 1. With the reflected voltage set to zero, the source
> current is calculated which results in power in the
> source resistor. Psource = Isource^2*Rsource
>
> 2. With the source voltage set to zero, the reflected
> current is calculated which results in power in the
> source resistor. Pref = Iref^2*Rsource
>
> Now superpose the two events. The resultant power
> equation is: Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)
> where 'A' is the angle between the source current
> and the reflected current. Note this is NOT power
> superposition. It is the common irradiance (power
> density) equation from the field of optics which
```

> has been in use in optical physics for a couple of
> centuries so it has withstood the test of time.
>
> For the voltage source looking into a 1/2WL open
> circuit stub, angle 'A' is 180 degrees. Therefore
> the total power in the source resistor is:
>
> Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(180)   or
>
> Ptot = Ps + Pr - 2*SQRT(Ps*Pr) = 0
>
> Ptot in the source resistor is zero watts but we
> already knew that. What is important is that the
> last term in that equation above is known as the
> "interference term". When it is negative, it indicates
> destructive interference. When Ptot = 0, we have
> "total destructive interference" as defined by
> Hecht in "Optics", 4th edition, page 388.
>
> Whatever the magnitude of the destructive interference
> term, an equal magnitude of constructive interference
> must occur in a different direction in order to
> satisfy the conservation of energy principle. Thus
> we can say with certainty that the energy in the
> reflected wave has been 100% re-reflected by the
> source. The actual reflection coefficient of the
> source in the example is |1.0| even when the source
> resistor equals the Z0 of the transmission line.
> I have been explaining all of this for about 5 years
> now. Instead of attempting to understand these relatively
> simple laws of physics from the field of optics, Roy
> ploinked me. Hopefully, you will understand.
>
> All of this is explained in my three year old Worldradio
> energy article on my web page.
>
> http://www.w5dxp.com/energy.htm

Can you make this all work for a pulse, or a step
function?

How do you compute
Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)
for a pulse or a step?

Or is your approach limited to sinusoids?

...Keith

76. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 05:21:35 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <C5ednSN9mZPkgubanZ2dnUVZ_s-pnZ2d@neonova.net>
Source record: 30292

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:ShCej.2480$pr6.1401@nlpi070.nbdc.sbc.com...
> Roger wrote:
>> The principles of superposition are mathematically usable, not too hard,
>> and I think very revealing. Yes, if we use part of the model, we must
>> use it all the way. To do otherwise would be error, or worse.

> clip some

> Roger, I have explained all of this before. If you are
> capable of understanding it, I take my hat off to you.
> Here's what happens in that ideal voltage source using
> the rules of superposition.
>

Well, I would like to think I could understand it, but maybe something is
wrong like Roy suggests. I think it is all falling into place, but our
readers are not all in agreement.

Could I ask a couple of questions to make sure I am understanding your
preconditions?

Is this a Thevenin source? If so, what is the internal resistor set to in
terms of Z0?

> 1. With the reflected voltage set to zero, the source
> current is calculated which results in power in the
> source resistor. Psource = Isource^2*Rsource
>

For condition number 2 below, is this a Thevenin equivalent resistance?

> 2. With the source voltage set to zero, the reflected
> current is calculated which results in power in the
> source resistor. Pref = Iref^2*Rsource
>
> Now superpose the two events. The resultant power
> equation is: Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)
> where 'A' is the angle between the source current
> and the reflected current. Note this is NOT power
> superposition. It is the common irradiance (power
> density) equation from the field of optics which
> has been in use in optical physics for a couple of
> centuries so it has withstood the test of time.

OK. A few reactions.

1. To add the total power of each wave and then also add the power
reduction of the phase relationship, would be creating power unless the
cos(A) is negative. Something seems wrong here, probably my understanding.

2. The two voltages should be equal, therfore the power delivered by each
to the source resister would be equal.

3. The power delivered to the source resistor will arrive a different times
due to the phase difference between the two waves.

4. If the reflected power returns at the same time as the delivered power
(to the source resistor), no power will flow. This because the resistor in
a Thevenin is a series resistor. Equal voltages will be applied to each side
of the resitor. The voltage difference will be zero.

5. If the reflected power returns 180 degrees out of phase with the applied
voltage (to the source resistor), the voltage across the resistor will
double with each cycle, resulting in an ever increasing current.(and power)
into the reflected wave.

>
> For the voltage source looking into a 1/2WL open
> circuit stub, angle 'A' is 180 degrees. Therefore
> the total power in the source resistor is:
>
> Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(180) or
>
> Ptot = Ps + Pr - 2*SQRT(Ps*Pr) = 0

This is correct for this condition. The problem with the equation comes
when cos(<90) which can easily happen.

I would suggest the equation Ptot = Ps+ Pr*(sine(A) where angle 'A' is the
angle between positive peaks of the two waves. This angle will rotate twice
as fast as the signal frequency due to the relative velocity between the
waves..
>
> Ptot in the source resistor is zero watts but we
> already knew that. What is important is that the
> last term in that equation above is known as the
> "interference term". When it is negative, it indicates
> destructive interference. When Ptot = 0, we have
> "total destructive interference" as defined by
> Hecht in "Optics", 4th edition, page 388.
>
> Whatever the magnitude of the destructive interference
> term, an equal magnitude of constructive interference
> must occur in a different direction in order to
> satisfy the conservation of energy principle. Thus
> we can say with certainty that the energy in the
> reflected wave has been 100% re-reflected by the
> source. The actual reflection coefficient of the
> source in the example is |1.0| even when the source

> resistor equals the Z0 of the transmission line.
> I have been explaining all of this for about 5 years
> now. Instead of attempting to understand these relatively
> simple laws of physics from the field of optics, Roy
> ploinked me. Hopefully, you will understand.
>
> All of this is explained in my three year old Worldradio
> energy article on my web page.
>
> http://www.w5dxp.com/energy.htm
> --
> 73, Cecil http://www.w5dxp.com

Light, especially solar energy, is a collection of waves of all magnitudes and frequencies. We should see only about 1/2 of the power that actually arrives due to superposition. The reflection from a surface should create standing waves in LOCAL space that will contain double the power of open space. I think your equation Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A) would be correct for a collection of waves, but incorrect for the example.

I tried to read your article a couple of weeks ago, but I found myself not understanding. I have learned a lot since then thanks to you, Roy, and others. I will try to read it again soon.

So what do you think Cecil?

73, Roger, W7WkB

77. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 05:34:02 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <BMqdne0U-_nUv-banZ2dnUVZ_g-dnZ2d@neonova.net>
Source record: 30293

Correction. Please note the change below. I apologize for the error.

Roger Sparks wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:ShCej.2480$pr6.1401@nlpi070.nbdc.sbc.com...
>> Roger wrote:
>>> The principles of superposition are mathematically usable, not too hard,
>>> and I think very revealing. Yes, if we use part of the model, we must
>>> use it all the way. To do otherwise would be error, or worse.
>
>> clip some
>
>> Roger, I have explained all of this before. If you are
>> capable of understanding it, I take my hat off to you.
>> Here's what happens in that ideal voltage source using
>> the rules of superposition.
>>
>
> Well, I would like to think I could understand it, but maybe something is
> wrong like Roy suggests. I think it is all falling into place, but our
> readers are not all in agreement.
>
> Could I ask a couple of questions to make sure I am understanding your
> preconditions?
>
> Is this a Thevenin source? If so, what is the internal resistor set to in
> terms of Z0?
>
>> 1. With the reflected voltage set to zero, the source
>> current is calculated which results in power in the
>> source resistor. Psource = Isource^2*Rsource
>>
>
> For condition number 2 below, is this a Thevenin equivalent resistance?
>
>> 2. With the source voltage set to zero, the reflected
>> current is calculated which results in power in the
>> source resistor. Pref = Iref^2*Rsource
>>
>> Now superpose the two events. The resultant power
>> equation is: Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)
>> where 'A' is the angle between the source current
>> and the reflected current. Note this is NOT power
>> superposition. It is the common irradiance (power

>> density) equation from the field of optics which
>> has been in use in optical physics for a couple of
>> centuries so it has withstood the test of time.
>
> OK. A few reactions.
>
> 1. To add the total power of each wave and then also add the power
> reduction of the phase relationship, would be creating power unless the
> cos(A) is negative. Something seems wrong here, probably my understanding.
>
> 2. The two voltages should be equal, therfore the power delivered by each
> to the source resister would be equal.
>
> 3. The power delivered to the source resistor will arrive a different times
> due to the phase difference between the two waves.
>
> 4. If the reflected power returns at the same time as the delivered power
> (to the source resistor), no power will flow. This because the resistor in
> a Thevenin is a series resistor. Equal voltages will be applied to each side
> of the resitor. The voltage difference will be zero.
>
> 5. If the reflected power returns 180 degrees out of phase with the applied
> voltage (to the source resistor), the voltage across the resistor will
> double with each cycle, resulting in an ever increasing current.(and power)
> into the reflected wave.
>
>> For the voltage source looking into a 1/2WL open
>> circuit stub, angle 'A' is 180 degrees. Therefore
>> the total power in the source resistor is:
>>
>> Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(180) or
>>
>> Ptot = Ps + Pr - 2*SQRT(Ps*Pr) = 0
>
> This is correct for this condition. The problem with the equation comes
> when cos(<90) which can easily happen.
>
> I would suggest the equation Ptot = Ps+ Pr*(sine(A) where angle 'A' is the
> angle between positive peaks of the two waves. This angle will rotate twice
> as fast as the signal frequency due to the relative velocity between the
> waves..
No, this angle is fixed by system design. If the system changes, this
angle will rotate twice as fast as the angle change of a single wave.
The equation should be OK.
>> Ptot in the source resistor is zero watts but we
>> already knew that. What is important is that the
>> last term in that equation above is known as the
>> "interference term". When it is negative, it indicates
>> destructive interference. When Ptot = 0, we have
>> "total destructive interference" as defined by

>> Hecht in "Optics", 4th edition, page 388.
>>
>> Whatever the magnitude of the destructive interference
>> term, an equal magnitude of constructive interference
>> must occur in a different direction in order to
>> satisfy the conservation of energy principle. Thus
>> we can say with certainty that the energy in the
>> reflected wave has been 100% re-reflected by the
>> source. The actual reflection coefficient of the
>> source in the example is |1.0| even when the source
>> resistor equals the Z0 of the transmission line.
>> I have been explaining all of this for about 5 years
>> now. Instead of attempting to understand these relatively
>> simple laws of physics from the field of optics, Roy
>> ploinked me. Hopefully, you will understand.
>>
>> All of this is explained in my three year old Worldradio
>> energy article on my web page.
>>
>> http://www.w5dxp.com/energy.htm
>> --
>> 73, Cecil http://www.w5dxp.com
>
> Light, especially solar energy, is a collection of waves of all magnitudes
> and frequencies. We should see only about 1/2 of the power that actually
> arrives due to superposition. The reflection from a surface should create
> standing waves in LOCAL space that will contain double the power of open
> space. I think your equation Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A) would be
> correct for a collection of waves, but incorrect for the example.
>
> I tried to read your article a couple of weeks ago, but I found myself not
> understanding. I have learned a lot since then thanks to you, Roy, and
> others. I will try to read it again soon.
>
> So what do you think Cecil?
>
> 73, Roger, W7WkB
>
>

78. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 05:46:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <449mn3ti5u3abn6bfq2ucj77m6dttevaqe@4ax.com>
Source record: 30294

On Tue, 1 Jan 2008 21:54:25 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>They seem very adept at making themselves
>unflilterable.

In fact they make it quite easy to filter by their own vanity. My
filter is only 7 characters long (written as a regular expression
M.I.5.P) and I have never seen a posting since adding it.

73's
Richard Clark, KB7QHC

79. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 06:26:39 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flfaqu$j87$1@news.albasani.net>
Source record: 30295

art wrote:

[...]

If you really want a "cast iron" filter, and you have the time to
study/learn the complexities of operation:

http://www.nfilter.org/

Regards,
JS

80. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 06:36:06 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flfbcl$j87$2@news.albasani.net>
Source record: 30296

John Smith wrote:
>> [...]

Scratch that, just seen that it isn't being maintained anymore and the installer didn't work which I just downloaded to try ... hmmm, wonder if anyone ever came up with anything similar?

In its' day, it worked great ...

Regards,
JS

81. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 06:41:24 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <ePednVGH-5uOr-banZ2dnUVZ_vGinZ2d@neonova.net>
Source record: 30297

Keith Dysart wrote:
> On Jan 1, 6:00 pm, Roger <rspa...@elltel.net> wrote:
>> Roy Lewallen wrote:
>>> Roger wrote:
>>>> Could you better describe how you determine that the source has a Z0
>>>> equal to the line Z0? I can guess that you use a Thï¿½venin equivalent
>>>> circuit and set the series resistor to Z0.
>>> Probably the simplest way is to put the entire source circuitry into a
>>> black box. Measure the terminal voltage with the box terminals open
>>> circuited, and the current with the terminals short circuited. The ratio
>>> of these is the source impedance. If you replace the box with a Thevenin
>>> or Norton equivalent, this will be the value of the equivalent circuit's
>>> impedance component (a resistor for most of our examples).
>>> If the driving circuitry consists of a perfect voltage source in series
>>> with a resistance, the source Z will be the resistance; if it consists
>>> of a perfect current source in parallel with a resistance, the source Z
>>> will be the resistance. You can readily see that the open circuit V
>>> divided by the short circuit I of these two simple circuits equals the
>>> value of the resistance.
>>>> The power output of the Thï¿½venin equivalent circuit follows the load.
>>> Sorry, I don't understand this. Can you express it as an equation?
>> There seems to be some confusion as to the terms "Thï¿½venin equivalent
>> >> circuit", "ideal voltage source", and how impedance follows these
>> sources.
>>
>> Two sources we all have access to are these links:
>>
>> Voltage source:
>> http://en.wikipedia.org/wiki/Voltage_source
>> Thï¿½venin equivalent circuit:http://en.wikipedia.org/wiki/Th%C3%A9venin%27s_theorem
>
> I don't disagree with anything I read there.
>
> But you may not quite have the concept of impedance
> correct.
>
> The impedance of the Thevenin/Norton equivalent source
> is not V/I but rather the slope of the line representing
> the relationship of the voltage to the current.
> When there is a source present, this
> line does not pass through the origin. Only for
> passive components does this line pass through
> the origin in which case it becomes V/I.
>

> Because the voltage to current plot for an ideal
> voltage source is horizontal, the slope is 0 and hence
> so is the impedance. For an ideal current source
> the slope is vertical and the impedance is infinite.
>
> Hoping this helps clarify....
>
> ...Keith

Yes, I can understand that there is no change in voltage no matter what the current load is, so there can be no resistance or reactive component in the source. The ideal voltage link also said that the ideal source could maintain voltage no matter what current was applied. Presumably a negative current through the source would result in the same voltage as a positive current, which is logical if the source has zero impedance.

During the transition from negative current passing through the source to positive current passing through the source, the current at some time must be zero. How is the impedance of the perfect source defined at this zero current point? How is the impedance of the attached system defined?

The resistor in the Thevenin/Norton equivalent source is selected with some criteria in mind. What I would like to do is to design a Thevenin source to provide 1v across a 50 ohm transmission line INFINATELY long, ignoring ohmic resistance. I would like the source resistor to absorb as much power as the line, so that if power ever returns under reflected wave conditions, it can all be absorbed by the resistor. I think the size of such a resistor will be 50 ohms.

Thanks for the clarification.

73, Roger, W7WKB

82. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 07:13:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nmecj73iqca1f@corp.supernews.com>
Source record: 30148

Second analysis: +0.5 input reflection coefficient

I got enough email responses to my request to make me believe it might be worthwhile to put together another analysis.

The analysis I did previously is of limited use because of the total lack of any loss in the system. It has also caused conceptual difficulties because of the perfect source's -1 reflection coefficient. So I'll do another analysis with a more realistic source.

The following analysis will illustrate the startup and progress to steady state of a lossless, one wavelength, open ended 50 ohm transmission line as before. But connected to the input end of the line will be a perfect voltage source in series with a 150 ohm resistance. This is not a Thevenin equivalent circuit, because it isn't meant to be an equivalent of anything; it's simply a perfect source and a resistance, both of which are common idealized linear circuit models. The only difference between this setup and the one I analyzed earlier is the addition of the source resistance.

I'm going to make a slight change in notation and call the initial forward and reverse waves vf1 and vr1 respectively, instead of just vf and vr as before. I apologize if this causes any confusion.

When we initially connect or turn on the voltage source, the source/resistance combination sees Z0 looking into the line. So the voltage at the line input is vs(t) * Z0 / (Z0 + Rs), where vs(t) is the voltage of the perfect voltage source and Rs is the 150 ohm source resistance, until the reflection of the original forward wave returns. So I'm going to specify that

vs(t) = 4 * sin(wt)

so that the initial voltage at the line input is simply sin(wt). At any point that the forward wave has reached, then,

vf1(t, x) = sin(wt - x)

The open far end of the line has a reflection coefficient of +1, so as before the returning wave is:

vr1(t, x) = sin(wt + x)

(The change from -x to +x is due to the reversal of direction of propagation. You'll see this with every reflection.) At any time between when vf1 reflects from the output end (t = 2*pi/w) and when it reaches the input end of the line (t = 4*pi/w), the total voltage at any point the returning wave has reached is

vtot = vf1(t, x) + vr1(t, x) = sin(wt - x) + sin(wt + x) [Eq. 1]

When the returning wave vr1 reaches the input end of the line, it re-reflects to form a new forward wave vf2. But because of the added 150 ohm resistance, the source reflection coefficient is +0.5 instead of the -1 of the previous analysis, so

vf2(t, x) = .5 * sin(wt - x)

Just after the reflection, the voltage at the line input will be

vf1(t, 0) + vr1(t, 0) + vf2(t, 0) = sin(wt) + sin(wt) + .5 * sin(wt)
= 2.5 * sin(wt)

So we'll see a 2.5 peak volt sine wave at the input from the time the first returning wave reaches the source until the next one does, or from t = 4*pi/w to t = 8*pi/w. And anywhere on the line which vf2 has reached, we'll see

vtot(t, x) = 1.5 * sin(wt - x) + sin(wt + x)

When vf2 hits the far end and reflects, it creates the second reflected wave

vr2(t, x) = .5 * sin(wt + x)

So now at any point where vr2 has reached we'll have

vtot(t, x) = 1.5 * sin(wt - x) + 1.5 * sin(wt + x) [Eq. 2]

There's something worth pointing out here. Look at the similarity between Eq. 1, which was the total voltage with only one forward and one reflected wave, and Eq. 2, which is the total with two forward and two reflected waves. They're exactly the same except in amplitude -- Eq. 2 vtot is 1.5 times Eq. 1 vtot. Also notice that the equation for vf2 is exactly the same as for vf1 except a constant, and likewise vr2 and vr1. Every time a new forward wave is created by reflection from the input end of the line, a new reflected wave is created by the reflection from the far end. The reflection coefficient at the far end doesn't change, so the relationship between each forward wave and the corresponding reflected wave is the same as for any other forward wave and its reflection. So the ratio of the sum of all forward waves to the sum of all reflected waves is the same as for any single forward wave and its reflection. The relationship between forward and reverse waves determines the SWR, so this is why the source reflection coefficient doesn't play any role in determining the line SWR. No matter what it is, it creates a new pair of waves having the same ratio as every other pair.

Let's look at just one more pair of waves.

vf3 = .5 * .5 * sin(wt - x) = 0.25 * sin(wt - x)
vr3 = .5 * .5 * sin(wt + x) = 0.25 * sin(wt + x)

From the time vf3 is created until vr3 returns to the input, or from t = 8*pi/w to t = 10*pi/w, at the input end of the line we'll see

v(t, 0) = vf1(t, 0) + vr1(t, 0) + vf2(t, 0) + vr2(t, 0) + vf3(t, 0) =
3.25 * sin(wt)

For the previous round trip period the sine wave amplitude was 2.5 volts
and for this round trip period it's 3.25 volts. Where is this going to
end after an infinite number of reflections?

Well, it had better end at 4 volts, the voltage of the perfect source!
At steady state, the impedance looking into the line is infinite, so the
current from the source is zero. (A comparable analysis of the current
waves would show convergence to itot = 0 at the input.) So there's no
drop across the 150 ohm resistor and the line input voltage equals the
voltage of the source.

Let's see if we can show this convergence mathematically. The trick is
to take advantage of a simple formula for the sum of an infinite
geometric series.

If F = a + ra + r^2*a + r^3*a, . . . an infinite number of terms

then F = a / (1 - r) if |r| < 1. It's a very useful formula. I learned
it in high school algebra, but see that it's in at least one my calculus
and analytic geometry texts. Try it out, if you want, with a pocket
calculator or spreadsheet.

Going back and looking at the analysis, we had

vtot(t, x) = vf1(t, x) + vr1(t, x)

for the first set of waves. The next set was exactly 1/2 the value of
the first set, due to the +0.5 source reflection coefficient. The next
set was 1/2 that value, and so forth. So the first term of the series
(a) is sin(wt - x) + sin(wt - x) and the ratio of terms is 0.5, so

vtot(t, x)(steady state) = (sin(wt - x) + sin(wt + x)) / (1 - 0.5) =
2 * sin(wt - x) + sin(wt + x)

Using the same trig identity as in the earlier analysis,

vtot(t, x)(steady state) = 4 * sin(wt) * cos(x)

This is the correct steady state solution. You can see that it includes
the standing wave envelope cos(x), as it must.

Because superposition applies, we can add up the infinite number of
forward and reverse waves any way we want, and the total will always be
the same. So let's separately add the forward waves and reverse waves.

vf3/vf2 = vf2/vf1 = 0.5, as it is for the ratio of any two successive
forward waves
vr3/vr2 = vr2/vr1 = 0.5, as it is for the ratio of any two successive
reverse waves

So

vf(t, x)(total) = sin(wt - x) / (1 - 0.5) = 2 * sin(wt - x)

and

vr(t, x)(total) = sin(wt + x) / (1 - 0.5) = 2 * sin(wt + x)

These can be used for steady state analysis, as though there is only one forward and one reverse wave, and the result will be exactly the same as if the system was analyzed for each of the infinite number of waves individually. This is almost universally done; the run-up from the initial state is usually only of academic interest.

If we add the total forward and reverse waves to get the total voltage, the result is exactly the same as it was when we summed the pairs of waves to get the total.

Again I ran a SPICE simulation of the circuit, using a 5 wavelength line for clarity.

http://eznec.com/images/TL2_input.gif is the voltage at the line input. As predicted, it starts at 1 volt peak, remains there until the first reflected wave returns to the input end (at t = 10 sec.), then jumps to 2.5 volts. After another round trip, it goes to 3.25.
http://eznec.com/images/TL2_1_sec.gif shows the voltage one wavelength (1 second) from the source. Here you can see that the voltage is zero until the initial forward wave arrives at t = 1 sec. From then until the reflected wave arrives at t = 9 sec., it's one volt peak. From then (t = 9) until the reflected wave re-reflects from the source and returns (t = 11), we have vf1 + vr1 = sin(wt - x) + sin(wt + x). x is 2*pi radians or 360 degrees, so the voltage is simply 2 * sin(wt). And that's what the plot shows - a sine wave of 2 volts amplitude. Then vf2 gets added in at t = 11 sec, for a total of sin(wt - x) + sin(wt + x) + 0.5 * sin(wt - x), or at the observation x point, 2.5 * sin(wt). At t = 19 sec., vr2 arrives and adds another 0.5 * sin(wt) to the total, raising the amplitude to 3 volts peak. At t = 21 sec., vf3 arrives, adding another 0.25 * sin(wt) for a total amplitude of 3.25 volts. And so forth. As with the previous analysis, SPICE shows exactly what the analysis predicts.

http://eznec.com/images/TL2_5_sec.gif is the voltage at the open end of the line. For the first 5 seconds, the voltage is zero because the initial wave hasn't arrived. At t = 5 sec., the voltage at the end becomes vf1 + vr1 = 2 * sin(wt). At 15 sec., it becomes vf1 + vr1 + vf2 + vr2 = 3 * sin(wt). And so forth, just as predicted by the analysis.

Although I've used a line of the convenient length of one wavelength (or 5 wavelengths for the SPICE run), an open circuited end, and a resistive source, none of these are required. Exactly the same kind of analysis can be done with complex loads of any values at the line input and output, and with any line length. But in the general case, returning waves don't add directly in phase or out of phase with forward waves, and a wave undergoes some phase shift other than 0 or 180 degrees upon reflection. So phase angles have to be included in the descriptions of all voltages. In the general case it's much easier to revert to phasor notation, but otherwise the analytical process is identical and the results just as good.

So far I haven't seen any analysis using alternative theories, ideas of how sources work, or using power waves, which also correctly predict the voltage at all times and in steady state.

Because there's so much interest in power, I'll calculate the power and energy at the line input. But I'll put it in a separate posting.

Roy Lewallen, W7EL

83. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 07:16:23 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nmeiafe9v49e3@corp.supernews.com>
Source record: 30149

Here's an analysis of the input power and energy of the system similar to the one described in my "Second analysis: +0.5 input reflection coefficient" Please refer to that posting when reading this. I'm going to make just one change to the system in that analysis: I'll use the 5 wavelength line of the SPICE analysis. This has absolutely no effect on any of the values shown in the analysis except where I gave periods of time when various equations were valid (e.g. t = 2*pi/w) -- those will be five times greater. The effect of this change is to allow use of the SPICE output as a visual aid. When speaking of the SPICE plot, I'll be referring to http://eznec.com/images/TL2_input.gif, which is the voltage at the input end of the line.

For this analysis I'm going to let f = 1 Hz, so w = 2*pi Hz.

From the voltage analysis and the SPICE plot, the initial voltage at the input of the line is sin(wt). So the voltage across the input resistor is 3 * sin(wt) (+ toward the source), and the current flowing into the line is (3 * sin(wt)) / 150 = 20 * sin(wt) mA. The average power being delivered to the line is Vin(rms) * Iin(rms) (since the voltage and current are in phase) = (0.7071 v. * 14.14 mA) = 10 mW. Since the line initially presents an impedance of Z0, this should also be Vin(rms)^2 / Z0 or Iin(rms)^2 / Z0. Let's see: Vin(rms) = 0.7071, so Vin(rms)^2 / Z0 = 0.5 / 50 = 10 mW; Iin(rms) = 0.01414 A, so Iin(rms)^2 * Z0 = 0.0002 * 50 W = 10 mW. Ok.

The input voltage remains unchanged until the first reflected wave returns at t = 10 sec (remember, we're using a 5 wavelength line and frequency of 1 Hz). So during that time we put 10 mW * 10 sec = 0.1 joule of energy into the line. Note that I could have calculated the instantaneous power for each instant, then integrated it over the first 10 seconds to get the total energy. The result would be identical.

During that first 10 seconds, the resistor is dissipating an average of Vr(rms) * Ir(rms) = 2.121 * 14.14 = 30 mW. The source is producing Vs(rms) * Is(rms) = 2.828 * 14.14 = 40 mW. So here's the story so far:

For the first 10 seconds (one round trip):
The source produces 40 mW, for a total of 400 mj (millijoules)
The resistance dissipates 30 mW, for a total of 300 mj
The line gets 10 mW, for a total of 100 mj

All the power and energy is totally accounted for, so far. The sum of power and energy delivered to the resistor and line equals the power and energy produced by the source.

As you can see from the SPICE output or the voltage analysis, the input voltage jumps to 2.5 volts at t = 10 seconds and stays there for the next 10 seconds. During that time, the voltage across the resistor is (4 - 2.5) * sin(wt), so the current drops to 1.5 sin(wt) / 150 = 10 sin(wt) mA which has an RMS value of about 7.071 mA. Using the same methods as before,

For the next 10 seconds:
The source produces 20 mW, for a total of 200 mj
The resistance dissipates 7.50 mW, for a total of 75 mj
The line gets 12.5 mW, for a total of 125 mj

We've again accounted for all the power and energy, with no need to invoke any kind of power waves.

Next the input voltage goes to 3.25 volts, so the current drops to 5 * sin(wt) mA and

For the next 10 seconds,
The source produces 10 mW, for a total of 100 mj
The resistance dissipates 1.875 mW, for a total of 18.75 mj
The line gets 8.125 mW, for a total of 81.25 mj

There's something interesting about this energy flow. Notice that the amount of power produced by the source decreases by a factor of two each cycle, and the amount of power dissipated by the resistor decreases by a factor of four each cycle. These are to be expected, since the line input voltage is increasing each time. But look at the power supplied to the line -- it actually increases during the second cycle relative to the first, then drops back. What's happening? Well, the line has an apparent impedance of Vin/Iin at any given time. Let's see what it is (the peak values have the same ratio as the RMS values, so I'll use those):

For t = 0 to 10, Vin/Iin = 1/0.020 = 50 ohms
For t = 10 to 20, Vin/Iin = 2.5/0.010 = 250 ohms
For t = 20 to 30, Vin/Iin = 3.75/0.005 = 750 ohms

The input impedance will, of course, approach an infinite value as time goes on, Vin approaches Vs, and Iin approaches zero. But during the time interval of 10 to 20 seconds, the apparent line impedance provided a better "impedance match" for the 150 ohm source than at other times, which increased the line power input during that time.

Only because we have no energy leaving the line can be calculate a total energy delivered by the source and dissipated by the resistance over an arbitrarily long time period. That is, we can find the total energy delivered if the line were connected and the source left on forever. We can use the same formula for summing an infinite series as used in the voltage analysis to find that:

The source produces a total of 400 / (1 - 0.5) = 800 mj
The resistor dissipates a total of 300 / (1 - 0.25) = 400 mj

from which we see that a total of 400 mj has been supplied to the line. If we were to quickly replace the source and resistor with a 50 ohm resistor across the line and no source, what should happen? Well, we have forward and reverse waves of 2 volts peak traveling on the line, so the end voltage should immediately drop to 2 * sin(wt) as the reverse traveling wave exits with no further reflections from the input end of the line, and the forward wave moves toward the far end. So the 50 ohm resistor would have an RMS voltage of 1.414 volts across it, and a dissipation of (1.414)^2 / 50 = 40 mW. This constant dissipation should continue until the line is completely discharged, which will take one round trip time or 10 sec. The total energy removed from the line and dissipated during this time is 40 mW * 10 sec = 400 mj, which is exactly the amount we put into the line during the charging process. All the energy produced by the source is accounted for. I think I can set this maneuver up with SPICE, and I'll do so if anyone who might be skeptical would be convinced by the SPICE output.

A caution is in order. This analysis was greatly simplified by the lack of any energy storing devices other than the transmission line. That is, there was no reactance at either end of the line. An equally accurate analysis could be done with reactances present, but calculation of energy from power would have to account for the temporary energy storage in the reactive components. Also, if a resistance-containing load is connected to the output, it will also dissipate power and energy, so that would also have to be accounted for. The bottom line is that care should be taken in applying this method to more complex circuits without suitable modification.

I've completely accounted for the power and energy leaving the voltage source, being dissipated in the resistor, and entering the line, at all times from startup to steady state, and done it quantitatively with numerical results. And I did this without any mention of propagating waves of power or energy. It was done very simply using Ohm's law and elementary power relationships, with the only variable being the line input voltage calculated from the voltage wave analysis. I offer a challenge to those who embrace the notion of traveling waves of average power or other alternative theories to do the same using mathematics and premises consistent with the alternative theory. Until such an analysis is produced, I remain unconvinced that any such theory is valid. *Any* analysis has to produce results consistent with the law of the conservation of energy, as this one has.

Roy Lewallen, W7EL

84. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 07:59:21 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ef9mn3t238t1ccv11jdeeaasgv1m1r4fco@4ax.com>
Source record: 30150

On Tue, 1 Jan 2008 18:44:17 -0800 (PST), Keith Dysart
<Keith.Dysart@gmail.com> wrote:

>Since the experiment ends before
>the reflection returns to the generator,

Is it a step, or is it a pulse?

Makes a huge difference in the analysis.

>the impedance
>of the generator is irrelevant.

The impedance perhaps, but not the voltage. I specifically offered a
difference of sources (Norton vs. Thevenin). The impedance is the
same either way, the voltage is not. As you introduce power later in
this response, power at the source is even more contentious. As such,
we can drop this altogether.

>Ah. The challenge of written precisely. Consider the
>generator to be on the left end of the line and the open
>to be at the right end. When the capacitance at the right
>end charges to 2 * V, the current now has to stop a little
>bit more to the left.

Still doesn't make sense, and I wouldn't attribute it to precision
seeing that you've written the same thing twice.

>Again, the poor writing meant a bit further to left
>from the end.

Yes, if you are in a left-right progression, further is more to the
right. There is the ambiguity of "end effect."

>> Want to explain how you double the stored voltage in the distributed
>> capacitance of the line without current? ï¿½
>
>The energy formerly present in the inductance of the line
>has been transferred to the capacitance.

That is always so. You haven't offered anything differentiable from
always, where previously (and later in your response, here) you
suggested current stopped flowing even when voltage was doubling.

>> The definition of capacitance is explicitly found in the number of
>> electrons (charge or energy) on a surface; which in this case has not
>> changed.>The charge that
>> >is continuing to flow from the source is being used

>> >to charge the distributed capacitance of the line.
>>
>> It would appear now that charge is flowing again, but that there is a
>> confusion as to where the flow comes from. ï¿½
>
>Using the new reference scheme,

What new reference scheme?

>charge to the left
>of the leftward propagating step continues to flow,
>while charge to the right has stopped flowing.
If precision was ever called for, now is the time.

>> Why would the source at
>> less voltage provide current to flow into a cap that is rising in
>> potential above it? ï¿½
>
>The beauty of inductance. You get extra voltage when
>you try to stop the flow.

You don't explain where the extra voltage is. There is a double
voltage to be sure, but you have not exactly drawn a cause-and-effect
relationship.

>Challenges with the referent.
>The former view is that a voltage of 2*V is propagating
>back along the line. The latter view is that it is a
>step of V above the already present V.

Sounds more like a problem for the challenged (i.e. there is no
difference between 2*V and V+V).

>> >In this model, the step function has propagated to the
>> >end, been reflected and is now propagating backwards.
>> >Implicit in this description is that the step continues
>> >to flow to the end of the line and be reflected as
>> >the leading edge travels back to the source.
>>
>> This is a difficult read. ï¿½You have two sentences. ï¿½Is the second
>> merely restating what was in the first, or describing a new condition
>> (the reflection)?
>
>Agreed. What is a good word to describe the constant
>voltage that follows the actual step change in
>voltage? The "tread" perhaps?

Does it matter? It is another step. That should be obvious for the
sake of superposition.

>"The tread continues to flow to the end of the line
>and be reflected as the leading edge travels back to
>the source."

>
>I am not sure that that is any clearer.

Not particularly, since we now have three things moving:
1. Step;
2. Tread;
3. Leading Edge.
It would seem to me that both 1 and 2 have a 3; so what are you trying
to say with the novel introduction of two more terms?

>> >And this is the major weakness in the model.
>>
>> Which model? ï¿½
>
>The "no interaction" model.

And which model is the "no interaction" model? The former, or the
latter?

>> The latter? or the former?> It claims
>> >the step function is still flowing in the portion of
>> >the line that has a voltage of 2*V and *zero* current.
>>
>> Does a step function flow? ï¿½
>
>Perhaps the "tread"? But then should the step change
>be called the "riser"?

So now we have four things moving:
1. Step;
2. Tread;
3. Leading Edge.
4. Riser
It would seem to me that both 1,2 and 4 have a 3; so what are you
trying to say with the novel introduction of three more terms?

>> As for "zero" current, that never made
>> sense in context here.
>
>Somewhat clarified, I hope. But for clarity, the
>current to the right of the leftward propagating
>step is zero.

So now the leftward propagating step is
1. Step;
2. Tread;
3. Leading Edge;
4. Riser?

If I simply discard the last three invented terms; went out on the
thin limb of interpretation; then, in my mind's eye I would see that,
yes, no current is flowing to the physical right of the transient (the
only thing that is moving - as evidenced through voltage).

>> >A trivial example is connecting to 10 volt batteries
>> >in parallel through ï¿½a .001 ohm resistor.
>>
>> Parallel has two outcomes, which one? ï¿½"Through" a resistor to WHERE?
>> In series? ï¿½In parallel? ï¿½
>>
>> Much to ambiguous.
>
>I know. Trying to conserve words leads to confusion.
>Try: negative to negative, positives connected using
>the resistor.

Makes quite a difference. Perhaps not in the math, but certainly in
the concept.

>> However, by this forced march through the math, it appears there are
>> two batteries in parallel; (series) bucking; with a parallel resistor.
>
>So in the end, successful communication of the schematic.

Actually no. You describe a resistor in a series loop; I describe a
resistor in parallel. Consider the repetition of your last statement
above:
>positives connected using the resistor.
Positives connected through the resistor (the sense of "using" the
resistor as connector)?
Or positives connected, then using the resistor (where it is also
connected, but unstated as such) to the negatives?

>> It would seem if you knew the charge, you already know the energy; but
>> the power?
>
>Just energy per unit time. We know the energy distribution
>on the line, so we know the power at any point and time.

Time has not been quantified, whereas voltage, hence charge, hence
energy has. Why introduce a new topic without enumerating it, when
its inclusion adds nothing anyway? You don't develop anything that
explains the step in terms of power. You don't use power anywhere. In
fact we then step into the philosophy of does a line actually move
power, or energy? That debate would cloud any issue of a step's
migration, reflection, or any of a spectrum of characteristics that
power has no sway over.

>> >But when
>> >two waves are simultaneously present, it is only
>> >legal to superpose the voltage and the current.
>>
>> And illegal if only one is present? ï¿½
>
>No. Legal to also compute the power.

Please note you start your sentence with a "But." Sentences (much
less paragraphs) are not started with coordinating conjunctions. When
you use "but," the logical implication is that you are coordinating:
two-waves with an equal ranking and unexpressed: one-wave.

One may also use "but" at the beginning of a sentence as a logical
connector between equal ideas (a transitional adverb); however, you
don't have anything in the preceding, original paragraph other than a
single wave.

I do not see anything distinctive about two waves over one wave until
your recent injection of power (not at all in the original), and to no
effect except to raise the objection (rather circular and unnecessary
inclusions to abandon the discussion of reflection in rhetorical
limbo). Apparently your transition spans many postings to a festering
point by Cecil (this is, of course, another one of my
interpretations).

>> >Earlier you asked for an experiment. How about this
>> >one....
>>
>> >Take two step function generators, one at each end
>> >of a transmission line. Start a step from each end
>> >at the same time. When the steps collide in the
>> >middle, the steps can be viewed as passing each
>> >other without interaction, or reversing and
>> >propagating back to their respective sources.
>>
>> Why just that particular view?
>
>Those seem to be the common alternatives.
>If there are more, please share.

Neither view works.

>> >We
>> >can measure the current at the middle of the line
>> >and observe that it is always 0.
>>
>> Is it? ï¿½When?
>
>Always.

You seem to be in self-contradiction when you describe voltage doubles
without current flow.

>> If, for some infinitesimal line section, there is no current through
>> it, then there is no potential difference across it.
>
>Or did you mean along it?

A point well made in the scheme of precise language. Yet and all,
taken singly (one/either conductor) or doubly (a transmission line
section); then the identical statement remains true with both

interpretations for the step condition.

Of course, a lot may be riding on whether you are speaking of a step
function, or a pulse. Seeing the original was explicit to step, and
never introduces pulse; then there is no current flow as I responded:
>> Hence, the when is some infinitesimal time before the waves of equal
>> potential meet - and no current flow forever after.
>>
>> >Therefore the
>> >charge that is filling the capacitance and causing
>> >the voltage step which is propagating back towards
>> >each generator
>>
>> How did that happen? ï¿½No potential difference across an infinitesimal
>> line section, both sides at full potential (capacitors fully charged,
>> or charging at identical rates). ï¿½Potentials on either side of the
>> infinitesimal line section are equal to each other and to the sources,
>> hence no potential differences anywhere, ï¿½No potential differences, no
>> current flow, no charge change, no reflection, no more wave.
>>
>> The last bit of induction went to filling the last capacitance element
>> with the last charge of current. ï¿½Last gasp. ï¿½No more gas. ï¿½Nothing
>> left. Finis.
>>
>> >must be coming from the generator
>> >to which the step is propagatig because no charge
>> >is crossing the middle of the line.
>>
>> >Do you like it?
>>
>> Not particularly. ï¿½What does it demonstrate?
>
>That they bounce rather than pass silently.

How do you introduce recoil or maintain momentum without energy? Odd.

Please remove my need to perform interpretation and give me a more
succinct accounting. Further, limit this to one scenario (this last
failed example is certainly dead in the water as far as collisions
go).

73's
Richard Clark, KB7QHC

85. M.I 5-Per secution ` thei r m ethods and tactics

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 08:11:48 UTC
From: emfmf@yahoo.com
Message-ID: <sz0800020811463621@4ax.com>
Source record: 30151
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

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86. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 08:29:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hqhmn352u53lr9b63uknhapraca27mqsrb@4ax.com>
Source record: 30152

On Tue, 01 Jan 2008 15:00:54 -0800, Roger <rsparks@elltel.net> wrote:

>There seems to be some confusion as to the terms
...
>Two things to notice about the Thï¿½venin equivalent circuit:
>1. It contains an ideal voltage source "IN SERIES" with a resistor.

Hi Roger,

One confusion would seem to originate in your reliance in resistors.

A resistor (R) is NOT the series (or for Norton the parallel) passive device - it is an Impedance (Z).

This misapplication (R) was perpetuated by Edison when he battled Westinghouse for funding of power generation projects. He would invariably craft the resistor (R) into the equation for the bankers to prove DC was more efficient that AC systems, when in fact the engineering (Z) proves quite the contrary.

I suppose the bankers bought it (R) at the outset, but market economics (Z) hammered Edison into the ground when the bookkeeping of AC made their investors rich at the expense of DC.

This also raises issues of the confusion over conjugate matching and Z0 matching where many correspondents here freely intermix the two's characteristics as though they belong to one or the other (or both, or neither).

73's
Richard Clark, KB7QHC

87. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 08:32:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nmj127aaels65@corp.supernews.com>
Source record: 30153

Correction:

Roy Lewallen wrote:
> . . .
> Reflection coefficients are complex numbers, so they can't properly be
> described as "positive" or "negative" except in the special cases of +1
> and -1. In all other cases, the can only be described by their magnitude
> and angle, or real and imaginary component. . .

It's also reasonable to talk about positive or negative reflection coefficients when you're restricting the possibilities to ones having an angle of zero or 180 degrees. This would be the case, for example, when dealing with lossless lines (purely real Z0) connected to other lossless lines or to a purely resistive source or load.

Roy Lewallen, W7EL

88. M-I 5-Persecut ion - w hy the secu rity servi ces?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 09:31:07 UTC
From: efiefmfmf@yahoo.com
Message-ID: <ad0800020931030073@4ax.com>
Source record: 30154
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

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-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
-= why. the security services? -=
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
```

You may ask,. why do I think the "they" referred to are the security services? Is there any evidence that there is. a single source, as opposed to a loosely based "whispering. campaign" amongst many people? Even if there is a single source, is there any evidence that "they". are professional "buggers" as opposed. to amateurs, or perhaps people working for a privately funded. organization?

a) As to the question of a single source. versus something more fragmented; it is quite obvious that there is a single source. from the way the campaign has been carried. out. Since things have been repeated verbatim which were said in my home, there. must be one group which does the watching and listening. Since. on several occasions (mainly during travel) people have been planted. in close proximity and rehearsed in what they were to say, it follows that someone. must have done the planning for that, and again a single source is. indicated.

b) So why couldn't it be amateurs? Why couldn't. it be a private organisation, for example a private detective agency paid. to manage the campaign and undertake the. technical aspects? Some detective agencies are unscrupulous as has been proved on the occasions. in the past when they've been exposed or caught; they. too can have access to the bugging technology deployed; and there are reported cases. of MI5 paying private eyes to do their dirty work (against peace campaigners and. similar enemies of the state) on the understanding that if they were caught then they could. deny all knowledge. Why. couldn't that be the case?

The main. factor pointing to direct security service involvement (as opposed to amateurs or MI5 proxies). is the breadth of their access to the media in particular, and the fact that the television companies are. so involved in the campaign. The. BBC would not directly invade someone's home themselves, since it would not be within. their remit to allocate personnel or financial resources to do so. An organisation of their stature would not. take part in a campaign set up by private sources. The. only people they would take material. from would be the security services, presumably on the assumption that if. the cat ever flew out of the bag yowling it would be MI5 who would take. the consequences.

State. sponsorship for these acts of psychological terrorism is also indicated by duration; support for over. six years for a team of three or four people would be beyond the. means and will of most private sources.

The viciousness of the slanders and personal denigration also. points to MI5; they traditionally "protect". the British state from politicians of the wrong hue by character assassination, and in this case. are using their tried and. tested methods to murder with words an enemy they have invented for. themselves.

And there are precedents.. Diana and Hewitt were alleged to have been filmed "at it" by an Army intelligence team which had. operated in Northern Ireland, these allegations were made by someone called Jones. who had been on. the team. His statements were denied by the defence establishment who tried to character-assassinate by. describing him as the "Jones twins". Funny how if. you tell the truth, then you must be ill, isn't it? Thought only communists. behaved like that?

Hewitt later said that he'd been. spoken to by someone in the army who revealed the existence of videotapes of him and. Diana, and that the tapes would be published if any. attempt was made by them to resume their association.

552

89. M-I,5-Persecutio n . wh y the security services ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 10:02:34 UTC
From: mfimfv@yahoo.com
Message-ID: <lk0800021002321702@4ax.com>
Source record: 30155
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

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-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
-= why the. security services? -=
-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
```

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The viciousness of. the slanders and personal denigration also points to MI5; they. traditionally "protect" the British state from politicians of the wrong hue by character assassination, and in this case are using. their tried and tested methods to murder. with words an enemy they have invented for. themselves.

And there are precedents. Diana and Hewitt were alleged to have been. filmed "at it" by an. Army intelligence team which had operated in Northern Ireland, these allegations were. made by someone called Jones who had been on the team. His statements were denied by the. defence establishment who tried. to character-assassinate by describing him as the "Jones twins". Funny. how if you tell the truth, then you must be ill, isn't it? Thought only communists. behaved like that?

Hewitt later said that he'd been spoken to by someone in the. army who revealed the existence of videotapes of him and. Diana, and that the tapes would be published if any attempt was made by. them to resume their association.

552

90. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 10:26:34 UTC
From: Eric Oyen - N7ZZT <n7zzt@hotmail.com>
Message-ID: <flfosi$q9b$1@aioe.org>
Source record: 30156

John Smith wrote:

> N7ZZT - Eric Oyen wrote:
>
> [...]
>
> Contrary to the rantings of self-serving hams, there are commercial
> interests--the market share just makes this a "touch-and-go-operation"
> in a niche which is so small ...
>
> http://www.icomamerica.com/en/products/amateur/dstar/id1/default.aspx
>
> Regards,
> JS

I see you have not only ignored the point, you shifted the subject.
sorry man. you are just not worth having an honest discussion with anymore.

--
Sometimes, you just gotta come right out and say whats on your mind and be
damned those who would ridicule you for it!

91. M,I-5'Pe rsecution ' harassm ent at wo rk

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 10:45:12 UTC
From: imfvm@gmail.com
Message-ID: <ih0800021045097463@4ax.com>
Source record: 30157
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

-=-=-=-=-=-=-=-=-=-=-=-=
-= harassment at. work -=
-=-=-=-=-=-=-=-=-=-=-=-=

Once I stopped watching television and listening to the. radio at the end of 1990, "they" had to find other ways of. committing abuses. So they took what must. be for them a tried and tested route; they get at you by subversion of those around you. Since they wouldn't be able to do that with my. family or friends, that meant getting at people in the workplace to be. their mouthpieces. and do their dirty work for them.

They supplied my employers in Oxford with details from what was. going on in my. private life, and what I and other people had said at my home and accommodation in Oxford. So people at. work repeated verbatim words which had been said. in my home, and repeated what I'd been doing recently. Often the most trivial things, the ones from your domestic life,. are the ones which hurt most. One manager in particular at Oxford continuously. abused me for ten months with verbal sexual abuse, swearing, and. threats to terminate my. employment. After ten months I was forced to seek psychiatric help and start taking medication, and was away from work for two. months. I spoke later with a solicitor about what had happened at that company;. he advised it. was only possible to take action if you had left the company as a result of harassment, and such an action would have to. be started very soon after leaving.

Over a year later. the same manager picked on another new worker, with even more serious results;. that employee tried to commit suicide with an overdose as a result of the ill-treatment, and was forced to leave. his job. But he didn't take action against the company, either.. Abuse at work is comparable to that elsewhere in that. tangible evidence is difficult to produce, and the. abusers will always have their denials ready when challenged. And even if a court accepts what you say happened, it. still remains to prove. that abuse causes the type of breakdown I had at the end of 1992. In a recent case before a British court,. a former member of the Army brought a case against others who had. maltreated him ten years previously. Although the court accepted. that abuse had occurred, it did not agree that depressive illness necessarily followed,. and denied justice to the. plaintiff.

2973

92. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 11:14:58 UTC
From: David J Windisch <davidjw@cinci.rr.com>
Message-ID: <477b7230$0$5119$4c368faf@roadrunner.com>
Source record: 30158

What's the status on that DC long-line 'tween somewhere in your neck of the
woods south toward Baja, pls? Kind regards on behalf of all the lurkers
from Dave N3HE

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:hqhmn352u53lr9b63uknhapraca27mqsrb@4ax.com...
> On Tue, 01 Jan 2008 15:00:54 -0800, Roger <rsparks@elltel.net> wrote:
>
>>There seems to be some confusion as to the terms
> ...
>>Two things to notice about the Thï¿½venin equivalent circuit:
>>1. It contains an ideal voltage source "IN SERIES" with a resistor.
>
> Hi Roger,
>
> One confusion would seem to originate in your reliance in resistors.
>
> A resistor (R) is NOT the series (or for Norton the parallel) passive
> device - it is an Impedance (Z).
>
> This misapplication (R) was perpetuated by Edison when he battled
> Westinghouse for funding of power generation projects. He would
> invariably craft the resistor (R) into the equation for the bankers to
> prove DC was more efficient that AC systems, when in fact the
> engineering (Z) proves quite the contrary.
>
> I suppose the bankers bought it (R) at the outset, but market
> economics (Z) hammered Edison into the ground when the bookkeeping of
> AC made their investors rich at the expense of DC.
>
> This also raises issues of the confusion over conjugate matching and
> Z0 matching where many correspondents here freely intermix the two's
> characteristics as though they belong to one or the other (or both, or
> neither).
>
> 73's
> Richard Clark, KB7QHC

93. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 12:22:54 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c81833e4-ca57-483c-9897-72bcc1810389@1g2000hsl.googlegroups.com>
Source record: 30159

On Jan 2, 1:41 am, Roger <rspa...@elltel.net> wrote:
> Keith Dysart wrote:
> > On Jan 1, 6:00 pm, Roger <rspa...@elltel.net> wrote:
> >> Roy Lewallen wrote:
> >>> Roger wrote:
> >>>> Could you better describe how you determine that the source has a Z0
> >>>> equal to the line Z0? I can guess that you use a Thévenin equivalent
> >>>> circuit and set the series resistor to Z0.
> >>> Probably the simplest way is to put the entire source circuitry into a
> >>> black box. Measure the terminal voltage with the box terminals open
> >>> circuited, and the current with the terminals short circuited. The ratio
> >>> of these is the source impedance. If you replace the box with a Thevenin
> >>> or Norton equivalent, this will be the value of the equivalent circuit's
> >>> impedance component (a resistor for most of our examples).
> >>> If the driving circuitry consists of a perfect voltage source in series
> >>> with a resistance, the source Z will be the resistance; if it consists
> >>> of a perfect current source in parallel with a resistance, the source Z
> >>> will be the resistance. You can readily see that the open circuit V
> >>> divided by the short circuit I of these two simple circuits equals the
> >>> value of the resistance.
> >>>> The power output of the Thévenin equivalent circuit follows the load.
> >>> Sorry, I don't understand this. Can you express it as an equation?
> >> There seems to be some confusion as to the terms "Thévenin equivalent
> >> >> circuit", "ideal voltage source", and how impedance follows these
> >> sources.
>
> >> Two sources we all have access to are these links:
>
> >> Voltage source:
> >> http://en.wikipedia.org/wiki/Voltage_source
> >> Thévenin equivalent circuit:http://en.wikipedia.org/wiki/Th%C3%A9venin%27s_theorem
>
> > I don't disagree with anything I read there.
>
> > But you may not quite have the concept of impedance
> > correct.
>
> > The impedance of the Thevenin/Norton equivalent source
> > is not V/I but rather the slope of the line representing
> > the relationship of the voltage to the current.
> > When there is a source present, this
> > line does not pass through the origin. Only for
> > passive components does this line pass through
> > the origin in which case it becomes V/I.

>
> > Because the voltage to current plot for an ideal
> > voltage source is horizontal, the slope is 0 and hence
> > so is the impedance. For an ideal current source
> > the slope is vertical and the impedance is infinite.
>
> > Hoping this helps clarify....
>
> > ...Keith
>
> Yes, I can understand that there is no change in voltage no matter what
> the current load is, so there can be no resistance or reactive component
> in the source. The ideal voltage link also said that the ideal source
> could maintain voltage no matter what current was applied. Presumably a
> negative current through the source would result in the same voltage as
> a positive current, which is logical if the source has zero impedance.

This is true.

> During the transition from negative current passing through the source
> to positive current passing through the source, the current at some time
> must be zero.

This would occur, for example, when the output terminals
are open circuited. Or connected to something that had
the same open-circuit voltage as your source.

> How is the impedance of the perfect source defined at
> this zero current point?

This is not a different question than: How is the
resistance of a resistor defined when it has no
current flowing in it?

It continues to satisfy the relation V = I * R,
though one can not compute R from the measured
V and I.

> How is the impedance of the attached system
> defined?

It is unknown, but has a voltage equal to the
voltage of the source.

> The resistor in the Thevenin/Norton equivalent source is selected with
> some criteria in mind. What I would like to do is to design a Thevenin
>   source to provide 1v across a 50 ohm transmission line INFINATELY
> long, ignoring ohmic resistance. I would like the source resistor to
> absorb as much power as the line, so that if power ever returns under
> reflected wave conditions, it can all be absorbed by the resistor. I
> think the size of such a resistor will be 50 ohms.

That is the correct value to not have any reflections
at the source.

But do not expect the power dissipated in the resistor
to increase by the same amount as the "reflected power".
In general, it will not. This is what calls into question
whether the reflected wave actually contains energy.

Do some simple examples with step functions. The math
is simpler than with sinusoids and the results do not
depend on the phase of the returning wave, but simply
on when the reflected step arrives bach at the source.

Examine the system with the following terminations on
the line: open, shorted, impedance greater than Z0,
and impedance less than Z0.

Because excitation with a step function settles to
the DC values, the final steady state condition is
easy to compute. Just ignore the transmission line
and assume the termination is connected directly
to the Thevenin generator. When the line is present,
it takes longer to settle, but the final state will
be the same with the line having a constant voltage
equal to the voltage output of the generator which
will be the same as the voltage applied to the load.

Then do the same again, but use a Norton source. You
will find that conditions which increase the dissipation
in the resistor of the Thevenin equivalent circuit
reduce the dissipation in the resistor of the Norton
equivalent circuit and vice versa.

This again calls into question the concept of power
in a reflected wave, since there is no accounting
for where that "power" goes.

...Keith

94. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 13:04:17 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <ddf8e258-3ee3-4e1e-808b-2b9c9c88fe5b@21g2000hsj.googlegroups.com>
Source record: 30160

On Jan 2, 2:59 am, Richard Clark <kb7...@comcast.net> wrote:
> On Tue, 1 Jan 2008 18:44:17 -0800 (PST), Keith Dysart
>
> <Keith.Dys...@gmail.com> wrote:
> >Since the experiment ends before
> >the reflection returns to the generator,
>
> Is it a step, or is it a pulse?

As stated, a step.

> Makes a huge difference in the analysis.
>
> >the impedance
> >of the generator is irrelevant.
>
> The impedance perhaps, but not the voltage. I specifically offered a
> difference of sources (Norton vs. Thevenin). The impedance is the
> same either way, the voltage is not. As you introduce power later in
> this response, power at the source is even more contentious. As such,
> we can drop this altogether.

The generality of the specified voltage (V) would seem
to adequately cover both the Thevenin and Norton generators.

> >Ah. The challenge of written precisely. Consider the
> >generator to be on the left end of the line and the open
> >to be at the right end. When the capacitance at the right
> >end charges to 2 * V, the current now has to stop a little
> >bit more to the left.
>
> Still doesn't make sense, and I wouldn't attribute it to precision
> seeing that you've written the same thing twice.

Given your previous writings, I suspect that you have
a solid understanding of the behaviour of an open-circuited
transmission line excited with a step function.

Perhaps you could make an attempt at writing a clear
description of the behaviour of such a system in terms
of charge flow and storage. Since "wave" is a word
overloaded with meanings, it would be good not to use
it in the description.

Once a clear description exists, I can extend it
using the same clear terminology to illustrate

the points of interest.

...Keith

95. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 13:39:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vuMej.35795$Pv2.27619@newssvr23.news.prodigy.net>
Source record: 30161

Keith Dysart wrote:
> It happens without effort because the output impedance
> of the Norton/Thevenin equivalent circuit is the same
> as the circuit it replaces, otherwise it is not an
> equivalent.

False. There can be a large difference in the output
impedance of an amplifier designed to drive a 50 ohm
load and a 50 ohm Thevenin equivalent circuit.
--
73, Cecil http://www.w5dxp.com

96. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 14:00:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <48c9979b-c94c-4623-9721-08d0676de87e@e23g2000prf.googlegroups.com>
Source record: 30162

On Jan 1, 9:03 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger wrote:
> > The principles of superposition are mathematically usable, not too hard,
> > and I think very revealing. Yes, if we use part of the model, we must
> > use it all the way. To do otherwise would be error, or worse.
>
> Roy and Keith don't seem to realize that the zero source
> impedance for the ideal voltage source is only when the
> source is turned off for purposes of superposition.

I am not sure you have the methodology quite correct.
The source is not turned off; its output is set to 0.

It does what every ideal voltage source will do when
set to a voltage; maintain that voltage. Through all
of this, the impedance of the ideal source remains 0.

Now it turns out that an ideal voltage source set
to zero volts can be replaced by a short which also
has an impedance of 0 and produces no volts. But this
does not alter that the ideal source always has an
impedance of 0.

Analogously, an ideal current source always has an
infinite impedance. When set to 0 amps, it behaves
exactly like an open circuit.

> They
> conveniently avoid turning the source voltage on to complete
> the other half of the superposition process. When the
> source signal and the reflected wave are superposed at
> the series source resistor, where the energy goes becomes
> obvious. Total destructive interference in the source
> results in total constructive interference toward the load.
> See below.
>
> > You have been a supporter of this theory for a long time.
>
> Yes, I have. I am a supporter of the principles and laws of
> physics. Others believe they can violate the principle of
> conservation of energy anytime they choose because the
> principle of conservation of energy cannot be violated -
> go figure.

You should really stop repeating this to yourself. No
one is attempting to violate the principle of conservation

of energy.

By continually repeating this mantra, you convince yourself that you do not need to examine the claims of those who disagree with you. So you do not examine and understand their claims. This seriously limits your capability to learn.

If you truly wish to demolish the claims, you should study them in great detail, then write an even better and more persuasive description of the claim than did the original author. Then identify and point out the flaws.

As it stands, you do not examine the claims, but immediately coat them with the tar of "violates conservation of energy" or some other mantra and walk away.

It does not lead to learning.

...Keith

97. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 14:20:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <L4Nej.2664$6%.918@nlpi061.nbdc.sbc.com>
Source record: 30164

Gene Fuller wrote:
> For future reference, however, just remember: Fields first, then power
> or energy. That's the way superposition really works.

Way back before optical physicists could measure light
wave fields, they were dealing with reflectance,
transmittance, and irradiance - all involving power
or energy. They are still using those concepts today
proven valid over the past centuries. Optical physicists
calculate the fields *AFTER* measuring the power density
and they get correct consistent answers.

Use whatever method works for you but don't try to change
or replace the body of the laws of physics that was in place
before your grandfather was born. Your rejection of those
laws of physics from the past centuries is why you are so
confused today by your steady-state short cuts. It's why
Keith doesn't recognize a 1.0 reflection coefficient when
it is staring him in the face. It's why Roy rejects energy
in reflected waves. Optical physicists have known for
centuries where the energy goes. That RF engineers are
incapable of performing an energy analysis is sad.

Irradiance (intensity) is a power density. Many problems
in physics can be solved without even knowing or caring
about the strength of the fields. Here is one such lossless
line problem for you.

100w--50 ohm line--+--1/2WL 300 ohm line--50 ohm load
Pfor1-->|-->Pfor2
Pref1<--|<--Pref2

Without using fields, voltages, or currents: Calculate
the magnitudes of the four P terms above. Using the RF
power reflection-transmission coefficients, please explain
the magnitude of Pref1. If you cannot do that, you really
need to broaden your horizons and alleviate your ignorance.

Quoting HP AN 95-1: "The previous four equations show that
s-parameters are simply related to power gain and mismatch
loss, quantities which are often of more interest than the
corresponding voltage functions."
--
73, Cecil http://www.w5dxp.com

98. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 14:20:57 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <18269158-9897-4155-83ed-3bb99738edbd@i7g2000prf.googlegroups.com>
Source record: 30163

On Jan 1, 4:16 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> >> The Norton or Thévenin equivalent circuits seem capable of positive
> >> reflection coefficients.
>
> > Either can be positive, negative, or zero depending
> > on the value of the output impedance compared to Z0.
>
> Would you please quote a reference that addresses
> the subject of reflection coefficients from Thevenin
> or Norton equivalent sources?

Seshardi, "Fundamentals of transmission lines and
electoromagnetic fields", page 19-21, explains
reflection diagrams and the generator is styled
after Thevenin. Page 21 says

RHOg = (Rg-R0)/(Rg+R0)

RHOg is the reflection coefficient at the generator
and Rg is the value of the output resistor. The
exposition has not yet generalized to Z so is still
in terms of R.

But do not feel limited to Seshardi. Any decent
book on transmission lines will cover the subject.

Or even easier, google '"lattice diagram" reflection',
"reflection diagram" or "bounce diagram". You will
find many examples using Thevenin sources.

But this same information has been repeatedly provided
and ignored. Will this time be different?

...Keith

99. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 14:22:37 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <7d3db505-e77d-4b79-b313-5fa93538382b@l6g2000prm.googlegroups.com>
Source record: 30165

```
On Jan 2, 8:39 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > It happens without effort because the output impedance
> > of the Norton/Thevenin equivalent circuit is the same
> > as the circuit it replaces, otherwise it is not an
> > equivalent.
>
> False. There can be a large difference in the output
> impedance of an amplifier designed to drive a 50 ohm
> load and a 50 ohm Thevenin equivalent circuit.

Then your Thevenin circuit is not an equivalent
for the amplifier, is it?

Please study "equivalent circuit" and report back.

...Keith
```

100. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 14:24:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <l8Nej.2665$6%.1850@nlpi061.nbdc.sbc.com>
Source record: 30166

Keith Dysart wrote:
> With two measurements you will obtain the correct
> impedance.

With two measurements you will obtain an impedance.
It will not be the impedance needed to calculate
the reflection coefficient seen by the reflected
waves.
--
73, Cecil http://www.w5dxp.com

101. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 14:33:11 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <9aee4752-9c34-45ec-bf3a-c3e7c34cee1f@e23g2000prf.googlegroups.com>
Source record: 30167

On Jan 2, 9:24 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > With two measurements you will obtain the correct
> > impedance.
>
> With two measurements you will obtain an impedance.
> It will not be the impedance needed to calculate
> the reflection coefficient seen by the reflected
> waves.

You should really spend some time looking for a
reference to support your assertion that "It will
not be the impedance needed to calculate the
reflection coefficient seen by the reflected
waves."

You will not find one.

...Keith

102. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 14:38:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <clNej.2666$6%.2461@nlpi061.nbdc.sbc.com>
Source record: 30168

Keith Dysart wrote:
> The impedance of the Thevenin/Norton equivalent source
> is not V/I but rather the slope of the line representing
> the relationship of the voltage to the current.

However, after the interference patterns have been
established, the reflected waves do not encounter that
source impedance. That is why the reflection coefficient
seen by the reflected waves is relatively unrelated to
the value of resistance in a Thevenin equivalent circuit.

You need to complete step 3 of the superposition process
to realize exactly what is happening. Reference the
irradiance equation from the field of EM wave optics
to ascertain the interference levels. What do you have
to lose by alleviating your ignorance?

Keith, until you take time to understand destructive and
constructive interference, you will never understand what
is happening inside a source and will be forever confused
by your blinders-on-come-hell-or-high-water method of
thinking. Optical physicists figured out a couple of
centuries ago exactly what you are wrestling with now.
Your present problem was already solved before your
grandfather was born.
--
73, Cecil http://www.w5dxp.com

103. Re: Go digital voice, BPL becomes NO problem!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 14:57:03 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flg8nt$ak1$1@news.albasani.net>
Source record: 30169

Eric Oyen - N7ZZT wrote:

>> [...]

Sorry OM, you are like the "beasts" which run in "packs" and attempt to
drag Cecil down--attempt to introduce petty arguments to confuse ...

Progress continues ... <GRIN>

JS

104. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 14:59:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <7FNej.2667$6%.219@nlpi061.nbdc.sbc.com>
Source record: 30170

Keith Dysart wrote:
> Can you make this all work for a pulse, or a step
> function?

Please reference a good book on optical EM waves
for a complete answer. It is *not me* making it work.
It is a body of physics knowledge that has existed
since long before you were born. It should have
been covered in your Physics 201 class. That you
are apparently unaware of such is a display of
basic ignorance of the science of EM waves.

The basic theory applies specifically to coherent
waves (which are the only EM waves capable of truly
interfering). CW RF waves are close enough to ideal
coherency that the theory works well. It would no
doubt work for a coherent Fourier series as well
but I don't want to spend the time necessary
to prove that assertion.

> How do you compute
> Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)
> for a pulse or a step?

The above equation applies to coherent signals.
It is known not to work when the signals are not
coherent because the angle 'A' never reaches
a fixed steady-state value.

> Or is your approach limited to sinusoids?

Again, it is not *my* approach and is described in any
textbook on "Optics" including Hecht and Born & Wolf.
--
73, Cecil http://www.w5dxp.com

105. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 15:24:09 UTC
From: art <aunwin@insightbb.com>
Message-ID: <2fd5cdf9-e649-45e4-a0c6-6fc49e3cea3a@x69g2000hsx.googlegroups.com>
Source record: 30171

On 1 Jan, 18:54, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:769f6465-64de-4ea3-9d29-0153fadef349@e23g2000prf.googlegroups.com...
> On Dec 30, 5:55 pm, "Ken Fowler" <ko...@yahoo.com> wrote:
>
> > I hate to totally block people who arguably have some useful things to
> > post
> > to the newsgroup. But the content on the thread about travelling waves
> > versus standing waves has become so dominated by one person that there is
> > no way to end it except by filtering all messages to
> > rec.radio.amateur.antennas to eliminate the dominant poster. So I have not
> > only blocked articles from his web site, I am blocking any article which
> > contains his name. So if you reply to him, I am sorry but I will not be
> > able to see your remarks. I know that no one is likely to lose any sleep
> > about my actions. From now on, I hope there will be articles about antenna
> > construction and modelling because that will probably be all that I am
> > able
> > to read. 73.
>
> > Ken Fowler, KO6NO
>
> Re: "Ken
> You have a direct line with Yahoo who aids and abets kb9...
> If they don't care who they support then drop them.
> Yahoo is probably happy with what their customers are doing
> on the net. Ofcourse if MI5 can't get the other guy write
> a letter to the CIA they would know what to do."
>
> Art, I suspect the problem with MI5 is the drastic reduction in funding due
> to the end of the cold war. One would think with the guy going to Canada and
> Florida the MI6 could step in and make a good hit without the assistance of
> the CIA. The CIA today is rather useless, not being able to even estimate
> Iranian WMD capability much less using electromagnetism to effect mind
> control :-)
>
> More seriously, my theory is that this MI5 is a prank that started at the
> psychology department of some UK university and the students carry it on as
> a tradition year after year. They seem very adept at making themselves
> unflilterable.
>
> If MI5 could only stop him from coming back they would have 100% of my
> support ;-)

I don't think it is organised,just a couple of wierdos. You have the
one
guy who lives in South London and then the other wierdo who lives way
up
North of Chicago. Actually they are so wierd that they don't even
communicate
with each other. Neither of the them work because of mental disability
which is not a bad thing as when they are caught they can be put in a
looney bin for a long while. Eventually somebody who lives nearby
will pay them a little visit and present them with a parcel or
something.
Fortunately their posts are easily recognisable so one can move on.
If the fphantom wave thing goes on much longer I may have to
communicate
with both of these wierdoos for a change in pace!
Art

106. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 15:31:18 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f11dfa2c-6da2-4062-8c37-909ac95240d4@i29g2000prf.googlegroups.com>
Source record: 30172

On Jan 2, 9:38 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > The impedance of the Thevenin/Norton equivalent source
> > is not V/I but rather the slope of the line representing
> > the relationship of the voltage to the current.
>
> However, after the interference patterns have been
> established, the reflected waves do not encounter that
> source impedance. That is why the reflection coefficient
> seen by the reflected waves is relatively unrelated to
> the value of resistance in a Thevenin equivalent circuit.

I assume that you have not provided a reference to support
this assertion because you have not been able to find one.

> You need to complete step 3 of the superposition process
> to realize exactly what is happening. Reference the
> irradiance equation from the field of EM wave optics
> to ascertain the interference levels. What do you have
> to lose by alleviating your ignorance?

Unfortunately optics do not do well at explaining
transmission lines since they do not extend down
to DC.

> Keith, until you take time to understand destructive and
> constructive interference, you will never understand what
> is happening inside a source and will be forever confused
> by your blinders-on-come-hell-or-high-water method of
> thinking. Optical physicists figured out a couple of
> centuries ago exactly what you are wrestling with now.
> Your present problem was already solved before your
> grandfather was born.

I have yet to find anything about transmission lines
that needs constructive and destructive interference
for explanation. Volts, amps and superposition seem
to be able to do it all, and have the added benefit
of explaining the behaviour for step functions and
pulses. With the volts, amps and superposition,
sinusoids are just a special case of the general
one.

I am unsure why some are content to constrain
themselves to solution techniques and explanations
that only work on the special case of sinusoids.

...Keith

107. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 15:43:21 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <8e306da0-969c-4ae0-8e30-dbef89584f9e@t1g2000pra.googlegroups.com>
Source record: 30173

On Jan 2, 9:59 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Can you make this all work for a pulse, or a step
> > function?

I accept your "NO" and agree that EM waves are
incapable of providing solutions for pulse or
step excitation.

But why don't you just say so clearly.

> Please reference a good book on optical EM waves
> for a complete answer.

Given that optical EM waves are only capable of
solving a subset of the uses of transmission lines,
it is not obvious why I should study them when
I can invest in learning approaches that will do
the whole job.

> It is *not me* making it work.

True. And as you have said, it does not work
for pulses or steps.

> It is a body of physics knowledge that has existed
> since long before you were born. It should have
> been covered in your Physics 201 class. That you
> are apparently unaware of such is a display of
> basic ignorance of the science of EM waves.

Some who claim to have studied them thoroughly
seem to be constrained by their limitations. Is
that better?

> The basic theory applies specifically to coherent
> waves (which are the only EM waves capable of truly
> interfering). CW RF waves are close enough to ideal
> coherency that the theory works well. It would no
> doubt work for a coherent Fourier series as well
> but I don't want to spend the time necessary
> to prove that assertion.
>
> > How do you compute
> > Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)
> > for a pulse or a step?
>

> The above equation applies to coherent signals.
> It is known not to work when the signals are not
> coherent because the angle 'A' never reaches
> a fixed steady-state value.
>
> > Or is your approach limited to sinusoids?
>
> Again, it is not *my* approach and is described in any
> textbook on "Optics" including Hecht and Born & Wolf.

Well, others more knowledgeable than I in optics
have disputed whether *your* approach accurately
represents those described in the textbooks.

In any case, being applicable only to sinusoids
limits the general applicability to transmission
lines which happily work at DC.

...Keith

108. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 15:50:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kpOej.1293$pA7.32@newssvr25.news.prodigy.net>
Source record: 30174

Roger Sparks wrote:
> Well, I would like to think I could understand it, but maybe something is
> wrong like Roy suggests. I think it is all falling into place, but our
> readers are not all in agreement.

Anyone who will take the time to understand and is capable
of understanding, will understand. What I am reporting are
centuries-old proven scientific concepts. Readers need only
reference an optics textbook for irradiance, reflectance,
and transmittance. "Optics", by Hecht is easy reading.

> Is this a Thevenin source? If so, what is the internal resistor set to in
> terms of Z0?

The example was a Thevenin source driving a 1/2WL open
line through a source resistor equal to Z0, e.g. 50 ohms.

> For condition number 2 below, is this a Thevenin equivalent resistance?

Yes, all the rules of superposition and Thevenin equivalency
are being followed.

> 1. To add the total power of each wave and then also add the power
> reduction of the phase relationship, would be creating power unless the
> cos(A) is negative. Something seems wrong here, probably my understanding.

Yep, I haven't given the other corresponding equation. The
pair of equations that satisfy the conservation of energy
requirements are (in Ramo&Whinnery Poynting vector notation):

|Pz+| = P1 + P2 + 2*SQRT(P1*P2)cos(A) eq.1

|Pz-| = P3 + P4 + 2*SQRT(P3*P4)cos(-A) eq.2

In a transmission line, the Poynting vector for Pz+ and the
Poynting vector for Pz- are pointed in opposite directions.

The destructive interference, as you observed, carries a
negative sign. This negative sign does NOT create energy.
It means that some excess amount of destructive interference
energy must go somewhere. It naturally goes into constructive
interference somewhere else. Please see:

http://www.mellesgriot.com/products/optics/oc_2_1.htm

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

> 2. The two voltages should be equal, therfore the power delivered by each
> to the source resister would be equal.

Under each of the two superposition steps, yes. However, when
the signals are combined, interference results, and the power
in the source resistor is reduced to zero. That "excess" energy
must go somewhere and it appears as constructive interference
redistributed toward the load. See the web pages above.

> 3. The power delivered to the source resistor will arrive a different times
> due to the phase difference between the two waves.

We are talking average power. Please don't get bogged down in
instantaneous power which would be the same when integrated.

> 4. If the reflected power returns at the same time as the delivered power
> (to the source resistor), no power will flow. This because the resistor in
> a Thevenin is a series resistor. Equal voltages will be applied to each side
> of the resitor. The voltage difference will be zero.

Yes, the result is destructive interference.

> 5. If the reflected power returns 180 degrees out of phase with the applied
> voltage (to the source resistor), the voltage across the resistor will
> double with each cycle, resulting in an ever increasing current.(and power)
> into the reflected wave.

Good time to switch over to a Norton equivalent.

> This is correct for this condition. The problem with the equation comes
> when cos(<90) which can easily happen.

That's no problem at all. It is just constructive interference
which implies destructive interference somewhere else. Destructive
interference must always equal constructive interference to avoid
violation of the conservation of energy principle.

> Light, especially solar energy, is a collection of waves of all magnitudes
> and frequencies. We should see only about 1/2 of the power that actually
> arrives due to superposition. The reflection from a surface should create
> standing waves in LOCAL space that will contain double the power of open
> space. I think your equation Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A) would be
> correct for a collection of waves, but incorrect for the example.

A collection of waves is not likely to be coherent so the equation
would not work. That equation works for any coherent EM wave. CW RF
waves are coherent.

> I tried to read your article a couple of weeks ago, but I found myself not
> understanding. I have learned a lot since then thanks to you, Roy, and
> others. I will try to read it again soon.

You might want to pick up a copy of "Optics", by Hecht
available from http://www.abebooks.com Please pay close
attention to the chapters on interference and superposition.

> So what do you think Cecil?

Also try HP's AN 95-1, an s-parameter app-note available on the
web. Pay close attention to what they say about power and what
happens when you square the s-parameter equations. Surprise!
You get the power interference equation above.
--
73, Cecil http://www.w5dxp.com

109. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 16:06:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ZDOej.2551$El5.415@newssvr22.news.prodigy.net>
Source record: 30175

Roger wrote:
> The resistor in the Thevenin/Norton equivalent source is selected with
> some criteria in mind. What I would like to do is to design a Thevenin
> source to provide 1v across a 50 ohm transmission line INFINATELY long,
> ignoring ohmic resistance. I would like the source resistor to absorb as
> much power as the line, so that if power ever returns under reflected
> wave conditions, it can all be absorbed by the resistor. I think the
> size of such a resistor will be 50 ohms.

If you allow reflected energy to flow through the
source resistor, destructive interference is often
the result and the resistor therefore will not
dissipate the reflected power.

The only way to get the source resistor to dissipate
all of the reflected power is to cause total constructive
interference within the source. That requires all of the
energy from the load side of the system.

When the source rejects reflected energy due to destructive
interference, that energy has no choice except to reverse
direction and flow back toward the load as constructive
interference energy.

Maybe you should reconsider the circulator+load-resistor?
--
73, Cecil http://www.w5dxp.com

110. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 16:27:06 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <7LKdnTqKXPXEJubanZ2dnUVZ_umlnZ2d@neonova.net>
Source record: 30176

```
Follow up and more corrections.
Roger wrote:
> Correction. Please note the change below. I apologize for the error.
>
> Roger Sparks wrote:
>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>> news:ShCej.2480$pr6.1401@nlpi070.nbdc.sbc.com...
>>> Roger wrote:
>>>> The principles of superposition are mathematically usable, not too
>>>> hard, and I think very revealing. Yes, if we use part of the model,
>>>> we must use it all the way. To do otherwise would be error, or worse.
>>
>>> clip some
>>
>>> Roger, I have explained all of this before. If you are
>>> capable of understanding it, I take my hat off to you.
>>> Here's what happens in that ideal voltage source using
>>> the rules of superposition.
>>>
>>
>> Well, I would like to think I could understand it, but maybe something
>> is wrong like Roy suggests. I think it is all falling into place, but
>> our readers are not all in agreement.
>>
>> Could I ask a couple of questions to make sure I am understanding your
>> preconditions?
>>
>> Is this a Thevenin source? If so, what is the internal resistor set
>> to in terms of Z0?
>>
>>> 1. With the reflected voltage set to zero, the source
>>> current is calculated which results in power in the
>>> source resistor. Psource = Isource^2*Rsource
>>>
>>
>> For condition number 2 below, is this a Thevenin equivalent resistance?
>>
>>> 2. With the source voltage set to zero, the reflected
>>> current is calculated which results in power in the
>>> source resistor. Pref = Iref^2*Rsource
>>>
>>> Now superpose the two events. The resultant power
>>> equation is: Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)
>>> where 'A' is the angle between the source current
```

>>> and the reflected current. Note this is NOT power
>>> superposition. It is the common irradiance (power
>>> density) equation from the field of optics which
>>> has been in use in optical physics for a couple of
>>> centuries so it has withstood the test of time.
>>
>> OK. A few reactions.
>>
>> 1. To add the total power of each wave and then also add the power
>> reduction of the phase relationship, would be creating power unless
>> the cos(A) is negative. Something seems wrong here, probably my
>> understanding.
>>
>> 2. The two voltages should be equal, therfore the power delivered by
>> each to the source resister would be equal.
>>
>> 3. The power delivered to the source resistor will arrive a different
>> times due to the phase difference between the two waves.
>>
>> 4. If the reflected power returns at the same time as the delivered
>> power (to the source resistor), no power will flow. This because the
>> resistor in a Thevenin is a series resistor. Equal voltages will be
>> applied to each side of the resitor. The voltage difference will be
>> zero.
>>
>> 5. If the reflected power returns 180 degrees out of phase with the
>> applied voltage (to the source resistor), the voltage across the
>> resistor will double with each cycle, resulting in an ever increasing
>> current.(and power) into the reflected wave.
>>
>>> For the voltage source looking into a 1/2WL open
>>> circuit stub, angle 'A' is 180 degrees. Therefore
>>> the total power in the source resistor is:
>>>
>>> Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(180) or
>>>
>>> Ptot = Ps + Pr - 2*SQRT(Ps*Pr) = 0
>>
>> This is correct for this condition. The problem with the equation
>> comes when cos(<90) which can easily happen.
>>
>> I would suggest the equation Ptot = Ps+ Pr*(sine(A) where angle 'A' is
>> the angle between positive peaks of the two waves. This angle will
>> rotate twice as fast as the signal frequency due to the relative
>> velocity between the waves..
> No, this angle is fixed by system design. If the system changes, this
> angle will rotate twice as fast as the angle change of a single wave.
> The equation should be OK.

The equation can NOT be OK for anything except a single interaction
point. It can not be used to plot the interaction between waves because
the wave location information is not present.

>>> Ptot in the source resistor is zero watts but we
>>> already knew that. What is important is that the
>>> last term in that equation above is known as the
>>> "interference term". When it is negative, it indicates
>>> destructive interference. When Ptot = 0, we have
>>> "total destructive interference" as defined by
>>> Hecht in "Optics", 4th edition, page 388.
>>>
>>> Whatever the magnitude of the destructive interference
>>> term, an equal magnitude of constructive interference
>>> must occur in a different direction in order to
>>> satisfy the conservation of energy principle. Thus
>>> we can say with certainty that the energy in the
>>> reflected wave has been 100% re-reflected by the
>>> source. The actual reflection coefficient of the
>>> source in the example is |1.0| even when the source
>>> resistor equals the Z0 of the transmission line.
>>> I have been explaining all of this for about 5 years
>>> now. Instead of attempting to understand these relatively
>>> simple laws of physics from the field of optics, Roy
>>> ploinked me. Hopefully, you will understand.
>>>
>>> All of this is explained in my three year old Worldradio
>>> energy article on my web page.
>>>
>>> http://www.w5dxp.com/energy.htm
>>> --
>>> 73, Cecil http://www.w5dxp.com
>>
>> Light, especially solar energy, is a collection of waves of all
>> magnitudes and frequencies. We should see only about 1/2 of the power
>> that actually arrives due to superposition. The reflection from a
>> surface should create standing waves in LOCAL space that will contain
>> double the power of open space. I think your equation Ptot = Ps + Pr
>> + 2*SQRT(Ps*Pr)cos(A) would be correct for a collection of waves, but
>> incorrect for the example.
>>
>> I tried to read your article a couple of weeks ago, but I found myself
>> not understanding. I have learned a lot since then thanks to you,
>> Roy, and others. I will try to read it again soon.
>>
>> So what do you think Cecil?
>>
>> 73, Roger, W7WkB
>>

In the last 24 hours, Roy posted a revised analysis that contains
results useful here. He presented a voltage example that resulted in a

steady state with steady state voltages 4 time initial value. Under superposition, this would equate to 4 times the initial power residing on the transmission line under the conditions presented. This concurs with other authors who predict power on the transmission line may exceed the delivered power due to reflected waves.

Your equation "Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)" is taken from illumination and radiation theory to describe power existing at a point in space near a reflecting surface. If we consider space to be a transmission media, and the reflecting surface to be a discontinuity in the transmission media, then we have a situation very similar to an electrical transmission line near a line discontinuity.

It is entirely reasonable to consider that the reflection ratio between the space transmission media and the reflective surface would result in an storage factor equaling 4 times the peak power of the initial forward wave. By storage factor, I simply mean the ratio of forward power to total power on the transmission media under standing wave conditions.

Under open circuit conditions, a half wavelength transmission line will have a storage factor of 2. Roy presented an example where the storage factor was 4. Perhaps the space transmission media also has a storage factor of 4 under some conditions, as described by "Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)".

73, Roger, W7WKB

111. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 16:41:02 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <v-6dnQWT4IcAI-banZ2dnUVZ_uuqnZ2d@neonova.net>
Source record: 30177

Keith Dysart wrote:
> On Jan 2, 1:41 am, Roger <rspa...@elltel.net> wrote:
>> Keith Dysart wrote:
>>> On Jan 1, 6:00 pm, Roger <rspa...@elltel.net> wrote:
>>>> Roy Lewallen wrote:
>>>>> Roger wrote:
>>>>>> Could you better describe how you determine that the source has a Z0
>>>>>> equal to the line Z0? I can guess that you use a Thï¿½venin equivalent
>>>>>> circuit and set the series resistor to Z0.
>>>>> Probably the simplest way is to put the entire source circuitry into a
>>>>> black box. Measure the terminal voltage with the box terminals open
>>>>> circuited, and the current with the terminals short circuited. The ratio
>>>>> of these is the source impedance. If you replace the box with a Thevenin
>>>>> or Norton equivalent, this will be the value of the equivalent circuit's
>>>>> impedance component (a resistor for most of our examples).
>>>>> If the driving circuitry consists of a perfect voltage source in series
>>>>> with a resistance, the source Z will be the resistance; if it consists
>>>>> of a perfect current source in parallel with a resistance, the source Z
>>>>> will be the resistance. You can readily see that the open circuit V
>>>>> divided by the short circuit I of these two simple circuits equals the
>>>>> value of the resistance.
>>>>>> The power output of the Thï¿½venin equivalent circuit follows the load.
>>>>> Sorry, I don't understand this. Can you express it as an equation?
>>>> There seems to be some confusion as to the terms "Thï¿½venin equivalent
>>>> >> circuit", "ideal voltage source", and how impedance follows these
>>>> sources.
>>>> Two sources we all have access to are these links:
>>>> Voltage source:
>>>> http://en.wikipedia.org/wiki/Voltage_source
>>>> Thï¿½venin equivalent circuit:http://en.wikipedia.org/wiki/Th%C3%A9venin%27s_theorem
>>> I don't disagree with anything I read there.
>>> But you may not quite have the concept of impedance
>>> correct.
>>> The impedance of the Thevenin/Norton equivalent source
>>> is not V/I but rather the slope of the line representing
>>> the relationship of the voltage to the current.
>>> When there is a source present, this
>>> line does not pass through the origin. Only for
>>> passive components does this line pass through
>>> the origin in which case it becomes V/I.
>>> Because the voltage to current plot for an ideal
>>> voltage source is horizontal, the slope is 0 and hence
>>> so is the impedance. For an ideal current source
>>> the slope is vertical and the impedance is infinite.

>>> Hoping this helps clarify....
>>> ...Keith
>> Yes, I can understand that there is no change in voltage no matter what
>> the current load is, so there can be no resistance or reactive component
>> in the source. The ideal voltage link also said that the ideal source
>> could maintain voltage no matter what current was applied. Presumably a
>> negative current through the source would result in the same voltage as
>> a positive current, which is logical if the source has zero impedance.
>
> This is true.
>
>> During the transition from negative current passing through the source
>> to positive current passing through the source, the current at some time
>> must be zero.
>
> This would occur, for example, when the output terminals
> are open circuited. Or connected to something that had
> the same open-circuit voltage as your source.
>
>> How is the impedance of the perfect source defined at
>> this zero current point?
>
> This is not a different question than: How is the
> resistance of a resistor defined when it has no
> current flowing in it?
>
> It continues to satisfy the relation V = I * R,
> though one can not compute R from the measured
> V and I.
>
>> How is the impedance of the attached system
>> defined?
>
> It is unknown, but has a voltage equal to the
> voltage of the source.
>
>> The resistor in the Thevenin/Norton equivalent source is selected with
>> some criteria in mind. What I would like to do is to design a Thevenin
>> source to provide 1v across a 50 ohm transmission line INFINATELY
>> long, ignoring ohmic resistance. I would like the source resistor to
>> absorb as much power as the line, so that if power ever returns under
>> reflected wave conditions, it can all be absorbed by the resistor. I
>> think the size of such a resistor will be 50 ohms.
>
> That is the correct value to not have any reflections
> at the source.
>
> But do not expect the power dissipated in the resistor
> to increase by the same amount as the "reflected power".
> In general, it will not. This is what calls into question

> whether the reflected wave actually contains energy.
>
> Do some simple examples with step functions. The math
> is simpler than with sinusoids and the results do not
> depend on the phase of the returning wave, but simply
> on when the reflected step arrives bach at the source.
>
> Examine the system with the following terminations on
> the line: open, shorted, impedance greater than Z0,
> and impedance less than Z0.
>
> Because excitation with a step function settles to
> the DC values, the final steady state condition is
> easy to compute. Just ignore the transmission line
> and assume the termination is connected directly
> to the Thevenin generator. When the line is present,
> it takes longer to settle, but the final state will
> be the same with the line having a constant voltage
> equal to the voltage output of the generator which
> will be the same as the voltage applied to the load.
>
> Then do the same again, but use a Norton source. You
> will find that conditions which increase the dissipation
> in the resistor of the Thevenin equivalent circuit
> reduce the dissipation in the resistor of the Norton
> equivalent circuit and vice versa.
>
> This again calls into question the concept of power
> in a reflected wave, since there is no accounting
> for where that "power" goes.
>
> ...Keith

Very interesting! It makes sense to me. I must be gone most of the day today so will be QRT for a while.

I am gaining an appreciation for the time boundaries here. To properly account for the power, we would need to integrate the source power over the entire time from switch on to switch off plus the time required for the reflected wave to completely return and die out.

If we consider the extended time period, within that period the power delivered by the source should equal the power dissipated by the resistor. The forward and reflected waves should only serve to be storage for the power during portions of the extended time period.

73, Roger, W7WKB

112. Re: Where is the moderator?????

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 16:48:36 UTC
From: KC8QJP <kc8qjp@lycos.com>
Message-ID: <flgf96$5iq$1@news.datemas.de>
Source record: 30178
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

"Bert Hyman" <bert@iphouse.com> wrote in message
news:Xns9A18BDCBB90D9VeebleFetzer@216.250.184.7...
> In news:flekv5$l0m$1@news.datemas.de "KC8QJP" <kc8qjp@lycos.com> wrote:
>
>>
>> "Bert Hyman" <bert@iphouse.com> wrote in message
>> news:Xns9A18B8CCD2621VeebleFetzer@216.250.184.7...
>>> In news:flekfu$kf8$1@news.datemas.de "KC8QJP" <kc8qjp@lycos.com>
>>> wrote:
>>>
>>>>
>>>><nc183d@aol.com> wrote in message
>>>> news:9d02c358-99b8-4a6a-97ed-92b49650c653@u10g2000prn.googlegroups.co
>>>> m. ..
>>>>> Wake up!!!
>>>>>
>>>>> Can't you stop all these bullshit MI5 persecution posts????
>>>>>
>>>>> They're absolutely clogging up all the rec.radio listings!!!!!
>>>>>
>>>>> Please do your job!
>>>>>
>>>>>
>>>> Are you as stupid as you sound?
>>>
>>> He's just a poor googlegrouper.
>>>
>>>
>>> Bert Hyman St. Paul, MN bert@iphouse.com
>>>
>>>
>> Are you related to busther hyman?
>
> Are you as stupid as you sound?
>
>
I just googled you and found you to be a real troublemaker Bert.

Bert Hyman St. Paul, MN bert@iphouse.com

113. Re: Where is the moderator?????

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 16:52:46 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9A196EB99B987VeebleFetzer@127.0.0.1>
Source record: 30179
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

kc8qjp@lycos.com (KC8QJP) wrote in news:flgf96$5iq$1@news.datemas.de:

>>
> I just googled you and found you to be a real troublemaker Bert.

So, you are as stupid as you sound.

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

114. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 17:23:26 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tthnn3dovl0rj3n741brcl65ucortudage@4ax.com>
Source record: 30180

On Wed, 2 Jan 2008 06:14:58 -0500, "David J Windisch"
<davidjw@cinci.rr.com> wrote:

>What's the status on that DC long-line 'tween somewhere in your neck of the
>woods south toward Baja, pls? Kind regards on behalf of all the lurkers
>from Dave N3HE

?????

Hi Dave,

That is pretty obscure, which means you know more than I do.

On the other hand, the long-line to DC for me a few days ago was
American Airlines SEA to BWI; then back from National; both through
DFW.

73's
Richard Clark, KB7QHC

115. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 18:14:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <swQej.33415$ID6.9608@newssvr27.news.prodigy.net>
Source record: 30181

Roy Lewallen wrote:
> So far I haven't seen any analysis using alternative theories, ideas of
> how sources work, or using power waves, which also correctly predict the
> voltage at all times and in steady state.

This is hardly different from the other example. Total destructive
interference is still occurring in the source resistor resulting
in total constructive interference toward the load. The forward
and reflected powers are equal to 0.04 watts. All of the voltages
and currents are easy to calculate after that. What else do you
need to know?
--
73, Cecil http://www.w5dxp.com

116. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 18:49:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <p7inn3dnuousnfj9kj92eatltqqukjgjfg@4ax.com>
Source record: 30182

On Wed, 2 Jan 2008 05:04:17 -0800 (PST), Keith Dysart
<Keith.Dysart@gmail.com> wrote:

>Given your previous writings, I suspect that you have
>a solid understanding of the behaviour of an open-circuited
>transmission line excited with a step function.

Hi Keith,

I do, but I haven't dwelled on the matter too much since my days in RADAR where a Pulse Forming Network could provide a kick from a very big bottled Thyratron. I can also in those early days recall an inadvertent opening of a circuit to a constant current device - another kick.

As for naming the multitude of combined stepped wave shapes, front porch and back porch regularly make their appearances a Trillion times an hour.

I simply couldn't wade through the myriad issues that you were trying to pull together. I prefer to drill down on one thing at a time and then bring them together. For instance, your last example of dueling sources was clearly blighted and allowed for easy dismissal. However, its inclusion was distinctly at odds with the other discussion which reveals the hazard of the shotgun style of answering all of Cecil's objections in one breath.

Cecil's crafted problems immediately fail with one detail, there is no reason to pursue them all. One need only review the "purpose" of this thread being
>On Tue, 18 Dec 2007 09:33:23 -0600, Cecil Moore <nospam@w5dxp.com> wrote:
>
>>There seems to be mass confusion even among the gurus on
>>this newsgroup as to the difference between standing-wave
>>current, as exists on a 1/2WL dipole, vs traveling-wave
>>current, as exists on a terminated antenna like a rhombic.
Clearly, Cecil was the most dazed and confused guru when I drilled down on this "purpose" of his own choice, on his own terms. The subsequent 450 postings have merely roiled in the seascape on sloshing waves when this anchor of "purpose" was cast off.

>Perhaps you could make an attempt at writing a clear
>description of the behaviour of such a system in terms
>of charge flow and storage. Since "wave" is a word
>overloaded with meanings, it would be good not to use
>it in the description.

I can appreciate your attempt to confine it to charge flow, but for me that leading edge merely introduces a wide spectrum of RF rather than restricting the topic. If I were to give any thought to the minutia of current flow along infinitesimal sections, it has long since been focused in the realm of coulomb blockades at the nano scale of quantum dots, and where sound waves comfortably migrate in the 100s of THz. I think few (make that zero) here are terribly interested in that side-bar.

>Once a clear description exists, I can extend it
>using the same clear terminology to illustrate
>the points of interest.

Methinks you are going to suffer it being ignored by the target of your intentions (Cecil?). His affliction of Netzheimers only allows any topic to be discussed to its logical confusion.

If, for the sake of lurkers, any topic merits an indepth study, it is best left to publishing at a page. I committed several hundred pages to fractals in the past, and Chip never manage to summon up more than half a dozen; and certainly never any coherent theory. Drilling down on the supporter's stated interest, on his own terms, almost always rents open the seams of failure. Again, the points of interest I elaborated on were consumed by the very few (maybe two, and mostly to their astonishment of so much effort going to so much "so what?"). We can all agree that the march of time has ravaged any millennium aspirations of the dawn of the fractal age.

73's
Richard Clark, KB7QHC

117. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 18:50:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <P1Rej.33419$ID6.9225@newssvr27.news.prodigy.net>
Source record: 30183

Roy Lewallen wrote:
> I've completely accounted for the power and energy leaving the voltage
> source, being dissipated in the resistor, and entering the line, at all
> times from startup to steady state, and done it quantitatively with
> numerical results. And I did this without any mention of propagating
> waves of power or energy.

Yes, you did deliberately avoid mentioning the energy in
the forward and reflected waves in the stub. So what? The
energy supplied to the stub is in the form of EM wave
energy. As long as it is not transformed into a different
type of energy, it will remain EM energy whether you choose
to ignore it or not. Your failure to mention ExH energy/sec
doesn't mean it ceases to exist. The EM wave energy is still
there moving at the speed of light in the medium. It is exactly
equal to the energy necessary to support the forward and
reflected power.

Roy, if you think that your failure to mention reality changes
reality, I feel really sorry for you but it is not unusual for
gurus to suffer from delusions of grandeur.
--
73, Cecil http://www.w5dxp.com

118. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:05:34 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <75f722dd-abbf-4f38-adf8-19f2470147e4@s8g2000prg.googlegroups.com>
Source record: 30184

On Jan 2, 1:50 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roy Lewallen wrote:
> > I've completely accounted for the power and energy leaving the voltage
> > source, being dissipated in the resistor, and entering the line, at all
> > times from startup to steady state, and done it quantitatively with
> > numerical results. And I did this without any mention of propagating
> > waves of power or energy.
>
> Yes, you did deliberately avoid mentioning the energy in
> the forward and reflected waves in the stub. So what? The
> energy supplied to the stub is in the form of EM wave
> energy. As long as it is not transformed into a different
> type of energy, it will remain EM energy whether you choose
> to ignore it or not.

In a stub driven with a step function, where is the
energy stored?

...Keith

119. OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:06:13 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flgnb3$ih9$1@news.albasani.net>
Source record: 30185

As you know, analog TV ends in 412 days (over the air analog tv signals.) Or, TV goes digital!

Would be a good time to sign up for the $40 coupon from the govt. to defray most of the cost of the converter box cost for your tv(s).

https://dtv2009.gov/

Regards,
JS

120. Re: OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:11:57 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9A19864A47F25VeebleFetzer@127.0.0.1>
Source record: 30186

assemblywizard@gmail.com (John Smith) wrote in
news:flgnb3$ih9$1@news.albasani.net:

> Would be a good time to sign up for the $40 coupon from the govt. to
> defray most of the cost of the converter box cost for your tv(s).

And it would be a good time to remember that the coupons are only good
for 90 days.

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

121. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:19:47 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flgo4osuq1@news.service.uci.edu>
Source record: 30187

Cecil Moore wrote:
> Jim Kelley wrote:
>
>> Cecil Moore wrote:
>>
>>> What I said is the voltage and
>>> current in a standing wave are *always* 90 degrees out of
>>> phase and it is impossible to generate heat when the voltage
>>> and current are 90 degrees out of phase.
>>
>>
>> So then shouldn't one expect coax to be heated uniformly along its
>> length at a high SWR?
>
>
> No, any and all heat is work done by traveling waves, not
> standing waves.

Perhaps you misunderstood the purpose of the question. Traveling waves are basically uniform in amplitude along the length of a transmission line. Why would any heating associated with a traveling wave anything other than uniformly distributed?

> As long as standing waves exist as standing
> waves, they are incapable of doing work or heating anything.
>
> You, of all people, should appreciate that since V*I*cos(90)
> equals zero for standing waves, absolutely no work can be
> performed by a standing wave. If the energy in a standing
> wave is used to provide work, the standing wave ceases to
> exist as it does at key-up.
>
> In trying to get any work out of V*I*cos(90)=0, blood out
> of a turnip comes to mind.

I have a piece of coax around here somewhere that I once burned up. I recall telling you about it. The insulation is bubbled and melted at half wavelength intervals. Please explain what particular aspect of a traveling wave might have caused that to happen.

Thanks and happy new year de ac6xg

122. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:20:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2uRej.35826$Pv2.17215@newssvr23.news.prodigy.net>
Source record: 30188

Keith Dysart wrote:
> But do not expect the power dissipated in the resistor
> to increase by the same amount as the "reflected power".
> In general, it will not. This is what calls into question
> whether the reflected wave actually contains energy.

Virtually every EM wave you see with your own eyes is
a reflection. For you to argue that there is no energy
in those reflected EM waves is ridiculous in the extreme.
Exactly how do your optic nerves detect photons that
contain no energy? Hey, maybe that's why you are
hallucinating. :-)

> This again calls into question the concept of power
> in a reflected wave, since there is no accounting
> for where that "power" goes.

That you fail to understand where the EM reflected wave
energy goes is simply ignorance. Please alleviate your
ignorance on the subject and the problem will go away.
Optical physicists have been tracking that energy for
centuries. Where have you been for the past three
centuries? :-)

I suggest you start with Eugene Hecht's chapter on
interference in "Optics". You will learn about
destructive interference, constructive interference,
and why those two must balance. All of the ExH energy
in an EM wave is conserved. You are simply ignorant
of how that energy is conserved.
--
73, Cecil http://www.w5dxp.com

123. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:22:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <5wRej.35828$Pv2.31@newssvr23.news.prodigy.net>
Source record: 30189

Keith Dysart wrote:
> Perhaps you could make an attempt at writing a clear
> description of the behaviour of such a system in terms
> of charge flow and storage.

Since you are unable to understand the more simple example
using only one sine wave, what makes you think you are
capable of understanding the more complex step function?
--
73, Cecil http://www.w5dxp.com

124. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:26:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KzRej.60194$eY.9779@newssvr13.news.prodigy.net>
Source record: 30191

Keith Dysart wrote:
> I am not sure you have the methodology quite correct.
> The source is not turned off; its output is set to 0.

That's exactly the same thing - turning a source off
and setting it to zero. I suggest you go back and
study the rules for superposition and get back to us.
Exactly the same concepts apply for an s-parameter
analysis. Please learn how s11 and s22 are measured
and get back to us.
--
73, Cecil http://www.w5dxp.com

125. Re: OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:27:01 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flgoi3$l9o$1@news.albasani.net>
Source record: 30190

Bert Hyman wrote:

>> ...
> And it would be a good time to remember that the coupons are only good
> for 90 days.
>

... or, for that matter, that 1/2 of all the allotted coupons are gone,
congress may choose to allot more (most likely will.)

Or, that the coupons will start being mailed Feb. 17, 2008 ...

Regards,
JS

126. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:32:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <QERej.60195$eY.47623@newssvr13.news.prodigy.net>
Source record: 30192

Keith Dysart wrote:
> But this same information has been repeatedly provided
> and ignored. Will this time be different?

I'm not the one who is ignoring that information.
Where are your calculations involving destructive
and constructive interference? Until you provide
that information, you are just blowing smoke.

When are you going to realize that the effective
reflection coefficient for a source supplying zero
power is |1.0|?

You can certainly use the reflection coefficient
that you posted but that is only a small part of
the total reflection story.
--
73, Cecil http://www.w5dxp.com

127. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:33:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <1GRej.60196$eY.55355@newssvr13.news.prodigy.net>
Source record: 30193

Keith Dysart wrote:
> Cecil Moore wrote:
>> There can be a large difference in the output
>> impedance of an amplifier designed to drive a 50 ohm
>> load and a 50 ohm Thevenin equivalent circuit.
>
> Then your Thevenin circuit is not an equivalent
> for the amplifier, is it?

No it isn't! So why are you trying to stuff it down
my throat?
--
73, Cecil http://www.w5dxp.com

128. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:35:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nnps4q76iev80@corp.supernews.com>
Source record: 30194

Roger wrote:
>
> In the last 24 hours, Roy posted a revised analysis that contains
> results useful here. He presented a voltage example that resulted in a
> steady state with steady state voltages 4 time initial value. Under
> superposition, this would equate to 4 times the initial power residing
> on the transmission line under the conditions presented. This concurs
> with other authors who predict power on the transmission line may exceed
> the delivered power due to reflected waves.
>
> Your equation "Ptot = Ps + Pr + 2*SQRT(Ps*Pr)cos(A)" is taken from
> illumination and radiation theory to describe power existing at a point
> in space near a reflecting surface. If we consider space to be a
> transmission media, and the reflecting surface to be a discontinuity in
> the transmission media, then we have a situation very similar to an
> electrical transmission line near a line discontinuity.
>
> It is entirely reasonable to consider that the reflection ratio between
> the space transmission media and the reflective surface would result in
> an storage factor equaling 4 times the peak power of the initial forward
> wave. By storage factor, I simply mean the ratio of forward power to
> total power on the transmission media under standing wave conditions.
>
> Under open circuit conditions, a half wavelength transmission line will
> have a storage factor of 2. Roy presented an example where the storage
> factor was 4. Perhaps the space transmission media also has a storage
> factor of 4 under some conditions, as described by "Ptot = Ps + Pr +
> 2*SQRT(Ps*Pr)cos(A)".

Power is neither stored nor conserved, so a power "storage factor" is meaningless. Consider a very simple example. Let's charge a capacitor with a constant current DC source. We'll apply 1 amp to a 1 farad capacitor for 1 second. During that time, the power begins at zero, since the capacitor voltage is zero, then it rises linearly to one watt as the capacitor voltage rises to one volt at the end of the one second period. So the average power over that period was 1/2 watt, and we put 1/2 joule of energy into the capacitor. (To confirm, the energy in a capacitor is 1/2 * C * V^2 = 1/2 joule.) Was power "put into" or stored in the capacitor?

Now we'll connect a 0.1 amp constant current load to the capacitor, in a direction that discharges it. We can use an ideal current source for this. The power measured at the capacitor or source terminals begins at 0.1 watt and drops linearly to zero as the capacitor discharges. The average is 0.05 watt. Why are we getting less power out than we put in?

"Where did the power go?" is heard over and over, and let me assure you, anyone taking care with his mathematics and logic is going to spend a long time looking for it. So in this capacitor problem, where did the power go?

It takes 10 seconds to discharge the capacitor, during which the load receives the 1/2 joule of energy stored in the capacitor. Energy was stored. Energy was conserved. Power was neither stored nor conserved.

Roy Lewallen, W7EL

129. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:36:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MIRej.60197$eY.49181@newssvr13.news.prodigy.net>
Source record: 30195

Keith Dysart wrote:
> You should really spend some time looking for a
> reference to support your assertion that "It will
> not be the impedance needed to calculate the
> reflection coefficient seen by the reflected
> waves."
>
> You will not find one.

You have got to be kidding, Keith. Even some of the
people on your side will admit that the effective
reflection coefficient for a source supplying zero
power is |1.0| nowhere near the value you calculated.
I believe that is what Roy said.
--
73, Cecil http://www.w5dxp.com

130. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:46:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <seqnn35hquphar3hvj5p67920ebaao743q@4ax.com>
Source record: 30196

On Wed, 02 Jan 2008 11:19:47 -0800, Jim Kelley <jwkelley@uci.edu>
wrote:

>I have a piece of coax around here somewhere that I once burned up. I
>recall telling you about it. The insulation is bubbled and melted at
>half wavelength intervals. Please explain what particular aspect of a
>traveling wave might have caused that to happen.

Head on collision?

73's
Richard Clark, KB7QHC

131. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:48:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fURej.35838$Pv2.27632@newssvr23.news.prodigy.net>
Source record: 30197

Keith Dysart wrote:
> I assume that you have not provided a reference to support
> this assertion because you have not been able to find one.

I provided the reference a number of times and you
chose to ignore it. The reference is the chapter on
interference in "Optics", by Hecht.

> Unfortunately optics do not do well at explaining
> transmission lines since they do not extend down
> to DC.

On the contrary, most physics books on "Light" do
indeed extend down to DC. I'm surprised you don't
know that. "Light" and "visible light" are two
entirely different subjects. "Light" covers all
EM waves all the way down to DC.

> I have yet to find anything about transmission lines
> that needs constructive and destructive interference
> for explanation.

Well, there's your entire problem in a nutshell. If
you don't ever look for something because you don't
"feel the need", you will never find it. Please don't
blame anyone else for your feelings. And you are not
alone. My mother never "felt the need" to understand
anything except God.

> I am unsure why some are content to constrain
> themselves to solution techniques and explanations
> that only work on the special case of sinusoids.

Sinusoids are a test of your comprehension level.
Because we know if you cannot even comprehend the
most simple case, you have no hope of comprehending
anything more complicated. Don't feel bad. My
girlfriend cannot comprehend sinusoids either.
--
73, Cecil http://www.w5dxp.com

132. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:51:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ulqnn3pnuvif9hvg0inlkbvttbvh53rb13@4ax.com>
Source record: 30198

On Wed, 02 Jan 2008 13:22:42 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Keith Dysart wrote:
>> Perhaps you could make an attempt at writing a clear
>> description of the behaviour of such a system in terms
>> of charge flow and storage.
>
>Since you are unable to understand the more simple example
>using only one sine wave, what makes you think you are
>capable of understanding the more complex step function?

For extra credit, try explaining why a traveling wave antenna has
standing waves on it! :-0

133. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:54:11 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flgq59$1r7$1@news.service.uci.edu>
Source record: 30202

Keith Dysart wrote:

> On Dec 27, 10:53 am, Cecil Moore <nos...@w5dxp.com> wrote:

>>But I don't
>>comprehend the utility of the following:
>>
>>The instantaneous value of voltage is 10 volts.
>>The instantaneous value of current is 1 amp.
>>The voltage and current are in phase.
>>
>>The instantaneous power is 10 joules per 0 sec?
>
>
> There is definitely a problem with that.

There is indeed a problem. The problem is that one amp does not equal
one coulomb per 0 sec.

73, ac6xg

134. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:54:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nnr0md191fced@corp.supernews.com>
Source record: 30199

People who are having trouble with the concept of a -1 voltage reflection coefficient for a perfect voltage source might benefit from the following exercise:

Look at my first analysis, where the perfect source was connected directly to the transmission line. Make no assumptions about the impedance or reflection coefficient it presents. Then, when the reflection of the initial forward wave returns, calculate the value the re-reflected wave must have in order to make the sum of the waves present, which is the line input voltage, equal to the perfect source voltage. The voltage of the perfect source can't change, by definition. The ratio of the re-reflected wave to the returning wave is the voltage reflection coefficient (since we're dealing with voltage waves).

I'll do it for you:

The forward wave was vf(t, x) = sin(wt - x)
The returning wave was vr(t, x) = sin(wt + x)

The returning wave will strike the input end of the line and create a new forward wave with value vf2(t, 0) = Gs * vr(t, 0) at the input, where Gs is the source voltage reflection coefficient.

Before the first forward wave returns, we have only vf(t, 0) = sin(wt) at the input end of the line. This is of course the source voltage.

After the wave arrives and re-reflects, we have at the input end

vtot(t, 0) = vf(t, 0) + vr(t, 0) + vf2(t, 0)
= vf(t, 0) + vr(t, 0) * (1 + Gs)

This must equal the source voltage, which is the line input voltage, and cannot change. So plugging in values:

sin(wt) = sin(wt) + sin(wt) * (1 + Gs)

Solving for Gs => Gs = -1

I have made no statement about the "impedance" of the perfect source. The only thing I've required is that the voltage remains constant, which is the very definition of a perfect source. You can do a similar exercise to show that the voltage reflection coefficient of a perfect current source is +1.

Roy Lewallen, W7EL

135. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:59:23 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nnr90ep5mbpdc@corp.supernews.com>
Source record: 30200

Jim Kelley wrote:
>
> I have a piece of coax around here somewhere that I once burned up. I
> recall telling you about it. The insulation is bubbled and melted at
> half wavelength intervals. Please explain what particular aspect of a
> traveling wave might have caused that to happen.

It's the consequence of having *two* traveling waves, which occurs any time the line isn't terminated with its characteristic impedance. Betcha yours wasn't.

Roy Lewallen, W7EL

136. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 19:59:49 UTC
From: charlie <wehatespam@wymsey.co.uk>
Message-ID: <1qOdnbkd2dqpcObanZ2dnUVZ8q2dnZ2d@pipex.net>
Source record: 30201

AI4QJ wrote:
<SNIP>
>
> More seriously, my theory is that this MI5 is a prank that started at the
> psychology department of some UK university and the students carry it on as
> a tradition year after year. They seem very adept at making themselves
> unflilterable.
>
> If MI5 could only stop him from coming back they would have 100% of my
> support ;-)
>
>
See http://www.five.org.uk/ or http://www.mi5.com/ Beware, there
tons of material there. This is the work of one very unwell man.

Charlie.

--
M0WYM
www.radiowymsey.org

137. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 20:14:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <XgSej.35842$Pv2.17759@newssvr23.news.prodigy.net>
Source record: 30203

Keith Dysart wrote:
> Cecil Moore rote:
> But why don't you just say so clearly.

I explained why it only applies to coherent
waves. Every model has its limitations, even
yours unless you are presenting a theory of
everything.

> Given that optical EM waves are only capable of
> solving a subset of the uses of transmission lines,
> it is not obvious why I should study them when
> I can invest in learning approaches that will do
> the whole job.

That's not a given and is in fact a falsehood.
RF waves are a subset of light waves. Perhaps
you are erroneously confusing "light waves" with
"visible light waves".

When a light wave is red-shifted to 10^12 times
its original wavelength, does it cease to be a
light wave? Feel free to answer yes or no.

> Well, others more knowledgeable than I in optics
> have disputed whether *your* approach accurately
> represents those described in the textbooks.

The last resort is an argumentium ad verecundiam,
an appeal to reverence/authority. Who, in particular,
do you consider to be the High Priest of r.r.a.a?

The technical truth will win out in the long run.
--
73, Cecil http://www.w5dxp.com

138. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 20:28:19 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flgs58$3r8$1@news.service.uci.edu>
Source record: 30204

Cecil Moore wrote:

> Keith Dysart wrote:
>
>> Cecil Moore wrote:
>>
>>> The instantaneous power is 10 joules per 0 sec?
>>
>>
>> There is definitely a problem with that.
>>
>> But an instantaneous value of 10 joules/sec; that
>> is useful.
>
>
> But that instantaneous instant is NOT one second
> long.

A rate of 10 joules/sec is valid at any time in which there is a 10 volt differential and a current flowing at a rate of one coulomb per second (and a half coulomb in a half second, and a thousandth of coulomb in a millisecond, and like that).

> Exactly how long is that instantaneous
> instant? 1 ms? 1 us? 1 ns? more? less?

That is a question more typically asked by someone who has never taken a calculus class.

73, ac6xg

139. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 20:35:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <UzSej.35845$Pv2.21093@newssvr23.news.prodigy.net>
Source record: 30205

Roger wrote:
> Perhaps the space transmission media also has a storage
> factor of 4 under some conditions, as described by "Ptot = Ps + Pr +
> 2*SQRT(Ps*Pr)cos(A)".

Visualize visible interference rings between two equal
waves each of P magnitude, where the darkest of the rings
is completely black. If it is not obvious, the power in
the brightest of the rings would have to be 4P for the
energy to average out to the 2P in the source waves. That's
all there is to "black" destructive interference vs "bright"
constructive interference. (4P+0P)/2 = 2P = average power
It's a no-brainer for most folks.

On the source side of a Z0-match, the reflections are "black".
On the load side of a Z0-match with reflections, the forward
wave is "bright". What could be simpler?
--
73, Cecil http://www.w5dxp.com

140. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 20:42:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <sGSej.35846$Pv2.14277@newssvr23.news.prodigy.net>
Source record: 30206

Richard Clark wrote:
> I committed several hundred pages to fractals in the past, ...

Richard, why didn't you commit several hundred pages
to your premise that reflections from non-reflective
glass are brighter than the surface of the sun?
--
73, Cecil http://www.w5dxp.com

141. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 20:44:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <aJSej.35847$Pv2.11423@newssvr23.news.prodigy.net>
Source record: 30207

Keith Dysart wrote:
> In a stub driven with a step function, where is the
> energy stored?

Depends upon which valid model one is using.

1. Reflection Model - the energy is stored in the
forward and reflected traveling waves.

2. The LCLCLC transmission line model - the energy
is alternately stored in the L's and C's.

3. The Sloshing Model - I'll let Roy handle that one.
--
73, Cecil http://www.w5dxp.com

142. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 20:55:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <nbunn3tnlj5lset1m3ag3mijcf9e72dbl5@4ax.com>
Source record: 30208

On Wed, 02 Jan 2008 14:42:01 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Richard Clark wrote:
>> I committed several hundred pages to fractals in the past, ...
>
>Richard, why didn't you commit several hundred pages
>to your premise that reflections from non-reflective
>glass are brighter than the surface of the sun?

Can't get past the trauma of your sunburn, can you? :-)

What do you see when you look in a conjugate mirror? (have to provide
two questions in the hope you can score 50% - MENSA standards).

143. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 21:10:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <e5Tej.82126$Um6.66806@newssvr12.news.prodigy.net>
Source record: 30209

Jim Kelley wrote:
> I have a piece of coax around here somewhere that I once burned up. I
> recall telling you about it. The insulation is bubbled and melted at
> half wavelength intervals. Please explain what particular aspect of a
> traveling wave might have caused that to happen.

It was the simple scalar addition of two traveling waves
that caused it to happen. Since standing waves contain no
real power, they cannot directly supply any real power.

Only traveling waves, with their voltages and currents
in phase, can supply real power. Each traveling wave
delivers some of its energy which is converted into heat.

If you believe that steady-state standing waves can supply
real power, please explain how real power can be obtained
when the voltage and current are 90 degrees out of phase.
--
73, Cecil http://www.w5dxp.com

144. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 21:16:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FaTej.82128$Um6.31988@newssvr12.news.prodigy.net>
Source record: 30210

Roy Lewallen wrote:
> "Where did the power go?"

Or more correctly, where did the energy go?
Was it destroyed or created? (Rhetorical)
--
73, Cecil http://www.w5dxp.com

145. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 21:19:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ZdTej.82129$Um6.56459@newssvr12.news.prodigy.net>
Source record: 30211

Richard Clark wrote:
> For extra credit, try explaining why a traveling wave antenna has
> standing waves on it! :-0

Ideal traveling-wave antennas have no standing waves.
You are simply pointing out the obvious difference
between the ideal and the real world. So what new?
--
73, Cecil http://www.w5dxp.com

146. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 21:23:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xhTej.82130$Um6.20761@newssvr12.news.prodigy.net>
Source record: 30212

Roy Lewallen wrote:
> Jim Kelley wrote:
>> I have a piece of coax around here somewhere that I once burned up. I
>> recall telling you about it. The insulation is bubbled and melted at
>> half wavelength intervals. Please explain what particular aspect of a
>> traveling wave might have caused that to happen.
>
> It's the consequence of having *two* traveling waves, ...

Funny how Roy changes his tune from posting to posting, huh?

Consider his exactly opposite response to measuring the
delay through a 75m loading coil using those same two
traveling waves. :-)
--
73, Cecil http://www.w5dxp.com

147. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 21:26:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8kTej.82131$Um6.23430@newssvr12.news.prodigy.net>
Source record: 30213

Jim Kelley wrote:
> That is a question more typically asked by someone who has never taken a
> calculus class.

The answer is typically asserted by someone who doesn't
know the difference between joules and joules per second.
--
73, Cecil http://www.w5dxp.com

148. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 21:55:38 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <uLTej.364509$kj1.123458@bgtnsc04-news.ops.worldnet.att.net>
Source record: 30214

Cecil Moore wrote:
> Gene Fuller wrote:
>> For future reference, however, just remember: Fields first, then power
>> or energy. That's the way superposition really works.
>
> Way back before optical physicists could measure light
> wave fields, they were dealing with reflectance,
> transmittance, and irradiance - all involving power
> or energy. They are still using those concepts today
> proven valid over the past centuries. Optical physicists
> calculate the fields *AFTER* measuring the power density
> and they get correct consistent answers.

"Way back" is irrelevant. One only needs to open a serious text book on Optics, such as Born and Wolf, to see how optical physicists perform analysis today.

>
> Quoting HP AN 95-1: "The previous four equations show that
> s-parameters are simply related to power gain and mismatch
> loss, quantities which are often of more interest than the
> corresponding voltage functions."

I agree with this statement completely (surprised??). S-parameter analysis is very useful. However, the "corresponding voltage functions" are equally valid, even if not as "interesting". What you might also notice in AN 95-1 is that there is no mention of incident and reflected waves on a transmission line, each carrying energy (or power or whatever you prefer), and passing like ships in the night.

You like to talk about conservation of energy, implying that your "powerful" reflected wave model is essential to meeting the conservation of energy requirement. In fact, your model is a poster child for the violation of energy conservation. Electromagnetic energy, like any energy, is a scalar quantity, and it is only positive. It is not possible to "net" the non-zero energy contributed from your counter-traveling waves to zero. The direction of the wave propagation does not change the sign of the energy. Be careful here; energy is *not* the same as the energy flux or Poynting vector. Don't mix terms that have totally different units. What *can* be assigned negative values are the fields. (Voltage and current are not exactly "fields", but they will work for these transmission line examples.) A "net" of zero volts or current is exactly what happens at the standing wave nodes resulting from the counter-traveling waves. After you have done the superposition correctly, using fields, not energy or power, then you can easily

determine the energy and power state as needed. Conservation of energy will be automatically satisfied, assuming no mathematical blunders. The Maxwell equations would be pretty useless if they did not provide conservation of energy.

For future reference, just remember: Fields first, then power or energy. That's the way superposition really works.

73,
Gene
W4SZ

149. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 21:57:30 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flh1cf$971$1@news.service.uci.edu>
Source record: 30216

Keith Dysart wrote:

> On Dec 29, 2:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>
>>Roger wrote:
>>
>>>Are there reflections at point "+"? Traveling waves going in opposite
>>>directions must pass here, therefore they must either pass through one
>>>another, or reflect off one another.
>>
>>In the absence of a real physical impedance discontinuity,
>>they cannot "reflect off one another". In a constant Z0 transmission
>>line, reflections can only occur at the ends of the line and only
>>then at an impedance discontinuity.
>
>
> Roger: an astute observation. And Cecil thinks he has
> the ONLY answer. Allow me to provide an alternative.
>
> Many years ago, when I first encountered this news group
> and started really learning about transmission lines, I
> found it useful to consider not only sinusoidallly
> excited transmission lines, but also pulse excitation.
> It sometimes helps remove some of the confusion and
> clarify the thinking. So for this example, I will use
> pulses.
>
> Consider a 50 ohm transmission line that is 4 seconds
> long with a pulse generator at one end and a 50 ohm
> resistor at the other.
>
> The pulse generator generates a single 1 second pulse
> of 50 volts into the line. Before and after the pulse
> its output voltage is 0. While generating the pulse,
> 1 amp (1 coulomb/s) is being put into the line, so
> the generator is providing 50 watts to the line.
>
> After one second the pulse is completely in the line.
> The pulse is one second long, contains 1 coulomb of
> charge and 50 joules of energy. It is 50 volts with
> 1 amp: 50 watts.
>
> Let's examine the midpoint (2 second) on the line.
> At two seconds the leading edge of the pulse arrives

> at the midpoint. The voltage rises to 50 volts and
> the current becomes 1 amp. One second later, the
> voltage drops back to 0, as does the current. The
> charge and the energy have completely passed the
> midpoint.
>
> When the pulse reaches the end of the line, 50
> joules are dissipated in the terminating resistor.
>
> Notice a key point about this description. It is
> completely in terms of charge. There is not a single
> mention of EM waves, travelling or otherwise.
>
> Now we expand the experiment by placing a pulse
> generator at each end of the line and triggering
> them to each generate a 50V one second pulse at
> the same time. So after one second a pulse has
> completely entered each end of the line and these
> pulse are racing towards each other at the speed
> of light (in the line). In another second these
> pulses will collide at the middle of the line.
>
> What will happen? Recall one of the basics about
> charge: like charge repel. So it is no surprise
> that these two pulses of charge bounce off each
> and head back from where they came. At the center
> of the line, for one second the voltage is 100 V
> (50 V from each pulse), while the current is
> always zero. No charge crossed the mid-point. No
> energy crossed the mid-point (how could it if
> the current is always zero (i.e. no charge
> moves) at the mid-point.
>
> It is a minor extension to have this model deal
> with sinusoidal excitation.
>
> What happens when these pulses arrive back at the
> generator? This depends on generator output
> impedance. If it is 50 ohms (i.e. equal to Z0),
> then there is no reflection and 1 joule is
> dissipated in each generator. Other values
> of impedance result in more complicated
> behaviour.
>
> So do the travelling waves "reflect" off each
> other? Save the term "reflect" for those cases
> where there is an impedance discontinuity and
> use "bounce" for those cases where no energy
> is crossing a point and even Cecil may be
> happy. But bounce it does.

>
> ...Keith

It's fairly safe to make this argument when both pulses are identical.
I challenge you to obtain this result when they are not. :-)

73, Jim AC6XG

150. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 21:59:15 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13no29obtnuk9e@corp.supernews.com>
Source record: 30215

Keith Dysart wrote:
> . . .
> But do not expect the power dissipated in the resistor
> to increase by the same amount as the "reflected power".
> In general, it will not. This is what calls into question
> whether the reflected wave actually contains energy.
>
> Do some simple examples with step functions. The math
> is simpler than with sinusoids and the results do not
> depend on the phase of the returning wave, but simply
> on when the reflected step arrives bach at the source.
>
> Examine the system with the following terminations on
> the line: open, shorted, impedance greater than Z0,
> and impedance less than Z0.
>
> Because excitation with a step function settles to
> the DC values, the final steady state condition is
> easy to compute. Just ignore the transmission line
> and assume the termination is connected directly
> to the Thevenin generator. When the line is present,
> it takes longer to settle, but the final state will
> be the same with the line having a constant voltage
> equal to the voltage output of the generator which
> will be the same as the voltage applied to the load.
>
> Then do the same again, but use a Norton source. You
> will find that conditions which increase the dissipation
> in the resistor of the Thevenin equivalent circuit
> reduce the dissipation in the resistor of the Norton
> equivalent circuit and vice versa.
>
> This again calls into question the concept of power
> in a reflected wave, since there is no accounting
> for where that "power" goes.

I heartily second Keith's recommendations.

For some simple illustrations of one problem with chasing "power waves" around, see http://eznec.com/misc/Food_for_thought.pdf, particularly the "Forward and Reverse Power" section beginning on p. 6 and the table on p. 8. This was originally written and posted more than five years ago and, to my knowledge, the problems it raises with the concept of "power waves" still haven't been addressed in the thousands of postings on the topic in the intervening time.

Roy Lewallen, W7EL

151. Re: OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 22:02:12 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A198ECB29FBHuckleberrybigvalley@198.186.192.196>
Source record: 30217

```
>
>> Would be a good time to sign up for the $40 coupon from the govt. to
>> defray most of the cost of the converter box cost for your tv(s).
>
> And it would be a good time to remember that the coupons are only good
> for 90 days.
>

Yes, 90 days from the date your coupon is issued and mailed to you.
```

152. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 22:42:05 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <1rUej.364691$kj1.128669@bgtnsc04-news.ops.worldnet.att.net>
Source record: 30218

Keith Dysart wrote:
> On Jan 2, 9:59 am, Cecil Moore <nos...@w5dxp.com> wrote:
>
>>
>> Please reference a good book on optical EM waves
>> for a complete answer.
>>
>
>>
>> It is a body of physics knowledge that has existed
>> since long before you were born. It should have
>> been covered in your Physics 201 class. That you
>> are apparently unaware of such is a display of
>> basic ignorance of the science of EM waves.
>>
>
>>
>> The basic theory applies specifically to coherent
>> waves (which are the only EM waves capable of truly
>> interfering). CW RF waves are close enough to ideal
>> coherency that the theory works well. It would no
>> doubt work for a coherent Fourier series as well
>> but I don't want to spend the time necessary
>> to prove that assertion.
>>

>> Again, it is not *my* approach and is described in any
>> textbook on "Optics" including Hecht and Born & Wolf.
>>
> Well, others more knowledgeable than I in optics
> have disputed whether *your* approach accurately
> represents those described in the textbooks.
>
> In any case, being applicable only to sinusoids
> limits the general applicability to transmission
> lines which happily work at DC.
>
> ...Keith

It is sadly amusing that Cecil takes so much comfort in optics. The
electromagnetic theory for optics (e.g. somewhere in the vicinity of
visible light) is of course identical to the electromagnetic theory for
HF. The preferred applications and shortcuts are sometimes a bit
different, but that is simply a matter of convenience and of no
importance here.

I have a couple of editions of Born and Wolf, which is a high level reference and often considered the standard for optics. I have been unable to find even one mention of "constructive" or "destructive" interference in their writing. Of course they delve into the topic of interference in excruciating detail. They don't, however, ascribe any particular mysticism or magic to interference. It is simply what happens when the wave fields are superposed.

The more popular accounts, such as the FSU Java applet on interference, the Melles-Griot web site, and apparently the text by Hecht, stay a bit further from rigorous analysis. Therefore they resort to handwaving requirements such as destructive must be balanced by constructive, blah, blah, blah.

Adding the voltages in the manner you and Roy have done is precisely the same operation as Cecil's interference method, without the emotional baggage.

73,
Gene
W4SZ

153. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 23:04:26 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5f5on3d7pegekej6s8crh9aiiojlo4mqd1@4ax.com>
Source record: 30219

On Wed, 02 Jan 2008 21:19:53 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:
>> For extra credit, try explaining why a traveling wave antenna has
>> standing waves on it! :-0

>Ideal traveling-wave antennas have no standing waves.

Ideal? You mean your dream of desires. Schoolgirl stuff for diaries
under pillows, not technical discussion (not that I'm surprised, I
actually enjoy your tendency toward heart-throb writing).

>You are simply pointing out the obvious difference
>between the ideal and the real world. So what new?

What new? What new shows us you don't get any extra credit, that what
new! You can try again, if you wish. That is, if you can resuscitate
the corpse you strangled when your "purpose" went off the rails.

+ +
|
---

154. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 23:47:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <HoVej.85904$YL5.84704@newssvr29.news.prodigy.net>
Source record: 30220

Gene Fuller wrote:
> "Way back" is irrelevant. One only needs to open a serious text book on
> Optics, such as Born and Wolf, to see how optical physicists perform
> analysis today.

The readers may be interested in how it is done today.
Please tell us how the phase of light is measured today.

> What you might also notice in AN 95-1 is that there
> is no mention of incident and reflected ...

Sorry Gene, I'm tired of wasting my time proving that you
are lying. Anyone who wants to prove how unethical you are
can do so by accessing:

http://www.ecs.umass.edu/ece/labs/antlab/HP_AppNote95-1_S-parameters.pdf

and searching for "incident" and "reflected".
<Lots of unethical BS deleted after that.>
--
73, Cecil http://www.w5dxp.com

155. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 23:51:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8sVej.2616$EI5.509@newssvr22.news.prodigy.net>
Source record: 30221

Roy Lewallen wrote:
> I heartily second Keith's recommendations.

Of course you two want to deny that reflected waves
contain any energy at all. If there is any energy
in reflected waves, your house-of-cards collapses.

So Roy, please explain how all those reflected
waves that are incident upon your optic nerves
don't contain any energy. (I'm not going to hold
my breath for your answer.)
--
73, Cecil http://www.w5dxp.com

156. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-02 23:52:59 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flh851fpr1@news.service.uci.edu>
Source record: 30222

Cecil Moore wrote:
> Jim Kelley wrote:
>
>> I have a piece of coax around here somewhere that I once burned up. I
>> recall telling you about it. The insulation is bubbled and melted at
>> half wavelength intervals. Please explain what particular aspect of a
>> traveling wave might have caused that to happen.
>
>
> It was the simple scalar addition of two traveling waves
> that caused it to happen.

'Addition' is not a cause. What is the actual cause - i.e. what
exactly causes coax to melt at half wavelength intervals?

> Since standing waves contain no
> real power, they cannot directly supply any real power.

To be consistent with the definitions EM waves don't actually
'contain' power, but it is certainly true that interference patterns
don't propagate and transfer energy.

73, ac6xg

157. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 00:04:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <eEVej.85906$YL5.26845@newssvr29.news.prodigy.net>
Source record: 30223

Gene Fuller wrote:
> The
> electromagnetic theory for optics (e.g. somewhere in the vicinity of
> visible light) is of course identical to the electromagnetic theory for
> HF.

Thanks Gene, I never thought you would ever admit that
fact of physics. Now that you have, your entire argument
collapses. If interference can happen in free space, it
certainly can happen in a transmission line.

> I have a couple of editions of Born and Wolf, which is a high level
> reference and often considered the standard for optics. I have been
> unable to find even one mention of "constructive" or "destructive"
> interference in their writing.

Try "Optics" by Hecht. He devotes an entire chapter
to interference. Hecht mentions destructive and constructive
interference dozens of times. I can quote page after page
of such if you want me to. Feel free to dispute Hecht if
you want, but that is your problem, not mine.

> Of course they delve into the topic of
> interference in excruciating detail. They don't, however, ascribe any
> particular mysticism or magic to interference. It is simply what happens
> when the wave fields are superposed.

Neither do I. It is just what happens when the wave fields
are superposed. The destructive interference must balance
the constructive interference to avoid violation of the
conservation of energy principle.
--
73, Cecil http://www.w5dxp.com

158. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 00:10:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <SJVej.85910$YL5.71391@newssvr29.news.prodigy.net>
Source record: 30224

Jim Kelley wrote:
> 'Addition' is not a cause.

Superposition is not a cause????
Superposition *IS* addition of phasors.
--
73, Cecil http://www.w5dxp.com

159. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 00:23:02 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flh9tchjb1@news.service.uci.edu>
Source record: 30225

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> 'Addition' is not a cause.
>
>
> Superposition is not a cause????

> Superposition *IS* addition of phasors.

Like addition, superposition is a mathematical operation. There is without question a mathematical result to most mathematical operations. But what does this operation itself actually cause in our case? A physical result has been obtained, but what is its exact cause? I don't think 'addition' is the best answer.

73, ac6xg

160. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 00:38:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nobkhrr9lkfc@corp.supernews.com>
Source record: 30226

I'm top posting this so readers won't have to scroll down to see it, but so I can include the original posting completely as a reference.

Keith, you've presented a very good and well thought out argument. But I'm not willing to embrace it without a lot of further critical thought. Some of the things I find disturbing are:

1. There are no mathematics to quantitatively describe the phenomenon.
2. I don't understand the mechanism which causes waves to bounce.
3. No test has been proposed which gives measurable results that will be different if this phenomenon exists than if it doesn't. (I acknowledge your proposed test but don't believe it fits in this category.)
4. I'm skeptical that this mechanism wouldn't cause visible distortion when dissimilar waves collide. But without any describing mathematics or physical basis for the phenomenon, there's no way to predict what should or shouldn't occur.
5. Although the argument about no energy crossing the zero-current node is compelling, I don't feel that an adequate argument has been given to justify the wave "bouncing" theory over all other possible explanations.

None of these make an argument with your logical development, although I think I might be able to do that too. But I'm very reluctant to accept a view of wave interaction that's apparently contrary to established and completely successful theory and one, if true, might have profound effects on our understanding of how things work. So frankly I'm looking hard for a flaw in your argument. And I may have found one.

A large part of the argument seems to revolve around a single point in a perfect transmission line, where the current is exactly zero. This is an infinitesimal point on a perfect line, so some anomalous things might be expected to happen there.

Let's consider a transmission line as a huge number of series inductors and shunt capacitors, each an ideal lumped device. In the ideal case, of course, there would be an infinite number of each, and each would have an infinitesimal value. However, the LC product and ratio must remain correct even in the limiting case. Each L and C is an ideal device, so the current into one terminal of an inductor has to equal the current out of the other. A consequence of this is that either we have a whole inductor with zero current, or the zero current point occurs between inductors, at a node to which a capacitor is connected. I think we'll get the same result using either scenario, but let's consider the second.

If we analyze this situation carefully, we'll find that the inductor on each side of the zero-current point does have a finite current, equal in

amplitude and flowing in opposite directions. So for half of the cycle, both are putting positive charge in the capacitor, and for the other half of the cycle, both are removing charge. The capacitor voltage goes up and down as a result, as we can also see by looking at the voltage at this zero-current point. So current from both sides is contributing to the capacitor charge, and turning off either one would change the line conditions. Any change in the current from the inductor on one side would change the capacitor voltage, and hence the current on the other side. So there is an interchange of information from one side to the other. Each inductor is conveying energy to the capacitor, which is storing and returning it.

Ok, so let's break the capacitor into two, each being half the original value, and constrain each inductor to deliver charge only to "its" capacitor. The wire between the capacitors carries no current because the capacitors always have equal voltages, and can be cut with no effect.

When there was one capacitor, it shared energy from both sides. When we broke it into two, there was no mixing of energy from either side. Why might one be a better description of reality than the other? It looks to me like the argument devolves into speculation about how small the "point" is at which the current drops to zero.

It would be instructive to see what happens as, for example, the load resistance is increased toward infinity or decreased toward zero arbitrarily closely, but not at the point at which it's actually there. If the "bouncing" phenomenon is necessary only to explain the limiting case of infinite SWR on a perfect line but no others, then an argument can be made that it's not necessary at all. I suspect this is the case.

I agree with your argument about two sources energized in turn, and have used that argument a number of times myself to refute the notion of superposing powers. Once two voltage or current waves occupy the same space, the only reality is the sum. We're free to split them up into traveling waves or any other combination we might dream up, with the sole requirement being that the sum of all our creations equals the correct total. (And the behavior of waves you're describing seemingly go beyond this.) The advantage to the non-interacting traveling wave model is that it so neatly predicts transient phenomena such as TDR and run-up to steady state. I spent a number of years designing TDR circuitry, interfacing with customers, and on several occasions developing and teaching classes on TDR techniques, without ever encountering any phenomena requiring explanations beyond classical traveling wave theory. So you can understand my reluctance to embrace it based on a problem with energy transfer across a single infinitesimal point in an ideal line.

Roy Lewallen, W7EL

Keith Dysart wrote:
> On Dec 30 2007, 6:18 pm, Roy Lewallen <w...@eznec.com> wrote:
>> Keith Dysart wrote:
>>

>>> I predict that the pulse arriving at the left end will
>>> have the same voltage, current and energy profile as
>>> the pulse launched at the right end and the pulse
>>> arriving at the right end will be similar to the
>>> one launched at the left.
>>> They will appear exactly AS IF they had passed
>>> through each other.
>>> The difficulty with saying THE pulses passed
>>> through each other arises with the energy. The
>>> energy profile of the pulse arriving at the left
>>> will look exactly like that of the one launched
>>> from the right so it will seem that the energy
>>> travelled all the way down the line for delivery
>>> at the far end. And yet, from the experiment above,
>>> when the pulses arriving from each end have the
>>> same shape, no energy crosses the middle of the
>>> line.
>>> So it would seem that the energy that actually
>>> crosses the middle during the collision is
>>> exacly the amount of energy that is needed to
>>> reconstruct the pulses on each side after the
>>> collision.
>>> If all the energy that is launched at one end
>>> does not travel to the other end, then I am
>>> not comfortable saying that THE pulse travelled
>>> from one end to the other.
>>> But I have no problem saying that the system
>>> behaves AS IF the pulses travelled from one
>>> end to the other.
>> You said that:
>>
>> > What will happen? Recall one of the basics about
>> > charge: like charge repel. So it is no surprise
>> > that these two pulses of charge bounce off each
>> > and head back from where they came.
>>
>> Yet it sounds like you are saying that despite this charge repulsion and
>> bouncing of waves off each other, each wave appears to be completely
>> unaltered by the other? It seems to me that surely we would detect some
>> trace of this profound effect.
>>
>>> . . .
>> Is there any test you can conceive of which would produce different
>> measurable results if the pulses were repelling and bouncing off each
>> other or just passing by without noticing the other?
>>
>> There are equations describing system behavior on the assumption of no
>> wave interaction, and these equations accurately predict all measurable
>> aspects of line behavior without exception. Have you developed equations
>> based on this charge interaction which predict line behavior with

>> equal accuracy and universal applicability?
>
> No equations. I expect that such equations would be more complex
> than those describing the behaviour using superposition. Since
> the existing equations and techniques for analysis are tractable
> and produce accurate results, I am not motivated to develop an
> alternate set with lower utility.
>
> And yet the "no interaction" model, while accurately predicting
> the behaviour has some weaknesses with explaining what is
> happening. It is, I suggest, these weaknesses that help lead
> some so far astray.
>
> To illustrate some of these weaknesses, consider an example
> where a step function from a Z0 matched generator is applied
> to a transmission line open at the far end. Charge begins to
> flow into the line. The ratio of the current to voltage on
> the line is defined by the distributed inductance and
> capacitance. The inductance is resisting the change in current
> which causes a voltage to charge the capacitance. A voltage
> step (call this V for later use) propagates down the line
> at the speed of light. In front of this step, the voltage,
> current and charge in the line is zero. After the step, the
> capacitance is charged to the voltage and charge is flowing
> in the inductance.
>
> The step function eventually reaches the open end where
> the current can no longer flow. The inductance insists
> that the current continue until the capacitance at the
> end of the line is charged to the voltage which will stop
> the flow. This voltage is double the voltage of the step
> function applied to the line (i.e 2*V). Once the
> infinitesimal capacitance at the end of the line is
> charged, the current now has to stop just a bit earlier
> and this charges the inifinitesimal capacitance a bit
> further from the end. So a step in the voltage propagates
> back along the line towards the source. In front of this
> step, current is still flowing. Behind the step, the
> current is zero and voltage is 2*V. The charge that
> is continuing to flow from the source is being used
> to charge the distributed capacitance of the line.
>
> The voltage that is propagating backwards along the
> line has the value 2*V, but this can also be viewed as
> a step of voltage V added to the already present voltage
> V. The latter view is the one that aligns with the "no
> interaction" model; the total voltage on the line is
> the sum of the forward voltage V and the reverse
> voltage V or 2*V.
>

> In this model, the step function has propagated to the
> end, been reflected and is now propagating backwards.
> Implicit in this description is that the step continues
> to flow to the end of the line and be reflected as
> the leading edge travels back to the source.
>
> And this is the major weakness in the model. It claims
> the step function is still flowing in the portion of
> the line that has a voltage of 2*V and *zero* current.
>
> Now without a doubt, when the voltages and currents
> of the forward and reverse step function are summed,
> the resulting totals are correct. But it seems to
> me that this is just applying the techniques of
> superposition. And when we do superposition on a
> basic circuit, we get the correct totals for the
> voltages and currents of the elements but we do
> not assign any particular meaning to the partial
> results.
>
> A trivial example is connecting to 10 volt batteries
> in parallel through a .001 ohm resistor. The partial
> results show 10000 amps flowing in each direction
> in the resistor with a total of 0. But I do not
> think that anyone assigns significance to the 10000
> amp intermediate result. Everyone does agree that
> the actual current in the resistor is zero.
>
> The "no interaction" model, while just being
> superposition, seems to lend itself to having
> great significance applied to the intermediate
> results.
>
> Partially this may be due to poor definitions. If the
> wave is defined as just being a voltage wave, then
> all is well.
>
> But, for example, when looking at a solitary pulse,
> it is easy (and accurate) to view the wave as having
> more than just voltage. One can compute the charge,
> the current, the power, and the energy. But when
> two waves are simultaneously present, it is only
> legal to superpose the voltage and the current.
> But it is obvious that a solitary wave has voltage,
> current, power, etc. But when two waves are present
> it is not legal to.... etc., etc.
> The "no interaction" model does not seem to resolve
> this conflict well, and some are lead astray.
>
> And it was this conflict that lead me to look for

> other ways of thinking about the system.
>
> Earlier you asked for an experiment. How about this
> one....
>
> Take two step function generators, one at each end
> of a transmission line. Start a step from each end
> at the same time. When the steps collide in the
> middle, the steps can be viewed as passing each
> other without interaction, or reversing and
> propagating back to their respective sources. We
> can measure the current at the middle of the line
> and observe that it is always 0. Therefore the
> charge that is filling the capacitance and causing
> the voltage step which is propagating back towards
> each generator must be coming from the generator
> to which the step is propagatig because no charge
> is crossing the middle of the line.
>
> Do you like it?
>
> ...Keith

161. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 00:41:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nobpggn8mrm8a@corp.supernews.com>
Source record: 30227

Jim Kelley wrote:
>
> It's fairly safe to make this argument when both pulses are identical.
> I challenge you to obtain this result when they are not. :-)
>
> 73, Jim AC6XG

I proposed this some time ago, and got the response that dissimilar pulses would still bounce off each other, yet appear exactly as though they were passing through without interaction. I haven't been able to understand why this would be, but there are no mathematics to explain it.

Roy Lewallen, W7EL

162. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 00:53:31 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flhbmhjbt1@news.service.uci.edu>
Source record: 30228

Cecil Moore wrote:
> Jim Kelley wrote:
>
>> That is a question more typically asked by someone who has never taken
>> a calculus class.
>
>
> The answer is typically asserted by someone who doesn't
> know the difference between joules and joules per second.

Or so it might seem to someone who had neglected to consider that the
'per second' in Joules per second in this case derives from the rate
at which charge is moving.

73, ac6xg

163. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 01:14:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <imdon3181vjrra47h7e2ajasvhv02f0p3s@4ax.com>
Source record: 30229

On Wed, 02 Jan 2008 16:23:02 -0800, Jim Kelley <jwkelley@uci.edu>
wrote:

> I don't think 'addition' is the best answer.

Hi Jim,

Do you want an actual, legitimate answer guaranteed to end the quest,
or are you having too much fun standing on Cecil's toes as he tries to
tap dance?

73's
Richard Clark, KB7QHC

164. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 01:35:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n2eon3p7q0j9qh7ved5m1t4qg78571tvmv@4ax.com>
Source record: 30230

On Wed, 02 Jan 2008 16:38:36 -0800, Roy Lewallen <w7el@eznec.com>
wrote:

> 2. I don't understand the mechanism which causes waves to bounce.

If I might amplify a similar concern.

Bounce is a phenomenon in everbody's experience, hence the term easily clouds the conversation as it also not a very rigorous term in RF.

In the day to day world of, say, rubber balls, bounce implies:
1. an inelastic deformation upon collision;
2. the conversion of kinematic energy into potential energy;
3. a period or interval of holding that potential energy (or further accumulation of potential energy);
4. the cessation of the inelastic deformation and the rebound unwinding 1-3 above as potential energy is converted back into kinematic energy.

So, for this "bounce" in a wave, can I observe the inelastic deformation? (Not just the superposition of waves, but the actual inelastic crush against resistance.) Inelastic often has loss attending it, do you care to characterize it as elastic? If so, then the usage of "bounce" is running against the grain of popular usage.

In this "bounce" in a wave, can I observe the time interval during which kinematic energy is converted to potential energy and then back to kinematic energy? (Is there a retardation in the wave migration? I would suspect a phase change might reveal this, and not just a phase inversion, nor a phase reversal.)

73's
Richard Clark, KB7QHC

165. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 02:46:23 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <30Yej.101418$MJ6.75924@bgtnsc05-news.ops.worldnet.att.net>
Source record: 30231

Cecil Moore wrote:
> Gene Fuller wrote:
>
>> What you might also notice in AN 95-1 is that there is no mention of
>> incident and reflected ...
>
> Sorry Gene, I'm tired of wasting my time proving that you
> are lying. Anyone who wants to prove how unethical you are
> can do so by accessing:
>
> http://www.ecs.umass.edu/ece/labs/antlab/HP_AppNote95-1_S-parameters.pdf
>
> and searching for "incident" and "reflected".
> <Lots of unethical BS deleted after that.>

I guess I must be hitting close to target. You always get nasty when I create problems for your pet theories.

Thanks for the reference to AN 95-1, even though I have several copies already. Your directed search terms prove my point exactly. I suppose puncturing your balloon is "unethical", but that is your problem, not mine.

I challenged you to find any case in AN 95-1 that supports your claim of counter-traveling waves in a transmission line, with each wave carrying its own energy that somehow nets out to zero. You came up with exactly nothing, which is not surprising.

Ranting and raving does not have any impact on the correct physical reality.

Oh, by the way, my full comment was, ". . . there is no mention of incident and reflected waves on a transmission line, each carrying energy (or power or whatever you prefer), and passing like ships in the night."

Your careful trimming is noted.

73,
Gene
W4SZ

166. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 02:49:21 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <R2Yej.101425$MJ6.13427@bgtnsc05-news.ops.worldnet.att.net>
Source record: 30232

Cecil Moore wrote:
> Gene Fuller wrote:
>> The electromagnetic theory for optics (e.g. somewhere in the vicinity
>> of visible light) is of course identical to the electromagnetic theory
>> for HF.
>
> Thanks Gene, I never thought you would ever admit that
> fact of physics. Now that you have, your entire argument
> collapses. If interference can happen in free space, it
> certainly can happen in a transmission line.
>

Cecil,

No one has ever said anything different. No one has ever denied
interference.

You are really grasping at straws now.

73,
Gene
W4SZ

167. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 03:12:35 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flhjr1$p76$1@news.albasani.net>
Source record: 30233

charlie wrote:

[...]

Well, I attempt to give everyone a "listen", this post has certainly
surpassed that ... THREAD PLONK!

JS

168. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 03:47:27 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <477c5ad0$0$9535$4c368faf@roadrunner.com>
Source record: 30234

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13nnr90ep5mbpdc@corp.supernews.com...
> Jim Kelley wrote:
>>
>> I have a piece of coax around here somewhere that I once burned up. I
>> recall telling you about it. The insulation is bubbled and melted at
>> half wavelength intervals. Please explain what particular aspect of a
>> traveling wave might have caused that to happen.
>
> It's the consequence of having *two* traveling waves, which occurs any
> time the line isn't terminated with its characteristic impedance. Betcha
> yours wasn't.

As you have stated before, the standing wave is the ENVELOPE of maxima resulting from forward and reflected waves. The ENVELOPE maxima and minima will occur at 1/2WL distances in the cable. If the line is lossless, no power is consumed in the unterminated line.

If I were to see a cable with melted insultion at 1/2 wavelengths and the coax was open, the first thing I would suspect is that the voltage on the inner conductor greatly exceed the dilectric strength of the insulation between inner conductor and shield at the original standing wave maxima and minima. Two 3-500Z's in series could produce 6KV or even more. Standard Radio Shack grade RG58 might not be able to handle that. When the insulation breaks down it turns into a carbon resistor and we no longer have a lossless situation; real power is dissipated. Whther or ot the standing wave is still present, power will dissipate where the dielctric material has turned into carbon (even with DC). Less likely would be current heating the inner conductor, again a resistive power loss. But these discussions have been assuming a lossless line of infinite dielectric strength where real power disspiation cannot occur unless we terminate the line and only then, in the terminating component since the line is supposedly 'lossless'. Adding the real life burnt coax example when the discussion assumes ideal components is comparimg apples and oranges; all we are doing is exposing the weakness of the assumption when using ideal lossless components. BTW, in any case in which insulation melting occurs and we have deviated from the ideal transmission line, at least some of the reactive power that was contained in the standing wave has now been changed into a travelling wave with I/V in phase thru the 'resistors' between inner conductor and shield.

169. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 04:08:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <JcZej.2220$jJ5.121@newssvr11.news.prodigy.net>
Source record: 30235

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> Superposition *IS* addition of phasors.
>
> I don't think 'addition' is the best answer.

Well, hang your favorite word on it. A rose
by any other name ...
--
73, Cecil http://www.w5dxp.com

170. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 04:17:29 UTC
From: art <aunwin@insightbb.com>
Message-ID: <e2f0d511-549b-4739-8f31-fd45df573b7c@l1g2000hsa.googlegroups.com>
Source record: 30236

On 2 Jan, 16:38, Roy Lewallen <w...@eznec.com> wrote:
> I'm top posting this so readers won't have to scroll down to see it, but
> so I can include the original posting completely as a reference.
>
> Keith, you've presented a very good and well thought out argument. But
> I'm not willing to embrace it without a lot of further critical thought.
> Some of the things I find disturbing are:
>
>   1. There are no mathematics to quantitatively describe the phenomenon.
>   2. I don't understand the mechanism which causes waves to bounce.
>   3. No test has been proposed which gives measurable results that will
> be different if this phenomenon exists than if it doesn't. (I
> acknowledge your proposed test but don't believe it fits in this category.)
>   4. I'm skeptical that this mechanism wouldn't cause visible
> distortion when dissimilar waves collide. But without any describing
> mathematics or physical basis for the phenomenon, there's no way to
> predict what should or shouldn't occur.
>   5. Although the argument about no energy crossing the zero-current
> node is compelling, I don't feel that an adequate argument has been
> given to justify the wave "bouncing" theory over all other possible
> explanations.
>
> None of these make an argument with your logical development, although I
> think I might be able to do that too. But I'm very reluctant to accept a
> view of wave interaction that's apparently contrary to established and
> completely successful theory and one, if true, might have profound
> effects on our understanding of how things work. So frankly I'm looking
> hard for a flaw in your argument. And I may have found one.
>
> A large part of the argument seems to revolve around a single point in a
> perfect transmission line, where the current is exactly zero. This is an
> infinitesimal point on a perfect line, so some anomalous things might be
> expected to happen there.
>
> Let's consider a transmission line as a huge number of series inductors
> and shunt capacitors, each an ideal lumped device. In the ideal case, of
> course, there would be an infinite number of each, and each would have
> an infinitesimal value. However, the LC product and ratio must remain
> correct even in the limiting case. Each L and C is an ideal device, so
> the current into one terminal of an inductor has to equal the current
> out of the other.

That is not correct. If both the capacitor and the inductance are
ideal

they cannot return the same amount of energy. This can only happen
when the
summation of all vectors are parallel to the axis of the conductor.
One only has to look at the vectors involved with out assigning length
to the vectors to see that the vectorial summation cannot be parallel
to the radiator axis. This is exactly why for maximum horizontal gain
the radiator is tipped away from the earth's surface. This response
is clearly shown when a time varient is added to Gaussian law.

A consequence of this is that either we have a whole
> inductor with zero current, or the zero current point occurs between
> inductors, at a node to which a capacitor is connected. I think we'll
> get the same result using either scenario, but let's consider the second.
>
> If we analyze this situation carefully, we'll find that the inductor on
> each side of the zero-current point does have a finite current, equal in
> amplitude and flowing in opposite directions. So for half of the cycle,
> both are putting positive charge in the capacitor, and for the other
> half of the cycle, both are removing charge.

That can only be true for a full wave radiator which emulates
a tank circuit. A half wave radiator is a series circuit,
a whole different ball game !

The capacitor voltage goes
> up and down as a result, as we can also see by looking at the voltage at
> this zero-current point. So current from both sides is contributing to
> the capacitor charge, and turning off either one would change the line
> conditions.

Not at the change over point where voltages are equal since a
capacitor
has a slight delay before discharging because of initial inductance
delay.

Any change in the current from the inductor on one side
> would change the capacitor voltage, and hence the current on the other
> side. So there is an interchange of information from one side to the
> other. Each inductor is conveying energy to the capacitor, which is
> storing and returning it.

It takes energy to propagate does it not?
Why would you ignore that?
>
> Ok, so let's break the capacitor into two, each being half the original
> value, and constrain each inductor to deliver charge only to "its"
> capacitor. The wire between the capacitors carries no current because
> the capacitors always have equal voltages, and can be cut with no effect.
Again that cannot be. The filling of all the capacitors fill up in a
series format.
snip
Art

>
> Roy Lewallen, W7EL
>
>
>
> Keith Dysart wrote:
> > On Dec 30 2007, 6:18 pm, Roy Lewallen <w...@eznec.com> wrote:
> >> Keith Dysart wrote:
>
> >>> I predict that the pulse arriving at the left end will
> >>> have the same voltage, current and energy profile as
> >>> the pulse launched at the right end and the pulse
> >>> arriving at the right end will be similar to the
> >>> one launched at the left.
> >>> They will appear exactly AS IF they had passed
> >>> through each other.
> >>> The difficulty with saying THE pulses passed
> >>> through each other arises with the energy. The
> >>> energy profile of the pulse arriving at the left
> >>> will look exactly like that of the one launched
> >>> from the right so it will seem that the energy
> >>> travelled all the way down the line for delivery
> >>> at the far end. And yet, from the experiment above,
> >>> when the pulses arriving from each end have the
> >>> same shape, no energy crosses the middle of the
> >>> line.
> >>> So it would seem that the energy that actually
> >>> crosses the middle during the collision is
> >>> exacly the amount of energy that is needed to
> >>> reconstruct the pulses on each side after the
> >>> collision.
> >>> If all the energy that is launched at one end
> >>> does not travel to the other end, then I am
> >>> not comfortable saying that THE pulse travelled
> >>> from one end to the other.
> >>> But I have no problem saying that the system
> >>> behaves AS IF the pulses travelled from one
> >>> end to the other.
> >> You said that:
>
> >> > What will happen? Recall one of the basics about
> >> > charge: like charge repel. So it is no surprise
> >> > that these two pulses of charge bounce off each
> >> > and head back from where they came.
>
> >> Yet it sounds like you are saying that despite this charge repulsion and
> >> bouncing of waves off each other, each wave appears to be completely
> >> unaltered by the other? It seems to me that surely we would detect some
> >> trace of this profound effect.
>
> >>> . . .

> >> Is there any test you can conceive of which would produce different
> >> measurable results if the pulses were repelling and bouncing off each
> >> other or just passing by without noticing the other?
>
> >> There are equations describing system behavior on the assumption of no
> >> wave interaction, and these equations accurately predict all measurable
> >> aspects of line behavior without exception. Have you developed equations
> >> based on this charge interaction which predict line behavior with
> >> equal accuracy and universal applicability?
>
> > No equations. I expect that such equations would be more complex
> > than those describing the behaviour using superposition. Since
> > the existing equations and techniques for analysis are tractable
> > and produce accurate results, I am not motivated to develop an
> > alternate set with lower utility.
>
> > And yet the "no interaction" model, while accurately predicting
> > the behaviour has some weaknesses with explaining what is
> > happening. It is, I suggest, these weaknesses that help lead
> > some so far astray.
>
> > To illustrate some of these weaknesses, consider an example
> > where a step function from a Z0 matched generator is applied
> > to a transmission line open at the far end. Charge begins to
> > flow into the line. The ratio of the current to voltage on
> > the line is defined by the distributed inductance and
> > capacitance. The inductance is resisting the change in current
> > which causes a voltage to charge the capacitance. A voltage
> > step (call this V for later use) propagates down the line
> > at the speed of light. In front of this step, the voltage,
> > current and charge in the line is zero. After the step, the
> > capacitance is charged to the voltage and charge is flowing
> > in the inductance.
>
> > The step function eventually reaches the open end where
> > the current can no longer flow. The inductance insists
> > that the current continue until the capacitance at the
> > end of the line is charged to the voltage which will stop
> > the flow. This voltage is double the voltage of the step
> > function applied to the line (i.e 2*V). Once the
> > infinitesimal capacitance at the end of the line is
> > charged, the current now has to stop just a bit earlier
> > and this charges the inifinitesimal capacitance a bit
> > further from the end. So a step in the voltage propagates
> > back along the line towards the source. In front of this
> > step, current is still flowing. Behind the step, the
> > current is zero and voltage is 2*V. The charge- Hide quoted text -
>
> - Show quoted text -...
>

> read more »

171. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 04:18:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <BmZej.35898$Pv2.17442@newssvr23.news.prodigy.net>
Source record: 30237

Roy Lewallen wrote:
> 2. I don't understand the mechanism which causes waves to bounce.

I don't understand the mechanism which causes waves to slosh.
Would you mind posting the sloshing equation?
--
73, Cecil http://www.w5dxp.com

172. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 04:40:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <bHZej.1391$pA7.829@newssvr25.news.prodigy.net>
Source record: 30238

Gene Fuller wrote:
> I challenged you to find any case in AN 95-1 that supports your claim of
> counter-traveling waves in a transmission line, with each wave carrying
> its own energy that somehow nets out to zero.

I did exactly that earlier and you didn't comprehend
it then - but here it is again.

(b1)^2 = (s11*a1 + s12*a2)^2 = 0

(b1)^2 is reflected power. It is only zero when
(s11*a1 + s12*a2)^2 = 0

(b1)^2 = (s11*a1)^2 + (s12*a2)^2 + 2(s11*a1)(s12*a2)

Since a1 and a2 are phasors, their multiplication
involves cos(A) of the Angle between them.

Pref1 = P1 + P2 + 2*SQRT(P1*P2)cos(A)

Does that equation look familiar? Please reference the
s-parameter ap note, pages 16 & 17, for the meaning of
those squared terms. The power density equation can be
derived from the s-parameter equation.

http://www.ecs.umass.edu/ece/labs/antlab/HP_AppNote95-1_S-parameters.pdf
--
73, Cecil http://www.w5dxp.com

173. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 04:44:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pKZej.1393$pA7.697@newssvr25.news.prodigy.net>
Source record: 30240

Gene Fuller wrote:
> No one has ever said anything different. No one has ever denied
> interference.

Denying that you ever argued about something is a first
step in the direction of understanding. Before long, you
will be arguing that you knew all of this stuff long ago.
--
73, Cecil http://www.w5dxp.com

174. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 04:44:49 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <70802861-b138-405c-ae31-c754d2c6c76d@f3g2000hsg.googlegroups.com>
Source record: 30239

On Jan 2, 2:32 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > But this same information has been repeatedly provided
> > and ignored. Will this time be different?

And Cecil provides the answer: No!

The requested information is provided but then
completely ignored in the response.

> I'm not the one who is ignoring that information.
> Where are your calculations involving destructive
> and constructive interference? Until you provide
> that information, you are just blowing smoke.

...Keith

175. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 04:48:17 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4b537b9b-07f4-41a1-9ad9-85a433c3cefc@v4g2000hsf.googlegroups.com>
Source record: 30241

On Jan 2, 2:33 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Cecil Moore wrote:
> >> There can be a large difference in the output
> >> impedance of an amplifier designed to drive a 50 ohm
> >> load and a 50 ohm Thevenin equivalent circuit.
>
> > Then your Thevenin circuit is not an equivalent
> > for the amplifier, is it?
>
> No it isn't! So why are you trying to stuff it down
> my throat?

I must have missed something.

You brought up the 50 ohm Thevenin equivalent circuit
which turned out not to be an equivalent circuit.

And now you think I am trying to stuff it down
your throat.

Amusing.

...Keith

176. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 04:50:10 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <0f0c9a4b-af88-4ec6-acc8-ed81df050033@r60g2000hsc.googlegroups.com>
Source record: 30242

On Jan 2, 2:36 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > You should really spend some time looking for a
> > reference to support your assertion that "It will
> > not be the impedance needed to calculate the
> > reflection coefficient seen by the reflected
> > waves."
>
> > You will not find one.
>
> You have got to be kidding, Keith. Even some of the
> people on your side will admit that the effective
> reflection coefficient for a source supplying zero
> power is |1.0| nowhere near the value you calculated.
> I believe that is what Roy said.

Bluster!

I am just waiting for a reference.

Still can't find one, can you?

...Keith

177. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 04:58:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nYZej.1397$pA7.458@newssvr25.news.prodigy.net>
Source record: 30243

Keith Dysart wrote:
> I am just waiting for a reference.
> Still can't find one, can you?

Since the reflected wave is reflected, the reflection
coefficient cannot be zero.

If the reflected wave is not reflected, there
would exist current in the source, but there
is none.

There are no references for pathological thinking.
--
73, Cecil http://www.w5dxp.com

178. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 05:06:30 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <0890865a-afd8-462d-8519-9de8ba940110@h11g2000prf.googlegroups.com>
Source record: 30244

On Jan 2, 4:57 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> Keith Dysart wrote:
> > On Dec 29, 2:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>
> >>Roger wrote:
>
> >>>Are there reflections at point "+"? Traveling waves going in opposite
> >>>directions must pass here, therefore they must either pass through one
> >>>another, or reflect off one another.
>
> >>In the absence of a real physical impedance discontinuity,
> >>they cannot "reflect off one another". In a constant Z0 transmission
> >>line, reflections can only occur at the ends of the line and only
> >>then at an impedance discontinuity.
>
> > Roger: an astute observation. And Cecil thinks he has
> > the ONLY answer. Allow me to provide an alternative.
>
> > Many years ago, when I first encountered this news group
> > and started really learning about transmission lines, I
> > found it useful to consider not only sinusoidallly
> > excited transmission lines, but also pulse excitation.
> > It sometimes helps remove some of the confusion and
> > clarify the thinking. So for this example, I will use
> > pulses.
>
> > Consider a 50 ohm transmission line that is 4 seconds
> > long with a pulse generator at one end and a 50 ohm
> > resistor at the other.
>
> > The pulse generator generates a single 1 second pulse
> > of 50 volts into the line. Before and after the pulse
> > its output voltage is 0. While generating the pulse,
> > 1 amp (1 coulomb/s) is being put into the line, so
> > the generator is providing 50 watts to the line.
>
> > After one second the pulse is completely in the line.
> > The pulse is one second long, contains 1 coulomb of
> > charge and 50 joules of energy. It is 50 volts with
> > 1 amp: 50 watts.
>
> > Let's examine the midpoint (2 second) on the line.
> > At two seconds the leading edge of the pulse arrives
> > at the midpoint. The voltage rises to 50 volts and

> > the current becomes 1 amp. One second later, the
> > voltage drops back to 0, as does the current. The
> > charge and the energy have completely passed the
> > midpoint.
>
> > When the pulse reaches the end of the line, 50
> > joules are dissipated in the terminating resistor.
>
> > Notice a key point about this description. It is
> > completely in terms of charge. There is not a single
> > mention of EM waves, travelling or otherwise.
>
> > Now we expand the experiment by placing a pulse
> > generator at each end of the line and triggering
> > them to each generate a 50V one second pulse at
> > the same time. So after one second a pulse has
> > completely entered each end of the line and these
> > pulse are racing towards each other at the speed
> > of light (in the line). In another second these
> > pulses will collide at the middle of the line.
>
> > What will happen? Recall one of the basics about
> > charge: like charge repel. So it is no surprise
> > that these two pulses of charge bounce off each
> > and head back from where they came. At the center
> > of the line, for one second the voltage is 100 V
> > (50 V from each pulse), while the current is
> > always zero. No charge crossed the mid-point. No
> > energy crossed the mid-point (how could it if
> > the current is always zero (i.e. no charge
> > moves) at the mid-point.
>
> > It is a minor extension to have this model deal
> > with sinusoidal excitation.
>
> > What happens when these pulses arrive back at the
> > generator? This depends on generator output
> > impedance. If it is 50 ohms (i.e. equal to Z0),
> > then there is no reflection and 1 joule is
> > dissipated in each generator. Other values
> > of impedance result in more complicated
> > behaviour.
>
> > So do the travelling waves "reflect" off each
> > other? Save the term "reflect" for those cases
> > where there is an impedance discontinuity and
> > use "bounce" for those cases where no energy
> > is crossing a point and even Cecil may be
> > happy. But bounce it does.
>

> > ...Keith
>
> It's fairly safe to make this argument when both pulses are identical.
> I challenge you to obtain this result when they are not. :-)

The example was carefully chosen to illustrate the
point, of course. But that is the value of particular
examples.

When the pulses are not identical, the energy that crosses
the point is exactly sufficient to turn one pulse
into the other. The remainder of the energy must bounce
because it does not cross the mid-point.

...Keith

179. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 05:14:21 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <68b9868c-8fdf-4424-a44c-ac16cbb039e0@1g2000hsl.googlegroups.com>
Source record: 30245

On Jan 2, 11:58 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > I am just waiting for a reference.
> > Still can't find one, can you?
>
> Since the reflected wave is reflected, the reflection
> coefficient cannot be zero.
>
> If the reflected wave is not reflected, there
> would exist current in the source, but there
> is none.
>
> There are no references for pathological thinking.

Still can't find one? ?

...Keith

180. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 05:21:21 UTC
From: art <aunwin@insightbb.com>
Message-ID: <56cb4e64-0da8-44cb-ad8d-96729b2c3b82@21g2000hsj.googlegroups.com>
Source record: 30246

On 2 Jan, 20:18, Cecil Moore <nos...@w5dxp.com> wrote:
> Roy Lewallen wrote:
> > 2. I don't understand the mechanism which causes waves to bounce.
>
> I don't understand the mechanism which causes waves to slosh.
> Would you mind posting the sloshing equation?
> --
> 73, Cecil http://www.w5dxp.com

Cecil,
All of the bickering come to a halt if you consider a full wave
radiator
instead of a half wave antenna. Yes, both can be resonant but only
one is in a state of equilibrium. The underpinnings of all laws
whether
mechanical or electrical is that all is in a state of equilibrium
otherwise the laws do not apply.
When there is a state of equilibrium one cannot have a collision of
waves.
The sequence for equilibrium is a magnetic field followed by a
electric field
which equals one period. Sloshing is a poor word. When current is
moving forward
you are charging up the `capacitor when the current changes direction
the capacitor
discharges as if it was shorted and creates a near instantaneous
electrostatic field
which dissapates while charging up the inductance which is also the
transition of
generating a magnetic field around the inductance.
During this time there is also a side ways force that affects or
depletes the current
by deflection which allows for propagation.This force is what is
termed "curl"
amongst many other names
At no time are there any counter waves because, not only are we
resonant but
we are also in a state of equilibrium. Move away from a fractional
wavelength
to a full wave length so both sides starts from a common point ie
resonant
and in a state of equilibrium and your difference will then be
resolved quickly.
Hope the above helps to stop posters from talking past each other.

My best regards
Art Unwin KB9MZ....XG(UK)

181. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 06:07:48 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A1AB581C5D5Noemailadr@208.49.80.251>
Source record: 30247

Keith Dysart <Keith.Dysart@gmail.com> wrote:

[...]

> Notice a key point about this description. It is completely in
> terms of charge. There is not a single mention of EM waves,
> travelling or otherwise.

> Now we expand the experiment by placing a pulse generator at each
> end of the line and triggering them to each generate a 50V one
> second pulse at the same time. So after one second a pulse has
> completely entered each end of the line and these pulse are racing
> towards each other at the speed of light (in the line). In another
> second these pulses will collide at the middle of the line.

> What will happen? Recall one of the basics about charge: like
> charge repel. So it is no surprise that these two pulses of charge
> bounce off each and head back from where they came.

[...]

> Keith

Keith, your model is not realistic. As you know, any signal you impose on a conductor will form an electromagnetic wave. This is the combination of electrostatic and electromagnetic fields, and it propagates at the normal velocity for that medium.

However, electromagnetic waves do not interact with each other, and they cannot bounce off each other.

Recall that light from stars is electromagnetic. It travels many light-years before it reaches your eyes. If electromagnetic waves interacted, you would not be able to see individual stars - they would merge into a blur.

Similarly, the signals reaching your antenna and traveling down the coax to your receiver do not interact with each other. As long as your receiver is not overloaded, the signals remain separate no matter how many stations are on the air at the moment.

So the statement that like charges repel does not apply to electromagnetic waves, and the pulses cannot bounce off each other.

Regards,

Mike Monett

182. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 07:47:18 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <d03pn3d0ifoacjosmnedquhnnfcmi4jthp@4ax.com>
Source record: 30098

On Wed, 2 Jan 2008 22:47:27 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>>> I have a piece of coax around here somewhere that I once burned up.

>BTW, in any case in
>which insulation melting occurs and we have deviated from the ideal
>transmission line,

Ummm, Dan, as this is an explicitly new thread (purposely so to gouge this thumb into the ideal eye) with such an intro as you are responding to...
We are not in Kansas any more.

Jim's question is answered quite simply and you have offered one yourself, generously slathered with doubt about its obvious application.

However, my guess finds the symptoms would be more aligned with two current nodes, not voltage. However, voltage or current, either mock the notion of "traveling waves," as Cecil recoils in shock from the bitter reality (his bï¿½te noire when it fails to serve his agenda) of this contradiction.

It relates to another bitter round in his own thread of trying to explain the confusion Hams have with Rhombic antennas and traveling waves to then discover standing waves line up and down them:
On Wed, 02 Jan 2008 21:19:53 GMT, Cecil Moore <nospam@w5dxp.com> wrote:
>Ideal traveling-wave antennas have no standing waves.

Formula:
1. The guru starts to resolve the confusion about real traveling wave antennas to the assembled unwashed masses;
2. a voice pipes up with simple data showing standing waves on real traveling wave antennas;
3. the guru abandons the explanation to resolve the confusion about real traveling wave antennas;
4. the guru denounces real traveling wave antennas as being non-ideal.

I get a kick out of Cecil, really. The built in failures of his arguments are so scripted that mocking them is like writing for the sit-com where Dick Van Dyke forever trips over the ottoman.

73's
Richard Clark, KB7QHC

183. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 09:20:23 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13npa6s7807dp5f@corp.supernews.com>
Source record: 30099

Corrections:

Roy Lewallen wrote:
> . . .

> vtot(t, x)(steady state) = (sin(wt - x) + sin(wt + x)) / (1 - 0.5) = 2
> * sin(wt - x) + sin(wt + x)

> . . .

Should read

vtot(t, x)(steady state) = (sin(wt - x) + sin(wt + x)) / (1 - 0.5) = 2
* (sin(wt - x) + sin(wt + x))

This was a typo and has no effect on the steps which follow or the
conclusions.

Thanks very much to the kind person who brought this error to my attention.

Roy Lewallen, W7EL

184. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 09:34:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13npb0i67i4reb9@corp.supernews.com>
Source record: 30100

Corrections:

Roy Lewallen wrote:
> . . .
> From the voltage analysis and the SPICE plot, the initial voltage at
> the input of the line is sin(wt). So the voltage across the input
> resistor is 3 * sin(wt) (+ toward the source), and the current flowing
> into the line is (3 * sin(wt)) / 150 = 20 * sin(wt) mA. The average
> power being delivered to the line is Vin(rms) * Iin(rms) (since the
> voltage and current are in phase) = (0.7071 v. * 14.14 mA) = 10 mW.
> Since the line initially presents an impedance of Z0, this should also
> be Vin(rms)^2 / Z0 or Iin(rms)^2 / Z0. . . .

The last sentence should read:

Since the line initially presents an impedance of Z0, this should also
be Vin(rms)^2 / Z0 or Iin(rms)^2 * Z0. . . .

The calculations which follow were done using the correct formula, so
the mistake had no effect on the following steps or the conclusions.

I also carelessly and incorrectly used j as an abbreviation for joules
throughout the posting. The correct abbreviation is J. (And yes, the
name of the unit is correctly joule, not capitalized, as is the case for
most if not all SI units named after people.) This mistake is made
potentially worse because of the possible confusion with the imaginary
operator j (as used by electrical engineers). I apologize for any
confusion the mistake might have caused.

Thanks very much to the careful and thoughtful reader who brought these
errors to my attention.

Roy Lewallen, W7EL

185. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 11:28:19 UTC
From: David J Windisch <davidjw@cinci.rr.com>
Message-ID: <477cc6d5$0$22617$4c368faf@roadrunner.com>
Source record: 30101

You were writing of Tesla over Edison, a-c over d-c power transmission, and I was reminded that Prez Kennedy started some work years ago somewhere in the West, involving hvdc transmission. I wasn't intentionally obscuring things in that earlier post. 73 Dave N3HE

"Richard Clark" <kb7qhc@comcast.net> wrote in message news:tthnn3dovl0rj3n741brcl65ucortudage@4ax.com...
> On Wed, 2 Jan 2008 06:14:58 -0500, "David J Windisch"
> <davidjw@cinci.rr.com> wrote:
>
>>What's the status on that DC long-line 'tween somewhere in your neck of
>>the
>>woods south toward Baja, pls? Kind regards on behalf of all the lurkers
>>from Dave N3HE
>
> ?????
>
> Hi Dave,
>
> That is pretty obscure, which means you know more than I do.

186. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 12:03:16 UTC
From: art <aunwin@insightbb.com>
Message-ID: <038b737f-bfaa-4be8-9924-9c6eda6759fc@m34g2000hsf.googlegroups.com>
Source record: 30102

On 2 Jan, 22:07, Mike Monett <N...@email.adr> wrote:
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> [...]
>
> > Notice a key point about this description. It is completely in
> > terms of charge. There is not a single mention of EM waves,
> > travelling or otherwise.
>
> > Now we expand the experiment by placing a pulse generator at each
> > end of the line and triggering them to each generate a 50V one
> > second pulse at the same time. So after one second a pulse has
> > completely entered each end of the line and these pulse are racing
> > towards each other at the speed of light (in the line). In another
> > second these pulses will collide at the middle of the line.
>
> > What will happen? Recall one of the basics about charge: like
> > charge repel. So it is no surprise that these two pulses of charge
> > bounce off each and head back from where they came.
>
> [...]
>
> > Keith
>
> Keith, your model is not realistic. As you know, any signal you
> impose on a conductor will form an electromagnetic wave. This is the
> combination of electrostatic and electromagnetic fields, and it
> propagates at the normal velocity for that medium.
>
> However, electromagnetic waves do not interact with each other, and
> they cannot bounce off each other.
>
> Recall that light from stars is electromagnetic. It travels many
> light-years before it reaches your eyes. If electromagnetic waves
> interacted, you would not be able to see individual stars - they
> would merge into a blur.
>
> Similarly, the signals reaching your antenna and traveling down the
> coax to your receiver do not interact with each other. As long as
> your receiver is not overloaded, the signals remain separate no
> matter how many stations are on the air at the moment.
>
> So the statement that like charges repel does not apply to
> electromagnetic waves, and the pulses cannot bounce off each other.

>
> Regards,
>
> Mike Monett

Mike
They will not listen to you because they are following books that are
incorrect.
They cannot get into their minds that for a given frequency the time
for
a cycle is always the same. And as I have pointed out many times in
different ways
that goes for 1/2 wave antennas too.
If one bends a half wave antenna such that the ends are close together
you
can feed at the wire ends.
So now you apply a DC current at one end and it will continue to go
forward
all the way to the other end of the wire.Wen it gets to the end of the
wire
the current reverses direction and goes back to the starting point
which
completes one wave length of travel which also represents one
wavelength of time.
Now the other side of the debate wants a half wave antenna.So let us
lay
that half wave antenna out in a similar way that we bent the half wave
length
antenna
Start a DC current at one end and it travels to the other end of the
wire
BUT TIME HAS NOT RUN OUT FOR FLOW IN THE SAME DIRECTION,and this is
the
crux of the debate since the current still has to move forward and
thus
can only procede down the center of the wire .
IT CANNOT GO BACK AT THIS TIME.
The time for forward travel runs out when it gets to the end of the
wire.
When time runs out it reverses direction and goes back up the inside
of
the wire and down the outside of the wire to the end or shall we say
return to the beginning to complete the cycle.
It can be seen that with a half wave antenna the current flows on the
surface
only half of the time such that it only encounters inductance and
capacitance
for half of a cycle such that it can radiate. The rest of the time
because
the current flow is not exposed to the surface it does not radiate.

At no time is the current going two different ways.
Unfortunately people ignore the requirements of time and for some reason want to change current direction to half the time required for that frequency thus creating collisions in the current flow. THIS DOES NOT HAPPEN. So gentlemen layout a bent full wave antenna and along side it lay out a half wave antenna in the same fashion and start current flow in both at the same time where length of travel is commensurate with time. You will now realise that all participants in this debate have been talking past each other.
Another way of looking at it is to draw a full wave length of communicationline in ladder form with its component inductances and capacitances. One side of the ladder drawn line has zero energy storage components only resistance and it is this line that represents travel down the center of the wire.
The bottom line is that a half wavelength antenna represents a full cycle with respect to frequency.
This will be the last time that I will try to explain the radiation characteristics of a antenna.
Best regards to all
Art Unwin KB9MZ.....XG

187. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 12:15:17 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f1cc9206-bf1c-43ea-a785-9b2ab759daf7@21g2000hsj.googlegroups.com>
Source record: 30103

On Jan 2, 2:48 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > I assume that you have not provided a reference to support
> > this assertion because you have not been able to find one.
>
> I provided the reference a number of times and you
> chose to ignore it. The reference is the chapter on
> interference in "Optics", by Hecht.

I am suprised that a book on optics would discuss the
output impedance of Thevenin equivalent circuits.

Be that as it may, could you kindly provide the brief
extract from "Optics", by Hecht, that clearly states
that the impedance in a Thevenin equivalent circuit
can not be used to compute the reflection coefficient.

...Keith

188. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 12:21:18 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <26063f25-66b3-45cf-95eb-5e99a9082035@e25g2000prg.googlegroups.com>
Source record: 30104

On Jan 2, 3:44 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > In a stub driven with a step function, where is the
> > energy stored?

Consider the state of the open circuited line
after settling.

> Depends upon which valid model one is using.
>
> 1. Reflection Model - the energy is stored in the
> forward and reflected traveling waves.

So it is stored only in the E field. Is it an
EM wave when only an E field is present?

> 2. The LCLCLC transmission line model - the energy
> is alternately stored in the L's and C's.

Since there is no current, it is stored only in
the capacitance of the line.

> 3. The Sloshing Model - I'll let Roy handle that one.

The sloshing has stopped, so the answer is the same
as 2.

But the important question is: Do you consider it
to be an EM wave when only an E field is present?

...Keith

189. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 12:22:20 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <va-dnc1hU5AOTuHanZ2dnUVZ_h6hnZ2d@neonova.net>
Source record: 30105

Keith Dysart wrote:
> On Jan 1, 9:03 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> Roger wrote:
>>> The principles of superposition are mathematically usable, not too hard,
>>> and I think very revealing. Yes, if we use part of the model, we must
>>> use it all the way. To do otherwise would be error, or worse.
>> Roy and Keith don't seem to realize that the zero source
>> impedance for the ideal voltage source is only when the
>> source is turned off for purposes of superposition.
>
> I am not sure you have the methodology quite correct.
> The source is not turned off; its output is set to 0.
>
> It does what every ideal voltage source will do when
> set to a voltage; maintain that voltage. Through all
> of this, the impedance of the ideal source remains 0.
>
> Now it turns out that an ideal voltage source set
> to zero volts can be replaced by a short which also
> has an impedance of 0 and produces no volts. But this
> does not alter that the ideal source always has an
> impedance of 0.
>
> Analogously, an ideal current source always has an
> infinite impedance. When set to 0 amps, it behaves
> exactly like an open circuit.
>
>> They
>> conveniently avoid turning the source voltage on to complete
>> the other half of the superposition process. When the
>> source signal and the reflected wave are superposed at
>> the series source resistor, where the energy goes becomes
>> obvious. Total destructive interference in the source
>> results in total constructive interference toward the load.
>> See below.
>>
>>> You have been a supporter of this theory for a long time.
>> Yes, I have. I am a supporter of the principles and laws of
>> physics. Others believe they can violate the principle of
>> conservation of energy anytime they choose because the
>> principle of conservation of energy cannot be violated -
>> go figure.
>
> You should really stop repeating this to yourself. No

> one is attempting to violate the principle of conservation
> of energy.
>
> By continually repeating this mantra, you convince
> yourself that you do not need to examine the claims
> of those who disagree with you. So you do not
> examine and understand their claims. This seriously
> limits your capability to learn.
>
> If you truly wish to demolish the claims, you should
> study them in great detail, then write an even better
> and more persuasive description of the claim than did
> the original author. Then identify and point out the
> flaws.
>
> As it stands, you do not examine the claims, but
> immediately coat them with the tar of "violates
> conservation of energy" or some other mantra and
> walk away.
>
> It does not lead to learning.
>
> ...Keith

I fully agree with the philosophy you express here Keith. But I can see how you would doubt that I am practicing what I just agreed with.

You have posted several times on the subject of impedance of an ideal source, and I have learned from your words. You may find however, that I have still not completely grasped an important component of the concept. If that happens, please try again, using a different argument.

Learning is a meshing of words, ideas, concepts, experience, and more. You can see that I am inexperienced. I can see that many of the posters are very experienced. Experience is not necessary for presenting an argument, but it certainly helps in presenting the argument wisely, coherently, and convincingly. Correctness is always a judgment by the reader.

73, Roger, W7WKB

190. Re: Enough

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 13:18:01 UTC
From: bigamps <bigamps@louder.org>
Message-ID: <dg5fj.1439$7d1.152@news01.roc.ny>
Source record: 30106

John Smith wrote:
> charlie wrote:
>
> [...]
>
> Well, I attempt to give everyone a "listen", this post has certainly
> surpassed that ... THREAD PLONK!
>
> JS

GAWD whatta twit.

191. Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 14:47:59 UTC
From: art <aunwin@insightbb.com>
Message-ID: <86a393f1-09ea-4dc3-bd02-051e76d264f4@5g2000hsg.googlegroups.com>
Source record: 30107

Some time ago JS woundered why we view the center of the earth is not represented by force vectors
pushing OUT ie the equal and opposite reaction with respect to gravity. This is a very insightful comment.
In fact the earth's ferrite mass center is represented by the magnetic poles but because of the diagmagnetic content of the earth which produces a weak magnetic field at right angles to a ferrite field we have two magnetic axis at a distance from each other in our earth and not just one.Thus somewhere, in between these two pole structures, we have a point of equilibrium where the vector forces emminate from this point in a outward direction. It is the position of the diagmatic pole that provides the "curl" effect as seen when studying the radiator vector format which is also responsible for the earth turning and the circular rotation of a pendulum to which a radiator is often compared..
(By another name I believe this also describes the Corriolis effect)
One can stretch their minds and ponder on the effect of this diamagnetic pole tho weak would have on a compass on opposite sides of the earth, such as the Bermuda triangle and the area on the other side of the earth but of to the side where Amelia Erhardt altered her course for a unknown reason and disappeared.
Regards
Art

192. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 15:00:43 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <LJSdnWc-7YUCZeHanZ2dnUVZ_rqlnZ2d@neonova.net>
Source record: 30108

Roy Lewallen wrote:
> Roger wrote:
>>
By storage factor, I simply mean the ratio of
>> forward power to total power on the transmission media under standing
>> wave conditions.
>>
>
> Power is neither stored nor conserved, so a power "storage factor" is
> meaningless. Consider a very simple example. Let's charge a capacitor
> with a constant current DC source. We'll apply 1 amp to a 1 farad
> capacitor for 1 second. During that time, the power begins at zero,
> since the capacitor voltage is zero, then it rises linearly to one watt
> as the capacitor voltage rises to one volt at the end of the one second
> period. So the average power over that period was 1/2 watt, and we put
> 1/2 joule of energy into the capacitor. (To confirm, the energy in a
> capacitor is 1/2 * C * V^2 = 1/2 joule.) Was power "put into" or stored
> in the capacitor?
>
> Now we'll connect a 0.1 amp constant current load to the capacitor, in a
> direction that discharges it. We can use an ideal current source for
> this. The power measured at the capacitor or source terminals begins at
> 0.1 watt and drops linearly to zero as the capacitor discharges. The
> average is 0.05 watt. Why are we getting less power out than we put in?
>
> "Where did the power go?" is heard over and over, and let me assure you,
> anyone taking care with his mathematics and logic is going to spend a
> long time looking for it. So in this capacitor problem, where did the
> power go?
>
> It takes 10 seconds to discharge the capacitor, during which the load
> receives the 1/2 joule of energy stored in the capacitor. Energy was
> stored. Energy was conserved. Power was neither stored nor conserved.
>
> Roy Lewallen, W7EL

By my using the words 'power' "storage factor", you got my point, hence
the reaction.

Before dismissing the concept of "storing power", consider that when
discussing a transmission line, it could be a useful description.

As you know, power is energy delivered over a time period. It always
carries a time dimension having beginning and end. Power(watt)
=v*i/(unit time) = 1 joule/second.

In the example you give of charging a capacitor, the time dimension is lost, so you are correct that only energy is conserved. Power is lost.

With a transmission line, we have an entirely different case. Here power is conserved because the time information is maintained. Power is stored on the line during the period it resides on the line. For example, we excite the line at one end and some time period later find that power is delivered to some destination. During the time period that the power was on the line, the information that defines the energy distribution over time has been preserved.

If power is stored, we implicitly store energy. Energy is v*i measured in joules without a time factor. Obviously we store energy on a transmission line when we store power.

So if in the future, I use the term "power storage", please take it to mean that energy distributed over time is under consideration. I hope the term might be useful to you as well.

73, Roger, W7WKB

193. Re: OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 15:35:03 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flivb4$p76$2@news.albasani.net>
Source record: 30109

Jim Higgins wrote:
[...]

Don't apply for the coupon then ...

For others:

http://www.cbsnews.com/stories/2008/01/02/tech/main3667921.shtml

Regards,
JS

194. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 15:38:48 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <747f4a64-d555-4763-9e3c-768325ab373e@s12g2000prg.googlegroups.com>
Source record: 30110

On Jan 3, 1:07 am, Mike Monett <N...@email.adr> wrote:
> Keith, your model is not realistic. As you know, any signal you
> impose on a conductor will form an electromagnetic wave. This is the
> combination of electrostatic and electromagnetic fields, and it
> propagates at the normal velocity for that medium.
>
> However, electromagnetic waves do not interact with each other, and
> they cannot bounce off each other.

That is the standard description, but it seems to have
some weaknesses.

> Recall that light from stars is electromagnetic. It travels many
> light-years before it reaches your eyes. If electromagnetic waves
> interacted, you would not be able to see individual stars - they
> would merge into a blur.

This would seem to me to depend on the nature of the
interaction. Clearly the interaction represented by
the term "bounce" (for lack of a better word) would
have to be such as to not violate any of these
observed behaviours.

> Similarly, the signals reaching your antenna and traveling down the
> coax to your receiver do not interact with each other. As long as
> your receiver is not overloaded, the signals remain separate no
> matter how many stations are on the air at the moment.
>
> So the statement that like charges repel does not apply to
> electromagnetic waves,

Q1. Are you saying that it is inappropriate to view
a transmission line as distributed capacitance and
inductance and analyze its behaviour using charge
stored in the capacitance and moving in the
inducatance?

If such analysis is appropriate, then it seems
to me that a pulse can be viewed as a chunk of
charge moving down the line.

Q2. Is this an appropriate view?

Q3. If so, then what happens when two such chunks
of charge collide in the middle of the line?

The existing analysis techniques tell us that
no current ever flows at the mid-point of the
line, this means no charge crosses the mid-point.

Q4. Is this correct?

Q5. If no charge crosses the mid-point, then how
do the pulses, made up of chunks of charge.
pass the mid-point?

Q6. If they do not pass the mid-point, then what
happens to them?

I have offerred a somewhat intuitive explanation.
Other explanations are welcome.

Any explanation that does not involve charge will
immediately cause me to ask Q1 again.

...Keith

195. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 15:55:48 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <8341ac45-98b0-4669-82c7-ad03c65f96ca@r60g2000hsc.googlegroups.com>
Source record: 30111

On Jan 3, 7:22 am, Roger <rspa...@elltel.net> wrote:
> Keith Dysart wrote:
> > On Jan 1, 9:03 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> >> Roger wrote:
> >>> The principles of superposition are mathematically usable, not too hard,
> >>> and I think very revealing. Yes, if we use part of the model, we must
> >>> use it all the way. To do otherwise would be error, or worse.
> >> Roy and Keith don't seem to realize that the zero source
> >> impedance for the ideal voltage source is only when the
> >> source is turned off for purposes of superposition.
>
> > I am not sure you have the methodology quite correct.
> > The source is not turned off; its output is set to 0.
>
> > It does what every ideal voltage source will do when
> > set to a voltage; maintain that voltage. Through all
> > of this, the impedance of the ideal source remains 0.
>
> > Now it turns out that an ideal voltage source set
> > to zero volts can be replaced by a short which also
> > has an impedance of 0 and produces no volts. But this
> > does not alter that the ideal source always has an
> > impedance of 0.
>
> > Analogously, an ideal current source always has an
> > infinite impedance. When set to 0 amps, it behaves
> > exactly like an open circuit.
>
> >> They
> >> conveniently avoid turning the source voltage on to complete
> >> the other half of the superposition process. When the
> >> source signal and the reflected wave are superposed at
> >> the series source resistor, where the energy goes becomes
> >> obvious. Total destructive interference in the source
> >> results in total constructive interference toward the load.
> >> See below.
>
> >>> You have been a supporter of this theory for a long time.
> >> Yes, I have. I am a supporter of the principles and laws of
> >> physics. Others believe they can violate the principle of
> >> conservation of energy anytime they choose because the
> >> principle of conservation of energy cannot be violated -
> >> go figure.
>

> > You should really stop repeating this to yourself. No
> > one is attempting to violate the principle of conservation
> > of energy.
>
> > By continually repeating this mantra, you convince
> > yourself that you do not need to examine the claims
> > of those who disagree with you. So you do not
> > examine and understand their claims. This seriously
> > limits your capability to learn.
>
> > If you truly wish to demolish the claims, you should
> > study them in great detail, then write an even better
> > and more persuasive description of the claim than did
> > the original author. Then identify and point out the
> > flaws.
>
> > As it stands, you do not examine the claims, but
> > immediately coat them with the tar of "violates
> > conservation of energy" or some other mantra and
> > walk away.
>
> > It does not lead to learning.
>
> > ...Keith
>
> I fully agree with the philosophy you express here Keith. But I can see
>   how you would doubt that I am practicing what I just agreed with.

You may have mis-interpreted my comments. I have NOT
seen evidenace of the behaviour I describe above in
your writings.

The comments mostly apply to a single poster who has
been posting on this group for many years, at least
since when I first started viewing this group in the
mid 90s and began to really gain an understanding of
transmission lines.

The presence of this poster providing misleading
information makes this group a rather unique learning
environment.

In most learning environments, the information is
neatly packaged and presented from a consistent
point of view with no challenge.

Here, a lot of chaff is mixed with the wheat. This
has the "benefit" of forcing the learner to
understand well enough to make decisions between
competing explanations. The learner who makes the
right choices comes out with a much more solid
understanding than one who has just been (spoon)

fed the story. On the other hand, some have probably been lead seriously astray.

For sure, I have a better understanding than I would have had without the challenging misleading information.

So for sure it would be better for the poster in question were he to let go of some of his incorrect beliefs, it would also reduce some of the opportunities for learning provided to others lurking or partaking in the discussions.

...Keith

196. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:01:11 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A1A6FF3133E4Noemailadr@208.49.80.251>
Source record: 30112

Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 3, 1:07am, Mike Monett <N...@email.adr> wrote:

>> Keith, your model is not realistic. As you know, any signal you
>> impose on a conductor will form an electromagnetic wave. This is
>> the combination of electrostatic and electromagnetic fields, and
>> it propagates at the normal velocity for that medium.

>> However, electromagnetic waves do not interact with each other,
>> and they cannot bounce off each other.

> That is the standard description, but it seems to have some
> weaknesses.

No, there are no weaknesses. Maxwell's equations have stood the test
of time.

>> Recall that light from stars is electromagnetic. It tra vels many
>> light-years before it reaches your eyes. If electromagnetic waves
>> interacted, you would not be able to see individual stars they
>> would merge into a blur.

> This would seem to me to depend on the nature of the interaction.
> Clearly the interaction represented by the term "bounce" (for lack
> of a better word) would have to be such as to not violate any of
> these observed behaviours.

The term "bounce" means they interact. Electromagnetic signals do
not interact. They superimpose. Each is completely unaware and
unaffected by the other.

>> Similarly, the signals reaching your antenna and traveling down
>> the coax to your receiver do not interact with each other. As
>> long as your receiver is not overloaded, the signals remain sep
>> arate no matter how many stations are on the air at the moment.

>> So the statement that like charges repel does not apply to
>> electromagnetic waves,

> Q1. Are you saying that it is inappropriate to view a transmission
> line as distributed capacitance and inductance and analyze its
> behaviour using charge stored in the capacitance and moving in the
> inducatance?

That is not what you are saying. You are ignoring the magnetic
field.

> If such analysis is appropriate, then it seems to me that a pulse
> can be viewed as a chunk of charge moving down the line.

> Q2. Is this an appropriate view?

No. You need to include the associated magnetic field.

> Q3. If so, then what happens when two such chunks of charge
> collide in the middle of the line?

Electromagnetic signals do not collide. They superimpose.

> The existing analysis techniques tell us that no current ever
> flows at the mid-point of the line, this means no charge crosses
> the mid-point.

> Q4. Is this correct?

That statement has no meaning.

> Q5. If no charge crosses the mid-point, then how do the pulses,
> made up of chunks of charge. pass the mid-point?

The pulses are not chunks of charge. They are the combination of
electrostatic and electromagnetic fields. You cannot separate the
two.

> Q6. If they do not pass the mid-point, then what happens to them?

That statement has no meaning.

> I have offerred a somewhat intuitive explanation.

Your explanation does not work.

> Other explanations are welcome.

> Any explanation that does not involve charge will immediately
> cause me to ask Q1 again.

Please study Maxwell's equations and how they are derived.

> Keith

Regards,

Mike Monett

197. Re: OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:09:59 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flj1ck$p76$3@news.albasani.net>
Source record: 30113

Jim Higgins wrote:

> ...
> That site has a defective security certificate that is registered to
> another site. It's also an alias of dtv2009.biz - .biz not being in
> exactly the best of neighborhoods and being hosted on Level3 doesn't
> help.

For those unable to view the certificate in question, I have included a couple of screen shots while viewing the certificate. Depending on which version of windows you are using, you may have to click again on the "enlarged image" to bring it to full viewing size:

http://assemblywizard.atwebpages.com

Regards,
JS

198. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:10:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <mO7fj.2691$pr6.1638@nlpi070.nbdc.sbc.com>
Source record: 30114

Keith Dysart wrote:
> When the pulses are not identical, the energy that crosses
> the point is exactly sufficient to turn one pulse
> into the other. The remainder of the energy must bounce
> because it does not cross the mid-point.

All you have proved is that you cannot tell one photon
from another. Your whole charge repulsion argument
falls apart when dealing with photons (which constitute
EM waves). I suggest you study and discover what is
possible with photons and what is not possible. You
seem to be concentrating on the carriers of the waves
rather than the EM waves themselves. Photons do NOT
and cannot bounce off of each other under ordinary
circumstances. You are simply illustrating the limitations
of ignoring the basic physics of the situation and wasting
a lot of time and effort in the process.

I have sat on a cliff overlooking the Pacific Ocean
at Fitzgerald's Marine Reserve north of Santa Cruz, CA
and have seen waves rolling in, reflecting off the beach,
and rolling back out to sea. Those waves pass through
each other as if the other wasn't there. The wave energy
is moving in both directions. The H2O carriers move
hardly at all. You can argue that the energy in the
waves is equal and therefore no average energy is being
transferred, but I still see the waves with people
riding on those waves. I do not see waves bouncing off
of each other although one could, as you have, delude
oneself into creating a mental illusion of such.

When I look out into my back yard, I am seeing reflections.
If there were a thousand people here, they would all be
seeing different reflections all passing through each other.
Photonic waves pass through each other unimpeded. It would
be a weird looking world if they bounced off each other.

In a wire, photons do not bounce off each other. However,
superposition can cause a redistribution of photon energy
at an impedance discontinuity. We call that redistribution
of energy a "reflections".
--
73, Cecil http://www.w5dxp.com

199. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:11:39 UTC
From: art <aunwin@insightbb.com>
Message-ID: <cb03a555-953e-4bb3-b5e3-d4f7ead452ac@e10g2000prf.googlegroups.com>
Source record: 30115

On 3 Jan, 07:38, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> On Jan 3, 1:07 am, Mike Monett <N...@email.adr> wrote:
>
> > Keith, your model is not realistic. As you know, any signal you
> > impose on a conductor will form an electromagnetic wave. This is the
> > combination of electrostatic and electromagnetic fields, and it
> > propagates at the normal velocity for that medium.
>
> > However, electromagnetic waves do not interact with each other, and
> > they cannot bounce off each other.
>
> That is the standard description, but it seems to have
> some weaknesses.
>
> > Recall that light from stars is electromagnetic. It travels many
> > light-years before it reaches your eyes. If electromagnetic waves
> > interacted, you would not be able to see individual stars - they
> > would merge into a blur.
>
> This would seem to me to depend on the nature of the
> interaction. Clearly the interaction represented by
> the term "bounce" (for lack of a better word) would
> have to be such as to not violate any of these
> observed behaviours.
>
> > Similarly, the signals reaching your antenna and traveling down the
> > coax to your receiver do not interact with each other. As long as
> > your receiver is not overloaded, the signals remain separate no
> > matter how many stations are on the air at the moment.
>
> > So the statement that like charges repel does not apply to
> > electromagnetic waves,
>
> Q1. Are you saying that it is inappropriate to view
> a transmission line as distributed capacitance and
> inductance and analyze its behaviour using charge
> stored in the capacitance and moving in the
> inducatance?
>
> If such analysis is appropriate, then it seems
> to me that a pulse can be viewed as a chunk of
> charge moving down the line.
>
> Q2. Is this an appropriate view?

>
> Q3. If so, then what happens when two such chunks
> of charge collide in the middle of the line?
>
> The existing analysis techniques tell us that
> no current ever flows at the mid-point of the
> line, this means no charge crosses the mid-point.
>
> Q4. Is this correct?
>
> Q5. If no charge crosses the mid-point, then how
> do the pulses, made up of chunks of charge.
> pass the mid-point?
>
> Q6. If they do not pass the mid-point, then what
> happens to them?
>
> I have offerred a somewhat intuitive explanation.
> Other explanations are welcome.
>
> Any explanation that does not involve charge will
> immediately cause me to ask Q1 again.
>
> ...Keith

The above is correct omly when the mid point you are refering to
is at the point where the time to complete half a peried is reached.
On a half period length that is at the end of a half wave radiator
the return path is the second half.The ant6enna only radiates
when the current travels on the surface towards the inductance
when the capacitors are discharging
Physical radiator length is half a cycle or period because half
the time it is travelling forward and the rest of the time backwards.
Hams must stop equating antenna length with a full wave length,
it equates to half a wave length. It is obvious then that the
completion of a cycle thus at no time has current moving
other than a single direction. Until hams get this distinction
into their heads they will never understand radiation.
Art

200. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:13:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kQ7fj.2693$pr6.5@nlpi070.nbdc.sbc.com>
Source record: 30116

Keith Dysart wrote:
> Still can't find one? ?

I haven't looked for one because I don't want to waste
my time. If there was a reference, Mr. Maxwell or Dr.
Bruene would have reported it by now but their argument
continues to rage, just like yours.
--
73, Cecil http://www.w5dxp.com

201. Re: OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:17:37 UTC
From: art <aunwin@insightbb.com>
Message-ID: <6b612c0c-cfe7-47cd-a308-a206cbcfc760@5g2000hsg.googlegroups.com>
Source record: 30117

On 3 Jan, 07:35, John Smith <assemblywiz...@gmail.com> wrote:
> Jim Higgins wrote:
>
> [...]
>
> Don't apply for the coupon then ...
>
> For others:
>
> http://www.cbsnews.com/stories/2008/01/02/tech/main3667921.shtml
>
> Regards,
> JS

If you only have three months to cash your coupon it is better
to wai until you are closer to the official change over time
to obtain the latest developments in manufacture.
Art

202. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:19:48 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <871d6fd7-8450-4696-922a-31e88b207087@5g2000hsg.googlegroups.com>
Source record: 30118

On Jan 3, 11:01 am, Mike Monett <N...@email.adr> wrote:
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> > On Jan 3, 1:07am, Mike Monett <N...@email.adr> wrote:
>
> >> Keith, your model is not realistic. As you know, any signal you
> >> impose on a conductor will form an electromagnetic wave. This is
> >> the combination of electrostatic and electromagnetic fields, and
> >> it propagates at the normal velocity for that medium.
>
> >> However, electromagnetic waves do not interact with each other,
> >> and they cannot bounce off each other.
>
> > That is the standard description, but it seems to have some
> > weaknesses.
>
> No, there are no weaknesses. Maxwell's equations have stood the test
> of time.
>
> >> Recall that light from stars is electromagnetic. It tra vels many
> >> light-years before it reaches your eyes. If electromagnetic waves
> >> interacted, you would not be able to see individual stars they
> >> would merge into a blur.
>
> > This would seem to me to depend on the nature of the interaction.
> > Clearly the interaction represented by the term "bounce" (for lack
> > of a better word) would have to be such as to not violate any of
> > these observed behaviours.
>
> The term "bounce" means they interact. Electromagnetic signals do
> not interact. They superimpose. Each is completely unaware and
> unaffected by the other.
>
> >> Similarly, the signals reaching your antenna and traveling down
> >> the coax to your receiver do not interact with each other. As
> >> long as your receiver is not overloaded, the signals remain sep
> >> arate no matter how many stations are on the air at the moment.
>
> >> So the statement that like charges repel does not apply to
> >> electromagnetic waves,
>
> > Q1. Are you saying that it is inappropriate to view a transmission
> > line as distributed capacitance and inductance and analyze its
> > behaviour using charge stored in the capacitance and moving in the

> > inducatance?
>
> That is not what you are saying. You are ignoring the magnetic
> field.
>
> > If such analysis is appropriate, then it seems to me that a pulse
> > can be viewed as a chunk of charge moving down the line.
>
> > Q2. Is this an appropriate view?
>
> No. You need to include the associated magnetic field.
>
> > Q3. If so, then what happens when two such chunks of charge
> > collide in the middle of the line?
>
> Electromagnetic signals do not collide. They superimpose.
>
> > The existing analysis techniques tell us that no current ever
> > flows at the mid-point of the line, this means no charge crosses
> > the mid-point.
>
> > Q4. Is this correct?
>
> That statement has no meaning.
>
> > Q5. If no charge crosses the mid-point, then how do the pulses,
> > made up of chunks of charge. pass the mid-point?
>
> The pulses are not chunks of charge. They are the combination of
> electrostatic and electromagnetic fields. You cannot separate the
> two.
>
> > Q6. If they do not pass the mid-point, then what happens to them?
>
> That statement has no meaning.
>
> > I have offerred a somewhat intuitive explanation.
>
> Your explanation does not work.
>
> > Other explanations are welcome.
>
> > Any explanation that does not involve charge will immediately
> > cause me to ask Q1 again.
>
> Please study Maxwell's equations and how they are derived.
>
> > Keith
>
> Regards,

>
>   Mike Monett

You did not directly answer Q1, but I take if from all the other responses that you are saying the answer is "no, it is not appropriate to view a transmission line as distributed capacitance and inductance and analyze its behaviour using charge stored in the capacitance and moving in the inducatance?"

Taking this invalidates all the subsequent questions since they are based on the premise that this kind of analysis is appropriate.

Or have I misinterpreted and your only concern with Q1 was that I did not mention that energy is stored in the electric field created by charge in the capacitance and the magnetic created by charge flowing in the inductance?

...Keith

203. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:23:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <a_7fj.2699$pr6.1280@nlpi070.nbdc.sbc.com>
Source record: 30119

Mike Monett wrote:
> However, electromagnetic waves do not interact with each other, and
> they cannot bounce off each other.

Mike, can we add "do not interact with each other" in
an unchanging medium? Coherent waves can apparently
interact at a change in mediums (impedance discontinuity).

One of the s-parameter equations illustrates that apparent
fact.

b1 = s11*a1 + s12*a2 = 0

Assuming a1 and a2 are non-zero forward and non-zero reflected
voltages, the only way they could superpose to zero is to
interact at the impedance discontinuity.
--
73, Cecil http://www.w5dxp.com

204. Re: OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:25:34 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flj29r$p76$4@news.albasani.net>
Source record: 30120

art wrote:

> ...
> If you only have three months to cash your coupon it is better
> to wai until you are closer to the official change over time
> to obtain the latest developments in manufacture.
> Art

I would make sure I purchased one which allowed upgrades to its'
firmware, indeed, I would do this with any "smart" electronic device,
even my digital camera(s).

Cheap chinese junk is better left alone, however, it is more and more
difficult to find anything else!

Regards,
JS

205. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:29:05 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flj2ge$p76$5@news.albasani.net>
Source record: 30121

Mike Monett wrote:

> ...
> The term "bounce" means they interact. Electromagnetic signals do
> not interact. They superimpose. Each is completely unaware and
> unaffected by the other.
> ...
> Regards,
>
> Mike Monett

EM fields act that same as static magnetic fields.

Why not just get some iron filings, a paper and a couple of magnets?

Move the magnets about below the paper with the iron filings above and actually get a visual on some magnetic fields and how they react to each other?

I like things simple ... then the math can follow ...

Regards,
JS

206. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 16:34:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <l88fj.2332$jJ5.789@newssvr11.news.prodigy.net>
Source record: 30122

Richard Clark wrote:
> Formula:
> 1. The guru starts to resolve the confusion about real traveling wave
> antennas to the assembled unwashed masses;
> 2. a voice pipes up with simple data showing standing waves on real
> traveling wave antennas;
> 3. the guru abandons the explanation to resolve the confusion about
> real traveling wave antennas;
> 4. the guru denounces real traveling wave antennas as being
> non-ideal.

Anyone following this thread knows that the above is absolutely
false. It is akin to dismissing lossless line analysis because
lossless lines don't exist in reality.

It is true that most real world standing wave antennas also
possess traveling waves. When an antenna is 90% standing waves,
the current on the antenna is primarily standing wave current
with a phase that changes very little end to end. The traveling
wave current is almost invisible.

It is true that most real world traveling wave antennas also
possess standing waves. When an antenna is 90% traveling waves,
the current on the antenna is primarily traveling wave current
with a phase that changes with length. The standing wave current
is almost invisible.

Richard is either very confused himself or deliberately trying
to confuse others. Each reader can decide for him/herself.
--
73, Cecil http://www.w5dxp.com

207. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:04:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MA8fj.2954$se5.759@nlpi069.nbdc.sbc.com>
Source record: 30123

Keith Dysart wrote:
> On Jan 2, 2:48 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> Keith Dysart wrote:
>>> I assume that you have not provided a reference to support
>>> this assertion because you have not been able to find one.
>> I provided the reference a number of times and you
>> chose to ignore it. The reference is the chapter on
>> interference in "Optics", by Hecht.
>
> I am suprised that a book on optics would discuss the
> output impedance of Thevenin equivalent circuits.

The "Optics", by Hecht reference is for destructive
and constructive interference, not Thevenin equivalent
circuits, but your attempt to confuse everyone is noted.
"Thevenin" is not even in the index of "Optics" so your
attempted diversion is ridiculous on the face of it.

I will repeat an earlier posting that you conveniently
chose to ignore. If we measure the forward power and
reflected power with a Bird wattmeter at the output of
your source during steady-state, it will tell you that:

forward power = reflected power

From that we can calculate the reflection coefficient.

rho = SQRT(Pref/Pfor) = plus or minus 1.0
--
73, Cecil http://www.w5dxp.com

208. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:05:24 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <12f15f25-0208-43e9-a8a6-6fb600f5807c@d4g2000prg.googlegroups.com>
Source record: 30124

On Jan 3, 11:10 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > When the pulses are not identical, the energy that crosses
> > the point is exactly sufficient to turn one pulse
> > into the other. The remainder of the energy must bounce
> > because it does not cross the mid-point.
>
> All you have proved is that you cannot tell one photon
> from another. Your whole charge repulsion argument
> falls apart when dealing with photons (which constitute
> EM waves). I suggest you study and discover what is
> possible with photons and what is not possible.

Can photons explain the state of a transmission
line driven with a step function after the line
has settled to a constant voltage?

If not, there would seem to be some difficulty
with the applicability.

...Keith

209. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:17:32 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <061b9221-565a-4e6b-b63b-ccf5b84fcc15@l6g2000prm.googlegroups.com>
Source record: 30125

On Jan 3, 11:13 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Still can't find one? ?
>
> I haven't looked for one because I don't want to waste
> my time. If there was a reference, Mr. Maxwell or Dr.
> Bruene would have reported it by now but their argument
> continues to rage, just like yours.

Excellent. So there is NO reference that claims
that the output impedance can not be used to
compute the reflection coefficient.

There are many references that do.

So that settles it, then. Many references on one side,
none on the other. It is time for you to accept the
standard methodology for computing the reflection
coefficient at a generator. And no, I am not holding
my breath while I wait.

And the arguments that I have seen between Mr. Maxwell
and Dr. Bruene are on a completely different matter.

...Keith

210. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:19:13 UTC
From: richardharrison@webtv.net
Message-ID: <4058-477D1911-1924@storefull-3254.bay.webtv.net>
Source record: 30126

Keith wrote:
"I am surprised that a book on optics would discuss the output impedance of Thevenin`s equivalent circuits."

Hecht is a physicist.

On page 74 of Terman`s 1955 0pus, he writes:
"According to Thevenin`s theorem, any linear network containing one or more sources of voltage and having two terminals behaves, in so far as a load impedance connected across these terminals is concerned, as though the network and its generators were equivalent to a simple generator having an internal impedance Z and a generated voltage E, where E is the voltage that appears across the terminals when no load is connected and Z is the impedance that is measured between the terminals when all sources of voltage are short-circuited."

On page 87 of his 1955 opus, Terman writes:
"The vector ratio of E2/E1 of the voltage of the reflected wave to the voltage of the incident wave at the load is termed the "reflection coefficient" of the load."

On page 97, Terman writes:
"The standing-wave ratio S is one means of expressing the magnitude of the reflection coefficient;"

On page 214 of "Schaum`s Outline of College Physics", Bueche & Hecht write:
"Standing waves---These might better not be called waves at all since they do not transport energy and momentum.---"

Cecil is vindicated.

Best regards, Richard Harrison, KB5WZI

211. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:20:46 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <13450496-1aea-428a-a00c-1272eac1df53@d4g2000prg.googlegroups.com>
Source record: 30127

```
On Jan 3, 12:04 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > On Jan 2, 2:48 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> >> Keith Dysart wrote:
> >>> I assume that you have not provided a reference to support
> >>> this assertion because you have not been able to find one.
> >> I provided the reference a number of times and you
> >> chose to ignore it. The reference is the chapter on
> >> interference in "Optics", by Hecht.
>
> > I am suprised that a book on optics would discuss the
> > output impedance of Thevenin equivalent circuits.
>
> The "Optics", by Hecht reference is for destructive
> and constructive interference, not Thevenin equivalent
> circuits, but your attempt to confuse everyone is noted.

My attempt to confuse!? We were discussing the determination
of reflection coefficients for Thevenin equivalent circuits.

But in another post, you have agreed that there
is a complete lack of references supporting your
position, so the question is now settled and you
can use the standard methodology to compute
reflection coefficient at a generator where
the output impedance is well defined.

Enjoy the new ability to solve problems that
were previously outside your grasp.

...Keith
```

212. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:43:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <v99fj.33319$JD.22667@newssvr21.news.prodigy.net>
Source record: 30128

Keith Dysart wrote:
> Cecil Moore wrote:
>> 1. Reflection Model - the energy is stored in the
>> forward and reflected traveling waves.
>
> So it is stored only in the E field.

Wrong! Please reference a book on EM waves. An
EM wave CANNOT have a stationary E-field in an
ordinary transmission line or in free space.

> But the important question is: Do you consider it
> to be an EM wave when only an E field is present?

No, that violates the definition of an EM wave. If
only an E-field is present in a transmission line or
in free space, it is NOT an EM wave, by definition.

For a single EM wave to exhibit a zero H-field, the
Z0 would have to be infinite which is clearly impossible
for free space or ordinary transmission lines.
--
73, Cecil http://www.w5dxp.com

213. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:51:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ng9fj.33321$JD.25952@newssvr21.news.prodigy.net>
Source record: 30130

Keith Dysart wrote:
> If such analysis is appropriate, then it seems
> to me that a pulse can be viewed as a chunk of
> charge moving down the line.
> Q2. Is this an appropriate view?

No.

> Q3. If so, then what happens when two such chunks
> of charge collide in the middle of the line?

They don't "collide". Clouds of photons collide
and their behavior is well known.

> Q5. If no charge crosses the mid-point, then how
> do the pulses, made up of chunks of charge.
> pass the mid-point?

How can two water waves pass through each other
while the water molecules are only moving up and
down?
--
73, Cecil http://www.w5dxp.com

214. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:51:49 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <8c6142c4-8da0-4a74-9c0f-7cbf90a3d6b5@d21g2000prf.googlegroups.com>
Source record: 30129

On Jan 3, 12:43 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Cecil Moore wrote:
> >> 1. Reflection Model - the energy is stored in the
> >> forward and reflected traveling waves.
>
> > So it is stored only in the E field.
>
> Wrong! Please reference a book on EM waves. An
> EM wave CANNOT have a stationary E-field in an
> ordinary transmission line or in free space.
>
> > But the important question is: Do you consider it
> > to be an EM wave when only an E field is present?
>
> No, that violates the definition of an EM wave. If
> only an E-field is present in a transmission line or
> in free space, it is NOT an EM wave, by definition.
>
> For a single EM wave to exhibit a zero H-field, the
> Z0 would have to be infinite which is clearly impossible
> for free space or ordinary transmission lines.

Good answers. Exactly as I expected. Now please
explain the applicability of EM waves to the
state of an open circuited line excited with a
step function, especially after it settles to a
constant voltage (where only an E field will be
present).

...Keith

215. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:52:19 UTC
From: richardharrison@webtv.net
Message-ID: <28958-477D20D3-2121@storefull-3257.bay.webtv.net>
Source record: 30132

Keith Dysart wrote:
Q5."If no charge crosses the mid-point, then how do the pulses, made up of charge, pass the mid-point?"

Radio waves propagate through empty space. No charges are needed for propagation, but a wire contains free electrons which are urged to move in-synch by a passing wave. That does not mean they migrate. In the wire, electrons go nowhere fast. Their motion is mostly in-place. It the energy which is traveling, not the electrons.

Best regards, Richard Harrison, KB5WZI

216. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 17:55:41 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A1A835C3E333Noemailadr@208.49.80.251>
Source record: 30131

Keith Dysart <Keith.Dysart@gmail.com> wrote:

[...]

> You did not directly answer Q1, but I take if from all the other
> responses that you are saying the answer is "no, it is not
> appropriate to view a transmission line as distributed capacitance
> and inductance and analyze its behaviour using charge stored in
> the capacitance and moving in the inducatance?"

That is not what you originally stated.

> Taking this invalidates all the subsequent questions since they
> are based on the premise that this kind of analysis is
> appropriate.

Yes, it does.

Your explanation is easily proven false. Let's suppose it was true.

Suppose it was possible to introduce a pulse of charge onto a
conductor.

Since like charges repel each other, what keeps the pulse together?

In other words, what prevents it from destroying itself?

Then, when the first pulse meets the second, what mechanism allows
them to bounce off each other?

Then, after they have bounced off each other, what mechanism keeps
them together?

[...]

> Keith

Regards,

Mike Monett

217. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 18:25:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <WM9fj.3881$lo5.1242@newssvr19.news.prodigy.net>
Source record: 30133

Keith Dysart wrote:
> The presence of this poster providing misleading
> information makes this group a rather unique learning
> environment.

But a learning experience nonetheless. All one has
to do regarding false information is to produce
valid technical references to the contrary.

Ad hominem attacks are not technical references
and the mere assertion that the information is
misleading implies some level of omniscience in
the asserter that is not in evidence.

For the record: The only controversial assertion
that I have ever made is that coherent EM wave
cancellation can cause a redistribution of the
EM energy in the opposite direction in a transmission
line. No one has proved that assertion to be wrong.

A couple of technical web pages assert that wave
cancellation can be the cause of a redistribution
of photonic energy to areas that allow constructive
interference.

Since there is only one other direction available
in a transmission line, the constructive interference
must occur in the opposite direction from the
direction of wave cancellation.

That seems like a no-brainer to me.
--
73, Cecil http://www.w5dxp.com

218. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 18:28:07 UTC
From: art <aunwin@insightbb.com>
Message-ID: <d5c06b70-ed77-4cc6-abef-55ffbcdb9197@s19g2000prg.googlegroups.com>
Source record: 30134

On 22 Dec 2007, 12:57, John Smith <assemblywiz...@gmail.com> wrote:
> Cecil Moore wrote:
> > ...
> > Why is the ignorance level about traveling waves so high
> > on this newsgroup? It's the result of those inadequate
> > lumped circuit models.
>
> In Einsteins' spirit, let's have a real look at waves (basically the
> KISS rule):
>
> http://www.colorado.edu/physics/2000/microwaves/standing_wave1.html
>
> you must go to the bottom of each page and click to view the next of the
> series.
>
> The standing wave is "driven" by the forward & reverse traveling waves,
> yet best thought of as being "separate in existence" (there are a total
> of 3 waves!) ... and can only/really exist within strict confines of
> design--or, resonance ...
>
> But then, this is nothing new, or, you already knew that ... I just like
> the way this is all presented--on those pages, or, even newbies are
> introduced to the depth of the argument ...
>
> Regards,
> JS

John, There is no way you have a standing wave. I know the books
suggest
that but the books are wrong. When current gets to the top of a
fractional
wave antenna it just does not turn back. It has to wait until half a
period time has
elapsed The turning around point is determined by frequency and
frequency alone regardles of the length of the radiator. I f the
forward time has not run out the current must continue going forward
and that means going down the center of the wire which is resistive
only and does not generate radiation. The current traverses the center
twice and it is when it starts to return on the outside is when
propagation comences. So at no time is the current changing direction
except at a time of half a period. It only has one pulse per period
and that pulse is dependent on the surface content that it traverses.
If it is a full wave where the length equates to half a period then
the capacitance and inductance is comensurate with length.

If it is a fractional wavelength it only radiates when returning on the surface where the energy storage content is half that of a full wave
This particular point has arrested the advances in antennas for 100 years just because man does not accept change.
Regards
Art

219. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 18:39:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kZ9fj.82205$Um6.17233@newssvr12.news.prodigy.net>
Source record: 30135

Mike Monett wrote:
> The term "bounce" means they interact. Electromagnetic signals do
> not interact. They superimpose. Each is completely unaware and
> unaffected by the other.

Except when they are coherent, collinear in the same direction,
equal in magnitude and 180 degrees out of phase. Thensomething
permanent happens as signified by the s-parameter equation.

b1 = s11*a1 + s12*a2 = 0

s11*a1 and s12*a2 are coherent, collinear in the same
direction, equal in magnitude and 180 degrees out of
phase. Their combined energy components are redistributed
in the direction of b2 = s21*a1 + s22*a2

Squaring the above equation results in the power density
irradiance equation from the field of optics.

Preflected = (b1)^2 = (s11*a1)^2 + (s12*a2)^2 + 2*s11*a1*s12*a2 = 0

micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index.html

"... when two waves of equal amplitude and wavelength that
are 180-degrees ... out of phase with each other meet, ...
All of the photon energy present in these waves must somehow be
recovered or redistributed in a new direction, according to the
law of energy conservation ... Instead, upon meeting, the photons
are redistributed to regions that permit constructive interference, ..."

That certainly sounds like an "interaction" to me.
--
73, Cecil http://www.w5dxp.com

220. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 18:42:37 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <htSdna9E27oBseDanZ2dnUVZ_gudnZ2d@neonova.net>
Source record: 30136

Roy Lewallen wrote:
> People who are having trouble with the concept of a -1 voltage
> reflection coefficient for a perfect voltage source might benefit from
> the following exercise:
>
> Look at my first analysis, where the perfect source was connected
> directly to the transmission line. Make no assumptions about the
> impedance or reflection coefficient it presents. Then, when the
> reflection of the initial forward wave returns, calculate the value the
> re-reflected wave must have in order to make the sum of the waves
> present, which is the line input voltage, equal to the perfect source
> voltage. The voltage of the perfect source can't change, by definition.
> The ratio of the re-reflected wave to the returning wave is the voltage
> reflection coefficient (since we're dealing with voltage waves).
>
> I'll do it for you:
>
> The forward wave was vf(t, x) = sin(wt - x)
> The returning wave was vr(t, x) = sin(wt + x)
>
> The returning wave will strike the input end of the line and create a
> new forward wave with value vf2(t, 0) = Gs * vr(t, 0) at the input,
> where Gs is the source voltage reflection coefficient.
>
> Before the first forward wave returns, we have only vf(t, 0) = sin(wt)
> at the input end of the line. This is of course the source voltage.

>
> After the wave arrives and re-reflects, we have at the input end
>
> vtot(t, 0) = vf(t, 0) + vr(t, 0) + vf2(t, 0)
> = vf(t, 0) + vr(t, 0) * (1 + Gs)
>
> This must equal the source voltage, which is the line input voltage, and
> cannot change. So plugging in values:
>
> sin(wt) = sin(wt) + sin(wt) * (1 + Gs)
>
> Solving for Gs => Gs = -1

>
> I have made no statement about the "impedance" of the perfect source.
> The only thing I've required is that the voltage remains constant, which
> is the very definition of a perfect source. You can do a similar
> exercise to show that the voltage reflection coefficient of a perfect

> current source is +1.
>
> Roy Lewallen, W7EL

I see your example as identical to Keith's example of two wave pulses traveling in opposite directions.

At the point of interaction, Keith's example has a reflection factor of 1 or zero, depending upon whether the waves bounce or pass. Keith's example is not a short circuit because two pulses of identical polarity are interacting so a reflection factor of -1 could never exist.

In your example, the presence of voltage from the ideal source creates conditions identical to Keith's example for the returning reflected wave. Accepting this premise, then the reflection factor must be either 1 or zero, depending upon whether the waves bounce or pass.

By assuming that the waves reflect at the ideal source, you proved that the reflection factor is -1, which is the factor for a short circuit. This can not be the case, so waves must not reflect at the ideal voltage source, they must pass.

vtot(t, 0) = vf(t, 0) + vr(t, 0)

= sin(wt)tot = sin(wt) + sin(wt)

= 2*sin(wt)

Someone will certainly say the the vtot(t,0) at the source location is the source voltage, because it is defined that way. The conditions at point (t,0) itself is actually unknown (because vf mysteriously appears, and vr disappears by going off the transmission line), but point (t, >0) is defined by assumptions. Therefore, at

vtot(t, >0) = vf(t, >0) + vr(t, >0)

= sin(wt)tot = sin(wt) + sin(wt)

= 2*sin(wt)

73, Roger, W7WKB

221. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 18:48:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <l6afj.82206$Um6.64481@newssvr12.news.prodigy.net>
Source record: 30137

Keith Dysart wrote:
> Can photons explain the state of a transmission
> line driven with a step function after the line
> has settled to a constant voltage?

Of course, photons can be used to explain all
EM wave action. A step function accelerates
electrons which then emit photons as EM waves.
Hint: electrons cannot move at the speed of
light. EM waves move at the speed of light.
--
73, Cecil http://www.w5dxp.com

222. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 18:51:08 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hdbqn31ihj1gjfj3spsn9t7pk66cgldks1@4ax.com>
Source record: 30138

On Thu, 3 Jan 2008 06:47:59 -0800 (PST), art <aunwin@insightbb.com>
wrote:

>One can stretch their minds and ponder on the effect of this
>diamagnetic pole tho weak would have on a compass on opposite sides of
>the earth, such as the Bermuda triangle and the area on the other side
>of the earth but of to the side where Amelia Erhardt altered her
>course for a unknown reason and disappeared.

She dissappeared over the Perth Australia? I think if she looked out
the window, she would've figured out she wasn't lost at sea in the mid
Pacific. She could've probably hailed a cab using your navigational
skills.

73's
Richard Clark, KB7QHC

223. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 18:56:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6dafj.82208$Um6.55311@newssvr12.news.prodigy.net>
Source record: 30139

Keith Dysart wrote:
> So there is NO reference that claims
> that the output impedance can not be used to
> compute the reflection coefficient.

If I say I am not going to look for a reference
to "creation" in The Bible, are you going to assert
there are no references to creation in The Bible?
Good luck on your ridiculous assertions.

> So that settles it, then.

No, it is not settled. Please reply to my posting
where I proved the reflection coefficient is plus
or minus one, the exact opposite of what you assert.

> And the arguments that I have seen between Mr. Maxwell
> and Dr. Bruene are on a completely different matter.

If you think that, it's prima facie evidence that you
are really confused.
--
73, Cecil http://www.w5dxp.com

224. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:00:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <dhafj.82209$Um6.81046@newssvr12.news.prodigy.net>
Source record: 30140

Keith Dysart wrote:
> My attempt to confuse!? We were discussing the determination
> of reflection coefficients for Thevenin equivalent circuits.

No, we were discussing destructive and constructive
interference. Sorry about your confusion.

> But in another post, you have agreed that there
> is a complete lack of references supporting your
> position, ...

No, I said I am not going to look for them. Sorry
about your confusion.

> Enjoy the new ability to solve problems that
> were previously outside your grasp.

I'm sorry, Keith, delusions of grandeur are a problem
outside of my field of expertise. Perhaps a professional
shrink could help you better than I.
--
73, Cecil http://www.w5dxp.com

225. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:09:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <70cqn358ku0tmabnisl9005nbgv3qdcqcs@4ax.com>
Source record: 30141

On Thu, 3 Jan 2008 06:28:19 -0500, "David J Windisch"
<davidjw@cinci.rr.com> wrote:

>You were writing of Tesla over Edison, a-c over d-c power transmission, and
>I was reminded that Prez Kennedy started some work years ago somewhere in
>the West, involving hvdc transmission. I wasn't intentionally obscuring
>things in that earlier post. 73 Dave N3HE

Hi Dave,

I am well practiced mixing it up with the masters of obscurity, and I certainly don't confuse you with Prior Art, or Cecileo. However, the HVDC project you allude to is new to me (even if it is/was decades old).

As an aside, I have worked with the lawyer who was instrumental in closing down WPPS (a nuclear power consortium we generally called WHOOPS). That consortium agonized that Washington's credit rating would go down the toilet if we defaulted - barely a blip in the interest rate resulted when we mothballed several nuclear reactors.

Even further aside, I lived in Japan in the early 50s when they used DC residential power (and we had to be careful to buy AC/DC appliances). Woe to those living at the end of the block where the street lights were dim.

Edison used to portray AC as being the killer current (eventually selected for use on death row). Actually there were a mix of characteristics that lent either the death potentiality. DC will cause the muscles to clamp, and if you seized a hazardous wire, you could never let go. AC, on the other hand (no pun), would cause fibrillation, and you stood some chance of releasing the same hazardous wire. AC, on the third hand (again, no pun), would also cause the sweat glands to excrete (due to the same fibrillation) and lower your path resistance (more lethal current).

73's
Richard Clark, KB7QHC

226. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:10:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nqafj.82211$Um6.23009@newssvr12.news.prodigy.net>
Source record: 30142

Keith Dysart wrote:
> Excellent. So there is NO reference that claims
> that the output impedance can not be used to
> compute the reflection coefficient.

That is probably a false statement. I just haven't
wasted my time looking for a reference that uses
those exact words.

> There are many references that do.

I seriously doubt that they say what you are
asserting. Please produce those references.
In another thread, I proved your assertion wrong.
A Bird wattmeter placed at the output of your source
will read forward power = reflected power. The
reflection coefficient can be calculated from
that. rho = SQRT(Pref/Pfor) = plus or minus 1.0
--
73, Cecil http://www.w5dxp.com

227. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:11:52 UTC
From: art <aunwin@insightbb.com>
Message-ID: <6f36588d-c7db-4fc1-949d-f863e0f2a0ea@i7g2000prf.googlegroups.com>
Source record: 30143

On 3 Jan, 09:51, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > If such analysis is appropriate, then it seems
> > to me that a pulse can be viewed as a chunk of
> > charge moving down the line.
> > Q2. Is this an appropriate view?
>
> No.
>
> > Q3. If so, then what happens when two such chunks
> > of charge collide in the middle of the line?
>
> They don't "collide". Clouds of photons collide
> and their behavior is well known.
>
> > Q5. If no charge crosses the mid-point, then how
> > do the pulses, made up of chunks of charge.
> > pass the mid-point?
>
> How can two water waves pass through each other
> while the water molecules are only moving up and
> down?
> --
> 73, Cecil http://www.w5dxp.com

Cecil
The current only changes direction at the behest
of the frequency. I know you think that the
current changes at the behest of the
length of radiator used i.e. at the top but
frankly that is lunacy. It is only when the capacitor charge
starts to move to the inductance and starts to store energy
which generates a diamagnetic field can propagation can occur
You must get a pencil and paper and think things out for
yourself instead of relying on books. With your IQ it should
be a cake walk because unlike some others you are able to get
back to first principles instead of learning by rote.
No personal offence intended. Being stubborn is not all that bad
but only if you are willing to think out alternatives given.
Otherwise it is a not invented in my back yard aproach which
amounts to an over inflation of one's ability
Best regards
Art

228. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:14:37 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fljc75$ml2$1@news.service.uci.edu>
Source record: 30146

Keith Dysart wrote:
> The example was carefully chosen to illustrate the
> point, of course. But that is the value of particular
> examples.

> When the pulses are not identical, the energy that crosses
> the point is exactly sufficient to turn one pulse
> into the other.

> The remainder of the energy must bounce
> because it does not cross the mid-point.
> ...Keith

So it really is almost as though the pulses travel through one another, rather than bounce off one another.

I have seen the concept that energy doesn't cross nodal points alluded to in some texts. However there are so many exceptions to it found in physical systems as to render it a dubious notion at best. Useful perhaps for illustration purposes.

In the discussion of standing waves on a string, Halliday and Resnick says "It is clear that energy is not transported along the string to the right or to the left, for energy cannot flow past the nodal points in the string, which are permanently at rest. Hence the energy remains "standing" in the string, although it alternates between vibrational kinetic energy and elastic potential energy."

So the idea is valid for a simple harmonic oscillator in which there are no losses. In such a case, once the system begins oscillating, no further input of energy is required in order to maintain oscillation. Clearly there is no flow of energy into or out of such a system. What is clear is that energy doesn't pass through the nodes. It is less clear that there exists an inherent mechanism which prevents the movement of energy.

And so it appears in cases where there is no transfer of energy that one might claim that waves bounce off of one another. There are no other examples, and no supporting mechanism for it of which I am aware, and so one might be equally justified in claiming that waves pass through each other in all cases.

73, ac6xg

229. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:15:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Vuafj.82212$Um6.19772@newssvr12.news.prodigy.net>
Source record: 30144

Keith Dysart wrote:
> Good answers. Exactly as I expected. Now please
> explain the applicability of EM waves to the
> state of an open circuited line excited with a
> step function, especially after it settles to a
> constant voltage (where only an E field will be
> present).

Before it settles to a constant voltage, there is
acceleration of electrons that results in an EM
photonic wave.

After it settles to a constant voltage, there is
no acceleration of electrons and the EM photonic
wave disappears.

Please see Maxwell's equations for further
enlightenment.
--
73, Cecil http://www.w5dxp.com

230. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:19:26 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c9286218-1477-4bdd-8f14-adac53806c22@s19g2000prg.googlegroups.com>
Source record: 30145

On Jan 3, 1:48 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Can photons explain the state of a transmission
> > line driven with a step function after the line
> > has settled to a constant voltage?
>
> Of course, photons can be used to explain all
> EM wave action. A step function accelerates
> electrons which then emit photons as EM waves.
> Hint: electrons cannot move at the speed of
> light. EM waves move at the speed of light.

Please describe the final state of the step
excited open circuited line using photons.

Thanks,

Keith

231. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:20:21 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <05dqn3t43pfjpkaquvmnb1ms3asl5qgcn5@4ax.com>
Source record: 30147

On Thu, 03 Jan 2008 16:34:25 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>Each reader can decide for him/herself.

Shocking!

Are you abdicating your role of Supreme Arbiter of Knowledge and
leading Guru of RF? (I didn't see any white smoke coming out of the
Vatican chimney to announce this portentous event.)

Will there be a retirement party?

232. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:22:28 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c9438b37-28f5-4e09-950b-a3f166a99941@e6g2000prf.googlegroups.com>
Source record: 30048

On Jan 3, 1:56 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > So there is NO reference that claims
> > that the output impedance can not be used to
> > compute the reflection coefficient.
>
> If I say I am not going to look for a reference
> to "creation" in The Bible, are you going to assert
> there are no references to creation in The Bible?
> Good luck on your ridiculous assertions.

You do seem to like to clip the important bits.

It was your sentence: "If there was a reference,
Mr. Maxwell or Dr. Bruene would have reported it
by now but their argument continues to rage" that
made it clear you did not expect to be able to
find a reference.

> > So that settles it, then.

And that was what settled it. No expectation
of a reference... Then no reason for you to
argue further.

...Keith

233. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:24:28 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fljcpk$ml2$2@news.service.uci.edu>
Source record: 30050

Richard Clark wrote:

> On Wed, 02 Jan 2008 16:23:02 -0800, Jim Kelley <jwkelley@uci.edu>
> wrote:
>
>
>>I don't think 'addition' is the best answer.
>
>
> Hi Jim,
>
> Do you want an actual, legitimate answer guaranteed to end the quest,
> or are you having too much fun standing on Cecil's toes as he tries to
> tap dance?

I was hoping to get Cecil to think a bit more carefully about what he
has been saying. To provide quality, as well as quantity.

73, ac6xg

234. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:27:20 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ngdqn39o6d2skmm1044d3b5v13qk4f6g0p@4ax.com>
Source record: 30049

On Thu, 3 Jan 2008 07:55:48 -0800 (PST), Keith Dysart
<Keith.Dysart@gmail.com> wrote:

>The presence of this poster providing misleading
>information makes this group a rather unique learning
>environment.

Hi Keith,

By a certain opaque style of writing, the tenor of questions offered,
and an aversion to to deliberating the evidence given in response; I
would say the crown of Trolling is being challenged and Cecil may slip
beneath a new prince's claim.

73's
Richard Clark, KB7QHC

235. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:35:03 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <bad0be0b-f994-483d-a047-a405df152750@e6g2000prf.googlegroups.com>
Source record: 30051

On Jan 3, 2:15 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Good answers. Exactly as I expected. Now please
> > explain the applicability of EM waves to the
> > state of an open circuited line excited with a
> > step function, especially after it settles to a
> > constant voltage (where only an E field will be
> > present).
>
> Before it settles to a constant voltage, there is
> acceleration of electrons that results in an EM
> photonic wave.
>
> After it settles to a constant voltage, there is
> no acceleration of electrons and the EM photonic
> wave disappears.

So when the edge of the step is travelling towards
the right, is there an EM wave to the right of the
step, to left of the step, at the step, or all three?
Similar question for when the step is travelling
back to the generator?

When the line has settled, how do you add the forward
and reflected wave to compute the voltage on the line,
or does the disappearance of the wave mean this is
now impossible?

If only the step itself has an EM wave, how are
voltages computed using reflection coefficient after
the step has reflected from the open end?

...Keith

236. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:37:57 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <jLidnXFC-LEJpODanZ2dnUVZ_vamnZ2d@neonova.net>
Source record: 30052

Keith Dysart wrote:

clip.....
>> I fully agree with the philosophy you express here Keith. But I can see
>> how you would doubt that I am practicing what I just agreed with.
>
> You may have mis-interpreted my comments. I have NOT
> seen evidenace of the behaviour I describe above in
> your writings.
>
> The comments mostly apply to a single poster who has
> been posting on this group for many years, at least
> since when I first started viewing this group in the
> mid 90s and began to really gain an understanding of
> transmission lines.
>
> The presence of this poster providing misleading
> information makes this group a rather unique learning
> environment.
>
> In most learning environments, the information is
> neatly packaged and presented from a consistent
> point of view with no challenge.
>
> Here, a lot of chaff is mixed with the wheat. This
> has the "benefit" of forcing the learner to
> understand well enough to make decisions between
> competing explanations. The learner who makes the
> right choices comes out with a much more solid
> understanding than one who has just been (spoon)
> fed the story. On the other hand, some have
> probably been lead seriously astray.
>
> For sure, I have a better understanding than
> I would have had without the challenging
> misleading information.
>
> So for sure it would be better for the poster
> in question were he to let go of some of his
> incorrect beliefs, it would also reduce some of
> the opportunities for learning provided to
> others lurking or partaking in the discussions.
>
> ...Keith

>

Thanks Keith. I am learning a tremendous amount here. As you say, the interaction really helps focus, reason, and justify, and finally, readjust thinking as understanding improves.

I certainly like your example of two opposite traveling pulses. I used it again today in a posting responding to Roy.

73, Roger, W7WKB

237. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:39:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <YRafj.82216$Um6.39306@newssvr12.news.prodigy.net>
Source record: 30054

Keith Dysart wrote:
> Please describe the final state of the step
> excited open circuited line using photons.

Photons are emitted and absorbed by the electrons
as the electrons lose/gain energy. Photons are not
conserved. Only the energy in photons is conserved.

In a DC system with no accelerating or decelerating
electrons, all of the photons have been absorbed
back into the electrons (or lost to radiation).
Of course, this describes an ideal system.
--
73, Cecil http://www.w5dxp.com

238. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:39:55 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <e285c88b-f78b-4695-90d6-deb1e64f760a@e25g2000prg.googlegroups.com>
Source record: 30053

On Jan 3, 2:10 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Excellent. So there is NO reference that claims
> > that the output impedance can not be used to
> > compute the reflection coefficient.
>
> That is probably a false statement. I just haven't
> wasted my time looking for a reference that uses
> those exact words.
>
> > There are many references that do.
>
> I seriously doubt that they say what you are
> asserting. Please produce those references.

One has been directly provided, though many
more are available using the google searches
previously suggested.

But that one is infinitely more than those
available supporting the opposite view.

> In another thread, I proved your assertion wrong.

Asserting that you have proved an assertion wrong
is not the same as proving it wrong.

> A Bird wattmeter placed at the output of your source
> will read forward power = reflected power. The
> reflection coefficient can be calculated from
> that. rho = SQRT(Pref/Pfor) = plus or minus 1.0

Of course. With one side of the Bird wattmeter
left open, it will happily measure the reflection
coefficient of that open. This says nothing about
the reflection coefficient of the line connection
with the source.

...Keith

239. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:42:08 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <87eqn3lcnk4niu3j2b9h93dt2ib9n9rq2v@4ax.com>
Source record: 30055

On Thu, 03 Jan 2008 12:25:59 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>> The presence of this poster providing misleading
>> information makes this group a rather unique learning
>> environment.

>For the record: The only controversial assertion
>that I have ever made is that coherent EM wave
>cancellation can cause a redistribution of the
>EM energy in the opposite direction in a transmission
>line. No one has proved that assertion to be wrong.

What an ego to rush to slip into a TNT vest in the hope of being
associated with Nobel.

As usual, Cecil's arguments are so script driven, that I cannot pass
up this mocking opportunity:

I shall assert that coherent EM wave cancellation can not cause a
redistribution of the EM energy in the opposite direction in a
transmission line.

No one has proved that assertion to be wrong.

Does that misleading statement qualify me for Keith's anointed villain
of the group? Cecil certainly has described me as being scurrilous
enough to so qualify! ;-)

Besides, I think I look better in that vest than he does.

73's
Richard Clark, KB7QHC

240. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:44:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <zWafj.82218$Um6.49063@newssvr12.news.prodigy.net>
Source record: 30056

Keith Dysart wrote:
> It was your sentence: "If there was a reference,
> Mr. Maxwell or Dr. Bruene would have reported it
> by now but their argument continues to rage" that
> made it clear you did not expect to be able to
> find a reference.

Make that *easily* find a reference and you will
have it correct. Just because I am lazy is not
a proof that the reference doesn't exist.

> And that was what settled it. No expectation
> of a reference... Then no reason for you to
> argue further.

Just a minute. What about the proof I offered
that the actual reflection coefficient is 1.0
based on Bird wattmeter readings?

The Bird tells us that at the source terminals,
the forward power equals the reflected power.
rho = SQRT(Pref/Pfor) = plus or minus 1.0
--
73, Cecil http://www.w5dxp.com

241. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:47:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <rZafj.82219$Um6.74876@newssvr12.news.prodigy.net>
Source record: 30057

Jim Kelley wrote:
> I was hoping to get Cecil to think a bit more carefully about what he
> has been saying. To provide quality, as well as quantity.

This newsgroup is not exactly an IEEE publication
subject to peer review. Methinks you are asking
too much for me to stop talking about phasor
addition of two phasors.
--
73, Cecil http://www.w5dxp.com

242. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:48:10 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flje62ogi1@news.service.uci.edu>
Source record: 30058

Cecil Moore wrote:
> Mike Monett wrote:
>
>> The term "bounce" means they interact. Electromagnetic signals do
>> not interact. They superimpose. Each is completely unaware and
>> unaffected by the other.
>
>
> Except when they are coherent, collinear in the same direction,
> equal in magnitude and 180 degrees out of phase.

Fabricated nonsense.

> Thensomething
> permanent happens as signified by the s-parameter equation.
>
> b1 = s11*a1 + s12*a2 = 0
>
> s11*a1 and s12*a2 are coherent, collinear in the same
> direction, equal in magnitude and 180 degrees out of
> phase. Their combined energy components are redistributed
> in the direction of b2 = s21*a1 + s22*a2
>
> Squaring the above equation results in the power density
> irradiance equation from the field of optics.
>
> Preflected = (b1)^2 = (s11*a1)^2 + (s12*a2)^2 + 2*s11*a1*s12*a2 = 0
>
> micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index.html
>
>
> "... when two waves of equal amplitude and wavelength that
> are 180-degrees ... out of phase with each other meet, ...
> All of the photon energy present in these waves must somehow be
> recovered or redistributed in a new direction, according to the
> law of energy conservation ... Instead, upon meeting, the photons
> are redistributed to regions that permit constructive interference, ..."
>
> That certainly sounds like an "interaction" to me.

But to truly be considered official proof of an interaction, it must
walk like one as well as sound like one, IIRC.

:-) ac6xg

243. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:50:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5ueqn3dkp0taac67enj2si7j0175k1bcmr@4ax.com>
Source record: 30059

On Thu, 3 Jan 2008 10:28:07 -0800 (PST), art <aunwin@insightbb.com>
wrote:

>When current gets to the top of a
>fractional
>wave antenna it just does not turn back. It has to wait until half a
>period time has
>elapsed

Guru Prior Art, sir,

Which is more rankling to your celebrity:
1. being ignored for such stupid remarks;
1. being criticised for such stupid remarks?

To reduce confusion, select 1 of the above in response.

73's
Richard Clark, KB7QHC

244. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:52:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <a6fqn35mkeklaq2i8asb0u1128lqfm86oh@4ax.com>
Source record: 30060

On Thu, 03 Jan 2008 11:24:28 -0800, Jim Kelley <jwkelley@uci.edu>
wrote:

>I was hoping to get Cecil to think a bit more carefully about what he
>has been saying. To provide quality, as well as quantity.

Aw, now you are shining us all on!!

73's
Richard Clark, KB7QHC

245. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:56:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <K5bfj.2757$El5.2147@newssvr22.news.prodigy.net>
Source record: 30061

Keith Dysart wrote:
> So when the edge of the step is travelling towards
> the right, is there an EM wave to the right of the
> step, to left of the step, at the step, or all three?
> Similar question for when the step is travelling
> back to the generator?

You are confusing cause and effect. There is an EM
wave wherever there are photons being exchanged
among the electrons. Any speed-of-light movement
is evidence of the existence of photons.

> When the line has settled, how do you add the forward
> and reflected wave to compute the voltage on the line,
> or does the disappearance of the wave mean this is
> now impossible?

After all the photons have been absorbed or radiated,
there is no forward EM wave or reflected EM wave.
They simply cease to exist in the DC steady-state
where electrons are not being accelerated or
decelerated.

> If only the step itself has an EM wave, how are
> voltages computed using reflection coefficient after
> the step has reflected from the open end?

If the step is reflected, the reflection consists
of photons. As long as anything is flowing at the
speed of light in the medium, photons exist.
--
73, Cecil http://www.w5dxp.com

246. Need some free older "E-Books?"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 19:58:19 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fljeoo$k1h$1@news.albasani.net>
Source record: 30062

Some references to antennas in the pages of a couple of these
books--interesting look at history ... scroll down the page to the books.

http://www.pmillett.com/tecnical_books_online.htm

Regards,
JS

247. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:01:25 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <pabfj.103448$MJ6.101767@bgtnsc05-news.ops.worldnet.att.net>
Source record: 30063

Cecil Moore wrote:
> Gene Fuller wrote:
>> I challenged you to find any case in AN 95-1 that supports your claim
>> of counter-traveling waves in a transmission line, with each wave
>> carrying its own energy that somehow nets out to zero.
>
> I did exactly that earlier and you didn't comprehend
> it then - but here it is again.
>
> (b1)^2 = (s11*a1 + s12*a2)^2 = 0
>
> (b1)^2 is reflected power. It is only zero when
> (s11*a1 + s12*a2)^2 = 0
>
> (b1)^2 = (s11*a1)^2 + (s12*a2)^2 + 2(s11*a1)(s12*a2)
>
> Since a1 and a2 are phasors, their multiplication
> involves cos(A) of the Angle between them.
>
> Pref1 = P1 + P2 + 2*SQRT(P1*P2)cos(A)
>
> Does that equation look familiar? Please reference the
> s-parameter ap note, pages 16 & 17, for the meaning of
> those squared terms. The power density equation can be
> derived from the s-parameter equation.
>
> http://www.ecs.umass.edu/ece/labs/antlab/HP_AppNote95-1_S-parameters.pdf

Wow! You missed again! And I thought that you actually understood what
s-parameters are all about.

Get a clue. None of your rantings say anything about the behavior of
waves on the transmission line. As usual you keep ducking the question
by answering a different one.

73,
Gene
W4SZ

248. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:06:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mtfqn3tqcrh65v447040hon8rehorf83u3@4ax.com>
Source record: 30064

On Thu, 03 Jan 2008 19:44:31 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>> of a reference... Then no reason for you to
>> argue further.
>
>Just a minute.

Reminds me of that Monty Python moment during the Black Plague and the
cart passing in the street.

Old man struggling with family against being put in:
"Wait! WAIT! I'm not dead yet!"

Family struggling harder:
"Oh YES YOU ARE!"

73's
Richard Clark, KB7QHC

249. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:07:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <agbfj.2760$El5.2475@newssvr22.news.prodigy.net>
Source record: 30065

Keith Dysart wrote:
> Of course. With one side of the Bird wattmeter
> left open, it will happily measure the reflection
> coefficient of that open. This says nothing about
> the reflection coefficient of the line connection
> with the source.

Any way you choose to look at the example, the same
amount of joules are flowing into the source as are
flowing out of the source during any particular time
period. That is a power reflection coefficient of 1.0
Take the square root to find the voltage reflection
coefficient of plus or minus 1.0
--
73, Cecil http://www.w5dxp.com

250. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:13:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <b7gqn35qk73dpj71trclib609vsh4otsak@4ax.com>
Source record: 30066

On Thu, 3 Jan 2008 11:19:26 -0800 (PST), Keith Dysart
<Keith.Dysart@gmail.com> wrote:

>> Hint: electrons cannot move at the speed of
>> light. EM waves move at the speed of light.

I love these built-in failures of argument. :-)

Shine the sun on a pie pan. How fast is light moving in getting
through it? How fast is an electron moving in getting through it?

Is light traveling at the speed of light? Would it travel faster than
an electron if we took out the pie? Would it travel faster than an
electron if we kept the pie and took out the pan?

73's
Richard Clark, KB7QHC

251. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:17:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <apbfj.2761$El5.1826@newssvr22.news.prodigy.net>
Source record: 30067

Richard Clark wrote:
> I shall assert that coherent EM wave cancellation can not cause a
> redistribution of the EM energy in the opposite direction in a
> transmission line.
>
> No one has proved that assertion to be wrong.

The Melles-Groit and FSU web pages certainly seem to
disagree with you. To the best of my knowledge, they
prove your assertion to be wrong and support my
contention of redistribution of energy after wave
cancellation.

http://www.mellesgriot.com/products/optics/oc_2_1.htm

"Clearly, if the wavelength of the incident light and
the thickness of the film are such that a phase difference
exists between reflections of p, then reflected wavefronts
interfere destructively, and overall reflected intensity is
a minimum. If the two reflections are of equal amplitude,
then this amplitude (and hence intensity) minimum will be
zero." (Referring to 1/4 wavelength thin films.)

"In the absence of absorption or scatter, the principle of
conservation of energy indicates all 'lost' reflected intensity
will appear as enhanced intensity in the transmitted beam.
The sum of the reflected and transmitted beam intensities is
always equal to the incident intensity. This important fact
has been confirmed experimentally."

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

"... when two waves of equal amplitude and wavelength that are
180-degrees ... out of phase with each other meet, they are not
actually annihilated, ... All of the photon energy present in
these waves must somehow be recovered or redistributed in a new
direction, according to the law of energy conservation ... Instead,
upon meeting, the photons are redistributed to regions that permit

constructive interference, so the effect should be considered as
a redistribution of light waves and photon energy rather than
the spontaneous construction or destruction of light."

In an RF transmission line, since there are only two possible
directions, the only "regions that permit constructive interference"
at an impedance discontinuity is the opposite direction from the

direction of destructive interference.
--
73, Cecil http://www.w5dxp.com

252. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:19:32 UTC
From: art <aunwin@insightbb.com>
Message-ID: <ca6add17-fa34-46b5-9fa8-f98fcc721b79@1g2000hsl.googlegroups.com>
Source record: 30068

On 3 Jan, 11:50, Richard Clark <kb7...@comcast.net> wrote:
> On Thu, 3 Jan 2008 10:28:07 -0800 (PST), art <aun...@insightbb.com>
> wrote:
>
> >When current gets to the top of a
> >fractional
> >wave antenna it just does not turn back. It has to wait until half a
> >period time has
> >elapsed
>
> Guru Prior Art, sir,
>
> Which is more rankling to your celebrity:
> 1. being ignored for such stupid remarks;
> 1. being criticised for such stupid remarks?
>
> To reduce confusion, select 1 of the above in response.
>
> 73's
> Richard Clark, KB7QHC

Fortunately idiots such as you are not able to debate civily
so what you think doesn't count.You may have been a good sailor
man but without a degree in engineering you will never be able
to understand first principals. Time and time again your questions
given but no technical answers provided other than taunts is
enought to show what a miserable man you are. For a person not
to understand that a time variable added to Gaussian law
equals Maxwell's lawa plus argueing about same with a man with
a doctorate who works for the space agency at MIT shows just how
much your ego has been inflated. You are just a large inflated
ballon looking for somebody who will place a prick in you.
Begone you miserable urchin.

253. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:21:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <rtbfj.85985$YL5.42436@newssvr29.news.prodigy.net>
Source record: 30069

Jim Kelley wrote:
>> Except when they are coherent, collinear in the same direction,
>> equal in magnitude and 180 degrees out of phase.
>
> Fabricated nonsense.

Coherent waves are fabricated nonsense?
Collinear, same direction waves are fabricated nonsense?
Equal magnitude waves are fabricated nonsense?
Opposite phase waves are fabricated nonsense?
--
73, Cecil http://www.w5dxp.com

254. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:25:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <uvgqn3dhr75cfer4gi92sh59d2oii70kml@4ax.com>
Source record: 30070

On Thu, 03 Jan 2008 14:17:11 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>> No one has proved that assertion to be wrong.
>
>The Melles-Groit and FSU web pages certainly seem to
>disagree with you.

There is a vast gulf between seeming and proving.

My assertion stands unassailed! [except for a few pecks by a duck]

255. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:29:18 UTC
From: richardharrison@webtv.net
Message-ID: <16958-477D459E-2349@storefull-3256.bay.webtv.net>
Source record: 30072

Art wrote:
"It is obvious that the completion of a cycle thus at no time has current moving other than in a single direction."

We have a "cycle" because the current alternates or reverses direction twice each cycle.

Hams likely agree with Terman that radio waves are produced to some extent whenever a wire in open space carries a high-frequency current. (Page 864, opus of 1955)

Kraus says on page 12 in the 3rd edition of "Antennas":
"Antennas convert electrons to photons, or vice versa."
Also: "Thus, time-changing current radiates and accelerated charge radiates."
Also: The currents on the transmission line flow out on the antenna and end there, but the fields associated with them keep on going.

Best regards, Richard Harrison, KB5WZI

256. Re: Need some free older "E-Books?"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:29:19 UTC
From: art <aunwin@insightbb.com>
Message-ID: <a9d4dde2-b9e0-41ef-ab20-9448043b81d0@l1g2000hsa.googlegroups.com>
Source record: 30071

On 3 Jan, 11:58, John Smith <assemblywiz...@gmail.com> wrote:
> Some references to antennas in the pages of a couple of these
> books--interesting look at history ... scroll down the page to the books.
>
> http://www.pmillett.com/tecnical_books_online.htm
>
> Regards,
> JS

John,
I have a lot of books dealing with radio that I can send you for free
if you want them. I am going to keep my 1st edition of the amateur
handbook
but I have a lot of other books
Art

257. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:35:56 UTC
From: art <aunwin@insightbb.com>
Message-ID: <438bacfc-dd9a-4395-8cf2-1e459cf1ff86@21g2000hsj.googlegroups.com>
Source record: 30073

On 3 Jan, 10:51, Richard Clark <kb7...@comcast.net> wrote:
> On Thu, 3 Jan 2008 06:47:59 -0800 (PST), art <aun...@insightbb.com>
> wrote:
>
> >One can stretch their minds and ponder on the effect of this
> >diamagnetic pole tho weak would have on a compass on opposite sides of
> >the earth, such as the Bermuda triangle and the area on the other side
> >of the earth but of to the side where Amelia Erhardt altered her
> >course for a unknown reason and disappeared.
>
> She dissappeared over the Perth Australia? I think if she looked out
> the window, she would've figured out she wasn't lost at sea in the mid
> Pacific. She could've probably hailed a cab using your navigational
> skills.
>
> 73's
> Richard Clark, KB7QHC

Again, no technical statements coming from your mouth only taunts.
Just shows what sort of individual you are, always taking a poke at
people
with none having technical content. I am beginning to think of you as
a
small person in stature with a big chip on your shoulder and a
slobbering mouth.

258. Re: Need some free older "E-Books?"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:36:17 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fljgvu$tm7$1@news.albasani.net>
Source record: 30074

art wrote:

>> ...
> John,
> I have a lot of books dealing with radio that I can send you for free
> if you want them. I am going to keep my 1st edition of the amateur
> handbook
> but I have a lot of other books
> Art

Art:

Would be GREAT! And, much appreciated!

I am making a collection of books, I am sorting those with expired copyrights, and creating a "Tech Repository." I am working on this when bored and "in the mood." When it gets sorted into page(s) I am not ashamed of, will make it (page(s)) known ...

SEND AWAY MAN!

Warmest regards,
JS

259. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:37:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <sdhqn3hq1g1f2hbdpc2bh6kq6vslu66dgl@4ax.com>
Source record: 30075

On Thu, 3 Jan 2008 12:19:32 -0800 (PST), art <aunwin@insightbb.com>
wrote:

>On 3 Jan, 11:50, Richard Clark <kb7...@comcast.net> wrote:
>> On Thu, 3 Jan 2008 10:28:07 -0800 (PST), art <aun...@insightbb.com>
>> wrote:
>>
>> >When current gets to the top of a
>> >fractional
>> >wave antenna it just does not turn back. It has to wait until half a
>> >period time has
>> >elapsed
>>
>> Guru Prior Art, sir,
>>
>> Which is more rankling to your celebrity:
>> 1. ï¿½being ignored for such stupid remarks;
>> 1. ï¿½being criticised for such stupid remarks?
>>
>> To reduce confusion, select 1 of the above in response.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Fortunately idiots such as you are not able to debate civily

My dear Prior Art, sainted Guru of the RF, sir,

By your response, you certainly must admit that your celebrity status
abhors being ignored. After all, who else has responded to your
nonsense?

My idiocy serves yours by keeping your words alive! Who needs civily
when it draws only flies?

73's
Richard Clark, KB7QHC

260. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:45:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <vuhqn3hk4ghi9oov12ovko167tlr3vot13@4ax.com>
Source record: 30076

On Thu, 3 Jan 2008 12:35:56 -0800 (PST), art <aunwin@insightbb.com>
wrote:

>> >One can stretch their minds and ponder on the effect of this
>> >diamagnetic pole tho weak would have on a compass on opposite sides of
>> >the earth, such as the Bermuda triangle and the area on the other side
>> >of the earth but of to the side where Amelia Erhardt altered her
>> >course for a unknown reason and disappeared.
>>
>> She dissappeared over the Perth Australia? ï¿½I think if she looked out
>> the window, she would've figured out she wasn't lost at sea in the mid
>> Pacific. ï¿½She could've probably hailed a cab using your navigational
>> skills.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Again, no technical statements

Oh most celebrated Prior Art, sir of infinite wisdom,

You write about geography and vectors.

The compass uses magnetism where you have curled the North Pole into
Bermuda.

The complex conjugate coordinates of Bermuda locate Perth Australia.

You have place Amelia at the conjugate North Pole by your navigational
skills [sic].

It stands to reason that modest cab fare would have gotten her to town
to allow her to announce she wasn't lost.

Vectors prove this and Gauss' law was used!

OH! I get it. You don't understand the technical part of "other side
of the earth" and complex conjugate. You only have a degree in
Spanner Engineering, not English, so your affliction is noted.

73's
Richard Clark, KB7QHC

261. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:49:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <aTbfj.2764$El5.1905@newssvr22.news.prodigy.net>
Source record: 30077

Gene Fuller wrote:
>> http://www.ecs.umass.edu/ece/labs/antlab/HP_AppNote95-1_S-parameters.pdf
>
> Wow! You missed again! And I thought that you actually understood what
> s-parameters are all about.
>
> Get a clue. None of your rantings say anything about the behavior of
> waves on the transmission line. As usual you keep ducking the question
> by answering a different one.

HP would be interested in knowing your theory that the
s-parameter equations cannot be used on a transmission
line. How can you possibly be that ignorant?

Actually, s-parameter equations are an ideal way to
analyze an impedance discontinuity in a transmission
line since the voltages are normalized to SQRT(Z0).
Squaring the normalized voltages yields power.

```
----50 ohm line--+--1/2WL 300 ohm line--50 ohm load
a1-->|-->b2
b1<--|<--a2
```

b1 = s11*a1 + s12*a2 b2 = s21*a1 + s22*a2

|a1|^2 is forward power, |b1|^2 is reflected power
|b2|^2 is forward power, |a2|^2 is reflected power

Squaring the s-parameter equations yields the power
density (irradiance) equation from the field of optics.
I'm sorry that technical fact upsets you so.
--
73, Cecil http://www.w5dxp.com

262. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:51:07 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_Ubfj.2766$El5.1923@newssvr22.news.prodigy.net>
Source record: 30079

Richard Clark wrote:
> Shine the sun on a pie pan. How fast is light moving in getting
> through it? How fast is an electron moving in getting through it?
> Is light traveling at the speed of light? Would it travel faster than
> an electron if we took out the pie? Would it travel faster than an
> electron if we kept the pie and took out the pan?

There, there, Richard, everything is going to be OK.
(Somebody get the net!)
--
73, Cecil http://www.w5dxp.com

263. Re: Where is the moderator?????

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:51:19 UTC
From: KC8QJP <kc8qjp@lycos.com>
Message-ID: <fljhsbtda1@news.datemas.de>
Source record: 30078
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

"Bert Hyman" <bert@iphouse.com> wrote in message
news:Xns9A196EB99B987VeebleFetzer@127.0.0.1...
> kc8qjp@lycos.com (KC8QJP) wrote in news:flgf96$5iq$1@news.datemas.de:
>
>>>
>> I just googled you and found you to be a real troublemaker Bert.
>
> So, you are as stupid as you sound.
>
>
You're living up to your reputation again hymen buster.

Bert Hyman | St. Paul, MN | bert@iphouse.com

264. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:58:06 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <y%bfj.369825$kj1.40821@bgtnsc04-news.ops.worldnet.att.net>
Source record: 30080

```
Cecil Moore wrote:
> Gene Fuller wrote:
>>> http://www.ecs.umass.edu/ece/labs/antlab/HP_AppNote95-1_S-parameters.pdf
>>
>> Wow! You missed again! And I thought that you actually understood what
>> s-parameters are all about.
>>
>> Get a clue. None of your rantings say anything about the behavior of
>> waves on the transmission line. As usual you keep ducking the question
>> by answering a different one.
>
> HP would be interested in knowing your theory that the
> s-parameter equations cannot be used on a transmission
> line. How can you possibly be that ignorant?
>
> Actually, s-parameter equations are an ideal way to
> analyze an impedance discontinuity in a transmission
> line since the voltages are normalized to SQRT(Z0).
> Squaring the normalized voltages yields power.
>
> ----50 ohm line--+--1/2WL 300 ohm line--50 ohm load
> a1-->|-->b2
> b1<--|<--a2
>
> b1 = s11*a1 + s12*a2 b2 = s21*a1 + s22*a2
>
> |a1|^2 is forward power, |b1|^2 is reflected power
> |b2|^2 is forward power, |a2|^2 is reflected power
>
> Squaring the s-parameter equations yields the power
> density (irradiance) equation from the field of optics.
> I'm sorry that technical fact upsets you so.

It's a swing and a miss. Strike three! You're out!

The entire point of s-parameter analysis is that the "network" can be
treated as a black box, characterized by the various parameters at the
ports. How does that work to analyze what is happening *inside* the box,
such as somewhere along the transmission line?

73,
Gene
W4SZ
```

265. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 20:58:52 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <g0cfj.85988$YL5.30500@newssvr29.news.prodigy.net>
Source record: 30081

Richard Clark wrote:
> There is a vast gulf between seeming and proving.

Richard, you seem to exist. Please prove that you
indeed do exist.
--
73, Cecil http://www.w5dxp.com

266. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 21:05:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <96cfj.2823$El5.1916@newssvr22.news.prodigy.net>
Source record: 30082

Gene Fuller wrote:
> The entire point of s-parameter analysis is that the "network" can be
> treated as a black box, characterized by the various parameters at the
> ports. How does that work to analyze what is happening *inside* the box,
> such as somewhere along the transmission line?

That's pretty simple to answer, Gene. Simply make
the black box infinitesimally thin so that events
are transparent. Ignorance is immediately alleviated.
--
73, Cecil http://www.w5dxp.com

267. meteor shower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 21:09:04 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <q9idnZrSJYIt0-DanZ2dnUVZ_qainZ2d@comcast.com>
Source record: 30083

Space Weather News for Jan. 3, 2008
http://spaceweather.com

METEOR SHOWER: Earth is about to pass through a stream of dusty debris from near-Earth asteroid 2003 EH1, producing the annual Quadrantid meteor shower. Forecasters expect a brief but intense peak of 50+ meteors per hour over Earth's northern hemisphere sometime between 0200 UTC and 0700 UTC on Friday morning, Jan. 4th. (Subtract 5 hours to convert UTC to EST.) The timing favors observers in the eastern USA, Europe and western parts of Asia. Winter storms frequently hide this shower from observers on the ground. To avoid such problems, a team of astronomers led by Peter Jenniskens of the SETI Institute plan to fly a plane above the clouds where they can train their cameras on the Quadrantids. Their data may reveal whether asteroid 2003 EH1 is the fragment of a broken-apart comet. Visit http://spaceweather.com for sky maps and more information.

JUST FOR FUN: This is a good time of year to see Orion the Hunter: the constellation rises in the east at sunset. Watching Orion ascend, you may experience the little-known "constellation illusion." The idea is the same as the Moon illusion; constellations viewed near the horizon look abnormally large. Go outside tonight and look. Can you believe your eyes?

268. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 21:32:43 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <%vcfj.369960$kj1.365204@bgtnsc04-news.ops.worldnet.att.net>
Source record: 30084

Cecil Moore wrote:
> Roy Lewallen wrote:
>> 2. I don't understand the mechanism which causes waves to bounce.
>
> I don't understand the mechanism which causes waves to slosh.
> Would you mind posting the sloshing equation?

Cecil,

I am not Roy, but I will answer your question.

It is really *very* straightforward. As I hope you will agree, a standing wave is characterized by voltage and current that are in quadrature, both in time and in space. In other words, the current loops are spaced 1/4 wave from the voltage loops, and the current maximum occurs 1/4 cycle ahead of (or behind) the voltage maximum.

Let's look at conservation of energy, one of your favorite topics.

At some arbitrary starting time, the voltage loop is at a maximum, and the current is zero. At that time all of the energy in the standing wave is contained in the capacitive or E^2 term. The physical location of that energy is centered on the voltage loops.

As the cycle proceeds, the voltage decreases and the current increases. After 1/4 cycle the current is at a maximum and the voltage is zero. Now all of the energy in the standing wave is contained in the inductive or H^2 term. The physical location of that energy is centered on the current loops.

There are two important observations. First, the location of the standing wave energy has physically moved by 1/4 wave during the 1/4 cycle. That is the "sloshing" that some of us use as a description. Call it what you like.

The second observation is that the standing wave is not at all static. Energy is moving back and forth at the speed of light in the medium.

Some people like to treat standing waves as poor distant cousins to "real" waves, or perhaps only as "envelopes". It is their option to do so, but it misses the actual behavior of standing waves and "sloshing" energy.

The equations can be found in many places, such as Johnson's book on Transmission Lines and Networks.

73,
Gene

W4SZ

269. Re: meteor shower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 21:35:53 UTC
From: art <aunwin@insightbb.com>
Message-ID: <791e9bec-6974-45ea-bc44-cf0c52e3b93d@r60g2000hsc.googlegroups.com>
Source record: 30085

On 3 Jan, 13:09, "Howard W3CQH" <hsgor...@comcast.net> wrote:
> Space Weather News for Jan. 3, 2008http://spaceweather.com
>
> METEOR SHOWER: Earth is about to pass through a stream of dusty debris from
> near-Earth asteroid 2003 EH1, producing the annual Quadrantid meteor shower.
> Forecasters expect a brief but intense peak of 50+ meteors per hour over
> Earth's northern hemisphere sometime between 0200 UTC and 0700 UTC on Friday
> morning, Jan. 4th. (Subtract 5 hours to convert UTC to EST.) The timing
> favors observers in the eastern USA, Europe and western parts of Asia.
> Winter storms frequently hide this shower from observers on the ground. To
> avoid such problems, a team of astronomers led by Peter Jenniskens of the
> SETI Institute plan to fly a plane above the clouds where they can train
> their cameras on the Quadrantids. Their data may reveal whether asteroid
> 2003 EH1 is the fragment of a broken-apart comet. Visithttp://spaceweather.comfor sky
maps and more information.
>
> JUST FOR FUN: This is a good time of year to see Orion the Hunter: the
> constellation rises in the east at sunset. Watching Orion ascend, you may
> experience the little-known "constellation illusion." The idea is the same
> as the Moon illusion; constellations viewed near the horizon look abnormally
> large. Go outside tonight and look. Can you believe your eyes?

When they collect these fragments are they like talcum powder that is
presently found on earth or are they moon dust like fragments. I
understand NASA have depleted their store of moon dust
which are jagged remnants of past collisions that storms have not
ground down. They need more moon dust to experiment on how to prevent
their entry into landing craft and the like.
Apparently one university is having success at growing crystals of
same.
Art

270. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 21:46:28 UTC
From: art <aunwin@insightbb.com>
Message-ID: <d6a1025b-4bf5-47cf-8369-a0c8654c3267@i7g2000prf.googlegroups.com>
Source record: 30086

On 26 Dec 2007, 12:02, Jim Kelley <jwkel...@uci.edu> wrote:
> Cecil Moore wrote:
> > What I said is the voltage and
> > current in a standing wave are *always* 90 degrees out of
> > phase and it is impossible to generate heat when the voltage
> > and current are 90 degrees out of phase.
>
> So then shouldn't one expect coax to be heated uniformly along its
> length at a high SWR?
>
> 73, ac6xg

Would it not be the current flowing on the outside copper of the
coax fighting to transfer to ground while traveling to the
transmitter ground as would happen if you chose the wrong
antenna to transmit on?
Art

271. Re: OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 22:14:03 UTC
From: MTV <NoSpam_mtvew@netscape.net>
Message-ID: <477d5e2f$0$11030$4c368faf@roadrunner.com>
Source record: 30087

John Smith wrote:
> Bert Hyman wrote:
>
> >> ...
>> And it would be a good time to remember that the coupons are only good
>> for 90 days.
>
> ... or, for that matter, that 1/2 of all the allotted coupons are gone,
> congress may choose to allot more (most likely will.)
>
> Or, that the coupons will start being mailed Feb. 17, 2008 ...

if converter boxes are actually available then; if not, they'll be
mailed as soon as the boxes are available, so consumers will have a full
90 days to buy.

Marv

--
This mail checked and found to be free of any virus.
Mozilla Thunderbird mail & Firefox browser
GO ASTROS!!!!! Yeh Dynamo MLS Champions!

272. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 22:35:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Mqdfj.2362$jJ5.259@newssvr11.news.prodigy.net>
Source record: 30088

Gene Fuller wrote:
> The second observation is that the standing wave is not at all static.
> Energy is moving back and forth at the speed of light in the medium.

Sorry Gene, The speed of water is "sloshing".
The speed of light is 10^10 faster than "sloshing".
--
73, Cecil http://www.w5dxp.com

273. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 22:47:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GBdfj.3919$lo5.2620@newssvr19.news.prodigy.net>
Source record: 30089

Gene Fuller wrote:
> The entire point of s-parameter analysis is that the "network" can be
> treated as a black box, ...

Gene, I cannot find anywhere in the s-parameter information
where some of the network must be hidden inside a black box.
I always thought an s-parameter analysis could be done without
a black box. Could you help us out here and point out exactly
where it says a black box is a requirement. Seems to me the
purpose of an s-parameter analysis is to alleviate ignorance
which obviously doesn't match your agenda.
--
73, Cecil http://www.w5dxp.com

274. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 22:53:45 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <ZHdfj.370273$kj1.162574@bgtnsc04-news.ops.worldnet.att.net>
Source record: 30090

Cecil Moore wrote:
> Gene Fuller wrote:
>> The second observation is that the standing wave is not at all static.
>> Energy is moving back and forth at the speed of light in the medium.
>
> Sorry Gene, The speed of water is "sloshing".
> The speed of light is 10^10 faster than "sloshing".

Cecil,

If your only concern is the definition of "sloshing", then about 100,000 messages have been wasted.

My definition of "sloshing" is as I stated. I believe that Roy would have the same definition. If your definition involves the speed of water, then I have no idea why that topic would be relevant here.

73,
Gene
W4SZ

275. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 22:57:55 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <c455e30d-8a22-4582-9fef-de9c610371d6@s8g2000prg.googlegroups.com>
Source record: 30091

On Jan 4, 3:51 am, Richard Clark <kb7...@comcast.net> wrote:
> On Thu, 3 Jan 2008 06:47:59 -0800 (PST), art <aun...@insightbb.com>
> wrote:
>
> >One can stretch their minds and ponder on the effect of this
> >diamagnetic pole tho weak would have on a compass on opposite sides of
> >the earth, such as the Bermuda triangle and the area on the other side
> >of the earth but of to the side where Amelia Erhardt altered her
> >course for a unknown reason and disappeared.
>
> She dissappeared over the Perth Australia? I think if she looked out
> the window, she would've figured out she wasn't lost at sea in the mid
> Pacific. She could've probably hailed a cab using your navigational
> skills.
>
> 73's
> Richard Clark, KB7QHC

She is believed to have gone down around 150 miles from Howland
Island in the Pacific, considering that is around 100 miles from the
equator I would say Art is pretty much on the money.

Derek

276. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 22:59:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nqq632227jle3@corp.supernews.com>
Source record: 30092

Roger wrote:
>
> I see your example as identical to Keith's example of two wave pulses
> traveling in opposite directions.

Not quite. The voltage following a pulse is zero; with my sine wave example the source continues producing a sine wave at all times while wave interaction is occurring.

> At the point of interaction, Keith's example has a reflection factor of
> 1 or zero, depending upon whether the waves bounce or pass. Keith's
> example is not a short circuit because two pulses of identical polarity
> are interacting so a reflection factor of -1 could never exist.

Because there are no mathematics and, as far as I can see, no mechanism for wave interaction, I can't discuss Keith's example except from the standpoint that the waves don't interact. (Excluding, of course, superposition from the meaning of "interact".)

> In your example, the presence of voltage from the ideal source creates
> conditions identical to Keith's example for the returning reflected
> wave. Accepting this premise, then the reflection factor must be either
> 1 or zero, depending upon whether the waves bounce or pass.

Sorry, I don't accept the premise.

> By assuming that the waves reflect at the ideal source, you proved that
> the reflection factor is -1, which is the factor for a short circuit.

Yes, that is correct.

> This can not be the case, so waves must not reflect at the ideal voltage
> source, they must pass.

Well, yes it can be the case, and is. But let's see where rejection of this fact leads.

> vtot(t, 0) = vf(t, 0) + vr(t, 0)
>
> = sin(wt)tot = sin(wt) + sin(wt)
>
> = 2*sin(wt)
>
> Someone will certainly say the the vtot(t,0) at the source location is
> the source voltage, because it is defined that way.

I certainly say that.

> The conditions at
> point (t,0) itself is actually unknown (because vf mysteriously appears,
> and vr disappears by going off the transmission line), but point (t, >0)
> is defined by assumptions. Therefore, at
>
> vtot(t, >0) = vf(t, >0) + vr(t, >0)
>
> = sin(wt)tot = sin(wt) + sin(wt)
>
> = 2*sin(wt)

So by rejecting the fact that the waves reflect at the ideal source, you're forced to conclude that the voltage at the output of a perfect source is unknown, with waves "mysteriously" appearing and disappearing. It also appears that you've violated Kirchoff's voltage law at the input. My analysis requires no such contradictions, unknown voltages, or mysteries. As an engineer, I like my analysis a whole lot better, because it can give me answers which are testably correct.

Can you use your theory to show the voltage at all times at the input or, if you choose, just inside the input of the line, as I've done using conventional theory?

I've used SPICE to verify my analysis. If I modify the SPICE model to show the voltage just inside the line, do you think it will show the voltage to be 2*sin(wt)? SPICE makes no assumptions about waves, bouncing or not, so if it shows sin(wt) (as it certainly will), where do you think its error is?

Roy Lewallen, W7EL

277. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 23:00:13 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <1Odfj.370298$kj1.213523@bgtnsc04-news.ops.worldnet.att.net>
Source record: 30093

Cecil Moore wrote:
> Gene Fuller wrote:
>> The entire point of s-parameter analysis is that the "network" can be
>> treated as a black box, ...
>
> Gene, I cannot find anywhere in the s-parameter information
> where some of the network must be hidden inside a black box.
> I always thought an s-parameter analysis could be done without
> a black box. Could you help us out here and point out exactly
> where it says a black box is a requirement. Seems to me the
> purpose of an s-parameter analysis is to alleviate ignorance
> which obviously doesn't match your agenda.

Why don't you try your favorite s-parameter reference, AN 95-1, page 6?

Since you are playing words games again by changing "can be treated"
into "requirement", I suppose you already are well aware of what AN 95-1
says.

73,
Gene
W4SZ

278. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 23:03:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hRdfj.2367$jJ5.1134@newssvr11.news.prodigy.net>
Source record: 30094

Gene Fuller wrote:
> My definition of "sloshing" is as I stated.

Look up "slosh" in the dictionary and then get
back to us.
--
73, Cecil http://www.w5dxp.com

279. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 23:07:03 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <19qqn39ejbjvfg6urbdjqci7ihk3hm56pq@4ax.com>
Source record: 30095

On Thu, 3 Jan 2008 14:57:55 -0800 (PST), Derek
<blueyhi5s@yahoo.com.au> wrote:

>On Jan 4, 3:51 am, Richard Clark <kb7...@comcast.net> wrote:
>> On Thu, 3 Jan 2008 06:47:59 -0800 (PST), art <aun...@insightbb.com>
>> wrote:
>>
>> >One can stretch their minds and ponder on the effect of this
>> >diamagnetic pole tho weak would have on a compass on opposite sides of
>> >the earth, such as the Bermuda triangle and the area on the other side
>> >of the earth but of to the side where Amelia Erhardt altered her
>> >course for a unknown reason and disappeared.
>>
>> She dissappeared over the Perth Australia? I think if she looked out
>> the window, she would've figured out she wasn't lost at sea in the mid
>> Pacific. She could've probably hailed a cab using your navigational
>> skills.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>
> She is believed to have gone down around 150 miles from Howland
>Island in the Pacific, considering that is around 100 miles from the
>equator I would say Art is pretty much on the money.

Bermuda (or even the Bermuda triangle) are both 3000 to 4000 kM from
the equator. The "other side of the earth" doesn't even come close to
Howland Island OR the Pacific!

How much money would you put down? Better yet, would you fly with Art
as navigator with his level of accurate map reading?

73's
Richard Clark, KB7QHC

280. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 23:19:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nqrbneed1oq01@corp.supernews.com>
Source record: 30096

Roger wrote:
>
> By my using the words 'power' "storage factor", you got my point, hence
> the reaction.
>
> Before dismissing the concept of "storing power", consider that when
> discussing a transmission line, it could be a useful description.
>
> As you know, power is energy delivered over a time period.

No, it's the rate of energy delivery or movement, which is not quite the same thing.

> It always
> carries a time dimension having beginning and end. Power(watt)
> =v*i/(unit time) = 1 joule/second.

Sorry, you've got this wrong. One watt is indeed one joule/second, but P(t) = v(t) * i(t), period. Energy is the integral of P(t) dt. Power is the time derivative of energy, or dE(t)/dt where E is the energy.

You could as reasonably say that energy always "carries a time dimension". After all, one joule = 1 watt-second.

> In the example you give of charging a capacitor, the time dimension is
> lost, so you are correct that only energy is conserved. Power is lost.

Sorry, I don't understand that.

> With a transmission line, we have an entirely different case. Here
> power is conserved because the time information is maintained. Power is
> stored on the line during the period it resides on the line. For
> example, we excite the line at one end and some time period later find
> that power is delivered to some destination. During the time period
> that the power was on the line, the information that defines the energy
> distribution over time has been preserved.

Ok, let's test this. Please tell me exactly how many watts are stored on the line of the second analysis (where the perfect source is in series with a 150 ohm resistor). Next, tell me how many watts will come out of the line if we quickly disconnect the perfect source and source resistance and replace it with:

A: A 50 ohm resistor, or
B: A 150 ohm resistor

> If power is stored, we implicitly store energy. Energy is v*i measured
> in joules without a time factor.

No, Energy is not v*i. Power is v*i. Energy is the time integral of v*i.
Power is not stored; energy is.

> Obviously we store energy on a
> transmission line when we store power.

I guess it would be obvious if you believe you can store power. But
before going further, please demonstrate what you mean by calculating
how many watts of power are stored on the example line. I showed exactly
how many joules of energy were stored, you can show how many watts of power.

> So if in the future, I use the term "power storage", please take it to
> mean that energy distributed over time is under consideration.

I'm afraid I'm not very good at translating what people mean when they
say something else. Why not call energy storage "energy storage", power
"power", and energy "energy"? Then I and hopefully other readers will
know what you mean. The MKSA unit of power is the watt, and of energy,
the joule. The two are no more the same than speed and distance, or
charge and current.

I hope
> the term might be useful to you as well.

No, I have enough trouble communicating when I take great care with my
terminology. The last thing I need is to be saying something which means
something else -- or means nothing at all. When I mean energy storage,
I'll say "energy storage", thank you.

Roy Lewallen, W7EL

281. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 23:29:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <wdefj.3926$lo5.1516@newssvr19.news.prodigy.net>
Source record: 30097

Gene Fuller wrote:
> I suppose you already are well aware of what AN 95-1
> says.

Yes, nowhere can I find where a black box is required
for the purpose of hiding part of the system from the
observer.

When a concept is used to alleviate ignorance, it is good.
When a concept is used to promote ignorance, it is bad.
What you are trying to do is pretty obvious.
--
73, Cecil http://www.w5dxp.com

282. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 23:38:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nqsev7atqea10@corp.supernews.com>
Source record: 29998

Gene Fuller wrote:
>
> Cecil,
>
> If your only concern is the definition of "sloshing", then about 100,000
> messages have been wasted.
>
> My definition of "sloshing" is as I stated. I believe that Roy would
> have the same definition. If your definition involves the speed of
> water, then I have no idea why that topic would be relevant here.

I've used the term a few times in this forum, and in the context exactly as you explained, clearly, in your previous posting. And as I also have explained several times in this forum since I first used it to describe energy in a line with infinite SWR in a posting in December 2002. But you can fully expect to see the question asked again and again as it has been over the intervening five years. This is a good example of the reason I plonked Cecil some time ago.

I don't see Cecil's postings unless quoted by someone else, nor do I consider it anything but a waste of time and cause of pointless frustration to respond to him unless the answer would also potentially benefit other readers. So no one should interpret my lack of response to anything he directs to me as any sort of endorsement or agreement.

Roy Lewallen, W7EL

283. Re: meteor shower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 23:40:20 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <Cnefj.32984$k27.730@bignews2.bellsouth.net>
Source record: 29999

"Howard W3CQH" <hsgorden@comcast.net> wrote in message
news:q9idnZrSJYlt0-DanZ2dnUVZ_qainZ2d@comcast.com...
> Space Weather News for Jan. 3, 2008
> http://spaceweather.com
>
> METEOR SHOWER: Earth is about to pass through a stream of dusty debris
> from
> near-Earth asteroid 2003 EH1, producing the annual Quadrantid meteor
> shower.
> Forecasters expect a brief but intense peak of 50+ meteors per hour over
> Earth's northern hemisphere sometime between 0200 UTC and 0700 UTC on
> Friday

I tried to watch one of those meteor-showers a couple of years ago, but got a crick in my neck, then someone told me it may be easier if I would lay on my back in the bed of my pickup truck - so I tried that - to no avail. My wife said try it again without the camper-top - but what does she know about meteors?

284. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 23:57:08 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <ea35c225-cb23-4c03-8862-1b1ca13461dd@s19g2000prg.googlegroups.com>
Source record: 30000

On Jan 4, 8:07 am, Richard Clark <kb7...@comcast.net> wrote:
> On Thu, 3 Jan 2008 14:57:55 -0800 (PST), Derek
>
>
>
> <blueyh...@yahoo.com.au> wrote:
> >On Jan 4, 3:51 am, Richard Clark <kb7...@comcast.net> wrote:
> >> On Thu, 3 Jan 2008 06:47:59 -0800 (PST), art <aun...@insightbb.com>
> >> wrote:
>
> >> >One can stretch their minds and ponder on the effect of this
> >> >diamagnetic pole tho weak would have on a compass on opposite sides of
> >> >the earth, such as the Bermuda triangle and the area on the other side
> >> >of the earth but of to the side where Amelia Erhardt altered her
> >> >course for a unknown reason and disappeared.
>
> >> She dissappeared over the Perth Australia? I think if she looked out
> >> the window, she would've figured out she wasn't lost at sea in the mid
> >> Pacific. She could've probably hailed a cab using your navigational
> >> skills.
>
> >> 73's
> >> Richard Clark, KB7QHC
>
> > She is believed to have gone down around 150 miles from Howland
> >Island in the Pacific, considering that is around 100 miles from the
> >equator I would say Art is pretty much on the money.
>
> Bermuda (or even the Bermuda triangle) are both 3000 to 4000 kM from
> the equator. The "other side of the earth" doesn't even come close to
> Howland Island OR the Pacific!
>
> How much money would you put down? Better yet, would you fly with Art
> as navigator with his level of accurate map reading?
>
> 73's
> Richard Clark, KB7QHC

But it is midway between the pole's on the other side of the
globe, which is more to the point of Art"s observation than your nit
picking.

Derek

285. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-03 23:58:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_Eefj.3931$lo5.1630@newssvr19.news.prodigy.net>
Source record: 30001

Roy Lewallen wrote:
> I've used the term a few times in this forum, and in the context exactly
> as you explained, clearly, in your previous posting.

You really should have looked up the definition in the
dictionary before willy-nilly using it. FYI, it is impossible
for EM energy to slosh.

> I don't see Cecil's postings unless quoted by someone else, nor do I
> consider it anything but a waste of time and cause of pointless
> frustration to respond to him unless the answer would also potentially
> benefit other readers. So no one should interpret my lack of response to
> anything he directs to me as any sort of endorsement or agreement.

You still haven't posted the equation for standing wave
current and explained how you used that current to make
your phase/delay measurements through a 75m bugcatcher
loading coil. Pretty convenient that you can ignore my
postings, huh?
--
73, Cecil http://www.w5dxp.com

286. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 00:06:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bsqqn3tasr8da7h9hc889a02761lj8maql@4ax.com>
Source record: 30002

On Thu, 03 Jan 2008 20:58:52 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>Richard Clark wrote:
>> There is a vast gulf between seeming and proving.
>
>Richard, you seem to exist. Please prove that you
>indeed do exist.

Gad, with built-in failures of logic like this question, it is SO, SO
easy, I can do it in stereo:

First, I can pinch myself: corporeal reality! However, you are just
amusing words on a screen that I can erase at will, hence you are a
figment of the imagination - the essential seeminess.

Second (this is the same mystery investigated as the Chinese Room
Argument), your messages only appear to be intelligent. Subsequent
correspondence reveals that to be a fiction.

What a pair of slam dunks for the home team.

Want to go for the trifecta?

Both the first and second tests can be independently corroborated by a
multitude of other posters here!

Dubito Tu Es

287. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 00:25:48 UTC
From: art <aunwin@insightbb.com>
Message-ID: <dbe2ed0b-4f8f-4d4e-95f1-74417708b437@i12g2000prf.googlegroups.com>
Source record: 30003

On 3 Jan, 15:57, Derek <blueyh...@yahoo.com.au> wrote:
> On Jan 4, 8:07 am, Richard Clark <kb7...@comcast.net> wrote:
>
>
>
>
>
> > On Thu, 3 Jan 2008 14:57:55 -0800 (PST), Derek
>
> > <blueyh...@yahoo.com.au> wrote:
> > >On Jan 4, 3:51 am, Richard Clark <kb7...@comcast.net> wrote:
> > >> On Thu, 3 Jan 2008 06:47:59 -0800 (PST), art <aun...@insightbb.com>
> > >> wrote:
>
> > >> >One can stretch their minds and ponder on the effect of this
> > >> >diamagnetic pole tho weak would have on a compass on opposite sides of
> > >> >the earth, such as the Bermuda triangle and the area on the other side
> > >> >of the earth but of to the side where Amelia Erhardt altered her
> > >> >course for a unknown reason and disappeared.
>
> > >> She dissappeared over the Perth Australia? I think if she looked out
> > >> the window, she would've figured out she wasn't lost at sea in the mid
> > >> Pacific. She could've probably hailed a cab using your navigational
> > >> skills.
>
> > >> 73's
> > >> Richard Clark, KB7QHC
>
> > > She is believed to have gone down around 150 miles from Howland
> > >Island in the Pacific, considering that is around 100 miles from the
> > >equator I would say Art is pretty much on the money.
>
> > Bermuda (or even the Bermuda triangle) are both 3000 to 4000 kM from
> > the equator. The "other side of the earth" doesn't even come close to
> > Howland Island OR the Pacific!
>
> > How much money would you put down? Better yet, would you fly with Art
> > as navigator with his level of accurate map reading?
>
> > 73's
> > Richard Clark, KB7QHC
>
>   But it is midway between the pole's on the other side of the
> globe, which is more to the point of Art"s observation than your nit

> picking.
>
> Derek- Hide quoted text -
>
> - Show quoted text -

Derek,
there are half a dozen more poles in our earth. Non ofcourse are as strong as the ferrite pole but none pass thru the geometric center of the earth so none can be exactly aligned on the opposite side of the center point. These poles being made of natural diamagnetic material
will have their lengths closest to the surface. All of course are weak but all are weighted by the inverse square law. and aligned at right angles to the ferrite pole (north and south)So at certain points on the surface of this earth all have a sweet spot for maximum impact on a small piece of ferrite metal shimmering tho balanced on a tiny pin when held in the hand.Don't take any notice of Richard he was a swabby for most of his time and never got the chance to look out the front of the ship.The bottom line is that he leaves nothing for you to ponder on so why converse with him? Os an aside Derek the majority of the earth's surface is covered by water which is diamagnetic. Both of the areas that I pointed to lie in a vaste area of water. I am not saying that compases malfunction in any way
but there are many aircrafts that have dissapeared in these areas without trace. Makes you think doesn't it.
Regards
Art Unwin KB9MZ....XG (uk)

288. Re: meteor shower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 00:34:47 UTC
From: Wayne <mygarbagecan@verizon.net>
Message-ID: <Haffj.118369$NL5.58422@trnddc05>
Source record: 30004

"Howard W3CQH" <hsgorden@comcast.net> wrote in message
news:q9idnZrSJYlt0-DanZ2dnUVZ_qainZ2d@comcast.com...
> Space Weather News for Jan. 3, 2008
> http://spaceweather.com
>
> METEOR SHOWER: Earth is about to pass through a stream of dusty debris
> from
> near-Earth asteroid 2003 EH1, producing the annual Quadrantid meteor
> shower.
> Forecasters expect a brief but intense peak of 50+ meteors per hour over
> Earth's northern hemisphere sometime between 0200 UTC and 0700 UTC on
> Friday
> morning, Jan. 4th. (Subtract 5 hours to convert UTC to EST.) The timing
<snip>
That figures.....Jan 4 is forecast to have one of the very few rainstorms
here in So Cal. Hope you other guys have good luck!

289. Re: meteor shower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 00:37:38 UTC
From: art <aunwin@insightbb.com>
Message-ID: <7e9beb45-ac28-4485-85a3-0bcc633c70e1@v4g2000hsf.googlegroups.com>
Source record: 30005

On 3 Jan, 15:40, "Hal Rosser" <hmros...@bellsouth.net> wrote:
> "Howard W3CQH" <hsgor...@comcast.net> wrote in message
>
> news:q9idnZrSJYlt0-DanZ2dnUVZ_qainZ2d@comcast.com...
>
> > Space Weather News for Jan. 3, 2008
> >http://spaceweather.com
>
> > METEOR SHOWER: Earth is about to pass through a stream of dusty debris
> > from
> > near-Earth asteroid 2003 EH1, producing the annual Quadrantid meteor
> > shower.
> > Forecasters expect a brief but intense peak of 50+ meteors per hour over
> > Earth's northern hemisphere sometime between 0200 UTC and 0700 UTC on
> > Friday
>
> I tried to watch one of those meteor-showers a couple of years ago, but got
> a crick in my neck, then someone told me it may be easier if I would lay on
> my back in the bed of my pickup truck - so I tried that - to no avail. My
> wife said try it again without the camper-top - but what does she know about
> meteors?

I was born in London before the war. You can hardly make out the stars
because of the multitude of lights. This is the reasom of course that
the Greenwich observatory was abandoned. Had some visitors from London
a few years back and they spent all evening looking up at the clear
skies of illinois. Today it is much to cold for an old man to venture
out.
Regards
Art

290. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 00:39:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <d9uqn352mkgjcrs7ajt726sbggmoi5ri9p@4ax.com>
Source record: 30006

On Thu, 3 Jan 2008 15:57:08 -0800 (PST), Derek
<blueyhi5s@yahoo.com.au> wrote:

> But it is midway between the pole's on the other side of the
>globe, which is more to the point of Art"s observation than your nit
>picking.

Howland Island is near dead on the Equator, Bermuda is not even close. Howland Island is near dead on the international date line, Bermuda is nowhere near the Prime Meridian (opposite side). The opposite side of the Earth for Howland Island would be south of the Ivory Coast in Central-West Africa!

I have sailed in the Bermuda triangle many times (to no shocking results) and Bermuda is three times closer to Boston than Quito Ecuador which is midway between the poles.

Bermuda is also on 65 degrees West longitude, 180 degrees away (or 115 degrees East longitude) is the Indian Ocean, not the Pacific (and I've been to both oceans too, crossing the full Pacific twice before I was 8 years old).

If nit picking amounts to a difference of 8000 kilometers, you must have your money on one hell of a spread.

This doesn't bode well for Art's magnetic compass correction factors. Even Gauss could tell the difference between the Indian Ocean and the Pacific Ocean (and he would have looked at a globe first before uttering this foolishness).

After all, this is really very simple stuff, but I guess you have to have been there to appreciate these nit picking issues.

As for diamagnetic curls of the magnetic field, if no one responded to this baloney, Art's ideas would die miserable solitary lives. Laughing at them is about the best currency exchange he can hope for.

73's
Richard Clark, KB7QHC

291. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 00:46:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hc0rn3hk99c1g6c1t144immiehs45jrrq4@4ax.com>
Source record: 30007

On Thu, 03 Jan 2008 17:58:51 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Pretty convenient that you can ignore my
>postings, huh?

You still haven't demonstrated how to balance the energy equations for
a battery in one pocket, and a mouse in the other.

Pretty convenient that you can ignore my postings, huh?

292. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 00:55:32 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flk060$53k$1@news.albasani.net>
Source record: 30008

Richard Clark wrote:

> ...
> You still haven't demonstrated how to balance the energy equations for
> a battery in one pocket, and a mouse in the other.
>
> Pretty convenient that you can ignore my postings, huh?

Remove the Dick in the way?

They do call you Dick for short, don't they? <ROFLOL>

JS

293. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 01:56:02 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <477d9233$0$16709$4c368faf@roadrunner.com>
Source record: 30009

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:d03pn3d0ifoacjosmnedquhnnfcmi4jthp@4ax.com...
> On Wed, 2 Jan 2008 22:47:27 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>>> I have a piece of coax around here somewhere that I once burned up.
>
>>BTW, in any case in
>>which insulation melting occurs and we have deviated from the ideal
>>transmission line,
>
> Ummm, Dan, as this is an explicitly new thread (purposely so to gouge
> this thumb into the ideal eye) with such an intro as you are
> responding to...
> We are not in Kansas any more.
>
> Jim's question is answered quite simply and you have offered one
> yourself, generously slathered with doubt about its obvious
> application.
>
> However, my guess finds the symptoms would be more aligned with two
> current nodes, not voltage. However, voltage or current, either mock
> the notion of "traveling waves," as Cecil recoils in shock from the
> bitter reality (his b�te noire when it fails to serve his agenda) of
> this contradiction.

No it doesn't. As soon as heat is dissipated, then we know that there is a real power component where current is in phase with voltage. I think in this case the insulating material broke down due to high voltage. The reason is that, with an unterminated coax, the reflected wave adds to the forward wave only at those portions of the line where the standing wave was at maximum and minimum. If the linear amp had a forward component at Vmax = 6KV, then the standing wave maximum and minimum would be +12KV and -12KV. Now, the minute the dielctric strength of the insulation material is exceeded, an arc is drawn inside the coax. This arc causes carbon to form and we have a carbon resistor path. This of course will occur only in the half WL sections corresponding to maxima and minima where the stress on the insulation is highest. It is not unusual for dielectric strengths to be exceeded. RG58U is rated at about 1.9KV which means that it will probably withstand 2X or about 4KV. I have no problem thinking that a coax like this would break down at the standing wave nodes and then continue to burn as energy continued to be dissipated in the damaged insulation from inner conductor to shield.

Your theory on the other hand, though possible, is lees likely in an amateur environment. The reason is that even a 22 AWG conductor can withstand a

rather large amount of current before it gets so hot as to melt and damage the thermoplastic insulation. Why is such a high current unlikely? Because in RF amateurs radio operators are dealing with high voltages and low currents in order to produce power. If this were an automotive circuit with a lead acid battery and high current, I think your scenario might be more likely (it is DC but you get the idea). Most amateur's do not deal with such high currents; we just don't have 50KW of power available to us like the commercial stations do.

> It relates to another bitter round in his own thread of trying to
> explain the confusion Hams have with Rhombic antennas and traveling
> waves to then discover standing waves line up and down them:

In any antenna, you will have a combination of standing waves and traveling waves. What I was saying was, in the above example, even if you started out with an open coax line and a perfect standing wave where no real power was dissipated, immediately after the insulation broke dow real power started dissipating and that component could only be composed of travelling waves, in phase with current and voltage.

294. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 02:53:14 UTC
From: richardharrison@webtv.net
Message-ID: <28730-477D9F9A-2120@storefull-3251.bay.webtv.net>
Source record: 30010

Gene, W4SZ wrote:
"Some people like to treat standing waves as poor distant cousins to
"real" waves, or perhaps as "only envelopes"."

Frederick J. Bueche & Eugene Hecht may have said it best in "Schaum`s
College Physics Outline": "Standing waves---These might better not be
called waves at all since they do not transport energy and momentum."

Best regards, Richard Harrison, KB5WZI

295. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 03:10:33 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <os6rn31d9s2aqdtracatpih0kvhvnaj3eu@4ax.com>
Source record: 30011

On Thu, 3 Jan 2008 20:56:02 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>> Jim's question is answered quite simply and you have offered one
>> yourself, generously slathered with doubt about its obvious
>> application.
>>
>> However, my guess finds the symptoms would be more aligned with two
>> current nodes, not voltage. However, voltage or current, either mock
>> the notion of "traveling waves," as Cecil recoils in shock from the
>> bitter reality (his bï¿½te noire when it fails to serve his agenda) of
>> this contradiction.
>
>No it doesn't. As soon as heat is dissipated, then we know that there is a
>real power component where current is in phase with voltage.

Hi Dan,

That stands to reason.

>I think in this
>case the insulating material broke down due to high voltage.

However, that does not. You (and I) don't have enough information
(not that it matters in confounding Cecil).

>The reason is
>that, with an unterminated coax, the reflected wave adds to the forward wave
>only at those portions of the line where the standing wave was at maximum
>and minimum.

This is rote (aside from the rough and loose description).

> If the linear amp had a forward component at Vmax = 6KV, then
>the standing wave maximum and minimum would be +12KV and -12KV.
and this is the particular information neither of us has. How do you
know Jim was running a linear, much less resulting with that
particular voltage? The clipped voltage commentary is strictly
conjecture.

>Your theory on the other hand, though possible, is lees likely in an amateur
>environment. The reason is that even a 22 AWG conductor can withstand a
>rather large amount of current before it gets so hot as to melt and damage
>the thermoplastic insulation.

Fusing current for 22 AWG runs about 40A in ambient temperature. The
inner core is not in ambient, but rather it is insulated (as you well
testify), which lowers the current required to open it. We don't need

fusing current but it does establish a rather dramatic caloric upper limit that easily exceeds the capacity of plastic to sustain exposure to the obvious heat. It is enough to say that lower currents could easily melt the plastic without having to "blow the fuse" so-to-speak.

All that remains is additional information from Jim as to the physical clues of melting or carbonization. With thermal runaway a distinct probability, both probably occurred and it is then a chicken and egg problem. The wavelength distance of these burns from the open end will nail it down with far more assurance than anecdotal evidence.

>> It relates to another bitter round in his own thread of trying to
>> explain the confusion Hams have with Rhombic antennas and traveling
>> waves to then discover standing waves line up and down them:
>
>In any antenna, you will have a combination of standing waves and traveling
>waves.

It took me only one post to prove that with data. I am not responsible for Cecil's framing of the argument to the contrary. Most of Cecil's craft projects contain critical errors that collapse his argument into wandering statements. To this point of 400 postings, or so, absolutely no one has expressed any confusion that Cecil implied was his premise to explain in the original thread. His straw man kneed him in the groin before he could get in his first argument and the gasps of incredulity were his own. :-)

>What I was saying was, in the above example, even if you started out
>with an open coax line and a perfect standing wave where no real power was
>dissipated, immediately after the insulation broke dow real power started
>dissipating and that component could only be composed of travelling waves,
>in phase with current and voltage.

It isn't that difficult, complex, or messy. All of this embroidery is like a traffic cop stopping you for speeding, and citing your violation in terms of galactic spin (tracking you at an even speed is vastly simpler and both you and the judge would be forced to agree that, yes, you were speeding).

73's
Richard Clark, KB7QHC

296. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 03:24:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <s29rn3lo4bjae1jm0976mim410o27s5ggm@4ax.com>
Source record: 30012

On Thu, 3 Jan 2008 20:53:14 -0600, richardharrison@webtv.net (Richard Harrison) wrote:

>Gene, W4SZ wrote:
>"Some people like to treat standing waves as poor distant cousins to
>"real" waves, or perhaps as "only envelopes"."
>
>Frederick J. Bueche & Eugene Hecht may have said it best in "Schaum`s
>College Physics Outline": "Standing waves---These might better not be
>called waves at all since they do not transport energy and momentum."

Hi Richard,

One of the bug-a-boos of definition crafting is using the term within its own definition. Even worse, is to define in negative terms (there are an infinite number of things that so qualify) such as a suitcase is not a planet, not a speaker, not a window, not a.... ad nauseam.

In other words "Standing Waves" are not "Waves" is sloppy writing. Going on, "transporting momentum?" Egads! Now there's an example of over-the-top writing. It could only provoke a goggle-eyed question of "how is momentum transported?" FedEx or UPS?

Does transporting energy mean accelerating a moving charge? Or moving a static charge? Both are energy, and yet one usage is slightly more comprehensible than the other. Does a surfer violate this definition? Would he be classified under traveling waves? (groan)

Hecht may be a commendable spirit, but his acolytes are trashing his legacy.

73's
Richard Clark, KB7QHC

297. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 06:12:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <27kfj.28161$4V6.7519@newssvr14.news.prodigy.net>
Source record: 30013

Richard Clark wrote:
> "AI4QJ" <nospam@yahoo.com> wrote:
>> In any antenna, you will have a combination of standing waves and traveling
>> waves.
>
> It took me only one post to prove that with data. I am not
> responsible for Cecil's framing of the argument to the contrary.

I fail to see what Richard thinks he has proven except
that he disagrees with Balanis, Kraus, and Jasik. It
is obvious that a lot of people don't understand the
considerable difference between standing waves and
traveling waves on an antenna or on transmission lines.

Although every real-world antenna contains both standing
waves and traveling waves, a 1/2WL dipole is classified as
a standing-wave antenna and a terminated rhombic is
classified as a traveling-wave antenna. Anyone who is
interested can model those two antennas using EZNEC to
observe the considerable difference in the antenna
currents.

Balanis dedicates most of "Antenna Theory", Chapter 10,
Traveling Wave and Broadband Antennas", page 488, 2nd
edition, to traveling-wave antennas like the terminated
Beverage and rhombic.

Also from "Antennas" by Kraus & Marhefka, 3rd edition:
"The condition of a uniform traveling wave on an antenna
is one of considerable importance, as this condition may
be approximated in a number of antennas systems." He
talks about terminated Beverage and rhombic antennas as
examples of traveling-wave antennas.

Jasik says: "Practically all standing-wave long-wire
antennas have gone out of use with preference for the
traveling-wave types." He then discusses the terminated
rhombic as an example of a traveling-wave antenna.
--
73, Cecil http://www.w5dxp.com

298. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 06:20:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vekfj.28162$4V6.7241@newssvr14.news.prodigy.net>
Source record: 30014

AI4QJ wrote:
> I think in this
> case the insulating material broke down due to high voltage.

J. C. Slater agrees with you. In "Microwave Transmission",
he wrote: "Particularly in coaxial lines, the limit to the
possible transmitted power is generally set by difficulties
of corona or sparking between the two conductors of the line.
The greatest practical reason for avoiding reflections is to
reduce the magnitude of these voltage maxima."
--
73, Cecil http://www.w5dxp.com

299. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 06:40:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qxkfj.3115$se5.2060@nlpi069.nbdc.sbc.com>
Source record: 30015

Cecil Moore wrote:
> Richard Clark wrote:
>> "AI4QJ" <nospam@yahoo.com> wrote:
>>> In any antenna, you will have a combination of standing waves and
>>> traveling waves.
>>
>> It took me only one post to prove that with data. I am not
>> responsible for Cecil's framing of the argument to the contrary.

From The IEEE Dictionary:

"traveling-wave antenna - An antenna whose excitation
has a quasi-uniform progressive phase, as the result
of a single feeding wave traversing its length in
one direction only."

Here are some more quotes from The ARRL Antenna Book:
"All the antenna systems considered so far in this
chapter have been based on operation with standing
waves of current and voltage along the wire. ..."

It then describes the concept of a terminated antenna
and says: "In such an antenna there are no standing
waves, because all received power is absorbed at
either end." The terminated rhombic antenna is then
described.

About Beverage antennas: "Because the Beverage is a
traveling wave, terminated antenna, it has no standing
waves resulting from radio signals."
--
73, Cecil http://www.w5dxp.com

300. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 07:22:09 UTC
From: jimkelleyamps@gmail.com
Message-ID: <e3daf0a4-5590-45cb-b547-99e00dc283ba@m34g2000hsf.googlegroups.com>
Source record: 30016

On Jan 2, 7:47 pm, "AI4QJ" <nos...@yahoo.com> wrote:
> "Roy Lewallen" <w...@eznec.com> wrote in message
>
> news:13nnr90ep5mbpdc@corp.supernews.com...
>
> > Jim Kelley wrote:
>
> >> I have a piece of coax around here somewhere that I once burned up. I
> >> recall telling you about it. The insulation is bubbled and melted at
> >> half wavelength intervals. Please explain what particular aspect of a
> >> traveling wave might have caused that to happen.
>
> > It's the consequence of having *two* traveling waves, which occurs any
> > time the line isn't terminated with its characteristic impedance. Betcha
> > yours wasn't.
>
> As you have stated before, the standing wave is the ENVELOPE of maxima
> resulting from forward and reflected waves. The ENVELOPE maxima and minima
> will occur at 1/2WL distances in the cable. If the line is lossless, no
> power is consumed in the unterminated line.
>
> If I were to see a cable with melted insultion at 1/2 wavelengths and the
> coax was open, the first thing I would suspect is that the voltage on the
> inner conductor greatly exceed the dilectric strength of the insulation
> between inner conductor and shield at the original standing wave maxima and
> minima. Two 3-500Z's in series could produce 6KV or even more. Standard
> Radio Shack grade RG58 might not be able to handle that. When the insulation
> breaks down it turns into a carbon resistor and we no longer have a lossless
> situation; real power is dissipated. Whther or ot the standing wave is still
> present, power will dissipate where the dielctric material has turned into
> carbon (even with DC). Less likely would be current heating the inner
> conductor, again a resistive power loss. But these discussions have been
> assuming a lossless line of infinite dielectric strength where real power
> disspiation cannot occur unless we terminate the line and only then, in the
> terminating component since the line is supposedly 'lossless'. Adding the
> real life burnt coax example when the discussion assumes ideal components is
> comparimg apples and oranges; all we are doing is exposing the weakness of
> the assumption when using ideal lossless components. BTW, in any case in
> which insulation melting occurs and we have deviated from the ideal
> transmission line, at least some of the reactive power that was contained in
> the standing wave has now been changed into a travelling wave with I/V in
> phase thru the 'resistors' between inner conductor and shield.

This is the discussion I was hoping Cecil would take up. I can assure you that the coax I was using was not lossless; RG58 is quite real in that respect. The source was probably good for a kilowatt at 2.4 GHz, though it's likely only a small fraction of that was actually coupled from the cavity by Langmuir probe into a 50 ohm termination of some sort. (This was 20 years ago, so some of the details have faded now.) The cable got hotter than a firecracker in a very short period of time over centimeter sized regions spaced some number of centimeters apart. The coax appeared to have melted due to excessive I^2R heating by the conductors. Skin effect apparently played no small role. I believe the voltage in question is not the voltage across the dielectric, but rather along the conductor. At my suggestion the experiment was not repeated. :-)

73, ac6xg

301. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 08:32:18 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <60nrn3peif715lo6ov2kajdt3r2n5f3qro@4ax.com>
Source record: 30017

On Fri, 04 Jan 2008 00:40:23 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Here are some more quotes

Dragging more bones out of the crypt and calling them USDA Prime Rib.

>About Beverage antennas: "Because the Beverage is a
>traveling wave, terminated antenna, it has no standing
>waves resulting from radio signals."

Well, that explains a Rhombic to clear up everyone's confusion! Gee,
Mr. Peabody, let's step into the "Way-Back machine" and find us an
example of this Beverage antenna!

I suppose this example would be either too real, and unrepresentative
of our Guru's pronouncements of RF purity;

OR

I suppose this example would be too text book, and unrepresentative of
our Guru's pronouncements of RF reality.

Gad, was is a loathsome degenerate like me suppose to do when faced
with a dilemma like this? I mean, damned if you do one, and damned if
you do the other.

The only choice is to use one of Cecil's designs and see what Cecil
would pop an aorta over.

So, with that in mind, I simply step into the Way-Back machine and
crank in Tue, 18 Dec 2007 09:33:23 -0600, Cecil Moore
<nospam@w5dxp.com> wrote:
>The traveling-wave file is:
>
>http://www.w5dxp.com/TravWave.EZ

It has already been demonstrated that it is inferior in design, but in
full faith to the original designer's intent of exhibiting a traveling
wave, I must stoop to accept less for the sake of embracing its
lineage (shudder).

Dear readers, we must take care not to upset the harmony of the
crystal spheres of our esteemed Guru of the Airwaves; however, fashion
dictates that the most recent withdrawal from the vaults above demand
an external radio signal, not one driving his divine inspiration. As
always, the best way to confound Cecil is to embrace his own work.
So, by the simple addition of ONE WIRE, 60 feet tall and located

100,000 feet away (we can't be bothered with interactions polluting this study) we then shift the source to this distant radio to see what currents are pressed upon the receiving antenna (as is such the obvious destiny of the Beverage).

SWR along the length of the line: 8:1

Hmm, must be the charm of the original designer that so pollutes those ancient tomes exposed to the cold cathode light of the Xerox. This shocking result is certainly not the product of original thinking.

At this juncture, dare I attempt something more conventional? After all, the Beverage is classically taller than Cecil's one foot tall munchkin. It also resides over real ground, which, after all, is the classic ingredient to its success. Having embraced damnation in using Cecil's I can't be burned in purgatory for any more normal design.

So, let's see what appears on the radio from designs that are more classic.

This time we have a 1000 meter long wire 3 meters above ground;
100,000 meters away is our transmitter;
we are operating on 3.8MHz;
the load of 600 Ohms is placed against a radial system below it;
there are 16 radials, each only 4 meters long, 1 centimeter above real, high accuracy ground.

We turn on the transmitter, and look at the SWR due to currents reported:
8:1 SWR at the transmitter end with the current phase swinging like a pendulum. With something like 300 segments, that is roughly a 18 degree shift per segment along the wire (Cecil's forecast was 0) over a continuum of 360 degrees (cycle repeats every 20 segments like clock work).

No doubt this unfortunate pair of designs (the prince and the pauper) will evoke calumny and rage against this miserable churl for presuming to interpret the mystic arts known only to the Gurus.

Another explanation might be that Traveling waves means something altogether different than how they are commonly discussed on this board. Perhaps the Xerox will reveal that nuance. Maybe it is a threshold issue. The Guru need only climb the mount for more tablets of scripture to render:
"All SWR less than 2:1 is henceforth decreed by holy writ
to be flat and conforming to the ecumenical standards of
Traveling Waves - so has it been said, so shall it ever be!"

73's
Richard Clark, KB7QHC

302. When Youre Older And Coping With Loss

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 11:16:36 UTC
From: bs866806@163.com
Message-ID: <6427e52b-2a90-4df4-99a9-d978ec060ba1@s8g2000prg.googlegroups.com>
Source record: 30018

The death of close friends and family members becomes increasingly common as you get older. However, the end of a loved one's life doesn't have to disable yours. Oftentimes, therapy can be of tremendous help in coping with loss and the feelings it can bring, such as pervasive sadness, isolation, hopelessness, or worthlessness.

Too often, a person's attitude is one of the biggest obstacles to getting help. Many people believe that they're too old to get help or that looking to therapy is a sign of weakness or moral failing. In fact, quite the opposite is true. Therapy is a treatment process that offers specialized techniques of caring that have been designed to provide support, insight, and guidance. You're never too old to benefit from the life-strengthening benefits of therapy.

Your therapist can provide help and support your efforts in some of the following important areas:

Expressing Your Grief

Expressing your sadness is the first step in accepting a loss. Therapy offers a confidential, comforting setting in which to express your feelings and the therapeutic relationship permits you to safely explore even your most deeply felt sources of loss.

Staying Connected

It's important to spend as much time as you can with friends and family and to continue going to places where people know you, like your place of worship or a social group in which you regularly participate. Your therapist can help guide and encourage your efforts to stay connected.

Pursuing Your Interests

Finding ways to continue enjoying life is not disrespectful to the memory of your loved one. If you find it's too difficult to enjoy an interest the two of you once shared, you and your therapist can together explore ideas for new activities you can make your own.

Throughout your lifetime, you have most likely been the person whom others have looked to for help in times of trouble. Know that it's okay for you to be at the receiving end of care and attention. You can turn to 4therapy's Therapist Locator for help in identifying a therapist in your area to help you as you cope with loss.

http://cncarrental.cn/html/Death/20060925/9259.html

303. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 11:43:30 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <e4530876-9011-4183-97e2-e4e9a2fe2e8a@e10g2000prf.googlegroups.com>
Source record: 30019

On Jan 3, 12:55 pm, Mike Monett <N...@email.adr> wrote:
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> [...]
>
> > You did not directly answer Q1, but I take if from all the other
> > responses that you are saying the answer is "no, it is not
> > appropriate to view a transmission line as distributed capacitance
> > and inductance and analyze its behaviour using charge stored in
> > the capacitance and moving in the inducatance?"
>
> That is not what you originally stated.
>
> > Taking this invalidates all the subsequent questions since they
> > are based on the premise that this kind of analysis is
> > appropriate.
>
> Yes, it does.
>
> Your explanation is easily proven false. Let's suppose it was true.
>
> Suppose it was possible to introduce a pulse of charge onto a
> conductor.
>
> Since like charges repel each other, what keeps the pulse together?
>
> In other words, what prevents it from destroying itself?
>
> Then, when the first pulse meets the second, what mechanism allows
> them to bounce off each other?
>
> Then, after they have bounced off each other, what mechanism keeps
> them together?

All good questions. But it appears that your underlying
suggestion is that charge and charge flow in the distributed
capacitance and inductance can not be used to analyze
transmission lines.

And yet I commonly see discussion of current in transmission
lines. Current is charge flow per unit time. Is this all
invalid? Must we abondon measurements of current? Voltage?
These are all based on the assumption of charge being
a useful concept.

...Keith

304. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 11:54:52 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4a6616fb-0ae0-4416-bbfb-d85cce1a3522@t1g2000pra.googlegroups.com>
Source record: 30020

On Jan 3, 1:25 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> For the record: The only controversial assertion
> that I have ever made is that coherent EM wave
> cancellation can cause a redistribution of the
> EM energy in the opposite direction in a transmission
> line.

Don't be so modest.

You have also claimed that for an amplifier which can
be modelled as a Thevenin or Norton equivalent circuit,
the output impedance can not be used to derive the
reflection coefficient.

You have claimed that the only way to prevent a
re-reflection at a generator is to use a circulator;
a 10 cent resistor will never do.

You have claimed that energy can cross a point on
the line where V or I is always 0.

You have claimed that there is great importance
to the terms "Traveling-Wave Current" and
"Standing-Wave Current" (the title of this thread).

And there were more that escape my memory.

...Keith

305. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 12:02:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <451cc4bf-62ab-44ac-ae2a-aa08b7b93bb0@e10g2000prf.googlegroups.com>
Source record: 30021

On Jan 3, 2:14 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> Keith Dysart wrote:
> > The example was carefully chosen to illustrate the
> > point, of course. But that is the value of particular
> > examples.
> > When the pulses are not identical, the energy that crosses
> > the point is exactly sufficient to turn one pulse
> > into the other.
> > The remainder of the energy must bounce
> > because it does not cross the mid-point.
> > ...Keith
>
> So it really is almost as though the pulses travel through one
> another, rather than bounce off one another.
>
> I have seen the concept that energy doesn't cross nodal points alluded
> to in some texts. However there are so many exceptions to it found in
> physical systems as to render it a dubious notion at best. Useful
> perhaps for illustration purposes.
>
> In the discussion of standing waves on a string, Halliday and Resnick
> says "It is clear that energy is not transported along the string to
> the right or to the left, for energy cannot flow past the nodal points
> in the string, which are permanently at rest. Hence the energy
> remains "standing" in the string, although it alternates between
> vibrational kinetic energy and elastic potential energy."
>
> So the idea is valid for a simple harmonic oscillator in which there
> are no losses. In such a case, once the system begins oscillating, no
> further input of energy is required in order to maintain oscillation.
>   Clearly there is no flow of energy into or out of such a system.
> What is clear is that energy doesn't pass through the nodes. It is
> less clear that there exists an inherent mechanism which prevents the
> movement of energy.
>
> And so it appears in cases where there is no transfer of energy that
> one might claim that waves bounce off of one another. There are no
> other examples, and no supporting mechanism for it of which I am
> aware, and so one might be equally justified in claiming that waves
> pass through each other in all cases.

I'd suggest that this is only if the concept of the
waves in question does not include energy. In the
limiting case of the two waves being identical no

energy crosses the nodes. In other cases, only a portion of the energy crosses the nodes.

If the concept of the waves includes energy, some explanation is required to account for the wave crossing the node, but its energy does not.

Some readers like to superpose energy just as they do voltage, but in general this is not a valid operation so I am uncomfortable using it as the explanation.

...Keith

306. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 12:20:57 UTC
From: Dave <noone@nowhere.com>
Message-ID: <Jwpfj.3137$Xe5.462@trndny09>
Source record: 30022

"Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
news:4a6616fb-0ae0-4416-bbfb-d85cce1a3522@t1g2000pra.googlegroups.com...

Sorry i have been absent for a while, been too busy with other work and had to turn this off to keep from spending all my time laughing at the postings. Are we going for another 1000 post thread? almost 2/3's of the way there now... here is a kick to keep it going.

>You have claimed that energy can cross a point on
>the line where V or I is always 0.

ah, so once you have a standing wave on a line then no energy can cross the voltage or current nodes?? thats interesting. so at the place where current is 'always' 0 the voltage is a max right? so what happens to the V^2/Z power at that point? is that not flowing past that point? conversely, at the point where voltage is always zero, what happens to the large I^2*R power at that point??? where does that go? then try this thought experiment... take a long coax with an open circuit end, feed it with sinusoidal ac so it has nice standing waves, keep it lossless just because that irritates some of the writers on here. then attach a pure resistance equal to Z0 at the open end. now, if energy can't pass the points where V or I is zero, and I is obviously zero at the open circuit at the end of the line there should be no power to flow into that resistor??? Oh, but wait, the voltage is a max there so the resistor could draw power from the voltage standing wave, but then what happens to the current standing wave? once the resistor drains the last half wave voltage wave how does energy get from the next standing wave into the far end one to replenish it if it can't flow across the voltage node?? sorry, i have to stop, about to start another laughing fit.

all of the above obvious contradictions become intuitively obvious once you completely forget the standing waves and think only in terms of the traveling waves. and remember, again just because it tweaks some correspondents on here, you only need the voltage OR the current traveling wave, either one is sufficient to completely describe the conditions on the line in either steady state or transient conditions. (as long as the line and components are all linear and time invarient, loss is not a problem for this statement to be true)

307. Re: Standing morphing to travelling waves. was r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 13:43:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cKqfj.33445$JD.31634@newssvr21.news.prodigy.net>
Source record: 30023

jimkelleyamps@gmail.com wrote:
> This is the discussion I was hoping Cecil would take up.

I did take it up. Power was dissipated in the process
of destroying the coax. There is zero real power in standing
waves. Therefore, standing waves did not destroy the
coax. By the process of elimination, it was traveling
waves that destroyed the coax. The failure of the coax
caused the system to shift into the transient state
thus changing the standing waves to traveling waves
which delivered the power to destroy the coax.

During the initial transient state, traveling wave
energy becomes standing wave energy that exists
through steady-state. During the final transient
state, that steady-state standing wave energy is
released back to traveling wave energy and dissipated
or radiated. During the failure of the coax, standing
wave energy becomes traveling wave energy once again
which delivered the power to destroy the coax.

J. C. Slater says it is more likely that the damage
occurred at the current nodes rather than at the
voltage nodes.
--
73, Cecil http://www.w5dxp.com

308. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 13:59:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vZqfj.33446$JD.21506@newssvr21.news.prodigy.net>
Source record: 30024

Richard Clark wrote:
>> http://www.w5dxp.com/TravWave.EZ
>
> It has already been demonstrated that it is inferior in design,

It is not an antenna - it is a wire that demonstrates
traveling waves by eliminating reflections.

> We turn on the transmitter, and look at the SWR due to currents
> reported:
> 8:1 SWR at the transmitter end with the current phase swinging
> like a pendulum. With something like 300 segments, that is
> roughly a 18 degree shift per segment along the wire (Cecil's
> forecast was 0)

Sorry, Richard, that is a false statement. With traveling wave
antennas, there is a phase shift per segment. An antenna with
an SWR of 8:1 is neither a traveling-wave nor a standing-wave
antenna but is a hybrid between the two. As usual, you have
either confused yourself or are trying to confuse others.
Sometimes it is hard to tell which.

A 1/2WL dipole is a standing-wave antenna with an SWR ~20:1
on the antenna wire. Take a look at its current phase.

A traveling-wave antenna needs an SWR close to ~1:1 to be
a good example. Whether by accident or on purpose, yours
is a very poor example.
--
73, Cecil http://www.w5dxp.com

309. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 14:20:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pgrfj.3304$6%.3084@nlpi061.nbdc.sbc.com>
Source record: 30025

Keith Dysart wrote:
> And yet I commonly see discussion of current in transmission
> lines.

RF current is a *result* of the H-field in the EM
wave. There are photons involved making it different
from DC. Electrons may (or may not) "bounce" off of
each other but photons traveling in opposite directions
in a transmission line do not and cannot "bounce" off
of each other. They pass each other like ships in the
night. Any theory based on photons "bouncing" off of
each other while traveling in opposite directions, is
inaccurate and doomed to failure. Simply applying the
scientific method will remedy the problem.
--
73, Cecil http://www.w5dxp.com

310. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 14:44:05 UTC
From: Dave <noone@nowhere.com>
Message-ID: <VCrfj.1$LL6.0@trndny06>
Source record: 30026

cecil scribbled:
>RF current is a *result* of the H-field in the EM wave. There are photons
>involved making it different from DC.

which comes first, the current or the field? i contend that it is not necessary to consider the current or the h-field at all. use the voltage traveling wave and it is not necessary to consider current at all, hence where does the h-field come from? or consider the current traveling wave and then where does the e-field come from? forget photons when thinking of coax, antennas, currents, and waves, they will just confuse you.

311. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 14:50:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <7Jrfj.3140$se5.2797@nlpi069.nbdc.sbc.com>
Source record: 30027

Keith Dysart wrote:
> You have also claimed that for an amplifier which can
> be modelled as a Thevenin or Norton equivalent circuit,
> the output impedance can not be used to derive the
> reflection coefficient.

And have proved it with concepts that existed before
I was born. I cannot take credit for that.

If an amplifier is delivering zero net power, the
calculated rho = SQRT(Pref/Pfor) = plus or minus 1.0
The value of the "output impedance" is irrelevant.
Because of superposition, the reflected energy never
encounters the "output impedance".

> You have claimed that the only way to prevent a
> re-reflection at a generator is to use a circulator;
> a 10 cent resistor will never do.

Roy has said essentially the same thing in so many
words. You see, your concepts lead to a direct
violation of the conservation of energy principle
for which I can take no credit.

> You have claimed that energy can cross a point on
> the line where V or I is always 0.

Since it is impossible for photons to reflect while
traveling in a homogeneous medium, that one is a
no-brainer. I cannot take credit for anything I
learned from Quantum Electrodynamics.

> You have claimed that there is great importance
> to the terms "Traveling-Wave Current" and
> "Standing-Wave Current" (the title of this thread).

Again, I didn't invent standing wave current and
traveling wave current. I am just reporting what
I have learned from people who knew the difference
before I was born. If one knows much of anything about
mathematics, one can look at the equation for standing
wave current and the equation for traveling wave current
and see the considerable differences. That you cannot
just proves that you don't know much of anything about
mathematics.

Standing wave current = Io*cos(kx)*cos(wt)

Traveling wave current = Io*cos(kx+wt)

I feel sorry for any "technical" person who cannot see the difference. For traveling waves, the position and phase are interlocked. For standing waves, the position and phase are divorced. Those differences are obvious and are plotted at.

http://www.w5dxp.com/travstnd.gif
--
73, Cecil http://www.w5dxp.com

312. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 14:53:07 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <mLrfj.3141$se5.1046@nlpi069.nbdc.sbc.com>
Source record: 30028

Keith Dysart wrote:
> Some readers like to superpose energy just as
> they do voltage, but in general this is not a
> valid operation so I am uncomfortable using
> it as the explanation.

Optical physicists have been "adding" power
densities (irradiance) for centuries. It's past
time for you to learn how they did it.
--
73, Cecil http://www.w5dxp.com

313. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 14:58:29 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fllhif$3c7$1@news.albasani.net>
Source record: 30029

Cecil Moore wrote:

> ...
> RF current is a *result* of the H-field in the EM
> wave. There are photons involved making it different
> from DC. Electrons may (or may not) "bounce" off of
> each other but photons traveling in opposite directions
> in a transmission line do not and cannot "bounce" off
> of each other. They pass each other like ships in the
> night. Any theory based on photons "bouncing" off of
> each other while traveling in opposite directions, is
> inaccurate and doomed to failure. Simply applying the
> scientific method will remedy the problem.

This thread has become long, it is so long--everyone must have some sort of questions--or it (the thread) has prompted some sort of question(s) in their minds'. If not, so be it, I am a "weirdo" for it ...

1) Does a .0001 Hz signal use photons? A .001 Hz? A .01 Hz? A .1 Hz? A 1 Hz? I mean, at what "magical point" do photons become involved?

2) What experiment(s) have "seen" these photons? A fogging of film emulsion? ???

In all seriousness, I simply have a problem with photons doing much more than "vibrating in near-place." With light, I can imagine photons ...

Warm regards,
JS

314. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 15:01:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <BTrfj.3142$se5.2572@nlpi069.nbdc.sbc.com>
Source record: 30030

Dave wrote:
> forget photons when thinking of
> coax, antennas, currents, and waves, they will just confuse you.

Keith has taken your advice to forget photons.
Why is he confused?
--
73, Cecil http://www.w5dxp.com

315. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 15:13:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <f2sfj.3143$se5.53@nlpi069.nbdc.sbc.com>
Source record: 30031

John Smith wrote:
> 1) Does a .0001 Hz signal use photons? A .001 Hz? A .01 Hz? A .1 Hz? A 1
> Hz? I mean, at what "magical point" do photons become involved?

Already answered. Any time electrons are accelerated or
decelerated, photons are involved. Any frequency of AC
can provide electron acceleration and deceleration.

> 2) What experiment(s) have "seen" these photons? A fogging of film
> emulsion? ???

Process of no-brainer elimination: Nothing else besides
photons can travel at the speed of light in a transmission
line (adjusted for the VF of the medium).
--
73, Cecil http://www.w5dxp.com

316. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 15:22:14 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flliv0$8d6$1@news.albasani.net>
Source record: 30032

Cecil Moore wrote:
> John Smith wrote:
>> 1) Does a .0001 Hz signal use photons? A .001 Hz? A .01 Hz? A .1 Hz? A
>> 1 Hz? I mean, at what "magical point" do photons become involved?
>
> Already answered. Any time electrons are accelerated or
> decelerated, photons are involved. Any frequency of AC
> can provide electron acceleration and deceleration.
>
>> 2) What experiment(s) have "seen" these photons? A fogging of film
>> emulsion? ???
>
> Process of no-brainer elimination: Nothing else besides
> photons can travel at the speed of light in a transmission
> line (adjusted for the VF of the medium).

Cecil:

I look for no fight, sometimes I just have "too much fun", sometimes at
others expense ... I really mean no harm ...

I just don't know ... I'll keep my mind open.

"No-brainer?" Huh, I'll work on increasing the "gray matter" here.
I'll check what's available in the health food stores. :-P

Regards,
JS

317. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 15:25:43 UTC
From: Bill Ogden <billogden@optonline.net>
Message-ID: <477e4ff9$0$13907$607ed4bc@cv.net>
Source record: 30033

As always, I very much appreciate the education provided by Roy.

It seems to me that much of the problem here is the continuous misunderstanding of the difference between "power" and "energy". What is difficult for me to understand is the sustained misunderstanding, even after the definitions have been reviewed time and time again.

Bill - W2WO

318. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 15:42:26 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n9ksn39fdbj2urlob8e9j38dnof5i38ok9@4ax.com>
Source record: 30034

On Fri, 04 Jan 2008 13:59:55 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>A 1/2WL dipole is a standing-wave antenna with an SWR ~20:1
>on the antenna wire.

Now there's an original observation.

>A traveling-wave antenna needs an SWR close to ~1:1 to be
>a good example. Whether by accident or on purpose, yours
>is a very poor example.

I used your Traveling Wave antenna. :-<

We can both agree the data reveals the truth of it being a very poor
example.

Dear Readers.

This was another slam-dunk. It was easier than collecting
unemployment. The simplest part is using Cecil's own examples and
drilling into their fault seams. Like this one, they usually split
open and spill their contents like an overripe watermelon.

It is unlikely that any better example will arrive that bears any
resemblance to what Beverage designed, so the data once again goes
undisputed in confounding the Guru of the Airwaves.

319. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 16:40:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qktfj.36170$Pv2.25684@newssvr23.news.prodigy.net>
Source record: 30035

John Smith wrote:
> "No-brainer?"

No-brainer for anyone who knows what particles are
available inside a transmission line.

Sorry for being short. My daughter is having
emergency surgery today and I am preparing
for a trip to warm sunny Syracuse, NY. :-(
--
73, Cecil http://www.w5dxp.com

320. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 16:53:43 UTC
From: richardharrison@webtv.net
Message-ID: <28958-477E6497-2215@storefull-3257.bay.webtv.net>
Source record: 30037

Richard Clark wrote:
"Does a surfer violate this definition?"

Traveling waves carry surfers to the beach. Standing waves only
oscillate the water surface up and down in place.

Best regards, Richard Harrison, KB5WZI

321. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 16:55:37 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cytfj.36174$Pv2.6943@newssvr23.news.prodigy.net>
Source record: 30036

Richard Clark wrote:
>> A traveling-wave antenna needs an SWR close to ~1:1 to be
>> a good example. Whether by accident or on purpose, yours
>> is a very poor example.
>
> I used your Traveling Wave antenna. :-<

http://www.w5dxp.com/TravWave.EZ

Good grief, Richard! You cannot use the 8.4:1 50 ohm SWR
reading for the SWR on a wire with a characteristic
impedance of 411 ohms. I see what you did now and it
is was more than stupid.

The load resistor is 411 ohms. The characteristic impedance
of the wire is close to 411 ohms. Set the Alt SWR Z0 to
411 ohms and observe the actual SWR of 1.025:1.

The SWR is 1.025:1. The current on the wire is close to
100% traveling wave current. You observed the phase shift
and reported it. You have proved my point while trying
to discredit it. Thank you very much.

The reason that I didn't defend myself against what you
were saying is that I didn't believe anyone would be
so stupid as to report the 50 ohm SWR on a wire with
a characteristic impedance of 411 ohms. Therefore, I
didn't know you were talking about my example.
--
73, Cecil http://www.w5dxp.com

322. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 17:17:22 UTC
From: art <aunwin@insightbb.com>
Message-ID: <54c1bf04-41c8-4276-a405-544fee35618e@21g2000hsj.googlegroups.com>
Source record: 30038

On 3 Jan, 08:29, John Smith <assemblywiz...@gmail.com> wrote:
> Mike Monett wrote:
> > ...
> > The term "bounce" means they interact. Electromagnetic signals do
> > not interact. They superimpose. Each is completely unaware and
> > unaffected by the other.
> > ...
> > Regards,
>
> > Mike Monett
>
> EM fields act that same as static magnetic fields.
>
> Why not just get some iron filings, a paper and a couple of magnets?
>
> Move the magnets about below the paper with the iron filings above and
> actually get a visual on some magnetic fields and how they react to each
> other?
>
> I like things simple ... then the math can follow ...
>
> Regards,
> JS

John
You are quite correct in requiring things to be relatively
simple . And RF is very simple when you do not try to make it
difficult.
A radiator in equilibrium is a full wave length and equates with
a mechanical pendulum which is about as close as you can get to
perpetual motion
Electrically it is seen as a parallel circuit sometimes called a tank
circuit.
It to like a pendulum passes the same energy backwards and forward and
losing just a bit to resistance losses.Ofcourse everybody knows that
the pendulum has also a circular motion as well as backwards and
forwards so if RF is to be compared to a pendulum we must be sure to
account for that rotative motion. Nothing so far is anything unusual.
Now we supply energy to the circuit or radiator. The initial current
enters the inductance and generates a magnetic field. The current
applied then reverses because it is AC or periodic DC.
Without support from flowing current the magnetic field starts to
collaps such that the energy
that it generates moves on the the capacitor which like the inductor

will stop the enrgy from getting by and thus stores it, It acts in a mirror image or opposite fashion to that of a conductor, when one discharges the other collects what is discharged. So far John it is all very simple since this can go on for ever backwards and forwards and if we lose a bit of energy along the way the current generator is there to replace what is lost.
Now we must look at the radiation properties as well as that circular movement that we saw with the pendulum which is the only thing left to describe.
In the atmosphere we have lots of dust that has penetrated the shields around earth. These are nothing fancy just dust particles. Actually these particles are called static particles and they just want to rest somewhere.The odd thing here that all metals will not allow it to settle
on them because like magnets with a hysterysis content they push away this galactic dust.
Fortunately there are some metals and matter that do not retain a internal hysterysis energy
pack like aluminum and copper and water so this duct pretty much seeks these out to settle on.
Nothing really difficults so far John, no fancy names or fancy bouncing.
So you see the reason why aluminum is used for radiators because they belong to a familly known as diamagnetic material. So what is so fancy about using aluminum to transport energy backwards and forward since aluminum is not specifically used for pendulums? well there is a specific reasons that the properties of aluminium fits in with current flow and RF generation.
First it has a skin that is difficult for current to penetrate so any field produced by current
can only be created outside the skin which unlike magnet material the field cannot penetrate the inner material. Fortunately it is conductive, on the othere side of the coin the field generated are weak because they do not have internal magnetic fields in the metal to support them. Still nothing special John , just a circuit sort of thing, no proton things or fancy names to muddy up the water. Noe let us look again as to what happens in the circuit.
Yup when the inductance creates a magnetic field it is a very weak field so the energy passed on to the cappacitor is very small. Never the less the acction of back and forth still goes on.
Now is when all the special things happen.
.....
The capacitor releases its energy like a blast of a opening door where the electrons stored with energy in their pockets blast their way towards the inductance. On the way it sweeps up
its brethberin electron particles that are devoid of energy on its way to the inductor.
The inductor is not interested in static or energy less electrons since the static does not have
any usefull energy required to make a mabnetic field .So the magnetic

field is generated on the outside of the inductance but here is the guts of radiation. Diagmatic materials when they produce a field produces a field at right angles to a normal ferromagnetic field. This field tho very weak parries the oncomming static particles away. The action spoken of for a momement disturbs the equilibrium that was in place such that the airborne static particles
are thrown away from the eaths gravitational field. Pretty neat John, nothing really new since all characteristics and properties are well known and documented.
Now reviewing what happenned and comparing it to a pendulum. Yup we had a back and forth motion but we already knew that because it was a tank circuit. The weak movement of the magnetic field created a 'curling' type action which paried the onrushing levitated particles away from the immediate scene. At the same time when all these levitated particals was forced upwards away from the radiator each particle provided an equal and opposite force which is applied to the radiator the impacts of which reflecting the changing energy flow from the capacitor. These multi impacts create a mechanical oscillation within the radiator.
See John, again nothing special, everything is known. It is just that like a jigsaw puzzle the complexity of which is determined from where one starts which in my case started with the Gaussian theory.The experts on the other hand did not know where to start so they inaiated new sciences
Oh, and another thing those particles that are now trying to escape the earth's gravity
field and in some cases bouncing off of the earths layers and comming back looking for a
radiater of the right material that it can arrive at to settle upon thus making a series of noises like a muscical box with a fantastic caphony of sound andc vivrations on a resonal antenna.
As I said before John,no fancy names or extra things moving around to take you attention away from what is really happening. All concurring phenomina is a matter of record by past very clever people which is beyond any doubt and, and I say 'and' like nature the mechanics of action are very, very simple.
Best Regards
Art Unwin.....KB9MZ...XG (uk)

323. Re: When Youre Older And Coping With Loss

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 17:44:12 UTC
From: art <aunwin@insightbb.com>
Message-ID: <b8b97127-0645-4562-b25e-f89e097a2255@t1g2000pra.googlegroups.com>
Source record: 30039

On 4 Jan, 03:16, bs866...@163.com wrote:
> The death of close friends and family members becomes increasingly
> common as you get older. However, the end of a loved one's life
> doesn't have to disable yours. Oftentimes, therapy can be of
> tremendous help in coping with loss and the feelings it can bring,
> such as pervasive sadness, isolation, hopelessness, or worthlessness.
>
> Too often, a person's attitude is one of the biggest obstacles to
> getting help. Many people believe that they're too old to get help or
> that looking to therapy is a sign of weakness or moral failing. In
> fact, quite the opposite is true. Therapy is a treatment process that
> offers specialized techniques of caring that have been designed to
> provide support, insight, and guidance. You're never too old to
> benefit from the life-strengthening benefits of therapy.
>
> Your therapist can provide help and support your efforts in some of
> the following important areas:
>
> Expressing Your Grief
>
> Expressing your sadness is the first step in accepting a loss. Therapy
> offers a confidential, comforting setting in which to express your
> feelings and the therapeutic relationship permits you to safely
> explore even your most deeply felt sources of loss.
>
> Staying Connected
>
> It's important to spend as much time as you can with friends and
> family and to continue going to places where people know you, like
> your place of worship or a social group in which you regularly
> participate. Your therapist can help guide and encourage your efforts
> to stay connected.
>
> Pursuing Your Interests
>
> Finding ways to continue enjoying life is not disrespectful to the
> memory of your loved one. If you find it's too difficult to enjoy an
> interest the two of you once shared, you and your therapist can
> together explore ideas for new activities you can make your own.
>
> Throughout your lifetime, you have most likely been the person whom
> others have looked to for help in times of trouble. Know that it's
> okay for you to be at the receiving end of care and attention. You can
> turn to 4therapy's Therapist Locator for help in identifying a

> therapist in your area to help you as you cope with loss.
>
> http://cncarrental.cn/html/Death/20060925/9259.html

Thanks for sharing that
Art

324. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 17:47:59 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080104094759.d43bc89e.rsparks@elltel.net>
Source record: 30040

On Fri, 4 Jan 2008 04:02:23 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 3, 2:14 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> > Keith Dysart wrote:
> > > The example was carefully chosen to illustrate the
> > > point, of course. But that is the value of particular
> > > examples.
> > > When the pulses are not identical, the energy that crosses
> > > the point is exactly sufficient to turn one pulse
> > > into the other.
> > > The remainder of the energy must bounce
> > > because it does not cross the mid-point.
> > > ...Keith
> >
> > So it really is almost as though the pulses travel through one
> > another, rather than bounce off one another.
> >
> > I have seen the concept that energy doesn't cross nodal points alluded
> > to in some texts. However there are so many exceptions to it found in
> > physical systems as to render it a dubious notion at best. Useful
> > perhaps for illustration purposes.
> >
> > In the discussion of standing waves on a string, Halliday and Resnick
> > says "It is clear that energy is not transported along the string to
> > the right or to the left, for energy cannot flow past the nodal points
> > in the string, which are permanently at rest. Hence the energy
> > remains "standing" in the string, although it alternates between
> > vibrational kinetic energy and elastic potential energy."
> >
> > So the idea is valid for a simple harmonic oscillator in which there
> > are no losses. In such a case, once the system begins oscillating, no
> > further input of energy is required in order to maintain oscillation.
> >   Clearly there is no flow of energy into or out of such a system.
> > What is clear is that energy doesn't pass through the nodes. It is
> > less clear that there exists an inherent mechanism which prevents the
> > movement of energy.
> >
> > And so it appears in cases where there is no transfer of energy that
> > one might claim that waves bounce off of one another. There are no
> > other examples, and no supporting mechanism for it of which I am
> > aware, and so one might be equally justified in claiming that waves
> > pass through each other in all cases.
>

> I'd suggest that this is only if the concept of the
> waves in question does not include energy. In the
> limiting case of the two waves being identical no
> energy crosses the nodes. In other cases, only a
> portion of the energy crosses the nodes.
>
> If the concept of the waves includes energy, some
> explanation is required to account for the wave
> crossing the node, but its energy does not.
>
> Some readers like to superpose energy just as
> they do voltage, but in general this is not a
> valid operation so I am uncomfortable using
> it as the explanation.
>
> ...Keith
>

Food for thought.

Consider an isolated transmission line charged to some DC voltage. Then initiate current by attaching a resistor. We can identify a wave moving back from the junction, beginning at the time of contact. We can also, by monitering the current or power through/into the resistor, plot a wave going through/into the resistor. The two waves would be mirror images of one another. The forward wave would clearly carry energy, the backmoving wave would be a "book keeping" wave that reported the energy removed from the transmission line.

The bookkeeping wave would really be the visible part/result of a power wave that is the negative equivalent of the wave passing through the resistor. Mathematically defining the energy component of the power wave, we should have If*Ef = 1 - Ib*Eb, where If and Ef are the instantaneous measured values of forward current and voltage, and Ib and Eb are the instantaneous measured values of bookkeeping current and voltage. The number 1 defines the beginning energy level as 1. We should observe that If = Ir. If so, then Ef = 1 - Er. Remember, these would be instantaneous values.

73, Roger, W7WKB

325. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 17:59:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2jqsn39fg44g7gfbn6qonhpc35ibchc5bd@4ax.com>
Source record: 30041

On Fri, 04 Jan 2008 10:55:37 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Richard Clark wrote:
>>> A traveling-wave antenna needs an SWR close to ~1:1 to be
>>> a good example. Whether by accident or on purpose, yours
>>> is a very poor example.
>>
>> I used your Traveling Wave antenna. :-<
>
>http://www.w5dxp.com/TravWave.EZ
>
>Good grief, Richard! You cannot use the 8.4:1 50 ohm SWR
>reading for the SWR on a wire with a characteristic
>impedance of 411 ohms. I see what you did now and it
>is was more than stupid.
>
>The load resistor is 411 ohms.

So it was, so it is, and so shall it always be to demonstrate a dramatic variation of CURRENT. All rather standard stuff. The SWR report from EZNEC is source based, and that source was 100km distant from the RECEIVE antenna - wholly remote from my care and consideration. I didn't make your mistake, you made it alone for yourself. Mount it like a trophy on your mantle with the rest.

With great misfortune, TravWave.EZ is, as you say, an atrocious antenna, and nothing like what Beverage designed which my second example more clearly reveals. I simply used your poor antenna so as to increase the likelihood of its impeachment by its designer. This, of course, triggered the script where that author condemned his own creation; and all the choreographed marks were hit precisely as anticipated.

Dear readers,

With such limp struggles as offered by Cecil, this has long passed the point of being a challenge. It rarely takes much effort to crack his arguments open, but having done it several times here alone, it can only be described as a Sado-Masochistic spectacle. My arm is getting tired with swinging the whip and Cecil's groans have long since lost their siren call. Perhaps some future outrage from Cecil will invigorate the song of the lash.

When dawn breaks, it will no doubt reveal TravWave.EZ disowned and cast out of the home as a fraud. I will undoubtedly be described as

its immoral progenitor because TravWave.EZ is so obviously the spawn of a demented troglodyte slipped into Cecil's nest like a cuckoo's egg.

73's
Richard Clark, KB7QHC

326. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 18:17:58 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080104101758.68467383.rsparks@elltel.net>
Source record: 30042

Correction. Made a typo on the math equation.

On Fri, 4 Jan 2008 09:47:59 -0800
Roger Sparks <rsparks@elltel.net> wrote:

> On Fri, 4 Jan 2008 04:02:23 -0800 (PST)
> Keith Dysart <Keith.Dysart@gmail.com> wrote:
>
> > On Jan 3, 2:14 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> > > Keith Dysart wrote:
> > > > The example was carefully chosen to illustrate the
> > > > point, of course. But that is the value of particular
> > > > examples.
> > > > When the pulses are not identical, the energy that crosses
> > > > the point is exactly sufficient to turn one pulse
> > > > into the other.
> > > > The remainder of the energy must bounce
> > > > because it does not cross the mid-point.
> > > > ...Keith
> > >
> > > So it really is almost as though the pulses travel through one
> > > another, rather than bounce off one another.
> > >
> > > I have seen the concept that energy doesn't cross nodal points alluded
> > > to in some texts. However there are so many exceptions to it found in
> > > physical systems as to render it a dubious notion at best. Useful
> > > perhaps for illustration purposes.
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> > > In the discussion of standing waves on a string, Halliday and Resnick
> > > says "It is clear that energy is not transported along the string to
> > > the right or to the left, for energy cannot flow past the nodal points
> > > in the string, which are permanently at rest. Hence the energy
> > > remains "standing" in the string, although it alternates between
> > > vibrational kinetic energy and elastic potential energy."
> > >
> > > So the idea is valid for a simple harmonic oscillator in which there
> > > are no losses. In such a case, once the system begins oscillating, no
> > > further input of energy is required in order to maintain oscillation.
> > >   Clearly there is no flow of energy into or out of such a system.
> > > What is clear is that energy doesn't pass through the nodes. It is
> > > less clear that there exists an inherent mechanism which prevents the
> > > movement of energy.
> > >
> > > And so it appears in cases where there is no transfer of energy that
> > > one might claim that waves bounce off of one another. There are no

> > > other examples, and no supporting mechanism for it of which I am
> > > aware, and so one might be equally justified in claiming that waves
> > > pass through each other in all cases.
> >
> > I'd suggest that this is only if the concept of the
> > waves in question does not include energy. In the
> > limiting case of the two waves being identical no
> > energy crosses the nodes. In other cases, only a
> > portion of the energy crosses the nodes.
> >
> > If the concept of the waves includes energy, some
> > explanation is required to account for the wave
> > crossing the node, but its energy does not.
> >
> > Some readers like to superpose energy just as
> > they do voltage, but in general this is not a
> > valid operation so I am uncomfortable using
> > it as the explanation.
> >
> > ...Keith
> >
> Food for thought.
>
> Consider an isolated transmission line charged to some DC voltage. Then initiate current by attaching a resistor. We can identify a wave moving back from the junction, beginning at the time of contact. We can also, by monitering the current or power through/into the resistor, plot a wave going through/into the resistor. The two waves would be mirror images of one another. The forward wave would clearly carry energy, the backmoving wave would be a "book keeping" wave that reported the energy removed from the transmission line.
>
> The bookkeeping wave would really be the visible part/result of a power wave that is the negative equivalent of the wave passing through the resistor. Mathematically defining the energy component of the power wave, we should have If*Ef = 1 - Ib*Eb, where If and Ef are the instantaneous measured values of forward current and voltage, and Ib and Eb are the instantaneous measured values of bookkeeping current and voltage. The number 1 defines the beginning energy level as 1. We should observe that If = Ir. If so, then Ef = 1 - Er. Remember, these would be instantaneous values.
>
Please correct the math typo.

If if = Ir, then Ef = 1/Ef - Eb

> 73, Roger, W7WKB
>

--
Roger Sparks <rsparks@elltel.net>

327. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 18:20:08 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flltci$1kh$1@news.albasani.net>
Source record: 30043

Cecil Moore wrote:

> ...
> No-brainer for anyone who knows what particles are
> available inside a transmission line.
>
> Sorry for being short. My daughter is having
> emergency surgery today and I am preparing
> for a trip to warm sunny Syracuse, NY. :-(

I wish you and the daughter well. I wouldn't wish NY on anyone, indeed,
California neither! I have three sons, I can empathize more than you
can imagine ... no offense taken, my skin is much thicker than that.

Take care of the family, this can all continue at a later date ...

Regards and good luck,
JS

328. Re: When Youre Older And Coping With Loss

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 18:22:33 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fllth3$1kh$2@news.albasani.net>
Source record: 30044

art wrote:

> ...
> Thanks for sharing that
> Art

Art:

Kinda sounds like some psychologist/psychiatrist into self-help. They surround themselves with the mentally ill and "feel better about themselves." I hope they find someone. :-D

But still, I just gotta PLONK 'EM/THREAD-PLONK!

Regards,
JS

329. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 18:31:53 UTC
From: Dave <noone@nowhere.com>
Message-ID: <tYufj.19$xA6.8@trndny09>
Source record: 30045

art spewed:
>So you see the reason why aluminum is used for radiators because they
>belong to a familly known as diamagnetic material.

so art, how do my steel tower 80m 4-square verticals work? how do most AM broadcast towers that are all steel radiate?

>A radiator in equilibrium is a full wave length

long ago, and far away... well maybe a couple months, and still in this group, you said 1/2 wave was the equilibrium size? so which is it, full wave or half wave? and where did gauss go?? how do these funny cosmic dust things fit into his equation??

330. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 19:11:08 UTC
From: art <aunwin@insightbb.com>
Message-ID: <128df833-cd43-4c3c-a2ff-9a1544e6c256@1g2000hsl.googlegroups.com>
Source record: 30046

On 3 Jan, 12:29, richardharri...@webtv.net (Richard Harrison) wrote:
> Art wrote:
>
> "It is obvious that the completion of a cycle thus at no time has
> current moving other than in a single direction."

>
> We have a "cycle" because the current alternates or reverses direction
> twice each cycle.

Geez. What is the matter with you? Ofcource A.C reverses direction. I know you will fight change but in no way does that change anything other than we don't have a lot of things bouncing around like this long thread is suggesting as well as you .

>
> Hams likely agree with Terman that radio waves are produced to some
> extent whenever a wire in open space carries a high-frequency current.
> (Page 864, opus of 1955)

Ofcourse hams are aware that radio waves are produced when a wire is subject to a alternating current. They have normally call this wire a antenna or a radiator. Nothing special there either. What is your message OM?

>
> Kraus says on page 12 in the 3rd edition of "Antennas":
> "Antennas convert electrons to photons, or vice versa."

He could be correct in that opinion! there are many opinions out there including mine but other theories have not been established by previously known facts

> Also: "Thus, time-changing current radiates and accelerated charge
> radiates."

Richard, it is a basic fact that a time varying field creates radiation and I have explained in detail the sequence of events. I have NO problem with you debating a fact that I have given or even supply a equivalent sequal of events supplied by another that implicitly contradicts what I have written but you are just supplying words. Again what is your message?Spit it out please.

> Also: The currents on the transmission line flow out on the antenna and
> end there, but the fields associated with them keep on going.

No silly.

When the current stops decay begins. We have not found a means for perpetual energy
as far as I know. Current flow in a parallel circuit is maintained by a generator which re supplies energy that is lost in the circuit. When you turn off the generator the current flow stops. I really am not interested on what could happen when you turn the power off I just walk away and why not? I wish Richard you would stop putting spam on this thread
Surely there are other things for you to do in life other than dropping names and inane suggestions which by their very nature donot require a response. You are just copying the antics of the other Richards trying to taunt as if you are afraid of something which you want to put down. Why not find a truth and the use it to debate a position? That is called a debate or a conversation? There is no nead to bait and taunt.
Art Unwin KB9MZ....XG

>
> Best regards, Richard Harrison, KB5WZI

331. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 19:19:26 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flm0s9$g2d$1@news.service.uci.edu>
Source record: 30047

Cecil Moore wrote:
> There is zero real power in standing
> waves.

The sentence is true, and is without need of the words 'real' and
'standing' to make it so.

> Therefore, standing waves did not destroy the
> coax.

:-) Yes and no. Were it not for waves standing on the coax, there
would have been no damage to the coax, and there wouldn't be an
explanation for the damage pattern. So your 'truism' has some
significant caveats. I guess that makes it more of a ....'half-truism'.

> By the process of elimination, it was traveling
> waves that destroyed the coax.

Kinda tough to have a standing wave in the absence of traveling waves
now, isn't it.

> During the initial transient state, traveling wave
> energy becomes standing wave energy that exists
> through steady-state.

So there's energy in the standing waves, but not power. Apparently
they're like traveling waves......that stand!

Probably best not to assume it's a 'different kind of wave' in the
first place. Maybe it would be better just to think of it as a
pattern formed by traveling waves - an appearance that traveling waves
can have under certain circumstances which produces stationary effects.

Yes I know that's basically what you've been trying to say "all
along", but you were saying it so poorly that it was indistinguishable
from fantasy.

> J. C. Slater says it is more likely that the damage
> occurred at the current nodes rather than at the
> voltage nodes.

I didn't even know he was there! But it is consistent with what J.W.
Kelley has said about it. :-)

73, ac6xg

332. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 19:33:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13nt2ga3nfoa78@corp.supernews.com>
Source record: 29898

I haven't been following this particular discussion of "standing wave antennas" vs "traveling wave antennas" because it looks to me like just another diversion to avoid confronting the sticky problems with alternative theories, and one that's been used and discussed many times before. But I see that EZNEC's report of SWR has been mentioned, so I'd like to make sure that readers understand what it means.

EZNEC reports an "SWR" for each source, and will also plot this as a function of frequency. This is *not* the SWR on an antenna (assuming that you can even rigorously define it), nor is it necessarily the SWR on a transmission line to which the source is connected, if it is connected to a line. It's only an alternate way of describing the impedance seen by the source, just like your transmitter's SWR meter. The reported SWR is the the SWR which would exist on a 50 ohm transmission line if that transmission line were connected between the source and its load, whether one is or not. It shows the same value as your transmitter SWR meter would if you replaced the source with your transmitter. An alternate SWR Z0 value can be specified so you can also see what the SWR would be on a transmission line of some other impedance. It's not necessary, or even likely, that there will be a transmission line or even wire (again, if you can even define SWR for a single conductor) which actually has an SWR equal to the value reported by EZNEC.

If you were to connect your transmitter to a 50 ohm load through a half wavelength 300 ohm transmission line, the SWR on the transmission line would be 6:1, but your rig's SWR meter would read 1:1. If you modeled this with EZNEC, it would show the 50 ohm SWR as 1:1 (like your transmitter SWR meter). If you set the alternate SWR Z0 to 300 ohms, it would correctly show the 300 ohm SWR to be 6:1. If you connected your transmitter directly to a 150 ohm resistor, your rig's SWR meter (and EZNEC's 50 ohm SWR) would read 3:1, even though there is no transmission line of any impedance and therefore no standing waves anywhere.

Roy Lewallen, W7EL

Richard Clark wrote:
> On Fri, 04 Jan 2008 10:55:37 -0600, Cecil Moore <nospam@w5dxp.com>
> wrote:
>
>> Richard Clark wrote:
>>>> A traveling-wave antenna needs an SWR close to ~1:1 to be
>>>> a good example. Whether by accident or on purpose, yours
>>>> is a very poor example.
>>> I used your Traveling Wave antenna. :-<

>> http://www.w5dxp.com/TravWave.EZ
>>
>> Good grief, Richard! You cannot use the 8.4:1 50 ohm SWR
>> reading for the SWR on a wire with a characteristic
>> impedance of 411 ohms. I see what you did now and it
>> is was more than stupid.
>>
>> The load resistor is 411 ohms.
>
> So it was, so it is, and so shall it always be to demonstrate a
> dramatic variation of CURRENT. All rather standard stuff. The SWR
> report from EZNEC is source based, and that source was 100km distant
> from the RECEIVE antenna - wholly remote from my care and
> consideration. I didn't make your mistake, you made it alone for
> yourself. Mount it like a trophy on your mantle with the rest.
>
> With great misfortune, TravWave.EZ is, as you say, an atrocious
> antenna, and nothing like what Beverage designed which my second
> example more clearly reveals. I simply used your poor antenna so as
> to increase the likelihood of its impeachment by its designer. This,
> of course, triggered the script where that author condemned his own
> creation; and all the choreographed marks were hit precisely as
> anticipated.
>
> Dear readers,
>
> With such limp struggles as offered by Cecil, this has long passed the
> point of being a challenge. It rarely takes much effort to crack his
> arguments open, but having done it several times here alone, it can
> only be described as a Sado-Masochistic spectacle. My arm is getting
> tired with swinging the whip and Cecil's groans have long since lost
> their siren call. Perhaps some future outrage from Cecil will
> invigorate the song of the lash.
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> When dawn breaks, it will no doubt reveal TravWave.EZ disowned and
> cast out of the home as a fraud. I will undoubtedly be described as
> its immoral progenitor because TravWave.EZ is so obviously the spawn
> of a demented troglodyte slipped into Cecil's nest like a cuckoo's
> egg.
>
> 73's
> Richard Clark, KB7QHC

333. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 19:40:59 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <fZvfj.375178$kj1.362238@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29899

Richard Harrison wrote:
> Richard Clark wrote:
> "Does a surfer violate this definition?"
>
> Traveling waves carry surfers to the beach. Standing waves only
> oscillate the water surface up and down in place.
>
> Best regards, Richard Harrison, KB5WZI
>

Richard,

A few questions:

* Have you ever seen a surfer?
* Did you perhaps notice that the surfer typically travels much faster
than the water?
* Did you ever think that is why the boards are shaped the way they are?
* Did you ever wonder how the surfer moves around if he or she is only
riding on the moving water?
* Did you ever see one of those surfer parks where folks surf on
man-made waves that stay in one place?
* Do you think perhaps the slope of the water might be important?
* Does a traveling wave have a different slope than a standing wave?

What does Terman say about all of this?

73,
Gene
W4SZ

334. Re: When Youre Older And Coping With Loss

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 19:58:34 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <0ce2cd6c-689d-4c76-9221-9dbb118761be@e25g2000prg.googlegroups.com>
Source record: 29900

On Jan 4, 9:44 am, art <aun...@insightbb.com> wrote:
> On 4 Jan, 03:16, bs866...@163.com wrote:
>
>
>
> > The death of close friends and family members becomes increasingly
> > common as you get older. However, the end of a loved one's life
> > doesn't have to disable yours. Oftentimes, therapy can be of
> > tremendous help in coping with loss and the feelings it can bring,
> > such as pervasive sadness, isolation, hopelessness, or worthlessness.
>
> > Too often, a person's attitude is one of the biggest obstacles to
> > getting help. Many people believe that they're too old to get help or
> > that looking to therapy is a sign of weakness or moral failing. In
> > fact, quite the opposite is true. Therapy is a treatment process that
> > offers specialized techniques of caring that have been designed to
> > provide support, insight, and guidance. You're never too old to
> > benefit from the life-strengthening benefits of therapy.
>
> > Your therapist can provide help and support your efforts in some of
> > the following important areas:
>
> > Expressing Your Grief
>
> > Expressing your sadness is the first step in accepting a loss. Therapy
> > offers a confidential, comforting setting in which to express your
> > feelings and the therapeutic relationship permits you to safely
> > explore even your most deeply felt sources of loss.
>
> > Staying Connected
>
> > It's important to spend as much time as you can with friends and
> > family and to continue going to places where people know you, like
> > your place of worship or a social group in which you regularly
> > participate. Your therapist can help guide and encourage your efforts
> > to stay connected.
>
> > Pursuing Your Interests
>
> > Finding ways to continue enjoying life is not disrespectful to the
> > memory of your loved one. If you find it's too difficult to enjoy an
> > interest the two of you once shared, you and your therapist can
> > together explore ideas for new activities you can make your own.
>

> > Throughout your lifetime, you have most likely been the person whom
> > others have looked to for help in times of trouble. Know that it's
> > okay for you to be at the receiving end of care and attention. You can
> > turn to 4therapy's Therapist Locator for help in identifying a
> > therapist in your area to help you as you cope with loss.
>
> >http://cncarrental.cn/html/Death/20060925/9259.html
>
> Thanks for sharing that
> Art

What do you bet that somewhere in the conversation they will ask for
the SSA of the deceased?

Paul

335. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:03:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Yhwfj.33762$ID6.7890@newssvr27.news.prodigy.net>
Source record: 29901

Richard Clark wrote:
> Cecil Moore <nospam@w5dxp.com> wrote:
>> The load resistor is 411 ohms.
>
> So it was, so it is, and so shall it always be to demonstrate a
> dramatic variation of CURRENT. All rather standard stuff. The SWR
> report from EZNEC is source based, ...

That's your stupid mistake. The SWR on the wire is load-
based and is equal to 1.025:1, close enough to call that
wire a traveling-wave configuration. If you are so stupid
that you don't even recognize your stupid mistake, I don't
think anything can be done for you.

The load is 411 ohms. The Z0 of the wire is close to 411
ohms. The SWR on the wire is close to 1:1. It is a traveling
wave configuration essentially devoid of standing waves.
The traveling wave current pattern is obvious.
--
73, Cecil http://www.w5dxp.com

336. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:08:57 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <193tn3p1jas0e0oe1cf09fkog633d02vt0@4ax.com>
Source record: 29903

On Fri, 04 Jan 2008 11:33:28 -0800, Roy Lewallen <w7el@eznec.com>
wrote:

>But I see that EZNEC's report of SWR has been mentioned, so I'd
>like to make sure that readers understand what it means.

Hi Roy,

Cecil simply presumed (without reading the antenna specification, nor trusting his own design) that my report of SWR was based on a source exciting the line.

First, and evidence of his poor reading skills, I specified that I had constructed a remote transmitter antenna to excite the test antenna (there were two). As you offer in unquoted material, the SWR report would have related to that source, in its own environment. I was wholly unconcerned with that, specifically. All SWR determinations followed the rather more prosaic method of simply observing current magnitudes along the length of the line, much like my work at the bench when I made similar measurements with similar techniques traceable to NBS.

Second, and with attention to his own reference citation that a Beverage antenna "...has no standing waves resulting from radio signals;" I introduced this remote excitation to provide just that: "radio signals" and not transmit excitation. Obviously, Cecil spends more time Xeroxing authorities than reading them.

So, the net effect is I used his model, and his referenced authority, pulled them together into a simple test which shows that, yes, standing waves inhabit the length of HIS traveling wave antenna when it is excited externally (as it must to conform to his authority). As Cecil has condemned his own design, I then also repeated this exercise with a design that more faithfully follows Beverage's design principles.

Rather simple stuff.

73's
Richard Clark, KB7QHC

337. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:09:55 UTC
From: art <aunwin@insightbb.com>
Message-ID: <744af823-df4c-458e-a016-1daef835027a@p69g2000hsa.googlegroups.com>
Source record: 29902

On 4 Jan, 10:31, "Dave" <no...@nowhere.com> wrote:
> art spewed:
>
> >So you see the reason why aluminum is used for radiators because they
> >belong to a familly known as diamagnetic material.
>
> so art, how do my steel tower 80m 4-square verticals work? how do most AM
> does broadcast towers that are all steel radiate?
>

It has a galvanised skin which is a diamagnetic material. Just like
aluminum current fliows on the surface. But Dave you surely knew that
so why did you place the question ?
Are you joining the Richard trio and try to spam any thread out of
existance that you dislike?

We already have plenty of spammerrs on all of the Radio newsnets. You
and the other spammers would do ham radio a real favor if you
generated your own newsgroup for comment rather than
clogging all the threads on the newsgroups.
Art

338. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:13:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <krwfj.33767$ID6.5624@newssvr27.news.prodigy.net>
Source record: 29904

Jim Kelley wrote:
> Were it not for waves standing on the coax, there would
> have been no damage to the coax, ...

Were it not for traveling waves, there would be no
standing waves and no damage to the coax.

> Kinda tough to have a standing wave in the absence of traveling waves
> now, isn't it.

Exactly, but that supports my side of the argument.

> So there's energy in the standing waves, but not power.

At the risk of you developing apoplexy, there is reactive
power in the standing waves, as defined in The IEEE Dictionary.

> Probably best not to assume it's a 'different kind of wave' in the first
> place.

Sorry Jim, but [Io*cos(kx)*cos(wt)] and [Io*cos(kx+wt)] *ARE*
different. If you don't know enough math to realize that by
looking at the equations, please go alleviate your ignorance.

> Yes I know that's basically what you've been trying to say "all along",
> but you were saying it so poorly ...

Sorry, my native tongue is Texan. :-)
--
73, Cecil http://www.w5dxp.com

339. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:14:32 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flm43j$jd7$1@news.service.uci.edu>
Source record: 29907

Cecil Moore wrote:

> Optical physicists have been "adding" power
> densities (irradiance) for centuries.

Yes, but physicists who publish in scientific journals and textbooks tend to be more careful in their calculations than are people who publish on the internet. That is why text books are generally considered reliable sources, whereas the internet newsgroups (where people can write whatever they please without consequence) are generally not.

73, ac6xg

340. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:19:00 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flm4bv$jd7$2@news.service.uci.edu>
Source record: 29906

Keith Dysart wrote:

> On Jan 3, 2:14 pm, Jim Kelley <jwkel...@uci.edu> wrote:

>>And so it appears in cases where there is no transfer of energy that
>>one might claim that waves bounce off of one another. There are no
>>other examples, and no supporting mechanism for it of which I am
>>aware, and so one might be equally justified in claiming that waves
>>pass through each other in all cases.
>
>
> I'd suggest that this is only if the concept of the
> waves in question does not include energy. In the
> limiting case of the two waves being identical no
> energy crosses the nodes. In other cases, only a
> portion of the energy crosses the nodes.

> If the concept of the waves includes energy, some
> explanation is required to account for the wave
> crossing the node, but its energy does not.
>
> Some readers like to superpose energy just as
> they do voltage, but in general this is not a
> valid operation so I am uncomfortable using
> it as the explanation.
>
> ...Keith

Hi Keith,

I'd like to thank you for your thoughtful and courteous post.

I agree with your observation about superposition of energy [and
power]. In fact this would seem to lend support to the idea that
there can be no 'energy nodes' on a transmission line.

Question for you: can you reference a thermodynamic treatment of this
concept of 'energy not crossing a node'? I think that thermo should
relate to just about energy transfer issue we might want to discuss,
including electromagnetic energy.

Thanks,

Jim Kelley, AC6XG

341. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:19:16 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8xwfj.33770$ID6.9801@newssvr27.news.prodigy.net>
Source record: 29905

Roy Lewallen wrote:
> I haven't been following this particular discussion of "standing wave
> antennas" vs "traveling wave antennas" ...

It certainly has a bearing on whether standing wave current
can be used to determine the delay through a 75m loading coil
like you have said it can. Please take a look at the current
phase reported by EZNEC and tell us once again how an constant
phase at all points on the antenna at any particular time can
be used to measure delay through the wire.

> This is *not* the SWR on an antenna ... An alternate SWR Z0
> value can be specified so you can also see what the SWR would
> be on a transmission line of some other impedance.

Richard C., are you reading this straight from the horse's mouth?
--
73, Cecil http://www.w5dxp.com

342. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:23:03 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <s15tn3h84mm50me7sehllg741820tuc5g3@4ax.com>
Source record: 29908

On Fri, 04 Jan 2008 20:03:04 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>The SWR on the wire is load-
>based and is equal to
8:1 as evidenced by CURRENT on the wire. :-)

You cannot make a SWR measurement on a receive antenna any other way.

343. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:27:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <eFwfj.2882$pr6.1297@nlpi070.nbdc.sbc.com>
Source record: 29909

Gene Fuller wrote:
> * Did you perhaps notice that the surfer typically travels much faster
> than the water?

Surfers even travel faster than the wave energy.
Sailboats travel faster than the wind.

Unfortunately, for your argument, nothing in the
universe (AFAWK) travels faster than an EM wave.
But maybe you can invent Warp Drive or Slip-Stream
Drive. :-)
--
73, Cecil http://www.w5dxp.com

344. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:31:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <EIwfj.2883$pr6.727@nlpi070.nbdc.sbc.com>
Source record: 29910

Richard Clark wrote:
> So, the net effect is I used his model, and his referenced authority,
> pulled them together into a simple test which shows that, yes,
> standing waves inhabit the length of HIS traveling wave antenna when
> it is excited externally (as it must to conform to his authority). As
> Cecil has condemned his own design, I then also repeated this exercise
> with a design that more faithfully follows Beverage's design
> principles.

I didn't even look at what you were doing but you were
NOT using my model so please quit fibbing about it.
If you are going to excite my example remotely, you
need a 411 ohm load resistor on each end of the wire.
I assume you are ignorant of that fact of physics.
--
73, Cecil http://www.w5dxp.com

345. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:34:54 UTC
From: Dave <noone@nowhere.com>
Message-ID: <OLwfj.11$tZ6.5@trndny03>
Source record: 29911

art continued spewing:

>It has a galvanised skin which is a diamagnetic material. Just like
>aluminum current fliows on the surface. But Dave you surely knew that so
>why did you place the question ?

not all tower is galvanized, some is simply painted... but art, you surely knew that, so why make that assumption. Just to prove you wrong i just stuck a piece of old iron wire, rust and all, in the connector for my ht and miracle of miracles, it still transmits!

oh, and those cosmic dust particles, do they settle on antennas that are inside buildings or under radomes? do they get blown off in the wind or fly off when a car with an antenna goes around a tight corner??

346. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:35:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <bMwfj.33772$ID6.31928@newssvr27.news.prodigy.net>
Source record: 29912

Jim Kelley wrote:
>
>
> Cecil Moore wrote:
>> Optical physicists have been "adding" power
>> densities (irradiance) for centuries.
>
> Yes, but physicists who publish in scientific journals and textbooks
> tend to be more careful in their calculations than are people who
> publish on the internet. That is why text books are generally
> considered reliable sources, whereas the internet newsgroups (where
> people can write whatever they please without consequence) are generally
> not.

Jim, you are posting to an internet newsgroup so
does that automatically make your posting equivalent
to the lowest layer of whale s__t in the deepest
part of the ocean? :-)

Please tell us exactly what is wrong with the irradiance
equation published in Born & Wolf and "Optics", by Hecht.
--
73, Cecil http://www.w5dxp.com

347. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:38:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <mPwfj.33773$ID6.23264@newssvr27.news.prodigy.net>
Source record: 29913

Richard Clark wrote:
> On Fri, 04 Jan 2008 20:03:04 GMT, Cecil Moore <nospam@w5dxp.com>
> wrote:
>
>> The SWR on the wire is load-
>> based and is equal to
> 8:1 as evidenced by CURRENT on the wire. :-)
>
> You cannot make a SWR measurement on a receive antenna any other way.

My TravWave.EZ file doesn't have a receive antenna so
your comment is irrelevant.

By your way of thinking, The SWR on the transmit antenna
has to be the same as the SWR on the receive antenna.
I have rarely ever heard such absolute cagada.
--
73, Cecil http://www.w5dxp.com

348. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:41:45 UTC
From: Roger <rsparks@elltel.net>
Message-ID: <2cWdnWQrcsSVB-PanZ2dnUVZ_gCdnZ2d@neonova.net>
Source record: 29914

Roy Lewallen wrote:
> Roger wrote:
>>
>> I see your example as identical to Keith's example of two wave pulses
>> traveling in opposite directions.
>
> Not quite. The voltage following a pulse is zero; with my sine wave
> example the source continues producing a sine wave at all times while
> wave interaction is occurring.
>
>> At the point of interaction, Keith's example has a reflection factor
>> of 1 or zero, depending upon whether the waves bounce or pass.
>> Keith's example is not a short circuit because two pulses of identical
>> polarity are interacting so a reflection factor of -1 could never exist.
>
> Because there are no mathematics and, as far as I can see, no mechanism
> for wave interaction, I can't discuss Keith's example except from the
> standpoint that the waves don't interact. (Excluding, of course,
> superposition from the meaning of "interact".)
>
>> In your example, the presence of voltage from the ideal source creates
>> conditions identical to Keith's example for the returning reflected
>> wave. Accepting this premise, then the reflection factor must be
>> either 1 or zero, depending upon whether the waves bounce or pass.
>
> Sorry, I don't accept the premise.
>
>> By assuming that the waves reflect at the ideal source, you proved
>> that the reflection factor is -1, which is the factor for a short
>> circuit.
>
> Yes, that is correct.
>
>> This can not be the case, so waves must not reflect at the ideal
>> voltage source, they must pass.
>
> Well, yes it can be the case, and is. But let's see where rejection of
> this fact leads.
>
>> vtot(t, 0) = vf(t, 0) + vr(t, 0)
>>
>> = sin(wt)tot = sin(wt) + sin(wt)
>>
>> = 2*sin(wt)

>>
>> Someone will certainly say the the vtot(t,0) at the source location is
>> the source voltage, because it is defined that way.
>
> I certainly say that.
>
>> The conditions at point (t,0) itself is actually unknown (because vf
>> mysteriously appears, and vr disappears by going off the transmission
>> line), but point (t, >0) is defined by assumptions. Therefore, at
>>
>> vtot(t, >0) = vf(t, >0) + vr(t, >0)
>>
>> = sin(wt)tot = sin(wt) + sin(wt)
>>
>> = 2*sin(wt)
>
> So by rejecting the fact that the waves reflect at the ideal source,
> you're forced to conclude that the voltage at the output of a perfect
> source is unknown, with waves "mysteriously" appearing and disappearing.
> It also appears that you've violated Kirchoff's voltage law at the
> input. My analysis requires no such contradictions, unknown voltages, or
> mysteries. As an engineer, I like my analysis a whole lot better,
> because it can give me answers which are testably correct.
>
> Can you use your theory to show the voltage at all times at the input
> or, if you choose, just inside the input of the line, as I've done using
> conventional theory?
Yes. Here is the difference. I am using a short cut by looking at the
way waves travel and superimpose. My assumption is that the input
impedance matches the impedance of the line. Thus 1v generates a 1v
sine wave. For a simple example, such as any multiple of 1/2 wave, this
causes current proportional to applied voltage and impedance of the
line. For example, 50v applied to a 50 ohm line gives a 1 amp current.

We know a line 1/2 wavelength long will absorb energy for the length of
time it takes for a wave to travel the length of line and return, so
power must be applied during the entire time. Obviously, 2 half waves
will be applied over that time period so the amount of energy on the
line is equal to the amount of energy contained in the power applied
over time by two half waves, so total power applied is 2 * initial power.

Equally obvious, by leaving the source connected after the reflected
wave has returned, the question of how the source reacts to the external
application of power must be answered. This is a second question,
unrelated to traveling waves on a transmission line. My answer to this
question is to disconnect the source and replace the source with a
connection identical to the condition at the far end of the transmission
line. You can see that this leaves the transmission line isolated with
power circulating on the line (is is POWER, time is involved).

Your solution (as presented in Analysis 2) and the Power Analysis was to keep the source supplied at all times in an attempt to create continuous real world conditions, as contrasted to my method of a quick and correctly timed disconnect. Both experiments are real world simulations and can be performed.

Your analysis is identical to what happens at a real world transmitter. A very good, automatically tuned transmitter! Your choice of an ideal voltage source amounts to setting conditions that automatically adjust for impedance changes as fast as the change happens. The transmission line sees an outgoing impedance change going from 150 ohms to infinity in your example. The source sees an outgoing impedance change from 200 ohms to infinity during the same analysis period.

It is interesting to compare the final voltage ratios (directly proportional to energy levels and directly proportional to power levels) on the transmission line to the SWR ratio. You used a SWR ratio of 3:1 and I used 1:1. You found that the total energy stored on the line was 4 times the initial energy applied, and I predicted that the total energy stored was 2 times the initial. The link here is that the power storage factor(SF) (I know you dislike the term) is found from

SF = SWR + 1.

Your storage factor was SF = 3 + 1 = 4. My storage factor was SF = 1 + 1 = 2.

If we can accept that the storage factor is always SF = SWR + 1 for all situations, then we have a very convient way to predict the voltage increase that results form impedance mismatch at a discontinuity. I am not yet ready to accept this generalization, but we should look at it more carefully.

Ending comment. Both your and my analysis are correct. Congratulations to both us!

73, Roger, W7WKB

349. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:48:09 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flm62k$lf9$1@news.service.uci.edu>
Source record: 29915

Cecil Moore wrote:

> Sorry Jim, but [Io*cos(kx)*cos(wt)] and [Io*cos(kx+wt)] *ARE*
> different.

Evidently, you can't recognize a trig identity when you see one.

> If you don't know enough math to realize that by
> looking at the equations, please go alleviate your ignorance.

> Sorry, my native tongue is Texan. :-)

Your tongue may be Texan, but the rest of you is pure arsehole. :-)

ac6xg

350. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 20:54:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bc6tn3dtg97jk7qerrhuiv69i4lhbvjp1o@4ax.com>
Source record: 29916

On Fri, 04 Jan 2008 14:31:33 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>If you are going to excite my example remotely, you
>need a 411 ohm load resistor on each end of the wire.

:-O

There IS a Santa Claus! Thank you, Thank you, Thank YOU!

I did that too!!!!

SWR = 29:1

Dear Readers,

The snap of the whip sings holiday carols when you hold back your
trump cards. A late present, and a most wonderful one. ;-)

351. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 21:09:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <5gxfj.5854$lo5.4221@newssvr19.news.prodigy.net>
Source record: 29917

Roger wrote:
> If we can accept that the storage factor is always SF = SWR + 1 for all
> situations, then we have a very convient way to predict the voltage
> increase that results form impedance mismatch at a discontinuity.

The s-parameter equations do that automatically.
That's part of their usefulness.

Incidentally, the power reflection coefficients,
rho^2, and the power transmission coefficient,
(1-rho^2), also do the same thing. That's why
a power analysis is often easier than a voltage
analysis.
--
73, Cecil http://www.w5dxp.com

352. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 21:19:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vpxfj.86095$YL5.43484@newssvr29.news.prodigy.net>
Source record: 29918

Jim Kelley wrote:
> Cecil Moore wrote:
>> Sorry Jim, but [Io*cos(kx)*cos(wt)] and [Io*cos(kx+wt)] *ARE*
>> different.
>
> Evidently, you can't recognize a trig identity when you see one.

Good grief, Jim, please solve the following "identity".

cos(kx)*cos(wt) = cos(kx+wt)

Find all (x,t) for which that equation is true.
I'm expecting an "attitude adjustment" from you.
Everyone is invited to solve the above equation
for (x,t). Hint: I solved it a long time ago.
--
73, Cecil http://www.w5dxp.com

353. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 21:20:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Zqxfj.86096$YL5.17513@newssvr29.news.prodigy.net>
Source record: 29919

Richard Clark wrote:
> Cecil Moore <nospam@w5dxp.com> wrote:
>> If you are going to excite my example remotely, you
>> need a 411 ohm load resistor on each end of the wire.

> SWR = 29:1

You are mistaken or bearing false witness - neither
of which is a plus for you.
--
73, Cecil http://www.w5dxp.com

354. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 21:51:22 UTC
From: Dave <noone@nowhere.com>
Message-ID: <uTxfj.23$xA6.17@trndny09>
Source record: 29920

"Jim Kelley" <jwkelley@uci.edu> wrote in message
news:flm62k$1lf9$1@news.service.uci.edu...
> Cecil Moore wrote:
>
>> Sorry Jim, but [Io*cos(kx)*cos(wt)] and [Io*cos(kx+wt)] *ARE*
>> different.
>
> Evidently, you can't recognize a trig identity when you see one.

in my book
cos(a+b)=cos(a)cos(b)-sin(a)sin(b)
so cos(kx+wt) would expand to:
cos(kx)cos(wt)-sin(kx)sin(wt)
me thinks you are missing a few terms in your 'identity'.

355. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 22:01:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ntb5jnbqbls68@corp.supernews.com>
Source record: 29921

Roger wrote:
> Roy Lewallen wrote:
>>
>> Can you use your theory to show the voltage at all times at the input
>> or, if you choose, just inside the input of the line, as I've done
>> using conventional theory?
> Yes. Here is the difference. I am using a short cut by looking at the
> way waves travel and superimpose. My assumption is that the input
> impedance matches the impedance of the line.

That's a different analysis than I did. I did two, one in which the mismatch was infinite (perfect voltage source at the input) and one in which the voltage reflection coefficient at the source was 0.5. The case where the input is matched is simpler, because there is no re-reflection from the source.

Can your method be used to analyze a circuit which is mismatched at the source?

> Thus 1v generates a 1v
> sine wave.

Sorry, I don't understand that sentence.

> For a simple example, such as any multiple of 1/2 wave, this
> causes current proportional to applied voltage and impedance of the
> line. For example, 50v applied to a 50 ohm line gives a 1 amp current.

It does for the time for one round trip. Then the current drops to zero if the line is matched at the source.

> We know a line 1/2 wavelength long will absorb energy for the length of
> time it takes for a wave to travel the length of line and return, so
> power must be applied during the entire time.

Yes.

> Obviously, 2 half waves
> will be applied over that time period so the amount of energy on the
> line is equal to the amount of energy contained in the power applied
> over time by two half waves, so total power applied is 2 * initial power.

You've lost me here. What's "total power"? Can you express it as an equation?

> Equally obvious, by leaving the source connected after the reflected
> wave has returned, the question of how the source reacts to the external
> application of power must be answered.

Well, the bit about "total power" wasn't obvious, so I'm not surprised
that what follows isn't either. You're apparently assuming that there
are waves of traveling power, which has led to demonstrably
self-contradictory results before, but let's see where it leads this time.

> This is a second question,
> unrelated to traveling waves on a transmission line. My answer to this
> question is to disconnect the source and replace the source with a
> connection identical to the condition at the far end of the transmission
> line.

Which I presume is the open circuited example.

> You can see that this leaves the transmission line isolated with
> power circulating on the line (is is POWER, time is involved).

The power at any point can easily be calculated, and it shows that
energy is moving back and forth on the line. There are no waves of power
moving about.

> Your solution (as presented in Analysis 2) and the Power Analysis was to
> keep the source supplied at all times in an attempt to create continuous
> real world conditions, as contrasted to my method of a quick and
> correctly timed disconnect. Both experiments are real world simulations
> and can be performed.

Ok. My method correctly predicts what will happen at any instant in
either case. Let's see how yours does.

> Your analysis is identical to what happens at a real world transmitter.
> A very good, automatically tuned transmitter!

I won't attempt to argue that, because of the great deal of controversy
about what the characteristics of a "real world transmitter" are. I make
no representation for my analysis other than what I stated: it uses an
ideal voltage source, which is rigorously defined and with
characteristics which are completely known, in conjunction with a
perfect resistance.

> Your choice of an ideal
> voltage source amounts to setting conditions that automatically adjust
> for impedance changes as fast as the change happens.

No, there is no change in impedance. The perfect source has a zero
impedance at all times. The resistance has an impedance equal to its
resistance at all times. The voltage of the voltage source stays
constant (that is, it puts out a sine wave of constant amplitude and
phase) at all times.

> The transmission
> line sees an outgoing impedance change going from 150 ohms to infinity
> in your example.

No, it sees a constant 150 ohms at all times.

> The source sees an outgoing impedance change from 200
> ohms to infinity during the same analysis period.

If you consider the analysis period to extend to steady state, then yes, that's correct. You might recall that the power into the line increased for one of the reflection periods because of the improved impedance match between the source and line (impedances of 150 and 250 ohms respectively) compared to the impedance match at other periods.

> It is interesting to compare the final voltage ratios (directly
> proportional to energy levels and directly proportional to power levels)
> on the transmission line to the SWR ratio.

The energy stored = 1/2 * C * v^2 + 1/2 * L * i^2, where v and i are the voltage and current at a very short section of line, and C and L are the capacitance and inductance, respectively, per that short section. As you can see, energy is not directly proportional to V by any means. There are places and times where energy is stored entirely in the magnetic field, and v is zero.

> You used a SWR ratio of 3:1
> and I used 1:1.

No, the SWR on the line was infinite in my example. It's determined entirely by the load impedance and the line's Z0. If you're assuming an open ended line, the SWR is infinite in your example also.

> You found that the total energy stored on the line was
> 4 times the initial energy applied,

No, the "initial energy" applied was zero. The analysis began with the assumption that the line was initially completely discharged. It sounds like you're confusing power, which had an initial value, and the energy, which accumulated over time.

and I predicted that the total
> energy stored was 2 times the initial.

Where and when did you predict that? What initial energy did you apply to the line? Can you do an analysis with the line initially discharged as I did?

> The link here is that the power
> storage factor(SF) (I know you dislike the term) is found from
>
> SF = SWR + 1.
>
> Your storage factor was SF = 3 + 1 = 4. My storage factor was
> SF = 1 + 1 = 2.

First of all, the SWR in my example was infinite, so by your calculation, the "power storage factor" was infinite.

> If we can accept that the storage factor is always SF = SWR + 1 for all
> situations, then we have a very convient way to predict the voltage

> increase that results form impedance mismatch at a discontinuity. I am
> not yet ready to accept this generalization, but we should look at it
> more carefully.

I still don't know what you mean by "power storage factor" or why you need to coin a new and vague term. So I guess I can accept that it's whatever you want it to be. But it has no relationship to power or energy that I can see.

> Ending comment. Both your and my analysis are correct. Congratulations
> to both us!

I've presented an analysis which gives, quantitatively, the exact voltage at any point on the line, at any instant, from turn-on until steady state. I've also shown the power being applied at any instant and the total energy on the line at any time.

You've presented an analysis whose only result is a poorly defined "power storage factor", derived from invalid premises.

Yes, congratulations to us both.

By the way, I didn't see from your "analysis" how many watts are stored in the line. If power is stored as you say, you surely must be able to determine how much.

Roy Lewallen, W7EL

356. Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 22:08:10 UTC
From: James <jnipperxxx@nospamfdn.com>
Message-ID: <OemdnY9Xh4nUM-PanZ2dnUVZ_v2pnZ2d@comcast.com>
Source record: 29922
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

I plan to install a 2 meter radio in my 1980 CJ5 Jeep (softtop). My plan is to construct a mount that will attach to my rear tire mount. Because this will be a custom mount, I can have the base of the antenna even with the top of the spare tire, or I can elevate it some for greater height. I use this Jeep only in mountain areas. Here are some of my questions:

1. What is the "best" 2 meter antenna type for me (I don't need a dual bander. I will only use 2 meters). I know that a 5/8 whip will have the best gain, but I have seen some comments that a 1/4 wave may work better in the mountains, because of the angles involved. Yet, I know that a 1/4 wave needs a good ground plane, which a softop probably will not do very well. It would seem that with a 1/4 wave, I would want the base of the antenna at or near the top of the Jeep. I am also aware of a colinear antenna, but that would be quite tall for me !!

2. Is it best to have the antenna element fully above the top of the top of the Jeep ?

3. If I use a spring to offer some protection for the whip, doesn't the spring add to the length of the antenna, and I would have to tune the whip for resonance ?

4. What is the best (maybe strongest?) mount type ? I am accustomed to the 3/8" - 24 type stud mount. It seems strong to me. What are the advantages of the NMO and other mount types for my purpose ?

5. After choosing the antenna type (1/4 wave, 5/8 wave / etc) what is the best antenna ? Larsen, Diamond. Other ?

Thanks for any comments and advice, based on actual experience.

73 de Jim K4PYT

357. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 22:22:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2lyfj.2457$jJ5.604@newssvr11.news.prodigy.net>
Source record: 29923

Richard Clark wrote:
> SWR = 29:1

Richard, to prove that you are not 100% insane,
would yo please attempt to prove that the SWR
in the transmit antenna is in any way related
to the SWR in the receive antenna?
--
73, Cecil http://www.w5dxp.com

358. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 23:04:19 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <TXyfj.106729$MJ6.64087@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29924

Cecil Moore wrote:
> Gene Fuller wrote:
>> * Did you perhaps notice that the surfer typically travels much faster
>> than the water?
>
> Surfers even travel faster than the wave energy.
> Sailboats travel faster than the wind.
>
> Unfortunately, for your argument, nothing in the
> universe (AFAWK) travels faster than an EM wave.
> But maybe you can invent Warp Drive or Slip-Stream
> Drive. :-)

Huh??? What argument of mine requires superluminal velocities? Did I post something while I was sleeping? I hate it when I do that.

8-)

73,
Gene
W4SZ

359. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-04 23:17:06 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <flmepukc1@news.service.uci.edu>
Source record: 29925

Dave wrote:
> "Jim Kelley" <jwkelley@uci.edu> wrote in message
> news:flm62k$lf9$1@news.service.uci.edu...
>
>>Cecil Moore wrote:
>>
>>
>>>Sorry Jim, but [Io*cos(kx)*cos(wt)] and [Io*cos(kx+wt)] *ARE*
>>>different.
>>
>>Evidently, you can't recognize a trig identity when you see one.
>
>
> in my book
> cos(a+b)=cos(a)cos(b)-sin(a)sin(b)
> so cos(kx+wt) would expand to:
> cos(kx)cos(wt)-sin(kx)sin(wt)
> me thinks you are missing a few terms in your 'identity'.

I'm sure your book is correct, Dave. Mine probably is too. (It has CRC Standard Mathematical Tables printed on the cover.) Cecil through a curve ball. The correct function for a standing wave can be written as the algebraic sum of two sine functions, or as the product of a sine and a cosine function e.g. y = 2*Ymax*sin(kx)cos(wt).

73, ac6xg

360. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 01:10:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5fltn39j47a8tfaevmvj2mpn3s8dsato5t@4ax.com>
Source record: 29926
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

On Fri, 4 Jan 2008 17:08:10 -0500, "James" <jnipperxxx@nospamfdn.com>
wrote:

>1. What is the "best" 2 meter antenna type for me (I don't need a dual
>bander. I will only use 2 meters).

Hi Jim,

If that is asking for a manufacturer recommendation, I will leave that
to others.

>I know that a 5/8 whip will have
>the best gain, but I have seen some comments that a 1/4 wave may work better
>in the mountains, because of the angles involved.

Either works fine. Mountains are immaterial unless you are trying to
work off the pointy end of the vertical (even then, there is no
difference they both provide nulls). There is certainly a lower
directivity with higher angles, but higher angles also suggest closer
proximity. Any proximity that allows you to "see" the source would
also allow you to talk to the source. You don't need any
extraordinary amount of gain/power to accomplish that when a handheld
can talk to the space shuttle.

>Yet, I know that a 1/4
>wave needs a good ground plane, which a softop probably will not do very
>well.

So would a 5/8ths. You may be tempted with halfwaves (no ground plane
required). Take care, they can be wildly mistuned by nearby metal
and/or coax length, or any number of other considerations. This
follows the rule: no such thing as a free lunch.

> It would seem that with a 1/4 wave, I would want the base of the
>antenna at or near the top of the Jeep. I am also aware of a colinear
>antenna, but that would be quite tall for me !!

So stick with a single element. Gain is not all that it is cracked up
to be. Your intended mounting position will work just fine.

>2. Is it best to have the antenna element fully above the top of the top of
>the Jeep ?

If it were a hard top, then mounted dead center would be best. You
aren't likely to notice any difference anyway (and you don't have a
hard top).

>3. If I use a spring to offer some protection for the whip, doesn't the
>spring add to the length of the antenna, and I would have to tune the whip
>for resonance ?

Ya sure, you betcha. Buy a whip that is springy in its own right
(maybe using piano wire - this suggestion will probably attract flack,
just make it thicker wire).

>4. What is the best (maybe strongest?) mount type ? I am accustomed to
>the 3/8" - 24 type stud mount. It seems strong to me. What are the
>advantages of the NMO and other mount types for my purpose ?

All very fine. You can get by with less, but what is important is a
tight weather seal.

>5. After choosing the antenna type (1/4 wave, 5/8 wave / etc) what is
>the best antenna ? Larsen, Diamond. Other ?

All of the above.

73's
Richard Clark, KB7QHC

361. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 01:30:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <k5Bfj.82341$Um6.23908@newssvr12.news.prodigy.net>
Source record: 29927

Jim Kelley wrote:
> I'm sure your book is correct, Dave. Mine probably is too. (It has CRC
> Standard Mathematical Tables printed on the cover.) Cecil through a
> curve ball. The correct function for a standing wave can be written as
> the algebraic sum of two sine functions, or as the product of a sine and
> a cosine function e.g. y = 2*Ymax*sin(kx)cos(wt).

I'm surprised that a physics professor doesn't recognize
the difference between the conventions of RF engineering
and optical physics (which are essentially meaningless).

Is discrediting me really worth denying the laws of physics?
--
73, Cecil http://www.w5dxp.com

362. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 01:54:18 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flmo04$3lt$1@news.albasani.net>
Source record: 29928
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

James wrote:

> ...
> Thanks for any comments and advice, based on actual experience.
>
> 73 de Jim K4PYT

Having been the owner of a CJ5 back in the 70's, I'd leave the soft-top alone, leaks bother me. Darn cover leaked air so bad it challenged the heater and won in cold/snow country--easily! Actually, wasn't that great even for California winters!

A pipe/tubing mounted to the bumper (are the bumpers still metal?) and one of the commercial 1/2 or 5/8 sounds good.

One of the helical wound fiberglass will get you going, remember, it won't be the last antenna you buy in life. Better yet, construct it yourself off some freely shared plans on the internet ...

Others recommendations may differ ... your choice. I'd just leave the soft-top alone ...

Regards,
JS

363. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 02:05:27 UTC
From: James <jnipperxxx@nospamfdn.com>
Message-ID: <daCdnVlVf8d7eOPanZ2dnUVZ_hqdnZ2d@comcast.com>
Source record: 29929
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

John, thanks for the input. But, since I have had the softop since 1980 and
love it, I think I will keep it. That is 28 years of being satisfied.
Why mess up a good thing ?

73 de JIm K4PYT

364. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 02:11:23 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flmp04$70h$1@news.albasani.net>
Source record: 29930
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

James wrote:
> John, thanks for the input. But, since I have had the softop since 1980 and
> love it, I think I will keep it. That is 28 years of being satisfied.
> Why mess up a good thing ?
>
> 73 de JIm K4PYT

James:

ABSOLUTELY MAN!

Have always kept a 4WD myself, jeeps, IH scouts, ford broncos, chevy 4WD
pickup, now a ford explorer--just NO MORE SOFT-TOPS. <LOL>

You could go mirror mount(s) also ...

Regards,
JS

365. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 03:06:30 UTC
From: Robert Smts <bob@rsmits.ca>
Message-ID: <47523359614b526f61dec872b27e8cff@grapevine.islandnet.com>
Source record: 29931
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

James wrote:

> I plan to install a 2 meter radio in my 1980 CJ5 Jeep (softtop). My
> plan
> is to construct a mount that will attach to my rear tire mount. Because
> this will be a custom mount, I can have the base of the antenna even with
> the top of the spare tire, or I can elevate it some for greater height. I
> use this Jeep only in mountain areas. Here are some of my questions:
>
> 1. What is the "best" 2 meter antenna type for me (I don't need a dual
> bander. I will only use 2 meters). I know that a 5/8 whip will
> have the best gain, but I have seen some comments that a 1/4 wave may work
> better
> in the mountains, because of the angles involved. Yet, I know that a
> 1/4 wave needs a good ground plane, which a softop probably will not do
> very
> well. It would seem that with a 1/4 wave, I would want the base of the
> antenna at or near the top of the Jeep. I am also aware of a colinear
> antenna, but that would be quite tall for me !!

Based on mounting a lot of two-way radios in logging trucks in my younger years, I suggest mechanical strength is a prime consideration, and that if you are driving on unpaved roads the radiation pattern will vary anyway from bouncing around on the roads.

I suggest a Larsen 5/8 wave antenna in either NMO or 3/8 in hole mounts. Personally I prefer the NMO, but you need a 3/4 in hole saw unless you use one of the available "L" brackets. (Which come in both variants). I suggest the Larsen because it's tough. I know at least one logger who was still able to call for help from his overturned pickup with a Larsen on the roof.

As for ground plane, you can probably mount it to the spare wheel bracket or someplace similar. And while theory says you need to put it in the centre of a metal roof, you'll be able to communicate very effectively with all sorts of non-optimum placements. Make it mechanically secure, and out of the way of opening doors, hatches, windshields or hoods. Keep in mind the higher up you put it the more trouble you have with the whip hitting things overhead, like garage lightbulbs.

The other good thing is that the Larsens are easy to unscrew for going through the car wash after a muddy expedition! And the metal in the antenna whip is flexible enough you don't need an antenna spring that can come loose on rough roads.

>
> 2. Is it best to have the antenna element fully above the top of the top
> of the Jeep ?
>
> 3. If I use a spring to offer some protection for the whip, doesn't the
> spring add to the length of the antenna, and I would have to tune the whip
> for resonance ?
>
> 4. What is the best (maybe strongest?) mount type ? I am accustomed
> to
> the 3/8" - 24 type stud mount. It seems strong to me. What are the
> advantages of the NMO and other mount types for my purpose ?

There's no need to go to the weight and heft of a 3/8 24 mount - it's really designed for heavy (and huge) HF antennas. Either the 3/8 snap in or NMO mounts work fine for the smaller, lighter VHF antennas. The NMOs also are very low profile when the antenna itself is unscrewed, and both 1/4 wave and 5/8 wave antennas can be interchanged with the same style mount.

I have no connection with Larsen other than using them for the past twenty years and more, including all my vehicles.

Bob, VE7HS

366. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 03:24:10 UTC
From: art <aunwin@insightbb.com>
Message-ID: <e2c8ac0c-8110-43a3-ba97-2ba2f9008a1a@t1g2000pra.googlegroups.com>
Source record: 29932

On 4 Jan, 10:31, "Dave" <no...@nowhere.com> wrote:
> art spewed:
>
snip
>
> >A radiator in equilibrium is a full wave length
>
> long ago, and far away... well maybe a couple months, and still in this
> group, you said 1/2 wave was the equilibrium size? so which is it, full
> wave or half wave? and where did gauss go?? how do these funny cosmic dust
> things fit into his equation??

David
you are quite correct in that I do fluctuate between a full wave
length and a half wave length antenna which is obviously wrong. My
problem in describing a wave length is to consider it in electric
terms thus a physical halfwave radiator is electrically a full wave
antenna since it handles one period. Ofcourse I should use standard
terminology and refer to physical length
even tho it is not exactly correct to my mind because it actually
varies in the real world where as electrical length doesn't. However,
I should stay with the accepted terminology to the best of my ability
even tho I believe that is why this arguement on colliding current is
realising postings and mass confusion in excess of 1000 each time it
comes up. I apologise for misleading terminolgy.
With reference to Gauss.
This is my starting point where with the addition of a time variable
to the static law became the same as Maxwells laws where Gauss formula
was firmly in theIsaac Newton camp
by revolving around gravitational fields.
Re: funny cosmic dust come into the equation
Cosmic or galactic dust is everywhere on this earth .m. This dust is
what Gauss refers to
as static particles in a gravitational field in equilibrium. Thus I
was able to add elements to this field as long as the elements were in
equilibrium, together with a time vaying addition which brings it into
Maxwells court. This transition to a dynamic form then allows the use
of computor programs based only around Maxwells laws. Thus radiators
and arrays could be designed based on a equilibrium format instead of
a planar format as with a Yagi using existing standard computor
radiator design programs. From the results the following becomes
correct i.e A radiator can be any shape, size or elevation as long it
is in aquilibrium
and made from a diamagnetic material. Thus now helix radiators would

have to have counter windings to fall with in these parameters, where the present helical antennas are absent the contra wound windings. All this is what Prof Hattely was looking for in combining the EH field which is unsuccesfull as is the latest RI antenna. None of these inventors followed the same trail that I did that revealed the equilibrium requirement for contra wound coil additions. Ask any other questions that you have difficulty with. As an aside, this was what Einstein was looking for during his last twenty years of life under the title of a Grand Unification theory but without success
Regards
Art Unwin....KB9MZ

367. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 05:19:32 UTC
From: art <aunwin@insightbb.com>
Message-ID: <b2b56ece-5e2f-4063-a715-4f957561879f@f3g2000hsg.googlegroups.com>
Source record: 29933

On 3 Jan, 16:39, Richard Clark <kb7...@comcast.net> wrote:
> On Thu, 3 Jan 2008 15:57:08 -0800 (PST), Derek
>
> <blueyh...@yahoo.com.au> wrote:
> > >   But it is midway between the pole's on the other side of the
> > >globe, which is more to the point of Art"s observation than your nit
> > >picking.
>
> Howland Island is near dead on the Equator, Bermuda is not even close.
> Howland Island is near dead on the international date line, Bermuda is
> nowhere near the Prime Meridian (opposite side). The opposite side of
> the Earth for Howland Island would be south of the Ivory Coast in
> Central-West Africa!
>
> I have sailed in the Bermuda triangle many times (to no shocking
> results) and Bermuda is three times closer to Boston than Quito
> Ecuador which is midway between the poles.
>
> Bermuda is also on 65 degrees West longitude, 180 degrees away (or 115
> degrees East longitude) is the Indian Ocean, not the Pacific (and I've
> been to both oceans too, crossing the full Pacific twice before I was
> 8 years old).
>
> If nit picking amounts to a difference of 8000 kilometers, you must
> have your money on one hell of a spread.
>
> This doesn't bode well for Art's magnetic compass correction factors.
> Even Gauss could tell the difference between the Indian Ocean and the
> Pacific Ocean (and he would have looked at a globe first before
> uttering this foolishness).
>
> After all, this is really very simple stuff, but I guess you have to
> have been there to appreciate these nit picking issues.
>
> As for diamagnetic curls of the magnetic field, if no one responded to
> this baloney, Art's ideas would die miserable solitary lives. Laughing
> at them is about the best currency exchange he can hope for.
>
> 73's
> Richard Clark, KB7QHC

Richard
You are just not reading what is written. The multi poles of the eath
do NOT dissect the center of the earth so their poles are never

exactly opposite but they are the other side of the World
Regarding diadmagnetic fields,
You have stated that to move a electron takes 10 to 100 x10 to the plus tenth value Tesla force which frankly is for a bonded electron or particle. A field to hold a inter galactic particle that Gauss calls static particles need only a magnetic field to the tune of 5 x 10 to the MINUS tenth value which is a very weak magnetic field and makes your figure look a bit silly. This compares favorability to a diagmagnetic field as formed from an aluminum conductor or radiator. This level of field can only marginally affect a ferrite based compass but I threw that in for general interest, especially when the field is generated at right angles to the normal ferrite magnetic field. I don't think anybody has determined why so many planes including a group of planes flew inexplicitely in the wrong direction in the Berbuda triangle where they perished or why Amelia failed to arrive at her destination after traversing several thousand miles succesfully on her journey around the world flight.But as far as the "foolishness" of a curving trajectory. It is well known that the earth turns. If you are not sure study a pendulum to see that it only not goes backwards and forwards but it also rotates, and there are many places that feature a large pendulum to illustrate this circular function.
If you are familier with vector forces you will note that one of the vectors is also called "curl" which mimics the weak diagmatic field of the earth but is magnified by a diamagnetic radiator based on the inverse square law.You also continually think or have a fixation in terms of a electron gun, which is a completely different animal compared to Galactic or interstellar dust that pervades this earth of ours. It sounds impressive but if you don't understand the nature of a static partical it does make you look silly with those knoweledgable in the field in the same way you decided to deride a Doctor from M.I.T. who is working on a NASA space project on a simple mathematical problem. So read carefully, and stop jumping to conclusions that are not intimated by my writings in efforts to anger people in your postings. I will not go as far as Cecil did by infering you are insane because I consider your comments are deliberate to precipitate anger, tho why you do this I do not know.
Art Unwin....KB9MZ.....XG (uk)

368. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 06:07:53 UTC
From: mike <monettsys@yahoo.com>
Message-ID: <75d56b61-358b-4d67-a9a8-a12f619367ee@u10g2000prn.googlegroups.com>
Source record: 29934

Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 3, 12:55pm, Mike Monett <N...@email.adr> wrote:

>> [...]

>> Your explanation is easily proven false. Let's suppose it was
>> true.

>> Suppose it was possible to introduce a pulse of charge onto a
>> conductor.

>> Since like charges repel each other, what keeps the pulse
>> together? In other words, what prevents it from destroying
>> itself?

>> Then, when the first pulse meets the second, what mechanism
>> allows them to bounce off each other?

>> Then, after they have bounced off each other, what mechanism
>> keeps them together?

> All good questions.

For which you have no answers.

But there's more bad news. Here's your original post of Dec 29:

~~~~~~
Subject: Re: Standing-Wave Current vs Traveling-Wave Current
Date: Sat, 29 Dec 2007 14:33:46 -0800 (PST)
From: Keith Dysart <Keith.Dysart@gmail.com>
Newsgroups: rec.radio.amateur.antenna

Keith Dysart <Keith.Dysart@gmail.com> wrote:

[...]

> Consider a 50 ohm transmission line that is 4 seconds long with a
> pulse generator at one end and a 50 ohm resistor at the other.

> The pulse generator generates a single 1 second pulse of 50 volts
> into the line. Before and after the pulse its output voltage is 0.

> While generating the pulse, 1 amp (1 coulomb/s) is being put into
> the line, so the generator is providing 50 watts to the line.

> After one second the pulse is completely in the line.
~~~~~~

> The pulse is one second long, contains 1 coulomb of charge and 50
> joules of energy. It is 50 volts with 1 amp: 50 watts.

> Let's examine the midpoint (2 second) on the line.

> At two seconds the leading edge of the pulse arrives at the
> midpoint. The voltage rises to 50 volts and the current becomes 1
> amp. One second later, the voltage drops back to 0, as does the
> current. The charge and the energy have completely passed the
> midpoint.

> When the pulse reaches the end of the line, 50 joules are
> dissipated in the terminating resistor.

> Notice a key point about this description. It is completely in
> terms of charge. There is not a single mention of EM waves,
> travelling or otherwise.

> Now we expand the experiment by placing a pulse generator at each
> end of the line and triggering them to each generate a 50V one
> second pulse at the same time. So after one second a pulse has
> completely entered each end of the line and these pulse are racing
> towards each other at the speed of light (in the line). In another
> second these pulses will collide at the middle of the line.

> What will happen? Recall one of the basics about charge: like
> charge repel. So it is no surprise that these two pulses of charge
> bounce off each and head back from where they came. At the center
> of the line, for one second the voltage is 100 V (50 V from each
> pulse), while the current is always zero. No charge crossed the
> mid-point. No energy crossed the mid-point (how could it if the
> current is always zero (i.e. no charge moves) at the mid-point.

[...]

> So do the travelling waves "reflect" off each other? Save the term
> "reflect" for those cases where there is an impedance
> discontinuity and use "bounce" for those cases where no energy is
> crossing a point and even Cecil may be happy. But bounce it does.

> Keith

~~~~~~
In order for the pulses to bounce off each other, your theory
requires that electrons move at nearly the speed of light.

Unfortunately, they do not. The classical formula for the drift
velocity of electrons in a conductor is:

v = I / (n * a * q)

where

v is the drift velocity of the electrons

I is the current in Amperes
~~~~~~

n is the number of electrons per cubic metre, copper = 8.5e28 / m^3

A is the cross sectional area of the wire

Q is the charge of an electron, 1.6e-19C

References:

http://amasci.com/miscon/speed.html

http://physicsplus.blogspot.com/2007/05/mcq-on-drift-velocity-of-electrons.html

http://resources.schoolscience.co.uk/CDA/16plus/copelech2pg3.html

http://hyperphysics.phy-astr.gsu.edu/HBASE/electric/ohmmic.html

Using the 1 Amp from your post, if the center conductor has an area
of 0.5 mm^2 (0.5e-6 m^2), the drift velocity is:

v = 1 / (8.5e28 * 0.5e-6 * 1.6e-19)

= 0.0001470 meters per second

So in one second, the electrons move 0.147 mm.

If the propagation constant of your line is 66%, the signal will
propagate at:

Vel = 3e8 * 0.66
= ~200e6 meters/sec

If the pulses meet in the center of the line, that point is about
400 million meters away from the electrons that originally carried
your pulse of charge.

This raises many questions. How can the pulses bounce off each other
if the electrons that carried the charge are 400 million meters
away? Obviously, they can't.

There's more bad news. If two collections of 1 Coulomb each were
concentrated one meter apart, the force between them could be
calculated from Coulomb's Law. In this example, the force is 1.01
million tons:

http://hyperphysics.phy-astr.gsu.edu/hbase/electric/elefor.html

This means the pulses could not even come close enough to bounce off
each other. This would certainly wreck any timing analysis you try
to do on the signals.

So your theory fails simple logic tests, it requires invalid
electron velocities, and it fails Coulomb's law.

It is clear the pulses cannot bounce off each other, as you claim
above when you state "But bounce it does."

~~~~~~
> But it appears that your underlying suggestion is that charge and
~~~~~~

> charge flow in the distributed capacitance and inductance can not
> be used to analyze transmission lines.

That is not what you proposed. Your post states:

> Notice a key point about this description. It is completely in
> terms of charge. There is not a single mention of EM waves,
> travelling or otherwise.

~~~~~~
> And yet I commonly see discussion of current in transmission
> lines. Current is charge flow per unit time. Is this all invalid?

> Must we abondon measurements of current? Voltage? These are all
> based on the assumption of charge being a useful concept.

You are just trying to fog the issue. You cannot use charge by
itself as you claim above.

> Keith

Regards,

Mike Monett
~~~~~~

369. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 10:35:18 UTC
From: "Helmut Wabnig"
Message-ID: <72nun3ds81ahq3hnna9fkffgbts7cvhcpm@4ax.com>
Source record: 29936

On Sat, 05 Jan 2008 20:47:36 +1100, slackj
<slackj_delete@optusnet.com.au> wrote:

>Hi folks,
>
>This one challenges my understanding of theory in relation to matching
>& propogation. I hope someone can enlighten me.
>
>I'm in Oz, and the current migration to the mobile phone system
>marketed as "Next G" network by our major carrier is on 850 Mhz band.
>
>The car kit I have bought (ZTE brand for a ZTE165) multi band phone
>specifically states that the antenna base should not be grounded.
>
>http://www.zte.com.au/downloads/Install_guideline_01.pdf
>
>"Additional Notice for Car Kit Installations
>1. The antenna must be isolated from the vehicle ground
>Make sure you isolate the antenna from the vehicle chassis (ground).
>If the antenna is grounded then noise can be introduced into the car
>kit. Always use a rubber mount to separate the antenna base from the
>car body or use a glass mount antenna."
>
>I already had a roof mounted centre loaded antenna for that band (was
>CDMA), and the above does not make sense to me. However I've done as
>they suggest and interrupted the braid at the antenna base.
>
>Anyone care to clue me up as to why this would be so?
>
>Stewart.

Probably a Lamda / 2 dipole, or a "sperrtopf"
(is there an English word?)
and then the base must be separated from chassis.

w.

370. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 10:37:53 UTC
From: Ralf Ballis <rb.news@arcor.de>
Message-ID: <477f5e05$0$27201$9b4e6d93@newsspool1.arcor-online.net>
Source record: 29935
Cross-posted to: alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

"James" <jnipperxxx@nospamfdn.com> schrieb im Newsbeitrag
news:OemdnY9Xh4nUM-PanZ2dnUVZ_v2pnZ2d@comcast.com...
>I plan to install a 2 meter radio in my 1980 CJ5 Jeep (softtop). My
>plan
> is to construct a mount that will attach to my rear tire mount. Because
> this will be a custom mount, I can have the base of the antenna even with
> the top of the spare tire, or I can elevate it some for greater height. I
> use this Jeep only in mountain areas. Here are some of my questions:

That's the best place to install it on this vehicle.

> 2. Is it best to have the antenna element fully above the top of the top
> of
> the Jeep ?

It would be but difficult to realize with a lot of constraints.

> 3. If I use a spring to offer some protection for the whip, doesn't the
> spring add to the length of the antenna, and I would have to tune the whip
> for resonance ?

Yes, you have to add every thing behind the feed point.
Keep in mind that a spring is an extra instability of this antenna, and with
this length isn't necessary

> 4. What is the best (maybe strongest?) mount type ? I am accustomed
> to
> the 3/8" - 24 type stud mount. It seems strong to me. What are the
> advantages of the NMO and other mount types for my purpose ?

In this case I would you recommend to use a 5/8 because the length would be
maybe reach near the top of an installed hardtop then a 1/4.

73 Ralf, DL2MRB

371. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 10:38:21 UTC
From: Jeff <jeff@local.host>
Message-ID: <477f5e4d$0$1342$834e42db@reader.greatnowhere.com>
Source record: 29937

"slackj" <slackj_delete@optusnet.com.au> wrote in message
news:jijun3tlh3tt82sesbrs1chcihhskhqkuv@4ax.com...
> Hi folks,
>
> This one challenges my understanding of theory in relation to matching
> & propogation. I hope someone can enlighten me.
>
> I'm in Oz, and the current migration to the mobile phone system
> marketed as "Next G" network by our major carrier is on 850 Mhz band.
>
> The car kit I have bought (ZTE brand for a ZTE165) multi band phone
> specifically states that the antenna base should not be grounded.
>
> http://www.zte.com.au/downloads/Install_guideline_01.pdf
>
> "Additional Notice for Car Kit Installations
> 1. The antenna must be isolated from the vehicle ground
> Make sure you isolate the antenna from the vehicle chassis (ground).
> If the antenna is grounded then noise can be introduced into the car
> kit. Always use a rubber mount to separate the antenna base from the
> car body or use a glass mount antenna."
>
> I already had a roof mounted centre loaded antenna for that band (was
> CDMA), and the above does not make sense to me. However I've done as
> they suggest and interrupted the braid at the antenna base.
>
> Anyone care to clue me up as to why this would be so?
>
> Stewart.

I suspect that this has nothing to do with the rf performance of the
antenna, and more to do with ground loops causing problems in the audio
stages of the car kit.

Jeff

372. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 10:55:02 UTC
From: Ralf Ballis <rb.news@arcor.de>
Message-ID: <477f620d$0$5948$9b4e6d93@newsspool3.arcor-online.net>
Source record: 29938

"Helmut Wabnig" <hwabnig@ .- --- -. DOT .- t> schrieb im Newsbeitrag
news:72nun3ds81ahq3hnna9fkffgbts7cvhcpm@4ax.com...
> On Sat, 05 Jan 2008 20:47:36 +1100, slackj
> <slackj_delete@optusnet.com.au> wrote:

> Probably a Lamda / 2 dipole, or a "sperrtopf"
> (is there an English word?)

Detuning sleeve or bazooka.

73 Ralf, DL2MRB

373. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 11:51:46 UTC
From: Dave <noone@nowhere.com>
Message-ID: <mbKfj.67$O97.14@trndny01>
Source record: 29939

"slackj" <slackj_delete@optusnet.com.au> wrote in message
news:jijun3tlh3tt82sesbrs1chcihhskhqkuv@4ax.com...
> Hi folks,
>

> http://www.zte.com.au/downloads/Install_guideline_01.pdf
>
> "Additional Notice for Car Kit Installations
> 1. The antenna must be isolated from the vehicle ground
> Make sure you isolate the antenna from the vehicle chassis (ground).
> If the antenna is grounded then noise can be introduced into the car
> kit. Always use a rubber mount to separate the antenna base from the
> car body or use a glass mount antenna."
>
> I already had a roof mounted centre loaded antenna for that band (was
> CDMA), and the above does not make sense to me. However I've done as
> they suggest and interrupted the braid at the antenna base.
>

did this 'car kit' come with an antenna? did you use that antenna or the
one you already had?? i suspect that if they supplied you an antenna that
it was meant to be isolated from the vehicle ground, possibly it had its own
matching or decoupling system built in. by interrupting the braid you may
or may not be isolating that antenna from the body, some antennas include a
matching transformer in the base that connects to ground. it also seems
like they are worried about dc grounding and voltage differences, perhaps
they don't isolate the antenna connection in the phone very well from the
power, so i would be very careful about how it is connected and follow their
procedure and use their parts.

374. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 13:38:38 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <d3bc1e18-2820-4260-be02-6aac486732f6@v46g2000hsv.googlegroups.com>
Source record: 29940

```
On Jan 5, 1:07 am, mike <monett...@yahoo.com> wrote:
>   Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
>   > On Jan 3, 12:55pm, Mike Monett <N...@email.adr> wrote:
>
>   >> [...]
>
>   >> Your explanation  is  easily proven false. Let's  suppose  it was
>   >> true.
>
>   >> Suppose it  was  possible to introduce a pulse of  charge  onto a
>   >> conductor.
>
>   >> Since like  charges  repel  each   other,  what  keeps  the pulse
>   >> together? In  other  words,   what  prevents  it  from destroying
>   >> itself?
>
>   >> Then, when  the  first  pulse meets  the  second,  what mechanism
>   >> allows them to bounce off each other?
>
>   >> Then, after  they  have bounced off  each  other,  what mechanism
>   >> keeps them together?
>
>   > All good questions.
>
>   For which you have no answers.
>
>   But there's more bad news. Here's your original post of Dec 29:
>
>   ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
>   Subject: Re: Standing-Wave Current vs Traveling-Wave Current
>   Date: Sat, 29 Dec 2007 14:33:46 -0800 (PST)
>   From: Keith Dysart <Keith.Dys...@gmail.com>
>   Newsgroups: rec.radio.amateur.antenna
>
>   Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
>   [...]
>
>   > Consider a 50 ohm transmission line that is 4 seconds long  with a
>   > pulse generator at one end and a 50 ohm resistor at the other.
>
>   > The pulse generator generates a single 1 second pulse of  50 volts
>   > into the line. Before and after the pulse its output voltage is 0.
```

>
> > While generating the pulse, 1 amp (1 coulomb/s) is being put into
> > the line, so the generator is providing 50 watts to the line.
>
> > After one second the pulse is completely in the line.
>
> > The pulse is one second long, contains 1 coulomb of charge and 50
> > joules of energy. It is 50 volts with 1 amp: 50 watts.
>
> > Let's examine the midpoint (2 second) on the line.
>
> > At two seconds the leading edge of the pulse arrives at the
> > midpoint. The voltage rises to 50 volts and the current becomes 1
> > amp. One second later, the voltage drops back to 0, as does the
> > current. The charge and the energy have completely passed the
> > midpoint.
>
> > When the pulse reaches the end of the line, 50 joules are
> > dissipated in the terminating resistor.
>
> > Notice a key point about this description. It is completely in
> > terms of charge. There is not a single mention of EM waves,
> > travelling or otherwise.
>
> > Now we expand the experiment by placing a pulse generator at each
> > end of the line and triggering them to each generate a 50V one
> > second pulse at the same time. So after one second a pulse has
> > completely entered each end of the line and these pulse are racing
> > towards each other at the speed of light (in the line). In another
> > second these pulses will collide at the middle of the line.
>
> > What will happen? Recall one of the basics about charge: like
> > charge repel. So it is no surprise that these two pulses of charge
> > bounce off each and head back from where they came. At the center
> > of the line, for one second the voltage is 100 V (50 V from each
> > pulse), while the current is always zero. No charge crossed the
> > mid-point. No energy crossed the mid-point (how could it if the
> > current is always zero (i.e. no charge moves) at the mid-point.
>
> [...]
>
> > So do the travelling waves "reflect" off each other? Save the term
> > "reflect" for those cases where there is an impedance
> > discontinuity and use "bounce" for those cases where no energy is
> > crossing a point and even Cecil may be happy. But bounce it does.
>
> > Keith
>
> ~~~~~~
> In order for the pulses to bounce off each other, your theory

>   requires that electrons move at nearly the speed of light.

It might best be called a hypothesis, but I don't think
it requires that electrons move at the speed of light,
rather charge move at the speed of light.

This would seem consistent with normal explanations where
charge starts to enter the line at some time T and starts
to exit the line at T + distance/speedOfLight later.

[snipped, an interesting computation of the speed of
electros]

>
>   There's more bad news. If two collections of 1 Coulomb each were
>   concentrated one meter apart, the force between them could be
>   calculated from Coulomb's Law. In this example, the force is 1.01
>   million tons:
>
>   http://hyperphysics.phy-astr.gsu.edu/hbase/electric/elefor.html
>
>   This means the pulses could not even come close enough to bounce off
>   each other. This would certainly wreck any timing analysis you try
>   to do on the signals.

Another interesting analysis. It raises the question of how
a pulse containing one coulomb over a measurable length of
line actually maintains its shape and does not immediately
disperse.

This is a detail well beyond my knowledge, but I could
speculate that it is related to the inductance and
forces of the resulting magnetic field.

I'd further speculate that the force between the pulses
can not travel faster than the speed of light, and since
the pulse itself is travelling at the speed of light,
the two pulses reach each other at the same time that
force does.

>   So your theory fails simple   logic tests, it requires invalid
>   electron velocities, and it fails Coulomb's law.
>
>   It is clear the pulses cannot bounce off each other, as you claim
>   above when you state "But bounce it does."
>
>   ~~~~~~
>   > But it appears that your underlying suggestion is that charge and
>   > charge flow in the distributed capacitance and inductance can not
>   > be used to analyze transmission lines.
>
>   That is not what you proposed. Your post states:

Perhaps I was not clear in my post.

In any case, the question is fundamental...

Can charge and charge flow in the distributed capacitance and
inductance be used to analyze transmission lines?

> > Notice a key point about this description. It is completely in
> > terms of charge. There is not a single mention of EM waves,
> > travelling or otherwise.
>
> ~~~~~~
> > And yet I commonly see discussion of current in transmission
> > lines. Current is charge flow per unit time. Is this all invalid?
>
> > Must we abondon measurements of current? Voltage? These are all
> > based on the assumption of charge being a useful concept.
>
> You are just trying to fog the issue. You cannot use charge by
> itself as you claim above.

No. I am just trying to make clear the consequences of choosing
"no" as the answer to the question I directly posed above.

...Keith

375. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 14:18:39 UTC
From: James <jnipperxxx@nospamfdn.com>
Message-ID: <xKadnXS2auggDOLanZ2dnUVZ_gWdnZ2d@comcast.com>
Source record: 29941
Cross-posted to: alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

Thanks for all the great replies here guys !! Very good points made by all
!!

73 de Jim K4PYT

376. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 14:30:34 UTC
From: Scott <"N2WMD ARRL.net">
Message-ID: <on4vn31v8t8fs91d7tnpdk8i5sv0v23h4p@4ax.com>
Source record: 29942
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

If you haven't committed to one design yet, you might look around for
or fabricate a tail light mount. Basically, the ones I;ve seen unbolt
the tail light, and are a stainless steel plate that has the same hole
patern as the bolts that secure the light. on top is a flap that is
bent forward drilled for the antenna mount. Advantages are, you don't
have to mess with it to change tires, it doesn't move to open the
tailgate (no extra coax to be stuffed somewhere), and if you put it on
the driver's side, it is very unlikely to be in you field of view on a
regular basis. As for sepcific antennas, I'd go for an inexpensive one
as long as reasonable.
Scott
N2WMD

On Fri, 4 Jan 2008 17:08:10 -0500, "James" <jnipperxxx@nospamfdn.com>
wrote:

>I plan to install a 2 meter radio in my 1980 CJ5 Jeep (softtop). My plan
>is to construct a mount that will attach to my rear tire mount. Because
>this will be a custom mount, I can have the base of the antenna even with
>the top of the spare tire, or I can elevate it some for greater height. I
>use this Jeep only in mountain areas. Here are some of my questions:
>
>1. What is the "best" 2 meter antenna type for me (I don't need a dual
>bander. I will only use 2 meters). I know that a 5/8 whip will have
>the best gain, but I have seen some comments that a 1/4 wave may work better
>in the mountains, because of the angles involved. Yet, I know that a 1/4
>wave needs a good ground plane, which a softop probably will not do very
>well. It would seem that with a 1/4 wave, I would want the base of the
>antenna at or near the top of the Jeep. I am also aware of a colinear
>antenna, but that would be quite tall for me !!
>
>2. Is it best to have the antenna element fully above the top of the top of
>the Jeep ?
>
>3. If I use a spring to offer some protection for the whip, doesn't the
>spring add to the length of the antenna, and I would have to tune the whip
>for resonance ?
>
>4. What is the best (maybe strongest?) mount type ? I am accustomed to
>the 3/8" - 24 type stud mount. It seems strong to me. What are the
>advantages of the NMO and other mount types for my purpose ?
>
>5. After choosing the antenna type (1/4 wave, 5/8 wave / etc) what is

>the best antenna ? Larsen, Diamond. Other ?
>
>---------------------------------
>
>Thanks for any comments and advice, based on actual experience.
>
>73 de Jim K4PYT
>
>
>
>

377. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 14:44:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <aJMfj.33826$ID6.90@newssvr27.news.prodigy.net>
Source record: 29943

Keith Dysart wrote:
> It might best be called a hypothesis, but I don't think
> it requires that electrons move at the speed of light,
> rather charge move at the speed of light.

Anything moving at the speed of light in a transmission
line is photonic in nature. The nature of photons is
well known and they do not repel each other. They have
electric and magnetic fields but no charge. So there's
no charge moving at the speed of light in a transmission
line.
--
73, Cecil http://www.w5dxp.com

378. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 14:48:11 UTC
From: PeterD <peter2@hipson.net>
Message-ID: <006vn396om6eij7jdaap3o9nudf4jcvnf0@4ax.com>
Source record: 29944
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

On Fri, 4 Jan 2008 17:08:10 -0500, "James" <jnipperxxx@nospamfdn.com>
wrote:

>I plan to install a 2 meter radio in my 1980 CJ5 Jeep (softtop). My plan
>is to construct a mount that will attach to my rear tire mount. Because
>this will be a custom mount, I can have the base of the antenna even with
>the top of the spare tire, or I can elevate it some for greater height. I
>use this Jeep only in mountain areas. Here are some of my questions:
>
>1. What is the "best" 2 meter antenna type for me (I don't need a dual
>bander. I will only use 2 meters).

Whatever one you want...

>I know that a 5/8 whip will have
>the best gain, but I have seen some comments that a 1/4 wave may work better
>in the mountains, because of the angles involved. Yet, I know that a 1/4
>wave needs a good ground plane, which a softop probably will not do very
>well. It would seem that with a 1/4 wave, I would want the base of the
>antenna at or near the top of the Jeep. I am also aware of a colinear
>antenna, but that would be quite tall for me !!
>
>2. Is it best to have the antenna element fully above the top of the top of
>the Jeep ?

For a softtop, no. For a (metal) hardtop yes. For a glass hardtop no.

>
>3. If I use a spring to offer some protection for the whip, doesn't the
>spring add to the length of the antenna, and I would have to tune the whip
>for resonance ?

If the spring is part of the antenna, yes. But only use a spring
designed for that particular antenna. Otherwise just make a spring
assembly for the entire mount instead.

>
>4. What is the best (maybe strongest?) mount type ? I am accustomed to
>the 3/8" - 24 type stud mount. It seems strong to me. What are the
>advantages of the NMO and other mount types for my purpose ?

Whatever matches your antenna?

>
>5. After choosing the antenna type (1/4 wave, 5/8 wave / etc) what is

>the best antenna ? Larsen, Diamond. Other ?

Didn't you ask that in question 1?

You are a Ham, you should know all about antennas. <g>

>
>---------------------------------
>
>Thanks for any comments and advice, based on actual experience.
>
>73 de Jim K4PYT
>
>
>
>

379. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 14:53:12 UTC
From: Dave <noone@nowhere.com>
Message-ID: <sRMfj.227$4o.28@trndny02>
Source record: 29945

"Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
news:d3bc1e18-2820-4260-be02-6aac486732f6@v46g2000hsv.googlegroups.com...
On Jan 5, 1:07 am, mike <monett...@yahoo.com> wrote:
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
>

>Can charge and charge flow in the distributed capacitance and
>inductance be used to analyze transmission lines?

yes. that is the classical derivation shown in any decent text book.

>> You are just trying to fog the issue. You cannot use charge by
>> itself as you claim above.

>No. I am just trying to make clear the consequences of choosing
>"no" as the answer to the question I directly posed above.

moving charge is current. current traveling waves are well defined and
analyzed by existing methods. as stated before and well documented in
existing texts you need only analyze the current OR the voltage traveling
waves in a transmission line to get the full picture since one is always
linearly related to the other by Z0. waves traveling in opposite directions
do not interact, they don't 'bounce' off of each other, they just pass right
through each other as long as the conditions required for superposition
apply, which is almost all the time in amateur installations.

380. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 15:36:45 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <nf8vn3d4b1f9d4r9h2bs59p1r7gnktkbnm@4ax.com>
Source record: 29946

On Sat, 05 Jan 2008 20:47:36 +1100, slackj
<slackj_delete@optusnet.com.au> wrote:

>Hi folks,
>
>This one challenges my understanding of theory in relation to matching
>& propogation. I hope someone can enlighten me.
>
>I'm in Oz, and the current migration to the mobile phone system
>marketed as "Next G" network by our major carrier is on 850 Mhz band.
>
>The car kit I have bought (ZTE brand for a ZTE165) multi band phone
>specifically states that the antenna base should not be grounded.
>
>http://www.zte.com.au/downloads/Install_guideline_01.pdf
>
>"Additional Notice for Car Kit Installations
>1. The antenna must be isolated from the vehicle ground
>Make sure you isolate the antenna from the vehicle chassis (ground).
>If the antenna is grounded then noise can be introduced into the car
>kit. Always use a rubber mount to separate the antenna base from the
>car body or use a glass mount antenna."
>
>I already had a roof mounted centre loaded antenna for that band (was
>CDMA), and the above does not make sense to me. However I've done as
>they suggest and interrupted the braid at the antenna base.
>
>Anyone care to clue me up as to why this would be so?

Hi Stewart,

As Jeff points out, this is to accommodate the audio system and
whatever curious battery configurations your vehicles might present.

Moreover, it sounds like you bought the cheapest design on the market
(this doesn't mean you paid the lowest price, however) and their
instructions merely make up for their failure to invest in the best
design for the customer.

Your description of "interrupted the braid" could present a severe RF
performance penalty, making that cheapest design even cheaper, and
your loss more expensive.

DO NOT interrupt the braid. What the sense of this is to ISOLATE the
antenna's ground from the chassis. Magmount antennas do this quite
well, but then you have this wire snaking out to the mount which does

not give a very polished installation appearance (if you are going to consider that). Otherwise interrupt the chassis (punch a hole, or use an existing hole) and pass a half wave antenna through it, securing it in the best fashion possible (perhaps a glomp of rubber compound, or epoxy). You may be able to find insulated antenna mounts.

73's
Richard Clark, KB7QHC

381. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 15:37:25 UTC
From: richardharrison@webtv.net
Message-ID: <4058-477FA435-2240@storefull-3254.bay.webtv.net>
Source record: 29947

Cecil, W5DXP wrote:
"Unfortunately for your argument, nothing in the universe (AFAWK)
travels faster than an EM wave. But maybe you can invent Warp Drive or
Slip-Stream Drive. :-)"

Nothing to do with the argument, but I believe there is an exception
that comes to exceeding the speed of light, and that is when the wave is
slowed in a medium to a speed less than c.

382. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 15:50:18 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8m9vn3htabd7hi8lmtnig0qj06c0kdvjvq@4ax.com>
Source record: 29948

On Sat, 5 Jan 2008 09:37:25 -0600, richardharrison@webtv.net (Richard Harrison) wrote:

>Cecil, W5DXP wrote:
>"Unfortunately for your argument, nothing in the universe (AFAWK)
>travels faster than an EM wave. But maybe you can invent Warp Drive or
>Slip-Stream Drive. :-)"
>
>Nothing to do with the argument, but I believe there is an exception
>that comes to exceeding the speed of light, and that is when the wave is
>slowed in a medium to a speed less than c.

Hi Richard,

You are right, of course. Cecil's one-size-fits-all answers always fail abruptly.

What you are describing is associated with Cerenkov radiation (not the radiation, but the stimulus of the radiation, which is a charged particle traveling faster than the speed of light for the medium within which it travels).

73's
Richard Clark, KB7QHC

383. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 16:22:30 UTC
From: richardharrison@webtv.net
Message-ID: <4058-477FAEC6-2242@storefull-3254.bay.webtv.net>
Source record: 29949

Ralf Ballis wrote:
"Keep in mind that a spring is an extra instability of this antenna, and with this length isn`t necessary."

The spring is designed to yield instead of the antenna and adds no more inductance than its overall length as it is short-circuited by a braid inside. Bend the spring to verify the braid is intact.

Best regards, Richard Harrison, KB5WZI

384. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 16:51:20 UTC
From: James <jnipperxxx@nospamfdn.com>
Message-ID: <hY6dnQdK-8kbKOLanZ2dnUVZ_oGjnZ2d@comcast.com>
Source record: 29950
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

Is this your usual wise-ass contribution to usergroups, PeterD ??

James

You are a Ham, you should know all about antennas. <g>

385. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 16:52:06 UTC
From: art <aunwin@insightbb.com>
Message-ID: <559fdb07-3724-49c4-ae80-5bed15f92c71@j20g2000hsi.googlegroups.com>
Source record: 29951

```
On 5 Jan, 05:38, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> On Jan 5, 1:07 am, mike <monett...@yahoo.com> wrote:
>
>
>
>
>
> > >   Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> > >   > On Jan 3, 12:55pm, Mike Monett <N...@email.adr> wrote:
>
> > >   >> [...]
>
> > >   >> Your explanation  is  easily proven false. Let's  suppose  it was
> > >   >> true.
>
> > >   >> Suppose it  was  possible to introduce a pulse of  charge  onto a
> > >   >> conductor.
>
> > >   >> Since like  charges  repel  each   other,  what  keeps  the pulse
> > >   >> together? In  other  words,   what  prevents  it  from destroying
> > >   >> itself?
>
> > >   >> Then, when  the  first  pulse meets  the  second,  what mechanism
> > >   >> allows them to bounce off each other?
>
> > >   >> Then, after  they  have bounced off  each  other,  what mechanism
> > >   >> keeps them together?
>
> > >   > All good questions.
>
> > >   For which you have no answers.
>
> > >   But there's more bad news. Here's your original post of Dec 29:
>
> > >   ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
> > >   Subject: Re: Standing-Wave Current vs Traveling-Wave Current
> > >   Date: Sat, 29 Dec 2007 14:33:46 -0800 (PST)
> > >   From: Keith Dysart <Keith.Dys...@gmail.com>
> > >   Newsgroups: rec.radio.amateur.antenna
>
> > >   Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> > >   [...]
```

> > > Consider a 50 ohm transmission line that is 4 seconds long with a
> > > pulse generator at one end and a 50 ohm resistor at the other.
> >
> > > The pulse generator generates a single 1 second pulse of 50 volts
> > > into the line. Before and after the pulse its output voltage is 0.
> >
> > > While generating the pulse, 1 amp (1 coulomb/s) is being put into
> > > the line, so the generator is providing 50 watts to the line.
> >
> > > After one second the pulse is completely in the line.
> >
> > > The pulse is one second long, contains 1 coulomb of charge and 50
> > > joules of energy. It is 50 volts with 1 amp: 50 watts.
> >
> > > Let's examine the midpoint (2 second) on the line.
> >
> > > At two seconds the leading edge of the pulse arrives at the
> > > midpoint. The voltage rises to 50 volts and the current becomes 1
> > > amp. One second later, the voltage drops back to 0, as does the
> > > current. The charge and the energy have completely passed the
> > > midpoint.
> >
> > > When the pulse reaches the end of the line, 50 joules are
> > > dissipated in the terminating resistor.
> >
> > > Notice a key point about this description. It is completely in
> > > terms of charge. There is not a single mention of EM waves,
> > > travelling or otherwise.
> >
> > > Now we expand the experiment by placing a pulse generator at each
> > > end of the line and triggering them to each generate a 50V one
> > > second pulse at the same time. So after one second a pulse has
> > > completely entered each end of the line and these pulse are racing
> > > towards each other at the speed of light (in the line). In another
> > > second these pulses will collide at the middle of the line.
> >
> > > What will happen? Recall one of the basics about charge: like
> > > charge repel. So it is no surprise that these two pulses of charge
> > > bounce off each and head back from where they came. At the center
> > > of the line, for one second the voltage is 100 V (50 V from each
> > > pulse), while the current is always zero. No charge crossed the
> > > mid-point. No energy crossed the mid-point (how could it if the
> > > current is always zero (i.e. no charge moves) at the mid-point.
> >
> > [...]
> >
> > > So do the travelling waves "reflect" off each other? Save the term
> > > "reflect" for those cases where there is an impedance
> > > discontinuity and use "bounce" for those cases where no energy is

> >   > crossing a point and even Cecil may be happy. But bounce it does.
>
> >   > Keith
>
> >   ~~~~~~
> >   In order for the pulses to bounce off each other, your theory
> >   requires that electrons move at nearly the speed of light.
>
> It might best be called a hypothesis, but I don't think
> it requires that electrons move at the speed of light,
> rather charge move at the speed of light.
>
> This would seem consistent with normal explanations where
> charge starts to enter the line at some time T and starts
> to exit the line at T + distance/speedOfLight later.
>
> [snipped, an interesting computation of the speed of
> electros]
>
>
>
> >   There's more bad news. If two collections of 1 Coulomb each were
> >   concentrated one meter apart, the force between them could be
> >   calculated from Coulomb's Law. In this example, the force is 1.01
> >   million tons:
>
> >   http://hyperphysics.phy-astr.gsu.edu/hbase/electric/elefor.html
>
> >   This means the pulses could not even come close enough to bounce off
> >   each other. This would certainly wreck any timing analysis you try
> >   to do on the signals.
>
> Another interesting analysis. It raises the question of how
> a pulse containing one coulomb over a measurable length of
> line actually maintains its shape and does not immediately
> disperse.
>
> This is a detail well beyond my knowledge, but I could
> speculate that it is related to the inductance and
> forces of the resulting magnetic field.
>
> I'd further speculate that the force between the pulses
> can not travel faster than the speed of light, and since
> the pulse itself is travelling at the speed of light,
> the two pulses reach each other at the same time that
> force does.
>
> >   So your theory fails simple logic tests, it requires invalid
> >   electron velocities, and it fails Coulomb's law.
>

> > It is clear the pulses cannot bounce off each other, as you claim
> > above when you state "But bounce it does."
>
> > ~~~~~~
> > > But it appears that your underlying suggestion is that charge and
> > > charge flow in the distributed capacitance and inductance can not
> > > be used to analyze transmission lines.
>
> > That is not what you proposed. Your post states:
>
> Perhaps I was not clear in my post.
>
> In any case, the question is fundamental...
>
> Can charge and charge flow in the distributed capacitance and
> inductance be used to analyze transmission lines?
>
> > > Notice a key point about this description. It is completely in
> > > terms of charge. There is not a single mention of EM waves,
> > > travelling or otherwise.
>
> > ~~~~~~
> > > And yet I commonly see discussion of current in transmission
> > > lines. Current is charge flow per unit time. Is this all invalid?
>
> > > Must we abondon measurements of current? Voltage? These are all
> > > based on the assumption of charge being a useful concept.
>
> > You are just trying to fog the issue. You cannot use charge by
> > itself as you claim above.
>
> No. I am just trying to make clear the consequences of choosing
> "no" as the answer to the question I directly posed above.
>
> ...Keith- Hide quoted text -
>
> - Show quoted text -

Keith, if you could get people to subscribe to hyperphysics so that
they may
read of the tremendous strides with respect to radiation,it's speed,
acute
angles of radiation and the relationships to light and even to the
solar system, especially with respect to the Milky way. All of these
discussions with respect to collision of waves would disappear, since
all laws are based around equilibrium. When equilibrium is broken as
with a radiator that is not resonant one cannot procede as normal in
translating existing laws for a unbalanced situation. When one does
this one enters a circular debate that has no end like this one which
many suposedly experts have deviated from cardinal laws. If these so

called "experts" kept up with the modern phases of science as shown by hyperphysics which you have pointed to instead of remaining inthe stable position of their junior years learning by rote they would be constantly reminded of the importance of confining them selves to the world of equilibrium.
Alas, they prefer to live in the confines of the past where modern physisists prefer to keep pace with knoweledge. However, these new physists only communicate between themselves such there is a barrier between the old and the new, those who seek knoweledge and those that are content with the world of the past.
Regards
Art

386. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 17:28:30 UTC
From: Dave <noone@nowhere.com>
Message-ID: <27Pfj.542$xA6.301@trndny09>
Source record: 29952

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:4058-477FAEC6-2242@storefull-3254.bay.webtv.net...
> Ralf Ballis wrote:
> "Keep in mind that a spring is an extra instability of this antenna, and
> with this length isn`t necessary."
>
> The spring is designed to yield instead of the antenna and adds no more
> inductance than its overall length as it is short-circuited by a braid
> inside. Bend the spring to verify the braid is intact.
>
> Best regards, Richard Harrison, KB5WZI
>

oh yeah, art would like this one! if the braid is inside the spring, how
does it work? wouldn't the skin effect keep the current on the outside of
the spring? or is the braid for the current traveling back down the inside
of the antenna??? ART! Help!!!

387. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 18:34:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <b9jvn3di8pd89ab4b3ko6pos4c98p5a96v@4ax.com>
Source record: 29953

On Sat, 05 Jan 2008 17:28:30 GMT, "Dave" <noone@nowhere.com> wrote:

>
>"Richard Harrison" <richardharrison@webtv.net> wrote in message
>news:4058-477FAEC6-2242@storefull-3254.bay.webtv.net...
>> Ralf Ballis wrote:
>> "Keep in mind that a spring is an extra instability of this antenna, and
>> with this length isn`t necessary."
>>
>> The spring is designed to yield instead of the antenna and adds no more
>> inductance than its overall length as it is short-circuited by a braid
>> inside. Bend the spring to verify the braid is intact.
>>
>> Best regards, Richard Harrison, KB5WZI
>>
>
>oh yeah, art would like this one! if the braid is inside the spring, how
>does it work? wouldn't the skin effect keep the current on the outside of
>the spring? or is the braid for the current traveling back down the inside
>of the antenna??? ART! Help!!!
>

Tsk, Tsk, Dave,

The spring is diamagnetic and bends itself towards your contact when
you transmit.

73's
Richard Clark, KB7QHC

388. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 19:22:12 UTC
From: PeterD <peter2@hipson.net>
Message-ID: <i3mvn3h4buvvtn7tv6pcuu41mlmh5smskp@4ax.com>
Source record: 29954
Cross-posted to:
alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

On Sat, 5 Jan 2008 11:51:20 -0500, "James" <jnipperxxx@nospamfdn.com>
wrote:

>Is this your usual wise-ass contribution to usergroups, PeterD ??
>
>James
>-------------------------------------
>You are a Ham, you should know all about antennas. <g>
>
>

Yes, it is...

Any ham who goes to the Jeep group for a 2M antenna advice is not
doing very well at all... And, if you actually read my post I did give
him some advice that was significant, and as to my parting comment, I
stand by it... Except in your case, please delete the <g> since you
clearly don't have a clue...

<plonk>

389. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 22:06:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3cTfj.1854$pA7.991@newssvr25.news.prodigy.net>
Source record: 29955

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "Unfortunately for your argument, nothing in the universe (AFAWK)
> travels faster than an EM wave. But maybe you can invent Warp Drive or
> Slip-Stream Drive. :-)"
>
> Nothing to do with the argument, but I believe there is an exception
> that comes to exceeding the speed of light, and that is when the wave is
> slowed in a medium to a speed less than c.

Sometimes EM waves travel at less than the speed of light
in a vacuum but they are still traveling at the speed
of light in the medium. VF*c is still the speed of light.
--
73, Cecil http://www.w5dxp.com

390. First sunspot of cycle 24 spotted, gloom and doom predicted :-)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 22:58:22 UTC
From: robert casey <wa2ise@ix.netcom.com>
Message-ID: <13o02sgnd5280d3@corp.supernews.com>
Source record: 29956

"NOAA
Washington, D.C.

Media Contact:
Anatta, 303-497-6288

January 4, 2008

NOAA: Sunspot is Harbinger of New Solar Cycle, Increasing Risk for
Electrical Systems

A new 11-year cycle of heightened solar activity, bringing with it increased
risks for power grids, critical military, civilian and airline
communications, GPS signals and even cell phones and ATM transactions,
showed signs it was on its way late yesterday when the cycle's first sunspot
appeared in the sun's Northern Hemisphere, NOAA scientists said."

And better DX as well! :-)

391. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-05 23:47:57 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4780172d$0$11098$4c368faf@roadrunner.com>
Source record: 29957

"Helmut Wabnig" <hwabnig@ .- --- -. DOT .- t> wrote in message
news:72nun3ds81ahq3hnna9fkffgbts7cvhcpm@4ax.com...
> On Sat, 05 Jan 2008 20:47:36 +1100, slackj
> <slackj_delete@optusnet.com.au> wrote:
>
>>Hi folks,
>>
>>This one challenges my understanding of theory in relation to matching
>>& propogation. I hope someone can enlighten me.
>>
>>I'm in Oz, and the current migration to the mobile phone system
>>marketed as "Next G" network by our major carrier is on 850 Mhz band.
>>
>>The car kit I have bought (ZTE brand for a ZTE165) multi band phone
>>specifically states that the antenna base should not be grounded.
>>
>>http://www.zte.com.au/downloads/Install_guideline_01.pdf
>>
>>"Additional Notice for Car Kit Installations
>>1. The antenna must be isolated from the vehicle ground
>>Make sure you isolate the antenna from the vehicle chassis (ground).
>>If the antenna is grounded then noise can be introduced into the car
>>kit. Always use a rubber mount to separate the antenna base from the
>>car body or use a glass mount antenna."
>>
>>I already had a roof mounted centre loaded antenna for that band (was
>>CDMA), and the above does not make sense to me. However I've done as
>>they suggest and interrupted the braid at the antenna base.
>>
>>Anyone care to clue me up as to why this would be so?
>>
>>Stewart.
>
> Probably a Lamda / 2 dipole, or a "sperrtopf"
> (is there an English word?)
> and then the base must be separated from chassis.

I agree. At 850MHz it is just as easy to make a 1/2 wave dipole as a 1/4 wave ground plane. The full legth of the dipole is only 18 cm. If that is what they're doing, then you want to stay as far away from ground as possible.

392. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 00:08:10 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <KZUfj.2354$qV.509@trnddc03>
Source record: 29958

"slackj" <slackj_delete@optusnet.com.au> wrote in message
news:th30o3t4fe96657nnfeb6poitstfu8v84o@4ax.com...
>
> Hi Richard,
>
> Thanks for the reply.
>
> I'll check around for a roofmount, but with a ground independent
> design. I'm old fashioned and still somewhat biased towards
> conventional groundplanes. If the roof was fiberglass I'd have no
> problem because I could build my own counterpoise under it.
>
> The issues for me with most ground independent designs are physical
> rather than electrical:
> 1. Most are not suitable for roof mounting as the feedline usually
> comes out the side close to the mounting point = 1 more hole in the
> roof.
> 2. Those designed with the feedline coming down through the centre
> are not properly waterproofed, especially if they have a spring
> incorporated.
> 3. Most are too easy to break off, having no flexibility at the
> mounting point.
> 4. Almost impossible to unscrew at the base when needed for carparks
> or garages.
>
> If you know of any commercial designs suitable for this application in
> your country I'd appreciate a clue. If all else fails, it looks like
> I'll have to build a support point behind the cab somewhere & buy a
> "normal" ground independent.
>
> BTW there was no choice in purchase of the kit - it is the ONLY one
> and is supplied by the Chinese manufacturers of the cellphone.
>
> Thanks again
>
> Stewart.
>

Hi Stewart

You and I probably agree that there is no DC reason to *not* connect the antenna coax to ground. It should be easy to test to see if there is a DC voltage from the coax outer conductor to Ground. With zero voltage from the coax to ground, there is no reason to isolate the antenna end of the coax from ground. Thats easy to check with a voltmeter.

You and I probably also agree that there are lots of AC noise conducted
in the ground circuits of car bodies. Alternators are often very noisy
(400 Hz when alt is running about 3,450 RPM). Flashers can be noise
sources.If the antenna is grounded then noise can be introduced into the car
kit.
It seems that, if the only reason to *not* connect the coax to ground at
the monoploe base is " If the antenna is grounded then noise can be
introduced into the car
kit", the problem noise could be eliminated by including adequate conductor
from the roof to the input (12 volt negative's) DC terminal.

Jerry

393. Re: First sunspot of cycle 24 spotted, gloom and doom predicted :-)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 00:46:00 UTC
From: ahso#1 <columbus@evuygt.com>
Message-ID: <cxVfj.998$EN6.93@trndny07>
Source record: 29959

"robert casey" <wa2ise@ix.netcom.com> wrote in message
news:13o02sgnd5280d3@corp.supernews.com...
> "NOAA
> Washington, D.C.
>
> Media Contact:
> Anatta, 303-497-6288
>
> January 4, 2008
>
> NOAA: Sunspot is Harbinger of New Solar Cycle, Increasing Risk for
> Electrical Systems
>
> A new 11-year cycle of heightened solar activity, bringing with it
> increased
> risks for power grids, critical military, civilian and airline
> communications, GPS signals and even cell phones and ATM transactions,
> showed signs it was on its way late yesterday when the cycle's first
> sunspot
> appeared in the sun's Northern Hemisphere, NOAA scientists said."
>
> And better DX as well! :-)
>

Outstanding!

394. Re: First sunspot of cycle 24 spotted, gloom and doom predicted :-)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 00:55:45 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flp8u8klk1@news.albasani.net>
Source record: 29960

robert casey wrote:

> ...
> And better DX as well! :-)
>

Australia, USA calling!

:-)

Regards,
JS

395. Re: First sunspot of cycle 24 spotted, gloom and doom predicted :-)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 02:33:58 UTC
From: Sum Ting Wong <sumtingwong@privacy.net>
Message-ID: <fff0o3hequk5ibqcnk8jl1ndt68o5qcqd8@4ax.com>
Source record: 29961

On Sat, 05 Jan 2008 17:58:22 -0500, robert casey
<wa2ise@ix.netcom.com> wrote:

>
>A new 11-year cycle of heightened solar activity, bringing with it increased
>risks for power grids, critical military, civilian and airline
>communications,

Last evening, KH6 was booming into the Left Coast on 75M. About time!

S.T.W.

396. Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 08:55:12 UTC
From: "Norbert M." <nom@il.com>
Message-ID: <47809736$0$958$6d4158fb@reader.xsnews.nl>
Source record: 29962

When matching a very short whip one gets a big reading but
further down the road is could all be dissapeared.

Can a closeby fieldstrenght measurement be done ?
The magnetic field is also great with a short whip.

397. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 11:11:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o1dqn6rks8b8@corp.supernews.com>
Source record: 29963

If you are changing nothing except the impedance matching, you can put
the field strength meter anywhere, and the highest reading will mean
you've adjusted it for the strongest signal at any distance.

Roy Lewallen, W7EL

Norbert M. wrote:
> When matching a very short whip one gets a big reading but
> further down the road is could all be dissapeared.
>
> Can a closeby fieldstrenght measurement be done ?
> The magnetic field is also great with a short whip.
>
>

398. Re: First sunspot of cycle 24 spotted, gloom and doom predicted :-)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 11:16:04 UTC
From: helmsman@worldnet.att.net
Message-ID: <b1e1o3t8pomd0aj5b11criji7m2vemoik1@4ax.com>
Source record: 29964

On Sat, 05 Jan 2008 18:33:58 -0800, Sum Ting Wong
<sumtingwong@privacy.net> wrote:

>On Sat, 05 Jan 2008 17:58:22 -0500, robert casey
><wa2ise@ix.netcom.com> wrote:
>
>>
>>A new 11-year cycle of heightened solar activity, bringing with it increased
>>risks for power grids, critical military, civilian and airline
>>communications,
>
>Last evening, KH6 was booming into the Left Coast on 75M. About time!
>
>S.T.W.

Where are you (city) and which coast is the (left) coast?

399. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 12:05:46 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <fa967945-2639-4c5c-aa8c-0c84cfd01b7a@t1g2000pra.googlegroups.com>
Source record: 29965

On 6 ene, 09:55, "Norbert M." <n...@il.com> wrote:
> When matching a very short whip one gets a big reading but
> further down the road is could all be dissapeared.
>
> Can a closeby fieldstrenght measurement be done ?
> The magnetic field is also great with a short whip.
Hello Norbert

A similar question appeared some days ago in a Dutch amateur radio newsgroup.

As Roy also mentioned, when you do not change the antenna (inclusive any ground system) and also not change the E-field meter position and orientation, but only change the matching, every dB increase in the near field, will give the same dB increase over distance. Assuming that your matching network does not produce significant E-field.

Determining the radiated power from near field measurements is theoretically possible, but not easy in real world for most amateurs.

You might measure the field strength at a certain (near field) distance. Run an EM simulation for your antenna construction (inclusive ground system if present). Compare the simulated (near field) E-field with the measured value. From the radiated power (in the simulation) you can calculate the radiated power from your antenna.

Best regards,

Wim
PA3DJS
www.tetech.nl

400. Re: First sunspot of cycle 24 spotted, gloom and doom predicted :-)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 16:54:45 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <XN7gj.3264$El5.357@newssvr22.news.prodigy.net>
Source record: 29966

helmsman@worldnet.att.net wrote:
> On Sat, 05 Jan 2008 18:33:58 -0800, Sum Ting Wong
> <sumtingwong@privacy.net> wrote:
>
>> On Sat, 05 Jan 2008 17:58:22 -0500, robert casey
>> <wa2ise@ix.netcom.com> wrote:
>>
>>> A new 11-year cycle of heightened solar activity, bringing with it increased
>>> risks for power grids, critical military, civilian and airline
>>> communications,
>> Last evening, KH6 was booming into the Left Coast on 75M. About time!
>>
>> S.T.W.
>
> Where are you (city) and which coast is the (left) coast?
>

Sum Ting Wong;

The "Left" coast is how we refer to the US Pacific coast, specifically
California.

This designation is determined by looking to the north and extending
your left hand. This will now point to the left coast.

In Asia you would be pointing to the European Atlantic coast.

Just some American humor. HI HI.

Bob Casey is from Oradell, NJ which is on the Right Coast and I am
currently living in St. Louis, MO. What is your QTH?

73
Dave WD9BDZ

401. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 17:31:37 UTC
From: art <aunwin@insightbb.com>
Message-ID: <9ff2d549-24c7-4e3a-8526-19211464925e@i72g2000hsd.googlegroups.com>
Source record: 29967

On 4 Jan, 09:17, art <aun...@insightbb.com> wrote:
> On 3 Jan, 08:29, John Smith <assemblywiz...@gmail.com> wrote:
>
>
>
>
>
> > Mike Monett wrote:
> > > ...
> > > The term "bounce" means they interact. Electromagnetic signals do
> > > not interact. They superimpose. Each is completely unaware and
> > > unaffected by the other.
> > > ...
> > > Regards,
>
> > > Mike Monett
>
> > EM fields act that same as static magnetic fields.
>
> > Why not just get some iron filings, a paper and a couple of magnets?
>
> > Move the magnets about below the paper with the iron filings above and
> > actually get a visual on some magnetic fields and how they react to each
> > other?
>
> > I like things simple ... then the math can follow ...
>
> > Regards,
> > JS
>
> John
> You are quite correct in requiring things to be relatively
> simple . And RF is very simple when you do not try to make it
> difficult.
> A radiator in equilibrium is a ELECTRICAL full wave length (a half wave PHYSICAL length
radiator) and equates > a mechanical pendulum which is about as close as you can get to
> perpetual motion
> Electrically it is seen as a parallel circuit sometimes called a tank
> circuit.
> It to like a pendulum passes the same energy backwards and forward and
> losing just a bit to resistance losses.Ofcourse everybody knows that
> the pendulum has also a circular motion as well as backwards and
> forwards so if RF is to be compared to a pendulum we must be sure to
> account for that rotative motion. Nothing so far is anything unusual.

> Now we supply energy to the circuit or radiator. The initial current
> enters the inductance and generates a magnetic field. The current
> applied then reverses because it is AC or periodic DC.
> Without support from flowing current the magnetic field starts to
> collaps such that the energy
> that it generates moves on the the capacitor which like the inductor
> will stop the enrgy from getting by and thus stores it, It acts in a
> mirror image or opposite fashion to that of a conductor, when one
> discharges the other collects what is discharged. So far John it is
> all very simple since this can go on for ever backwards and forwards
> and if we lose a bit of energy along the way the current generator is
> there to replace what is lost.
> Now we must look at the radiation properties as well as that circular
> movement that we saw with the pendulum which is the only thing left to
> describe.
> In the atmosphere we have lots of dust that has penetrated the shields
> around earth. These are nothing fancy just dust particles. Actually
> these particles are called static particles and they just want to rest
> somewhere.The odd thing here that all metals will not allow it to
> settle
> on them because like magnets with a hysterysis content they push away
> this galactic dust.
> Fortunately there are some metals and matter that do not retain a
> internal hysterysis energy
> pack like aluminum and copper and water so this duct pretty much seeks
> these out to settle on.
> Nothing really difficults so far John, no fancy names or fancy
> bouncing.
> So you see the reason why aluminum is used for radiators because they
> belong to a familly known as diamagnetic material. So what is so fancy
> about using aluminum to transport energy backwards and forward since
> aluminum is not specifically used for pendulums? well there is a
> specific reasons that the properties of aluminium fits in with current
> flow and RF generation.
> First it has a skin that is difficult for current to penetrate so any
> field produced by current
> can only be created outside the skin which unlike magnet material the
> field cannot penetrate the inner material. Fortunately it is
> conductive, on the othere side of the coin the field generated are
> weak because they do not have internal magnetic fields in the metal to
> support them. Still nothing special John , just a circuit sort of
> thing, no proton things or fancy names to muddy up the water. Noe let
> us look again as to what happens in the circuit.
> Yup when the inductance creates a magnetic field it is a very weak
> field so the energy passed on to the cappacitor is very small. Never
> the less the acction of back and forth still goes on.
> Now is when all the special things happen.
> ....
> The capacitor releases its energy like a blast of a opening door where
> the electrons stored with energy in their pockets blast their way

> towards the inductance. On the way it sweeps up
> its brethberin electron particles that are devoid of energy on its way
> to the inductor.
> The inductor is not interested in static or energy less electrons
> since the static does not have
> any usefull energy required to make a mabnetic field .So the magnetic
> field is generated on the outside of the inductance but here is the
> guts of radiation. Diagmatic materials when they produce a field
> produces a field at right angles to a normal ferromagnetic field.
> This field tho very weak parries the oncomming static particles away.
> The action spoken of for a momement disturbs the equilibrium that was
> in place such that the airborne static particles
> are thrown away from the earth's gravitational field. Pretty neat John,
> nothing really new since all characteristics and properties are well
> known and documented.
> Now reviewing what happenned and comparing it to a pendulum. Yup we
> had a back and forth motion but we already knew that because it was a
> tank circuit. The weak movement of the magnetic field created a
> 'curling' type action which paried the onrushing levitated particles
> away from the immediate scene.
WHY? bECAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL
SUCGH AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT
FLOW WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL

At the same time when all these
> levitated particals was forced upwards away from the radiator each
> particle provided an equal and opposite force which is applied to the
> radiator the impacts of which reflecting the changing energy flow
> from the capacitor. These multi impacts create a mechanical
> oscillation within the radiator.
> See John, again nothing special, everything is known. It is just that
> like a jigsaw puzzle the complexity of which is determined from where
> one starts which in my case started with the Gaussian theory.The
> experts on the other hand did not know where to start so they inaiated
> new sciences
> Oh, and another thing those particles that are now trying to escape
> the earth's gravity
> field and in some cases bouncing off of the earths layers and comming
> back looking for a
> radiater of the right material that it can arrive at to settle upon
> thus making a series of noises like a muscical box with a fantastic
> caphony of sound andc vivrations on a resonal antenna.(A MHZ IS A MILLION CYCLES SO ONE
CAN IMAGINE THE NUMBER OF IMPACT SAMMLES ARE TRANSFERED WHEN AUDIO OCCURRES)
> As I said before John,no fancy names or extra things moving around to
> take you attention away from what is really happening. All concurring
> phenomina is a matter of record by past very clever people which is
> beyond any doubt and, and I say 'and' like nature the mechanics of
> action are very, very simple.

Ofcourse the big this that all the above is corroberated using
existing antenna computor programs on antennas when an optimiser is

used or you can google the steps taken at every instance
> Best Regards
> Art Unwin.....KB9MZ...XG (uk)- Hide quoted text -
>
> - Show quoted text -

402. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 17:40:00 UTC
From: Dave <noone@nowhere.com>
Message-ID: <Qn8gj.1477$tZ6.1206@trndny03>
Source record: 29968

art blathered on and scribbled:

>WHY? bECAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL
>SUCGH AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT
>FLOW WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL

so, you should be able to take a compass, a piece of copper wire, and a
piece of steel or iron wire and tell the difference between the material
just by passing a dc current through them?

403. Re: First sunspot of cycle 24 spotted, gloom and doom predicted :-)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 18:17:05 UTC
From: helmsman@worldnet.att.net
Message-ID: <vn62o3dbpmjs8q1416riiku50aengf51ls@4ax.com>
Source record: 29969

On Sun, 06 Jan 2008 10:54:45 -0600, "David G. Nagel"
<nagel.david@sbcglobal.net> wrote:

>helmsman@worldnet.att.net wrote:
>> On Sat, 05 Jan 2008 18:33:58 -0800, Sum Ting Wong
>> <sumtingwong@privacy.net> wrote:
>>
>>> On Sat, 05 Jan 2008 17:58:22 -0500, robert casey
>>> <wa2ise@ix.netcom.com> wrote:
>>>
>>>> A new 11-year cycle of heightened solar activity, bringing with it increased
>>>> risks for power grids, critical military, civilian and airline
>>>> communications,
>>> Last evening, KH6 was booming into the Left Coast on 75M. About time!
>>>
>>> S.T.W.
>>
>> Where are you (city) and which coast is the (left) coast?
>>
>
>Sum Ting Wong;
>
>The "Left" coast is how we refer to the US Pacific coast, specifically
>California.
>
>This designation is determined by looking to the north and extending
>your left hand. This will now point to the left coast.
>
>In Asia you would be pointing to the European Atlantic coast.
>
>Just some American humor. HI HI.
>
>Bob Casey is from Oradell, NJ which is on the Right Coast and I am
>currently living in St. Louis, MO. What is your QTH?
>
>73
>Dave WD9BDZ

Just north of Detroit.

404. FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 19:01:21 UTC
From: art <aunwin@insightbb.com>
Message-ID: <58618071-6e51-4e6a-a3f7-93e209107c52@h11g2000prf.googlegroups.com>
Source record: 29970

Gentlemen
Radio is about fields , waves, inductors e.t.c and diamagnetic materials which does not include iron.!
So to refer to the magnetic field of iron has nothing to do with radio. For antennas we use diamagnetic materials which have a skin. None of these, when a current is passed thru them ,allows a field to be formed on the inside like a iron magnet ! So gentlemen, get back to basics and review what a field looks like under these circumstances. I am not going to tell you because your niche in life is to argue, so check things out for yourself. Think academicaly or in a scientific fashion instead of CB ers
And another thing. All laws are bound to the focal point of equilibrium. When there is not a state of equilibrium you have varying waves which do not appear when equilibrium is present.
So be specific if you are refering to a non equilibrium status since all laws must be modified to account for this. Otherwise, your debates will go on for years and years and years without closure
Art Unwin KB9MZ......xg(uk)

405. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 19:28:32 UTC
From: art <aunwin@insightbb.com>
Message-ID: <a3840396-2f6c-4ba8-a3db-7ac69a98d4da@v46g2000hsv.googlegroups.com>
Source record: 29971

On 6 Jan, 09:40, "Dave" <no...@nowhere.com> wrote:
> art blathered on and scribbled:
>
> >WHY? bECAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL
> >SUCGH AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT
> >FLOW WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL
>
> so, you should be able to take a compass, a piece of copper wire, and a
> piece of steel or iron wire and tell the difference between the material
> just by passing a dc current through them?

David
It certainly is not the same axis as the material that the current is
travelling through! Remember my comments with respect to a pendulum
when a eclipse occures, and the happennings in the Bermuda triangle!
If you did go to college look up your 101 notes or review the new
thread I have started for amateurs and socalled experts.
David, I am like an ever ready battery, I keep going and going until I
can educate all about how radiation occurs in a scientific fashion to
those who are not educated.
Unless debate points out errors that can be substantiated
I will go on and on and on and....
Art Unwin....KB9MZ....xg (uk)

406. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 19:43:04 UTC
From: Dave <noone@nowhere.com>
Message-ID: <cbagj.803$xA6.383@trndny09>
Source record: 29972

in his own world, art let loose with more words of wisdom:

>
>>>WHY? bECAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL
>>>SUCGH AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT
>>>FLOW WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL
>>
>> so, you should be able to take a compass, a piece of copper wire, and a
>> piece of steel or iron wire and tell the difference between the material
>> just by passing a dc current through them?
>>

>It certainly is not the same axis as the material that the current is
>travelling through! Remember my comments with respect to a pendulum when a
>eclipse occures, and the happennings in the Bermuda triangle!

ok, lets make this simple. what is the equation for the vector
representation of the magnetic field around an infinitely long straight wire
made of copper? and what is the equation for it around a wire made of iron?
and how do they relate to the bermuda triangle? show all work, and complete
before the next eclipse.

407. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 20:19:18 UTC
From: nm5k@wt.net
Message-ID: <6b6389bd-6151-4137-b5fd-4166b2b41022@c4g2000hsg.googlegroups.com>
Source record: 29973

On Jan 6, 1:28 pm, art <aun...@insightbb.com> wrote:

> David, I am like an ever ready battery, I keep going and going until I
> can educate all about how radiation occurs in a scientific fashion to
> those who are not educated.
> Unless debate points out errors that can be substantiated
> I will go on and on and on and....
> Art Unwin....KB9MZ....xg (uk)

"Educating" people using copious amounts of bafflegab has been
proven by Underwriters Laboratory to be a hazard to carbon life forms
of all types. You should cease and desist from this illogical behavior
says Dr. Spock. Captain Kirk seems to be in full agreement.
I asked Dr. McCoy about this, and he said, "Oh hell, it's too much
of that Vulcan Ale he's been drinking". Scotty had no comment,
but only scratched his head in disgust, and starting mumbling
something
about dilithium crystals never being in a true state of equilibrium,
even under the strict care and supervision of Dr. McCoy.
As a final comment, Captain Kirk said, well, there you have it then,
bafflgab is never in a true state of equilibrium. Even on the
Enterprise.
MK

408. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 20:24:23 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <8Oagj.3287$El5.2473@newssvr22.news.prodigy.net>
Source record: 29974

Dave wrote:
> in his own world, art let loose with more words of wisdom:
>
>>>> WHY? bECAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL
>>>> SUCGH AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT
>>>> FLOW WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL
>>> so, you should be able to take a compass, a piece of copper wire, and a
>>> piece of steel or iron wire and tell the difference between the material
>>> just by passing a dc current through them?
>>>
>
>> It certainly is not the same axis as the material that the current is
>> travelling through! Remember my comments with respect to a pendulum when a
>> eclipse occures, and the happennings in the Bermuda triangle!
>
> ok, lets make this simple. what is the equation for the vector
> representation of the magnetic field around an infinitely long straight wire
> made of copper? and what is the equation for it around a wire made of iron?
> and how do they relate to the bermuda triangle? show all work, and complete
> before the next eclipse.
>
>

There's no point in being a smart-ass, Chip. You don't have any better
grasp of electromagnetic theory than anyone else on this newsgroup,
including Art.
73,
Tom Donaly, KA6RUH

409. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 20:29:07 UTC
From: Dave <noone@nowhere.com>
Message-ID: <nSagj.1482$tZ6.1062@trndny03>
Source record: 29975

<nm5k@wt.net> wrote in message
news:6b6389bd-6151-4137-b5fd-4166b2b41022@c4g2000hsg.googlegroups.com...
> On Jan 6, 1:28 pm, art <aun...@insightbb.com> wrote:
>
>> David, I am like an ever ready battery, I keep going and going until I
>> can educate all about how radiation occurs in a scientific fashion to
>> those who are not educated.
>> Unless debate points out errors that can be substantiated
>> I will go on and on and on and....
>> Art Unwin....KB9MZ....xg (uk)
>
> "Educating" people using copious amounts of bafflegab has been
> proven by Underwriters Laboratory to be a hazard to carbon life forms
> of all types. You should cease and desist from this illogical behavior
> says Dr. Spock. Captain Kirk seems to be in full agreement.
> I asked Dr. McCoy about this, and he said, "Oh hell, it's too much
> of that Vulcan Ale he's been drinking". Scotty had no comment,
> but only scratched his head in disgust, and starting mumbling
> something
> about dilithium crystals never being in a true state of equilibrium,
> even under the strict care and supervision of Dr. McCoy.
> As a final comment, Captain Kirk said, well, there you have it then,
> bafflgab is never in a true state of equilibrium. Even on the
> Enterprise.
> MK
>

live long and prosper.

me thinks that art is a bit out of equilibrium... but its fun to try and
tweak him into contradicting himself, which he does frequently.

410. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 21:02:46 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <Wlbgj.28436$4V6.5995@newssvr14.news.prodigy.net>
Source record: 29976

Dave wrote:
> <nm5k@wt.net> wrote in message
> news:6b6389bd-6151-4137-b5fd-4166b2b41022@c4g2000hsg.googlegroups.com...
>> On Jan 6, 1:28 pm, art <aun...@insightbb.com> wrote:
>>
>>> David, I am like an ever ready battery, I keep going and going until I
>>> can educate all about how radiation occurs in a scientific fashion to
>>> those who are not educated.
>>> Unless debate points out errors that can be substantiated
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>> proven by Underwriters Laboratory to be a hazard to carbon life forms
>> of all types. You should cease and desist from this illogical behavior
>> says Dr. Spock. Captain Kirk seems to be in full agreement.
>> I asked Dr. McCoy about this, and he said, "Oh hell, it's too much
>> of that Vulcan Ale he's been drinking". Scotty had no comment,
>> but only scratched his head in disgust, and starting mumbling
>> something
>> about dilithium crystals never being in a true state of equilibrium,
>> even under the strict care and supervision of Dr. McCoy.
>> As a final comment, Captain Kirk said, well, there you have it then,
>> bafflgab is never in a true state of equilibrium. Even on the
>> Enterprise.
>> MK
>>
>
> live long and prosper.
>
> me thinks that art is a bit out of equilibrium... but its fun to try and
> tweak him into contradicting himself, which he does frequently.
>
>

Which, of course, doesn't say anything about Art, but does speak
volumes about you.
73,
Tom Donaly, KA6RUH

411. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 21:08:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o2gr7mianqmbf@corp.supernews.com>
Source record: 29977

nm5k@wt.net wrote:
> On Jan 6, 1:28 pm, art <aun...@insightbb.com> wrote:
>
>> David, I am like an ever ready battery, I keep going and going until I
>> can educate all about how radiation occurs in a scientific fashion to
>> those who are not educated.
>> Unless debate points out errors that can be substantiated
>> I will go on and on and on and....
>> Art Unwin....KB9MZ....xg (uk)
>
> "Educating" people using copious amounts of bafflegab has been
> proven by Underwriters Laboratory to be a hazard to carbon life forms
> of all types. You should cease and desist from this illogical behavior
> says Dr. Spock. . . .

Dr. Spock was a famous human pediatrician. Although perhaps not an expert on logic, he did write volumes about how to deal with children. So his advice is entirely appropriate in this situation, probably even more so than from the Mr. Spock of Star Trek.

Roy Lewallen, W7EL

412. Re: FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 21:19:41 UTC
From: art <aunwin@insightbb.com>
Message-ID: <598dcdd0-02b7-46bb-b614-fe4ca2b9ce1f@d4g2000prg.googlegroups.com>
Source record: 29978

On 6 Jan, 11:01, art <aun...@insightbb.com> wrote:
> Gentlemen
> Radio is about fields , waves, inductors e.t.c and diamagnetic
> materials which does not include iron.!
> So to refer to the magnetic field of iron has nothing to do with
> radio. For antennas we use diamagnetic materials which have a skin.
> None of these, when a current is passed thru them ,allows a field to
> be formed on the inside like a iron magnet ! So gentlemen, get back to
> basics and review what a field looks like under these circumstances. I
> am not going to tell you because your niche in life is to argue,
> so check things out for yourself. Think academicaly or in a
> scientific fashion instead of CB ers
> And another thing. All laws are bound to the focal point of
> equilibrium. When there is not a state of equilibrium you have varying
> waves which do not appear when equilibrium is present.
> So be specific if you are refering to a non equilibrium status since
> all laws must be modified to account for this. Otherwise, your debates
> will go on for years and years and years without closure
> Art Unwin KB9MZ......xg(uk)

Seems like the people on this side of the pond only got educated to
the level of their professors. So guys listen up.
When a current flows in a piece of iron it exhibites a field that is
representive of the north and south pole. Iron is referred to as a
ferrite matererial. When a current passes over a diamagnetic material
the field is representitive of a diamatic pole within the earth. This
pole is at a different angle to the ferrite pole and is also quite
weak. It is readily seen in action with a pendulum as it induces a
curve to its movement as it goes backwards and forwards. It moves more
erraticall when a eclipse occurs because tho the action tho weak is
enhanced the ferrite pole from out space is somewhat shielded and thus
magnifies the identification of the diamagnetic anti gravity forces.
This anti gravitational force can also create levitation, but is
really known as the offcenter force of our earth that turns the earth
around.
Now if you review the Corriolis effect or the Casmire effect you will
see that these are the effect created by poles other that that of
ferrite.
So now to a radio antenna. Surely you are aware that a capacitor
discharge moves towards a inductive field where at the same time it
sweeps up the static particles that have come to rest after entering
th atsmosphere (predominately during the active sunspot cycle.) When
the swarm or plasma cloud gets to the inductance it only accepts
charged electrons to make up a field. This field is a

antigravitational field that is oriented differently from a ferrite magnetic field. The field orientation thus guides what was the inate static particles into a curling action away from our antenna.This same action is in fact is called a curl vector when one determines the resultant vector of forces that emanate from a time varient field, which also is not parallel to the axis of the current flow.
Remember that this multi particle sweeping action occurs a million times for each megacycle of operation so there is a constant series of pulses or plasma stream moving away from the antenna. Each of these particles placed a reactive force upon the antenna such that with the abundance of
particles by virtue of the numourous samples supplied creates an occillating action on the radiator. This same sample of forces travels with the plasm until it finds a diamagnetic material that is resonant where it can impart the same occillatory movement on its new resting place. What is special about the resting place chosen is that only a dimagnetic material will allow these static particles to rest upon their surface, because all other materials have retained magnetic properties as seen when looking at a hysteresis curve.

Now with respect to Amelia Erhardt and the Bermuda triangle. What I was ponting to was that the axis of the diagmatic pole could well lie on this very axis where the dimagnetic field would be quite a bit stronger than elsewhere.
Put into place that both of these areas is surrounded by water which is also diamagnetic. Think then of a aeroplane made of aluminum enclosure that exihibits a shielding action as with a eclipse. Could not one wonder what could happen to a small ferrite sliver used in a compass when reacting to such circumstances especially when considering the universal square law? Would a few degrees of movement on a compass create a situation where a resulting course change would be made? I know this really has nothing to do with radiation but well.....you did ask.
Don't take my word for all this . Investigate via Google on all the phenomina spoken of. Use a computor program with an optimiser and determine why the radiator is tipped away from being parallel to earth.
Did equilibrium create an array where the radiators were closer to each other than a yagi? Check out where the gain difference comes from when radiators are stacked but with only one feed point. I could go on ofcourse,but I do recognise that old hams resist change so acceptance of the above is doomed. Cover the undeniable facts and kick Art from the group!
Can't do that I keep going and going and....
Art Unwin KB9MZ.....XG (uk)

413. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 22:11:34 UTC
From: nm5k@wt.net
Message-ID: <76cb3146-2f50-4e74-b463-66b785e3e38c@e6g2000prf.googlegroups.com>
Source record: 29979

On Jan 6, 2:29 pm, "Dave" <no...@nowhere.com> wrote:

>
> live long and prosper.
>
> me thinks that art is a bit out of equilibrium... but its fun to try and
> tweak him into contradicting himself, which he does frequently.

He doesn't have to be tweaked. He seems to grab at every straw
that is within reach.
Oh, and it's not like I hang around just to tweak Art..
And I'm surely no expert at electromagnetic theory
compared to many here.
But on the other hand, I don't spew out bafflegab on a weekly
basis either though, and then try to claim said "theory" as fact.
And that I am an expert, and everyone else is surely brain dead
if they don't except said bafflegab as gospel.
Art does this though. This is why it's hard to resist tweaking
him every once in a while. :/

He may well be on to some new exotic theory to set all mankind
on it's tail, but if he can't describe it without using bafflegab,
no one will ever be able to tell what he is talking about.
Myself, I'm not holding my breath... I don't believe in free
lunches.

> Dr. Spock was a famous human pediatrician. Although perhaps not an
> expert on logic, he did write volumes about how to deal with children.
> So his advice is entirely appropriate in this situation, probably even
> more so than from the Mr. Spock of Star Trek.
>
> Roy Lewallen, W7EL

Humm, I was thinking Mr. Spock was a "doctor" too, but maybe he
wasn't.. He might as well have been vs the rest of the crew... :/

MK

414. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 22:14:57 UTC
From: richardharrison@webtv.net
Message-ID: <4058-478152E1-2370@storefull-3254.bay.webtv.net>
Source record: 29980

Aet wrote:
"WHY? beCAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL SUCH AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT FLOW WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL.

My experience with broadcast towers is that it matters not if a steel tower is painted or zinc coated it works the same.

Terman`s 1955 opus says on page 21:
"When a current is flowing through such a conductor (he makes no distinction between iron or copper, but does describe an isolated round wire), the magnetic flux that results is in the form of concentric circles, as shown in Fig. 2-9. It is to be noted that some of the flux exists within the conductor and therefore links with , i.e.,encircles, current near the center of the conductor while not linking with current flowing near the surface. The result is that the inductance of the central part of the conductor is greater than the inductance of the part of the conductor near the surface; this is because of the greater number of flux linkages existing in the central region."

Terman is describing "skin effect".

"Right hand rule" definitions also say magnetic flux encircles the current carrying conductor. Art`s assertion is "off the wall".

Best regards, Richard Harrison, KB5WZI

415. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 22:37:00 UTC
From: art <aunwin@insightbb.com>
Message-ID: <cbc80e95-b004-479b-826b-9f9b57476e94@q39g2000hsf.googlegroups.com>
Source record: 29981

On 6 Jan, 12:29, "Dave" <no...@nowhere.com> wrote:
> <n...@wt.net> wrote in message
>
> news:6b6389bd-6151-4137-b5fd-4166b2b41022@c4g2000hsg.googlegroups.com...
>
>
>
>
>
> > On Jan 6, 1:28 pm, art <aun...@insightbb.com> wrote:
>
> >> David, I am like an ever ready battery, I keep going and going until I
> >> can educate all about how radiation occurs in a scientific fashion to
> >> those who are not educated.
> >> Unless debate points out errors that can be substantiated
> >> I will go on and on and on and....
> >> Art Unwin....KB9MZ....xg (uk)
>
> > "Educating" people using copious amounts of bafflegab has been
> > proven by Underwriters Laboratory to be a hazard to carbon life forms
> > of all types. You should cease and desist from this illogical behavior
> > says Dr. Spock. Captain Kirk seems to be in full agreement.
> > I asked Dr. McCoy about this, and he said, "Oh hell, it's too much
> > of that Vulcan Ale he's been drinking". Scotty had no comment,
> > but only scratched his head in disgust, and starting mumbling
> > something
> > about dilithium crystals never being in a true state of equilibrium,
> > even under the strict care and supervision of Dr. McCoy.
> > As a final comment, Captain Kirk said, well, there you have it then,
> > bafflgab is never in a true state of equilibrium. Even on the
> > Enterprise.
> > MK
>
> live long and prosper.
>
> me thinks that art is a bit out of equilibrium... but its fun to try and
> tweak him into contradicting himself, which he does frequently.- Hide quoted text -
>
> - Show quoted text -

Probably so. But pseudo experts such as Roy and Tom and the three
Richards can't put o neck hold on the advances of science for ever,
for people like MK to follow in lockstep in the absence of knoweledge.
As for you Dave you can never move forward while resisting the notion

that the addition of a time varient field to Gaussian law of Statics
becomes the same as Maxwell's law. Without understanding the
relationships of laws with the state of equilibrium you will never
exceed beyond the learning level of your professor, only their equal.
Because of learning by rote without understanding of the first
principles of science all of which revolve around the lynch pin of
equilibrium. But you are not alone. All of the so called experts on
this newsgroup are guilty of the same thing
hanging on to the writings of Terman and other oldies while ignoring
or resisting the movement of science during the last half century.
But then today,s interests of hams is talking and handwaving and not
the intricacies of modern science with respect to radiation.
Art Unwin KB9MZ....XG (uk)

416. Re: FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 22:37:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5ii2o3p79ujibe43jp263r7tqddpv39rln@4ax.com>
Source record: 29983

On Sun, 6 Jan 2008 13:19:41 -0800 (PST), Guru <aunwin@insightbb.com>
read from scripture:

>Iron is referred to as a ferrite matererial.

A Viking conceit of language when they stopped by to rape the Brits' women and shove an "isarno" sword into the men's guts. 1000 years before that, there was no iron anywhere, only ferrum. Of course, at that time Roman Legions were raping Viking women and shoving ferrous swords into the men's guts. The latin bastards swore to never utter the word ferrite ever again, and started making maps of small Atlantic islands where they could celebrate their new customs of population control.

> It is readily seen in action with a pendulum as it induces a
>curve to its movement as it goes backwards and forwards.

That would have shocked Gauss who always thought that his beer buddy, Coriolis, described it to him in much different terms. Gauss was probably too drunk to correct him? As they had escaped both the Roman Legions and the Vikings, they were well known at the nearby Pub.

>It moves more
>erraticall when a eclipse occurs because tho the action tho weak is
>enhanced the ferrite pole from out space is somewhat shielded and thus
>magnifies the identification of the diamagnetic anti gravity forces.

Emperor Ming the Merciless said as much to Flash Gordon. Dr. Flexi Cherkov was supposed to explain it better in the next episode, but I didn't have a nickel for that weekend's matinee. ;-(

>This anti gravitational force can also create levitation, but is
>really known as the offcenter force of our earth that turns the earth
>around.

This was written in antiquity when Archimedes said "give me a lever long enough, and a fulcrum, and I bet I can sucker the taxman into giving me a pension to write about physics." Instead, Archimedes, Aristotle, and Aristophenes spent their social security checks at the Pub levitating beer for themselves and Gauss and some frog who could write his name in the snow by swinging his pendulum. (Alcohol enhances the diamagnetic effects of local eclipses. Many researchers confirm the earth spinning qualities of these tests.)

>Now if you review the Corriolis effect or the Casmire effect you will
>see that these are the effect created by poles other that that of
>ferrite.

I just love Casmire, best song ever done by Diamagnetic Prophylactic (formerly Led Zeppelin)!

>when reacting to such circumstances especially when
>considering the universal square law?

The universal cube law replaced that after the "Treaty of Near-Pi of 1927" in a convention at Berne Switzerland.

73's
Richard Clark, KB7QHC

417. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 22:37:37 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47815836$0$16717$4c368faf@roadrunner.com>
Source record: 29982

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:s15tn3h84mm50me7sehllg741820tuc5g3@4ax.com...
> On Fri, 04 Jan 2008 20:03:04 GMT, Cecil Moore <nospam@w5dxp.com>
> wrote:
>
>>The SWR on the wire is load-
>>based and is equal to
> 8:1 as evidenced by CURRENT on the wire. :-)
>
> You cannot make a SWR measurement on a receive antenna any other way.

You are making a "Voltage" standing wave measurement based ion the CURRENT
of the wire?

AI4QJ

418. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 22:50:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <nim2o3tv3rhitu78uaqkk4bltb1lf8j863@4ax.com>
Source record: 29984

On Sun, 6 Jan 2008 17:37:37 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>news:s15tn3h84mm50me7sehllg741820tuc5g3@4ax.com...
>> On Fri, 04 Jan 2008 20:03:04 GMT, Cecil Moore <nospam@w5dxp.com>
>> wrote:
>>
>>>The SWR on the wire is load-
>>>based and is equal to
>> 8:1 as evidenced by CURRENT on the wire. :-)
>>
>> You cannot make a SWR measurement on a receive antenna any other way.
>
>You are making a "Voltage" standing wave measurement based ion the CURRENT
>of the wire?

Hi Dan,

I don't know about ions; but, sure, voltage standing wave measurement
is as accurate as current standing wave measurement. Or perhaps you
need to make your question a little more terse (don't rely on the
continuity of discussion involving Cecil's quotes to fully inform any
argument).

In other words, filter out the static and frame your own question.

73's
Richard Clark, KB7QHC

419. Re: FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 23:31:08 UTC
From: art <aunwin@insightbb.com>
Message-ID: <55300f80-5a1d-4431-9445-f386a767359f@v29g2000hsf.googlegroups.com>
Source record: 29985

On 6 Jan, 14:37, Richard Clark <kb7...@comcast.net> wrote:
> On Sun, 6 Jan 2008 13:19:41 -0800 (PST), Guru <aun...@insightbb.com>
> read from scripture:
>
> >Iron is referred to as a ferrite matererial.
>
> A Viking conceit of language when they stopped by to rape the Brits'
> women and shove an "isarno" sword into the men's guts. 1000 years
> before that, there was no iron anywhere, only ferrum. Of course, at
> that time Roman Legions were raping Viking women and shoving ferrous
> swords into the men's guts. The latin bastards swore to never utter
> the word ferrite ever again, and started making maps of small Atlantic
> islands where they could celebrate their new customs of population
> control.
>
> > It is readily seen in action with a pendulum as it induces a
> >curve to its movement as it goes backwards and forwards.
>
> That would have shocked Gauss who always thought that his beer buddy,
> Coriolis, described it to him in much different terms. Gauss was
> probably too drunk to correct him? As they had escaped both the Roman
> Legions and the Vikings, they were well known at the nearby Pub.
>
> >It moves more
> >erraticall when a eclipse occurs because tho the action tho weak is
> >enhanced the ferrite pole from out space is somewhat shielded and thus
> >magnifies the identification of the diamagnetic anti gravity forces.
>
> Emperor Ming the Merciless said as much to Flash Gordon. Dr. Flexi
> Cherkov was supposed to explain it better in the next episode, but I
> didn't have a nickel for that weekend's matinee.   ;-(
>
> >This anti gravitational force can also create levitation, but is
> >really known as the offcenter force of our earth that turns the earth
> >around.
>
> This was written in antiquity when Archimedes said "give me a lever
> long enough, and a fulcrum, and I bet I can sucker the taxman into
> giving me a pension to write about physics." Instead, Archimedes,
> Aristotle, and Aristophenes spent their social security checks at the
> Pub levitating beer for themselves and Gauss and some frog who could
> write his name in the snow by swinging his pendulum. (Alcohol
> enhances the diamagnetic effects of local eclipses. Many researchers
> confirm the earth spinning qualities of these tests.)

>
> >Now if you review the Corriolis effect or the Casmire effect you will
> >see that these are the effect created by poles other that that of
> >ferrite.
>
> I just love Casmire, best song ever done by Diamagnetic Prophylactic
> (formerly Led Zeppelin)!
>
> >when reacting to such circumstances especially when
> >considering the universal square law?
>
> The universal cube law replaced that after the "Treaty of Near-Pi of
> 1927" in a convention at Berne Switzerland.
>
> 73's
> Richard Clark, KB7QHC

Typical of the three Richards, no content on antennas because his
degree was in English thus is lost with physics and old history like
Terman
and his experience is a sailor scrubbing the decks. Enjoy an evening
with your male masculane males or what ever they are called until you
can stand no more and fall asleep in their arms
Art

420. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-06 23:32:31 UTC
From: richardharrison@webtv.net
Message-ID: <8202-4781650F-2197@storefull-3255.bay.webtv.net>
Source record: 29986

Art wrote:
"Tom and the three Richards can`t put a neck hold on the advance of science forever."

Permanent magnets are collections of current loops, so it is supposed thet the earth`s magnetism is caused by currents in the earth. Its poles approach alignment with the earth`s axis of rotation.

Solar storms are seen to affect the earth`s magnetism and evidence exists that poles have reversed over the eons of history. The most recent reversal came about 2.5 million years ago.

"College Physics" by Frank Miller, Jr. is the source of the above.

Best regards, Richard Harrison, KB5WZI

421. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 00:06:04 UTC
From: richardharrison@webtv.net
Message-ID: <8202-47816CEC-2203@storefull-3255.bay.webtv.net>
Source record: 29987

Wim, PA3DJS wrote:
"Determining the radiated power from near field measurements is theoretically possible, but not easy in the real world for most amateurs."

My experience in tuning commercial 2-way HF radios for maximum power radiated. It could be obtained by placing my multimeter (using crystal rectifiers for a.c. scale rectification) with its test leads attached on the hood of the vehicle containing the radio and tuning for maximum. The measured performance proved as good as any other tuning method.

Best regards, Richard Harrison, KB5WZI

422. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 00:31:19 UTC
From: art <aunwin@insightbb.com>
Message-ID: <efad53ed-0e5b-4223-8b33-575d0b1dbac7@i7g2000prf.googlegroups.com>
Source record: 29988

On 6 Jan, 14:14, richardharri...@webtv.net (Richard Harrison) wrote:
> Aet wrote:
>
> "WHY? beCAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL SUCH
> AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT FLOW
> WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL.
>
> My experience with broadcast towers is that it matters not if a steel
> tower is painted or zinc coated it works the same.
>
> Terman`s 1955 opus says on page 21:
> "When a current is flowing through such a conductor (he makes no
> distinction between iron or copper, but does describe an isolated round
> wire), the magnetic flux that results is in the form of concentric
> circles, as shown in Fig. 2-9. It is to be noted that some of the flux
> exists within the conductor and therefore links with , i.e.,encircles,
> current near the center of the conductor while not linking with current
> flowing near the surface. The result is that the inductance of the
> central part of the conductor is greater than the inductance of the part
> of the conductor near the surface; this is because of the greater number
> of flux linkages existing in the central region."
>
> Terman is describing "skin effect".
>
> "Right hand rule" definitions also say magnetic flux encircles the
> current carrying conductor. Art`s assertion is "off the wall".
>
> Best regards, Richard Harrison, KB5WZI

No. It is keeping up to date. Terman died before all these things
become known and basically you are also dead when you cannot move
forward with the times. Go to google and look up diamagnetic materials
and diamagnetic fields. While you are at it check out the rotation of
a pendulum and how its curls are explained. While you are at it
explain why a radiator being parallel to the earth does not produce as
much horizontal gain as a tipped antenna.I dare you to come back and
explain what you discovered.
You can't hold back father time or the advance of science by holding
on to old books. Methinks you are better staying with ficticious waves
that bounce into each other with the other instant experts.
Art

423. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 00:46:04 UTC
From: art <aunwin@insightbb.com>
Message-ID: <2c79fb74-0bd5-4de8-a86e-e946ba80e1ab@y5g2000hsf.googlegroups.com>
Source record: 29989

On 6 Jan, 16:06, richardharri...@webtv.net (Richard Harrison) wrote:
> Wim, PA3DJS wrote:
>
> "Determining the radiated power from near field measurements is
> theoretically possible, but not easy in the real world for most
> amateurs."
>
> My experience in tuning commercial 2-way HF radios for maximum power
> radiated. It could be obtained by placing my multimeter (using crystal
> rectifiers for a.c. scale rectification) with its test leads attached on
> the hood of the vehicle containing the radio and tuning for maximum. The
> measured performance proved as good as any other tuning method.
>
> Best regards, Richard Harrison, KB5WZI

But that doesn't change anything that Wim stated which is entirely
correct.
You did not "determine" radiated power.......period
Art

424. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 00:54:22 UTC
From: Dave <noone@nowhere.com>
Message-ID: <2Legj.6853$LL6.4683@trndny06>
Source record: 29990

```
"AI4QJ" <nospam@yahoo.com> wrote in message
news:47815836$0$16717$4c368faf@roadrunner.com...
>
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:s15tn3h84mm50me7sehllg741820tuc5g3@4ax.com...
>> On Fri, 04 Jan 2008 20:03:04 GMT, Cecil Moore <nospam@w5dxp.com>
>> wrote:
>>
>>>The SWR on the wire is load-
>>>based and is equal to
>> 8:1 as evidenced by CURRENT on the wire. :-)
>>
>> You cannot make a SWR measurement on a receive antenna any other way.
>
> You are making a "Voltage" standing wave measurement based ion the CURRENT
> of the wire?
>
> AI4QJ
>
sure, VSWR is just as valid as Current-SWR, they are absolutely identical...
the only difference is that VSWR is the amateur 'standard' because it was
frequently easier to measure the voltage than the current... i.e. on open
wire feeders all you had to do was run a neon bulb or other cheap voltmeter
along the line to find the min and max voltage points... for a current
measurement you would have to couple a loop around the line or insert
shunts, not nearly as simple as measuring a voltage... so vswr was the
'standard'... though just plain swr, refering to either one, is just as
proper.
```

425. Re: r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 00:57:48 UTC
From: art <aunwin@insightbb.com>
Message-ID: <ab630d0b-572c-4c4c-b287-c92c582c1fb8@d21g2000prf.googlegroups.com>
Source record: 29991

On 25 Dec 2007, 04:26, "Dave" <no...@nowhere.com> wrote:
> or FAQ depending on how you look at it... I should probably repeat this
> regularly on here.
>
> This newsgroup should NOT be used as a reference source for concepts or
> equations regarding fields, waves, transmission lines, or other physical
> phenomena. Please consult published text books and peer reviewed journals
> for analysis of technical questions. The regular contributors in this group
> have a wide variety of misconceptions and erroneous views which they
> frequently throw in as if they were well known facts.
>
> On the lighter side, it can be fun now and then to throw them a simple
> problem and watch them swarm around like a kicked hornet nest.

Did you ever think that your post would last this long? Obviously the
regular contributors
in this group cannot handle the truth and thus will not consult
anything.Now the experts are argueing over the term SWR a very, very,
deep discussion revealing things unknown to the amateur community at
this time. No need for books if you quest is an arguement.
Thus you are a model member of this newsgroup.What goes around comes
around.
Your buddy
Art

426. Re: r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 01:04:02 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <jUegj.6245$lo5.4701@newssvr19.news.prodigy.net>
Source record: 29992

art wrote:
> On 25 Dec 2007, 04:26, "Dave" <no...@nowhere.com> wrote:
>> or FAQ depending on how you look at it... I should probably repeat this
>> regularly on here.
>>
>> This newsgroup should NOT be used as a reference source for concepts or
>> equations regarding fields, waves, transmission lines, or other physical
>> phenomena. Please consult published text books and peer reviewed journals
>> for analysis of technical questions. The regular contributors in this group
>> have a wide variety of misconceptions and erroneous views which they
>> frequently throw in as if they were well known facts.
>>
>> On the lighter side, it can be fun now and then to throw them a simple
>> problem and watch them swarm around like a kicked hornet nest.
>
> Did you ever think that your post would last this long? Obviously the
> regular contributors
> in this group cannot handle the truth and thus will not consult
> anything.Now the experts are argueing over the term SWR a very, very,
> deep discussion revealing things unknown to the amateur community at
> this time. No need for books if you quest is an arguement.
> Thus you are a model member of this newsgroup.What goes around comes
> around.
> Your buddy
> Art

Hi Art,
The arrogance and false superiority evidenced in Dave's post can
only be learned in a university. Dave is an old regular on this
newsgroup who has posted under many different names over the years.
Pay him no attention.
73,
Tom Donaly, KA6RUH

427. Re: FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 01:04:25 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <uus2o3l27fepsr6e4p4q07jjn6jnfa89kh@4ax.com>
Source record: 29993

On Sun, 6 Jan 2008 15:31:08 -0800 (PST), art <aunwin@insightbb.com>
wrote:

>Enjoy an evening
>with your male masculane males or what ever they are called

Prior Art,

And you can't get anyone else to respond to your notices except from
someone like you describe above? Both you and Cecil seem to jump for
the TNT Suicide vest every time so you can hug me with more passion.

XOXOXOX

73's
Richard Clark, KB7QHC

428. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 01:10:58 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <C_egj.387480$kj1.117876@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29994

art wrote:

> WHY? bECAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL
> SUCGH AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT
> FLOW WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL
>

Does it matter that aluminum and copper are paramagnetic rather than diamagnetic? Perhaps you should consider a bismuth antenna. That is the poster child for diamagnetic metals.

73,
Gene
W4SZ

429. Re: FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 01:15:03 UTC
From: art <aunwin@insightbb.com>
Message-ID: <03ea3dac-f21d-42f3-8f8f-390e821d7e6b@l32g2000hse.googlegroups.com>
Source record: 29995

On 6 Jan, 17:04, Richard Clark <kb7...@comcast.net> wrote:
> On Sun, 6 Jan 2008 15:31:08 -0800 (PST), art <aun...@insightbb.com>
> wrote:
>
> >Enjoy an evening
> >with your male masculane males or what ever they are called
>
> Prior Art,
>
> And you can't get anyone else to respond to your notices except from
> someone like you describe above? Both you and Cecil seem to jump for
> the TNT Suicide vest every time so you can hug me with more passion.
>
> XOXOXOX
>
> 73's
> Richard Clark, KB7QHC

I am looking for educated discussion not handwaving. I know you are
incapable of providing anything of a related matter as does the rest
of the newsgroup.Go back underground wearing your fish net tights for
your jollies

430. Re: r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 01:34:31 UTC
From: art <aunwin@insightbb.com>
Message-ID: <44d60e40-0ba8-4d01-91fc-46d01306ec49@q77g2000hsh.googlegroups.com>
Source record: 29996

On 6 Jan, 17:04, "Tom Donaly" <dtdon...@sbcglobal.net> wrote:
> art wrote:
> > On 25 Dec 2007, 04:26, "Dave" <no...@nowhere.com> wrote:
> >> or FAQ depending on how you look at it... I should probably repeat this
> >> regularly on here.
>
> >> This newsgroup should NOT be used as a reference source for concepts or
> >> equations regarding fields, waves, transmission lines, or other physical
> >> phenomena. Please consult published text books and peer reviewed journals
> >> for analysis of technical questions. The regular contributors in this group
> >> have a wide variety of misconceptions and erroneous views which they
> >> frequently throw in as if they were well known facts.
>
> >> On the lighter side, it can be fun now and then to throw them a simple
> >> problem and watch them swarm around like a kicked hornet nest.
>
> > Did you ever think that your post would last this long? Obviously the
> > regular contributors
> > in this group cannot handle the truth and thus will not consult
> > anything.Now the experts are argueing over the term SWR a very, very,
> > deep discussion revealing things unknown to the amateur community at
> > this time. No need for books if you quest is an arguement.
> > Thus you are a model member of this newsgroup.What goes around comes
> > around.
> > Your buddy
> > Art
>
> Hi Art,
>   The arrogance and false superiority evidenced in Dave's post can
> only be learned in a university. Dave is an old regular on this
> newsgroup who has posted under many different names over the years.
> Pay him no attention.
> 73,
> Tom Donaly, KA6RUH- Hide quoted text -
>
> - Show quoted text -

But Tom,
this newsgroup is for auguments. Nobody is responding to the science
of antennas. Nobody has the knoweledge to refute statements supplied
How about just you and I discuss radiation and how it is created?
That sort of thing may interest people other than the instant experts.
For instance, I would love a counter discussion to what I have
theorised

even if it shows me to be in error, but this requires more than handwaving . I know you are knoweledgable about the things I have discussed where as others are still back in the old days and thus cannot contribute on a modern basis..
If we make a "field" all will follow and leave the puffed up pretend experts in the dust. At least the thread would NOT consist mainly of one person which would be a change.On top of that they would read a civil discussion that has not happened in a long while.
As for Dave he has not had what is known as a education,Witness his denials of static versus dynamic fields, where I know of no written text book that alignes with him. You just can't fake an engineering structured education.
Best regards
Art

431. Re: FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 01:39:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <v303o3pvntdp6d3v2ped1v57g19poh3khs@4ax.com>
Source record: 29997

On Sun, 6 Jan 2008 17:15:03 -0800 (PST), art <aunwin@insightbb.com>
wrote:

>On 6 Jan, 17:04, Richard Clark <kb7...@comcast.net> wrote:
>> On Sun, 6 Jan 2008 15:31:08 -0800 (PST), art <aun...@insightbb.com>
>> wrote:
>>
>> >Enjoy an evening
>> >with your male masculane males or what ever they are called
>>
>> Prior Art,
>>
>> And you can't get anyone else to respond to your notices except from
>> someone like you describe above? ï¿½Both you and Cecil seem to jump for
>> the TNT Suicide vest every time so you can hug me with more passion.
>>
>> XOXOXOX
>>
>> 73's
>> Richard Clark, KB7QHC
>
>I am looking for educated discussion not handwaving. I know you are
>incapable of providing anything of a related matter as does the rest
>of the newsgroup.Go back underground wearing your fish net tights for
>your jollies

Your TNT vest appears to be quite tightly laced up. Cutting off
circulation is it? I don't think many here are interested your side
topic choice of underwear.

Seems like a pattern in educated discussion is converging on the
reality that there isn't much educated topic here in the first place -
and that is how we got into this waltz.

Is your dance card empty?

73's
Richard Clark, KB7QHC

432. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 01:46:56 UTC
From: art <aunwin@insightbb.com>
Message-ID: <1d43b575-b493-47cd-bcaa-733d9ef751ff@p69g2000hsa.googlegroups.com>
Source record: 29848

On 6 Jan, 17:10, Gene Fuller <W4SZzzz...@att.net> wrote:
> art wrote:
> > WHY? bECAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL
> > SUCGH AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT
> > FLOW WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL
>
> Does it matter that aluminum and copper are paramagnetic rather than
> diamagnetic? Perhaps you should consider a bismuth antenna. That is the
> poster child for diamagnetic metals.
>
> 73,
> Gene
> W4SZ

Yes, bismuth would be the ideal material. On the other hand my
understanding is aluminum, copper,water, gold and the like are
diamagnetic materials. I am basing that on the magnetic susceptability
values and the like to make that distinction.Where are you drawing the
line with respect to diamagnetic and paramagnetic? The idea of using a
ingredient that could smother an already weak paramagnetic field seams
to thwart the actions that I am refering to.
Regards
Art

433. Re: meteor shower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 01:48:14 UTC
From: JSmith <jsmith52@tampabay.rr.com>
Message-ID: <478184DE.2040207@tampabay.rr.com>
Source record: 29849

Wayne wrote:
> "Howard W3CQH" <hsgorden@comcast.net> wrote in message
> news:q9idnZrSJYlt0-DanZ2dnUVZ_qainZ2d@comcast.com...
>
>>Space Weather News for Jan. 3, 2008
>>http://spaceweather.com
>>
>>METEOR SHOWER: Earth is about to pass through a stream of dusty debris
>>from
>>near-Earth asteroid 2003 EH1, producing the annual Quadrantid meteor
>>shower.
>>Forecasters expect a brief but intense peak of 50+ meteors per hour over
>>Earth's northern hemisphere sometime between 0200 UTC and 0700 UTC on
>>Friday
>>morning, Jan. 4th. (Subtract 5 hours to convert UTC to EST.) The timing
>
> <snip>
> That figures.....Jan 4 is forecast to have one of the very few rainstorms
> here in So Cal. Hope you other guys have good luck!
>
>
Southwest TEXAS has the clearest skies this time of the year. Very clear.

73 de Jim W4ONO .-.-.

434. Re: meteor shower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 01:51:22 UTC
From: JSmith <jsmith52@tampabay.rr.com>
Message-ID: <4781859A.4040008@tampabay.rr.com>
Source record: 29850

Wayne wrote:
> "Howard W3CQH" <hsgorden@comcast.net> wrote in message
> news:q9idnZrSJYlt0-DanZ2dnUVZ_qainZ2d@comcast.com...
>
>>Space Weather News for Jan. 3, 2008
>>http://spaceweather.com
>>
>>METEOR SHOWER: Earth is about to pass through a stream of dusty debris
>>from
>>near-Earth asteroid 2003 EH1, producing the annual Quadrantid meteor
>>shower.
>>Forecasters expect a brief but intense peak of 50+ meteors per hour over
>>Earth's northern hemisphere sometime between 0200 UTC and 0700 UTC on
>>Friday
>>morning, Jan. 4th. (Subtract 5 hours to convert UTC to EST.) The timing
>
> <snip>
> That figures.....Jan 4 is forecast to have one of the very few rainstorms
> here in So Cal. Hope you other guys have good luck!
>
>
Southwest TEXAS has the clearest skies this time of the year. Very clear.

73 de Jim W4ONO .-.-.

435. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 02:07:11 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47818950$0$5097$4c368faf@roadrunner.com>
Source record: 29851

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:nim2o3tv3rhitu78uaqkk4bltb1lf8j863@4ax.com...
> On Sun, 6 Jan 2008 17:37:37 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>
>>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>news:s15tn3h84mm50me7sehllg741820tuc5g3@4ax.com...
>>> On Fri, 04 Jan 2008 20:03:04 GMT, Cecil Moore <nospam@w5dxp.com>
>>> wrote:
>>>
>>>>The SWR on the wire is load-
>>>>based and is equal to
>>> 8:1 as evidenced by CURRENT on the wire. :-)
>>>
>>> You cannot make a SWR measurement on a receive antenna any other way.
>>
>>You are making a "Voltage" standing wave measurement based ion the CURRENT
>>of the wire?
>
> Hi Dan,
>
> I don't know about ions; but, sure, voltage standing wave measurement
> is as accurate as current standing wave measurement. Or perhaps you
> need to make your question a little more terse (don't rely on the
> continuity of discussion involving Cecil's quotes to fully inform any
> argument).
>
> In other words, filter out the static and frame your own question.

But you said (in CAPS), "8:1 as evidenced by CURRENT on the wire. :-), You cannot make a SWR measurement on a receive antenna any other way." Sorry if the CAPS made my response look terse but I was only repeating your word verbatim.

Given that, just as with the voltage VSWR, the current standing wave is merely a depiction of the envelope of maximum amd minimum current values at the various points along distance kx, how do you measure the standing wave current on the wire? Do you use a current loop and measure the maxima and minima of a great number of points on a line and then plot the ISWR outer envelope on graph paper? My point is that standing wave current does not travel through the wire, it merely oscillates at different max/min amplitudes on each of the infinite number of points on the line. It cannot be measured directly with a current loop.

The VSWR meter on the ham rig is merely looking at the balance of forward and reflected "power" and it is calibrated to read it out as VSWR (or SWR). It may as well say "ISWR"; it is all the same thing. But it is not measured by sensing either voltage ot current going into the antenna...it measures the delta power.

436. Re: r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 02:39:36 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478190ec$0$5106$4c368faf@roadrunner.com>
Source record: 29852

"art" <aunwin@insightbb.com> wrote in message
news:ab630d0b-572c-4c4c-b287-c92c582c1fb8@d21g2000prf.googlegroups.com...

"Did you ever think that your post would last this long? Obviously the
regular contributors
in this group cannot handle the truth and thus will not consult
anything.Now the experts are argueing over the term SWR a very, very,
deep discussion revealing things unknown to the amateur community at
this time. [...]"

Hello Art, the concept of SWR is extremely misunderstood even by people with degrees in electronics engineering. It is assumed to be simple, yet many people get it wrong. Indeed, a good understanding is essential for antenna development. I do not fault anyone for not understanding the concept because standing waves, simple as they may seem, are actually expressed as the product of a cos wave over distance and a sine wave over time. Many things are happening over the length of the antenna as the function is operating. If you think of it, it is the essence of space-time and it may be productive for you to consider it even more broadly in your own hypotheses, more broadly that is by possibly incorporating the mechancial SWR analogues to voltage/current SWR's and who knows what new ideas may come to mind with your model.

437. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 03:25:39 UTC
From: richardharrison@webtv.net
Message-ID: <28958-47819BB3-2600@storefull-3257.bay.webtv.net>
Source record: 29854

art wrote:
"You did not 'determine" radiated power.....period"

Exactly right. Power in the near field is largely reactive. To determine radiated power you measure the in-phase volt-amperes with a wattmeter. The multimeter on the hood maximizes output same as a Bird wattmeter for practical results, but you hanen`t quantified watts out.

Best regards, Richard Harrison, KB5WZI

438. Unusual page--for Art! <LOL>

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 03:27:03 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fls660$4k7$1@news.albasani.net>
Source record: 29853

Art:

Just came across this, was interesting enough to read-it-through;
thought you might enjoy it:

http://www.tfcbooks.com/articles/tws4.htm

Regards,
JS

439. Re: Unusual page--for Art! <LOL>

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 03:56:39 UTC
From: art <aunwin@insightbb.com>
Message-ID: <d818019a-8d94-4bae-a80f-50853926f727@f3g2000hsg.googlegroups.com>
Source record: 29855

On 6 Jan, 19:27, John Smith <assemblywiz...@gmail.com> wrote:
> Art:
>
> Just came across this, was interesting enough to read-it-through;
> thought you might enjoy it:
>
> http://www.tfcbooks.com/articles/tws4.htm
>
> Regards,
> JS

Yes it was ok. Ofcourse Tesla like Vincent and Prof Hately and Hart
ignored the king pin of equilibrium thinking resonance and equilibrium
could be equated as the same.
When Tesla started to pump energy into the earth to prove the method
of transferring energy there was a huge explosion in the hinta land of
Russia which westerners were not allowed to view. Thus this was taken
as evidence that energy could be passed thru the ground. What created
the explosion in Russia
is unknown even to this day.(the FBI stole all Teslas records and
destroyed them as they considered Tesla a possible enemy, to the
dismay of science.
The antenna with a capacitive top is just a way to modify
a non resonant antenna by enlarging the capacitive content of the
radiator. That immediately violated the root(LC) ratio required for
Maxwells law thus it is then the "system" that was made resonant
instead of the radiator alone.
John.What interested you most?
Best regards
Art

440. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 04:51:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <33b3o3h19l727g04n8decqbiq9ksov48l1@4ax.com>
Source record: 29856

On Sun, 6 Jan 2008 21:07:11 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>But you said (in CAPS), "8:1 as evidenced by CURRENT on the wire. :-), You
>cannot make a SWR measurement on a receive antenna any other way." Sorry if
>the CAPS made my response look terse but I was only repeating your word
>verbatim.

Hi Dan,

All very true, but the meaning to you is what you are questioning I am
quite sure, and as I am quite comfortable with what I meant (I wrote
it after all), just what is your question?

>Given that, just as with the voltage VSWR, the current standing wave is
>merely a depiction of the envelope of maximum amd minimum current values at
>the various points along distance kx, how do you measure the standing wave
>current on the wire?

It is reported with every other aspect of the antenna by EZNEC. You
should acquaint yourself with the common reports provided by it or
other modelers in the NEC field.

>Do you use a current loop and measure the maxima and
>minima of a great number of points on a line and then plot the ISWR outer
>envelope on graph paper? My point is that standing wave current does not
>travel through the wire, it merely oscillates at different max/min
>amplitudes on each of the infinite number of points on the line. It cannot
>be measured directly with a current loop.

Traveling? You've got yourself twisted around the axle. I've
measured these phenomenon professionally, to NBS standards across the
full range of RF out to 12GHz. Although the technique can be heavily
invested with up-front work, and certain methods must be chosen with
care, conceptually it is quite simple.

>The VSWR meter on the ham rig is merely looking at the balance of forward
>and reflected "power" and it is calibrated to read it out as VSWR (or SWR).
>It may as well say "ISWR"; it is all the same thing. But it is not measured
>by sensing either voltage ot current going into the antenna...it measures
>the delta power.

99% of correspondents here have never had any experience with
determining SWR beyond the meter you just described. SWR was being
measured long before its invention, and you would be hard pressed to
find one in a laboratory (except as a customer's item to be tested).

Now, if you would simply take my advice to heart: strip away the static and ask the question that is plaguing you.

73's
Richard Clark, KB7QHC

441. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 05:18:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <eCigj.36905$Pv2.13688@newssvr23.news.prodigy.net>
Source record: 29857

Richard Clark wrote:
> It is reported with every other aspect of the antenna by EZNEC.

TravWave.EZ is not really an antenna. It is a loaded 1/4WL single-
wire transmission line designed to display the nature of
traveling waves. Take a look at the current phase vs the current
phase of StndWave.EZ. Both files are available from my web page.
--
73, Cecil http://www.w5dxp.com

442. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 05:38:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ghe3o3dj4dvvr10fgng12dg2unh1gide6l@4ax.com>
Source record: 29858

On Sun, 06 Jan 2008 23:18:04 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Richard Clark wrote:
>> It is reported with every other aspect of the antenna by EZNEC.
>
>TravWave.EZ is not really an antenna.

It is more an artificial ground toaster. It bears no more
relationship to an antenna than its applicability to
Standing/Traveling Waves does to the Prince of Orange.

443. Re: Unusual page--for Art! <LOL>

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 06:18:00 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flsg6h$6ok$1@news.albasani.net>
Source record: 29859

art wrote:

> ...
> John.What interested you most?
> Best regards
> Art

Art:

My gawd man! Some things are just meant to be "FUN!" :-D

Tesla interested me, most of any ...

Regards,
JS

444. Seeking New FAQ/Intro Maintainers for rec.radio.amateur.*

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 07:05:02 UTC
From: rram@panix.com
Message-ID: <radio/ham-radio/recruitment-1-1199689500@panix.com>
Source record: 29860
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.info

```
Posted-By: auto-faq 3.3.2 beta (PGPMoose V2.0, Perl 5.005)
Archive-name: radio/ham-radio/recruitment
Revision: 1.1 2007/09/29 18:42:47
Posting-Frequency: posted monthly
URL: http://www.faqs.org/faqs/radio/personal-intro/

Changes followed by "|".

The rec.radio.info newsgroup, first established in 1993, has been
recently revived by an active moderation team. We are currently seeking
suitable information, FAQ, and bulletin articles from the entire
rec.radio.* newsgroup hierarchy for simultaneous cross-posting to our
newsgroup.

We are seeking a replacement maintainer for the following information
bulletin formerly posted to rec.radio.amateur.* (and currently archived
at http://www.faqs.org/faqs/radio/personal-intro/ ):

radio/personal-intro
Subject: Guide to the rec.radio Newsgroups
Maintainer: jeffreyh@Hawaii.Edu (Jeffrey Herman)
Last Posted: 9 Nov 2001 06:18:17 GMT
Posting-Frequency: 15th of each month

We are willing to provide any technical support necessary to get this
article updated and automatically posted again at a regular interval.
This would include establishing contact with the original maintainer for
any necessary permissions. We would prefer to seek a new, dedicated
maintainer at this time, rather than start auto-posting the original
article ourselves.

For more information about our newsgroup, see:

http://www.panix.com/~rram/usenet/rri/index.html

Please direct any comments, questions, or criticisms to
rec-radio-info-request@panix.com.
```

445. TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 08:14:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o3nr95ue6fk3e@corp.supernews.com>
Source record: 29861

I've made a program to help visualize some transmission line phenomena. With it, you can see the voltage, current, power, and energy on a transmission line. This is a prototype of a work in progress. I've spent more time than I should on it already, but will add some features and increase its flexibility as time permits.

The program, named TLVis1.exe, is available from http://eznec.com/misc/rraa/. It doesn't require any installation and should run on most machines. If it complains about missing files, an easy way to make sure you have the correct run time files is to download and install the free EZNEC demo program from http://eznec.com.

Here's how to use it:

First, notice the scroll bar at the lower right. It allows you to select among five different demonstration setups. This selection bar is disabled while graphs are being run or displayed. Clicking Run will start the selected demo or, if paused, will resume it. You can pause the analysis at any time, step time forward or backward one step at a time with the appropriate button, and resume with the Run button.

For all demos, the transmission line is lossless, open circuited at the end, and 3 wavelengths long. The display shows various quantities (voltage, current, power, or energy) as a function of position along the line -- the source end is to the left and the load end to the right. The display at different times shows the quantity along the line at diffent times. Please keep in mind that the horizontal axis is position along the line, not time.

For demos 1 - 4, the input consists of a perfect voltage source and series resistance. The resistance value is three times the Z0 of the transmission line, resulting in a purely real input reflection cofficient of +0.5.

For demo 5, only, there is no series resistance at the input, so the input reflection coefficient is -1.0.

DEMO 1

Demo 1 shows the combined forward and combined reverse traveling voltage and current waves, and the total voltage. Start the program and click Run. You'll see black sinusoidal waves moving to the right. These are the initial voltage and current waves. They show as black because the forward wave is also the total until the wave reaches the far end of the line.

Pause the display when the reflected waves are about half way back to the source. Notice that the forward V and I waves (green) are always in phase, and the reverse V and I waves (red) are always out of phase. Also note that at any point along the line, the total is the sum of the forward and reverse waves.

Resume the analysis by clicking Run. As additional waves accumulate, all the forward waves are combined to be shown as a single forward wave (green) and the reverse waves are likewise combined (red). Watch the voltage and current at the input and output ends of the line. At the output end, the current is zero at all times, and the voltage is at a maximum there. At the input end, there's initially some current, as shown by the black line going up and down at the very input of the line. There's a time-varying voltage at the input at all times, although it changes in value as various reflections take place. As the analysis runs, the system slowly approaches steady state. Eventually, you'll see that the current at the input end has dropped to zero, as it must, since there can be no power at the line input at steady state because the output end is open circuited.

Pause the display once steady state is reached and step the time forward or back a few steps. Notice that there are times when the voltage is zero everywhere along the line, and other times when the current is zero everywhere along the line. This is true only when the SWR is infinite, as it is here.

DEMO 2

Clear the display and click the end of the slider bar to select demo #2. The lower graph shows the energy per unit distance on the line. This is an energy density, since it's per unit distance, and the total energy on any span of line is the integral of the energy density over that span. But I'll refer to the density as "energy" for simplicity. The energy is separated into two components, Ee and Eh. Ee is the energy stored in the line's capacitance as an E field. Eh is the energy stored in the line's inductance as an H field. The total energy is the sum of these. The upper graph shows the total V and I at the same time.

During the initial forward transit, you see only a green line for the voltage and current. This is because they're normalized to the same peak value (I = V/Z0), so they exactly coincide. The V line is drawn last, so it's all you see during this time. Unlike V and I, Ee and Eh have the same units and so are drawn to scale. Ee is exactly the same as Eh during the initial forward wave (that is, exactly half the energy at every point along the line is stored in the E field and half as an H field), so all you see is the Ee trace, and the total which is exactly twice as much.

When the reflected wave returns, though, the energy is no longer stored evenly between E and H, but swaps between one and the other. This gets pretty interesting as steady state is approached. Steady state is reached, for practical purposes, when the I trace at the input remains zero at all times. Pause the display when you reach that point, and use

the single step buttons to watch the energy in slow motion. Several things are notable:

-- There is no place on the line where the energy is always zero. It's zero momentarily only at particular places only.
-- There are moments when the energy density is the same at all places along the line.
-- The relationship between Ee and Eh is the same everywhere on the line at any given time. In other words, the energy swaps between Ee and Eh everywhere on the line at the same time. So there are times when all the
energy everywhere on the is stored in the E field and times where it's all stored in the H field.

The energy seems to form an initial forward wave, then reflect and re-reflect to form a standing wave. See the comments in the demo 3 description about this.

A word of caution, though -- some or all these wouldn't be true if there was a finite load rather than an open cicruit at the far end of the line.

DEMO 3

Clear the display and select demo 3.

The top graph is the same as for demo 2, but the bottom graph shows the power at each point along the line. The power tells us the magnitude and direction of energy flow -- when the power is positive, energy is flowing to the right at that point; when negative, to the left; and when zero there is no energy moving past that point. The amount of energy being moved is proportional to the magnitude of the power. The power at any point is the product of V and I at that point; V and I are shown in the upper graph.

Click Run and notice that there seems to be a power "wave" moving to the right, although its period is half the period of V or I. And it exhibits a standing wave just like V or I, except the frequency with which it oscillates up and down is twice that of V or I. The power is zero everywhere on the line at those times when either the voltage or current is zero everywhere.

It's important to note that this power distribution, which can seemingly be described as a sum of forward and reverse traveling waves, isn't made up of a forward wave made from the forward voltage and current waves and a reverse wave from the reverse voltage and current waves. It's calculated from the total voltage and current, not separate forward and reverse waves. Nor do the power "waves" represent average power. It's instantaneous power whose average value over any integral number of V or I half cycles is zero, and whose average over any half wavelength of line is zero.

DEMO 4

Clear the display and select demo 4.

This shows power and energy density at the same time, with power as the top graph and energy as the lower.

Pause the display when the analysis has reached steady state, indicated by the power at the input end of the line remaining at zero at all times. Single step until the total energy trace is as flat as you can get it, meaning that an equal amount of energy is stored in each small part of the line. The power waveform is at its maximum amplitude at this time, meaning that energy is moving as rapidly as it ever does. Look at the first power peak, just to the right of the line input (left side of graph). At that point along the line, the energy is moving to the right at its maximum rate. Click the "Single Step >" button once. You can see that the energy just to the right of that maximum-power point has increased, and to the left it's decreased. (It decreased to the left even though the power waveform is positive because more energy was required from the line just to its right than it was being furnished from the left.) Look carefully as you step and you'll see that the power graph isn't the derivative of the energy graph (although it looks that way at some times). That's because these are graphs of position, not time, and power is the *time*, not position, derivative of energy.

Single step until you reach the time when the power is zero everywhere along the line. The energy distribution is the most uneven at that time. Click one step forward or back and notice that the energy graph changes very little -- zero power means there's no movement of energy at that time.

DEMO 5

This is the same setup as demo 1 except that the source resistor has been replaced by a short circuit, leaving a perfect voltage source connected directly to the input end of the line and an input reflection coefficient of -1. An analysis I did and posted showed the input voltage oscillating among three values, one of which was zero, and never reaching a stable steady state. This display shows that behavior.

It's been interesting to develop and work with this program. I hope you'll learn from it as I have. I'll post notices as I make improvements to it.

Roy Lewallen, W7EL

446. Antenna designs for noise cancellation on HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 11:09:36 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <4782085f$1@clear.net.nz>
Source record: 29862

Hi! Any one come across any designs for recieving antennas for HF
(especially 14 MHz) for use in a situation with a lot of QRN.
This seems to be radiated from local power lines, but despite the lnes
in our subdivision being underground we still get a S6/S7 noise level.
Yes we have contacted the authorities but so far no useful result.
It seems somewhat worse on my 5/8 wave vertical than on my G5RV doublet.
Neither myself no a neighbouring Ham have been able to find a way around
this problem despite us both being experienced "old timers".
Some sort of "noise antenna" and phasing arrangement is contemplated but
we have not as yet found a suitable design.
Any ideas welcome!
73's Cliff Wright ZL1BDA ex G3NIA

447. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 11:47:34 UTC
From: wood@itd.nrl.navy.mil
Message-ID: <wood-0701080647340001@jbw-mac.itd.nrl.navy.mil>
Source record: 29863

In article
<86a393f1-09ea-4dc3-bd02-051e76d264f4@5g2000hsg.googlegroups.com>, art
<aunwin@insightbb.com> wrote:

> In fact the earth's ferrite mass center is represented by the magnetic
> poles <snip>

"Ferrite mass center?" What are you talking about? Did you mean
"ferrous?" Ferrites have high electrical resistivity, not a property
that's usually associated with the hypothetical process(es) that gives
rise to the geomagnetic field. Sincerely, and 73s,

John Wood (Code 5550) e-mail: wood@itd.nrl.navy.mil
Naval Research Laboratory
4555 Overlook Avenue, SW
Washington, DC 20375-5337

448. Re: Antenna designs for noise cancellation on HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 12:24:56 UTC
From: "Helmut Wabnig"
Message-ID: <8e64o3laohk5mgh159jocvth7irb722g73@4ax.com>
Source record: 29864

On Tue, 08 Jan 2008 00:09:36 +1300, cliff wright
<c.c.wright@paradise.net.nz> wrote:

>Hi! Any one come across any designs for recieving antennas for HF
>(especially 14 MHz) for use in a situation with a lot of QRN.
>This seems to be radiated from local power lines, but despite the lnes
>in our subdivision being underground we still get a S6/S7 noise level.
>Yes we have contacted the authorities but so far no useful result.
>It seems somewhat worse on my 5/8 wave vertical than on my G5RV doublet.
>Neither myself no a neighbouring Ham have been able to find a way around
>this problem despite us both being experienced "old timers".
>Some sort of "noise antenna" and phasing arrangement is contemplated but
> we have not as yet found a suitable design.
>Any ideas welcome!
>73's Cliff Wright ZL1BDA ex G3NIA

http://images.google.at/imgres?imgurl=http://www.funkfreund.de/00_Amateurfunk-Lexikon/_M/Magnetantenne0.jpg&imgrefurl=http://www.funkfreund.de/00_Amateurfunk-Lexikon/_M/M.htm&h=526&w=496&sz=25&hl=de&start=2&tbnid=qqUXqPMWeTc2LM:&tbnh=132&tbnw=124&prev=/images%3Fq%3Dmagnetantenne%26gbv%3D2%26svnum%3D10%26hl%3Dde%26client%3Dfirefox-a%26rls%3Dorg.mozilla:de:official%26sa%3DG

I love Googel links!

Try a magnetic loop antenna, they are less suszeptible to noise.

w.

449. Re: Antenna designs for noise cancellation on HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 12:38:19 UTC
From: "John, N9JG" <john@Xremove.MeYgotwals.com>
Message-ID: <%2pgj.41377$G23.18718@newsreading01.news.tds.net>
Source record: 29865

If you don't mind spending some bucks, check out
http://www.dxengineering.com/ProductDetail.asp?ID=215&SecID=114&DeptID=12

John, N9JG

"cliff wright" <c.c.wright@paradise.net.nz> wrote in message
news:4782085f$1@clear.net.nz...
> Hi! Any one come across any designs for recieving antennas for HF
> (especially 14 MHz) for use in a situation with a lot of QRN.
> This seems to be radiated from local power lines, but despite the lnes in
> our subdivision being underground we still get a S6/S7 noise level.
> Yes we have contacted the authorities but so far no useful result.
> It seems somewhat worse on my 5/8 wave vertical than on my G5RV doublet.
> Neither myself no a neighbouring Ham have been able to find a way around
> this problem despite us both being experienced "old timers".
> Some sort of "noise antenna" and phasing arrangement is contemplated but
> we have not as yet found a suitable design.
> Any ideas welcome!
> 73's Cliff Wright ZL1BDA ex G3NIA

450. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 13:02:21 UTC
From: Yuri Blanarovich <K3BU@optonline.net>
Message-ID: <Cppgj.1$JA4.0@newsfe12.lga>
Source record: 29866

"J. B. Wood" <wood@itd.nrl.navy.mil> wrote in message
news:wood-0701080647340001@jbw-mac.itd.nrl.navy.mil...
> In article
> <86a393f1-09ea-4dc3-bd02-051e76d264f4@5g2000hsg.googlegroups.com>, art
> <aunwin@insightbb.com> wrote:
>
>> In fact the earth's ferrite mass center is represented by the magnetic
>> poles <snip>
>
> "Ferrite mass center?" What are you talking about? Did you mean
> "ferrous?" Ferrites have high electrical resistivity, not a property
> that's usually associated with the hypothetical process(es) that gives
> rise to the geomagnetic field. Sincerely, and 73s,
>
> John Wood (Code 5550) e-mail: wood@itd.nrl.navy.mil
> Naval Research Laboratory
> 4555 Overlook Avenue, SW
> Washington, DC 20375-5337

Genius educated in Geee land and "correcting" the "dummies" misconceptions, but doesn't know the difference between the director - reflector, polarity - polarization, ferrite - ferrous, etc. When trying to make some sense of his "writings" and incoherent blabbing, you get the picture of troll with an attitude.

bada HNY BUm xOK

451. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 13:59:32 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <215edac9-d84c-4303-97c2-f10c8951b960@v29g2000hsf.googlegroups.com>
Source record: 29867

On 7 ene, 04:25, richardharri...@webtv.net (Richard Harrison) wrote:
> art wrote:
>
> "You did not 'determine" radiated power.....period"
>
> Exactly right. Power in the near field is largely reactive. To determine
> radiated power you measure the in-phase volt-amperes with a wattmeter.
> The multimeter on the hood maximizes output same as a Bird wattmeter for
> practical results, but you hanen`t quantified watts out.
>
> Best regards, Richard Harrison, KB5WZI

Hi Richard,

You can determine radiated power and radiation pattern by near field measurements (theoretically). Please search for "poynting theorem" and "Huygens principle", "Huygens Source" or "Fresnel diffraction theory". Most texts require differential vector calculus.

Because determining radiated power based on E- and H-Field measurement is generally not feasible for amateurs (and even for many professionals), I suggested another approach based on E-field measurements and EM simulation.

As absolute E-field measurement and EM simulation are within the reach of amateur radio operators, one can both tune for maximum field and determine absolute radiated power.

Of course you don't know how much power is dissipated in nearby structures (buildings, etc).

Best regards,

Wim
PA3DJS
www.tetech.nl

452. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 14:09:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Goqgj.6310$lo5.1541@newssvr19.news.prodigy.net>
Source record: 29868

Richard Clark wrote:
> On Sun, 06 Jan 2008 23:18:04 -0600, Cecil Moore <nospam@w5dxp.com>
> wrote:
>
>> Richard Clark wrote:
>>> It is reported with every other aspect of the antenna by EZNEC.
>> TravWave.EZ is not really an antenna.
>
> It is more an artificial ground toaster. It bears no more
> relationship to an antenna than its applicability to
> Standing/Traveling Waves does to the Prince of Orange.

Your motive with all this handing waving is unclear.
It's only purpose is to illustrate traveling waves on a
single piece of wire. You can make the wire 1/4WL or any
other length. And the same thing can be illustrated by a
model of a terminated rhombic antenna in free space.

http://www.w5dxp.com/rhombicT.EZ

This is a terminated rhombic in free space. The termination
resistor is 880 ohms and the 880 ohm feedpoint SWR is 1.032:1.
Take a look at the current with and without the phase. Then
compare that traveling-wave current to the standing-wave current
on a 1/2WL dipole. Or simply learn enough math to tell the
difference between Io*cos(kx)*cos(wt) and Io*cos(kx+wt).
--
73, Cecil http://www.w5dxp.com

453. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 14:46:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <zXqgj.3095$jJ5.44@newssvr11.news.prodigy.net>
Source record: 29869

Jim Kelley wrote:
> Cecil Moore wrote:
>
>> Sorry Jim, but [Io*cos(kx)*cos(wt)] and [Io*cos(kx+wt)] *ARE*
>> different.
>
> Evidently, you can't recognize a trig identity when you see one.

One really should take a look at the math before waving one's
hands and opening one's mouth in ignorance.

Please enlighten us as to exactly what trig "identity" will make
the following terms equal.

E1*e^j(wt-kx) ?=? E2*e^j(wt-kx) + E2*e^j(wt+kx)

Seems to me the only condition for which they are equal is when
E2=0, i.e. when reflections (and therefore standing waves) don't
exist.
--
73, Cecil http://www.w5dxp.com

454. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 15:34:21 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rdh4o3dbah9smraqdfdc4cm22h7rjdbd21@4ax.com>
Source record: 29870

On Mon, 07 Jan 2008 08:09:44 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Your motive with all this handing waving is unclear.
>It's only purpose is to illustrate traveling waves on a
>single piece of wire.

Three pieces of wire, one of them yours (a piece of trash as you
describe it; and two of mine, following the conventions of their
designers). The demonstration is remarkable enough to accomplish what
you set out to do, clear up the confusion about standing waves on a
Rhombic, and then later a Beverage

455. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 15:52:25 UTC
From: art <aunwin@insightbb.com>
Message-ID: <69c13e60-0bcd-4601-8463-51d675f255d7@i72g2000hsd.googlegroups.com>
Source record: 29871

On 7 Jan, 03:47, w...@itd.nrl.navy.mil (J. B. Wood) wrote:
> In article
> <86a393f1-09ea-4dc3-bd02-051e76d26...@5g2000hsg.googlegroups.com>, art
>
> <aun...@insightbb.com> wrote:
> > In fact the earth's ferrite mass center is represented by the magnetic
> > poles <snip>
>
> "Ferrite mass center?" What are you talking about? Did you mean
> "ferrous?" Ferrites have high electrical resistivity, not a property
> that's usually associated with the hypothetical process(es) that gives
> rise to the geomagnetic field. Sincerely, and 73s,
>
> John Wood (Code 5550)   e-mail: w...@itd.nrl.navy.mil
> Naval Research Laboratory
> 4555 Overlook Avenue, SW
> Washington, DC 20375-5337

Yes, I do often make a poor choice of words but fortunately
those in the group quickly get the gist of my postings.
Oh to be young again when those sort of things didn't happen.But then
this is no time to lie down and give up on life and play dead
Art.

456. Re: TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 16:00:33 UTC
From: John KD5YI <groups1.jocjo@xoxy.net>
Message-ID: <B0sgj.7203$9e1.4497@trnddc02>
Source record: 29872

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13o3nr95ue6fk3e@corp.supernews.com...
> I've made a program to help visualize some transmission line phenomena.

(snip program description)

Thanks, Roy. It is very interesting.

I'm having a hard time getting my head around Demo 5. The waves go away periodically (every 8 wavelengths?), sort of like a squegging oscillator. (By the way, it appears that the line is two wavelengths long rather than three.) This was totally unexpected. I will think more about this and try to picture the reason.

Nice tool.

John

457. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 16:01:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <f0i4o3l6asmt1omn3kqjfqjhura6h6gsil@4ax.com>
Source record: 29873

On Mon, 07 Jan 2008 08:09:44 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>
>http://www.w5dxp.com/rhombicT.EZ
>
>This is a terminated rhombic in free space. The termination
>resistor is 880 ohms and the 880 ohm feedpoint SWR is 1.032:1.

Which, of course, has nothing to do with Standing Waves ON THE
ANTENNA.

On wire 1, the variation that is swinging along the line like any
other Standing Wave antenna of length greater than a quarter wave. The
value is higher than your "source SWR," of course.

>Take a look at the current with and without the phase.

Swinging 180 degrees at 6 or 7 degrees per segment. Exactly like my
earlier reports in contrast to your proclamations.

> Then
>compare that traveling-wave current to the standing-wave current
>on a 1/2WL dipole. Or simply learn enough math to tell the
>difference between Io*cos(kx)*cos(wt) and Io*cos(kx+wt).

I was there weeks ago ahead of you where the formula applies (on the
wire, not an EZNEC report of source SWR).

It was more interesting to compare your Rhombic to itself in a closer
to ground situation (elevated 12 feet above a real, high accuracy
ground).

SWR there, out of the gate (not at the source) and on the antenna wire
itself (where traveling waves would be presumed to inhabit the
design):
SWR: 1.15
Further down the wires, radiation loss does ameliorate this
SWR: 1.08
Still in excess of your Source SWR, which, obviously has nothing to do
with STANDING/TRAVELING WAVES ON THE WIRE.

Nice of you to confirm every point I made in refuting your claims.

Others are free to observe every classic indication of Standing Waves
upon a "Traveling Wave" antenna, complete with phase shift as I had
reported some time ago.

458. Re: Magnetic fields

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 16:04:04 UTC
From: art <aunwin@insightbb.com>
Message-ID: <6325a68f-dab6-45c3-8e86-0489da83a7e0@i7g2000prf.googlegroups.com>
Source record: 29874

On 7 Jan, 05:02, "Yuri Blanarovich" <K...@optonline.net> wrote:
snip
>
> Genius educated in Geee land and "correcting" the "dummies" misconceptions,
> but doesn't know the difference between the director - reflector, polarity -
> polarization, ferrite - ferrous, etc. When trying to make some sense of his
> "writings" and incoherent blabbing, you get the picture of troll with an
> attitude.
>
> bada HNY BUm xOK- Hide quoted text -
>
> - Show quoted text -

Please note
that I have placed an abstract on EHam.
I am sure they would love to hear from you again over there.
Darn it.
Why ever did they ban you from posting your interesting thoughts?
Art XG
over there.

459. Re: Unusual page--for Art! <LOL>

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 16:14:28 UTC
From: art <aunwin@insightbb.com>
Message-ID: <27f86e3e-d4b3-4d8f-b66d-ea31d9c1cb40@r60g2000hsc.googlegroups.com>
Source record: 29875

On 6 Jan, 22:18, John Smith <assemblywiz...@gmail.com> wrote:
> art wrote:
>
> > ...
>
> > John.What interested you most?
> > Best regards
> > Art
>
> Art:
>
> My gawd man! Some things are just meant to be "FUN!" :-D
>
> Tesla interested me, most of any ...
>
> Regards,
> JS

Tesla interests me also. If he didn't neglect the principles
of equilibrium he would not have died without notice. Professor
Hately,
Vincent, Hart and many others also failed to take it into account
and also will fade from memory. But without these people we would
not have any thing to print in QST
Art

460. Re: Unusual page--for Art! <LOL>

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 16:28:50 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fltjvrpbg1@news.albasani.net>
Source record: 29876

art wrote:

> Tesla interests me also. If he didn't neglect the principles
> of equilibrium he would not have died without notice. Professor
> Hately,
> Vincent, Hart and many others also failed to take it into account
> and also will fade from memory. But without these people we would
> not have any thing to print in QST
> Art

Some might not realize, Tesla and Einstein were friends, they were given opportunities to "pick each others brains."

The turbine he designed/built is still used today in virtually unaltered design ... his tesla coils virtually "cover the net" and it is difficult to conduct a through search on antennas/theory and not to start running into such ... a truly amazing man for his time--I wonder if he would not even stand as such if born in our time. But thank goodness he wasn't--he put us "ahead of the game."

Regards,
JS

461. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 16:32:52 UTC
From: richardharrison@webtv.net
Message-ID: <28732-47825434-341@storefull-3251.bay.webtv.net>
Source record: 29877

Wim, PA3DJS wrote:
"Of course you don`t know how much power is dissipated in nearby structures (buildings, etc)."

Yes. Standard broadcast field strengths are measured at distances along radial paths begining at one mile from the station to ensure far field determination. Conductivity of the earth affects received signal strength. Over sea water, the millivolts per meter decline inversely with distance. Over the earth, decline is more rapid depending on conductivity. Some sites along the radials are unacceptable due to proximity of conducting structures. The more measurements along a radial, the better. 25 sites per radial is about the minimum. In the USA, the FCC has published Groundwave Field vs Distance Charts, and made them a part of its rules. One can try to fit his measured data to the FCC curves. Groundwaves is what broadcasting is all about at these frequencies.

Best regards, Richard Harrison, KB5WZI

462. Re: TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 16:50:16 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080107085016.7cf99cd2.rsparks@elltel.net>
Source record: 29878

On Mon, 07 Jan 2008 00:14:30 -0800
Roy Lewallen <w7el@eznec.com> wrote:

> I've made a program to help visualize some transmission line phenomena.
> With it, you can see the voltage, current, power, and energy on a
> transmission line. This is a prototype of a work in progress. I've spent
> more time than I should on it already, but will add some features and
> increase its flexibility as time permits.
>
> The program, named TLVis1.exe, is available from
> http://eznec.com/misc/rraa/. It doesn't require any installation and
> should run on most machines. If it complains about missing files, an
> easy way to make sure you have the correct run time files is to download
> and install the free EZNEC demo program from http://eznec.com.

This is a great program Roy. Thanks for creating it and making it available.

73, Roger, W7WKB

463. How Does A TV Antenna Work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 17:03:07 UTC
From: Randy Yates <yates@ieee.org>
Message-ID: <m3ejctin5g.fsf@ieee.org>
Source record: 29879

Hi Folks,

This is my first post to this group. I'm a EE, so I've
had all the theory - now I want to know how these things
work. :)

Basically, my question is this: how can a a TV antanna
cover, what, 60 MHz to 800 MHz? That's over three octaves,
and if the antenna elements are designed to be a fixed
portion of a wavelength, why does this work over such a
large range?
--
% Randy Yates % "So now it's getting late,
%% Fuquay-Varina, NC % and those who hesitate
%%% 919-577-9882 % got no one..."
%%%% <yates@ieee.org> % 'Waterfall', *Face The Music*, ELO
http://www.digitalsignallabs.com

464. Re: How Does A TV Antenna Work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 17:39:12 UTC
From: gsm@mendelson.com
Message-ID: <slrnfo4ome.jiv.gsm@cable.mendelson.com>
Source record: 29880

Randy Yates wrote:
> Hi Folks,
>
> This is my first post to this group. I'm a EE, so I've
> had all the theory - now I want to know how these things
> work. :)
>
> Basically, my question is this: how can a a TV antanna
> cover, what, 60 MHz to 800 MHz? That's over three octaves,
> and if the antenna elements are designed to be a fixed
> portion of a wavelength, why does this work over such a
> large range?

It's because all of it is the driven element.

What you are thinking about is a Yagi antenna. A Yagi has
only one driven element a refelctor at the rear, and
directors in front of it. The more directors you add,
the narrower the beam width (how wide a signal
it transmits or the direction it receives from).
As you narrow the beam width the gain increases,
for each halving of the beam width, the gain doubles.

Eventually you reach a point of diminishing returns
which seems to be around 12db.

A log periodic antenna, such as a TV antenna consists of
many driven elements of varying sizes. I don't know if
it is necessary, or just works better, but they are fed
out of phase, i.e. the connection to the next element
(really a dipole) is reversed.

The easiest way to tell a Yagi from a log periodic is
that a yagi antenna the elements except the driven one
is a single piece and they are not insulated from the boom.

A log periodic antenna is made up of a set of dipoles, so
each one is split in the middle and insulated. Often you
can see the feed wires criss-crossed.

Note that log periodic antennas are not used everywhere for
TV signals. In the U.S. tv stations tend to be clustered around
large cities and often the same area. A log periodic makes sense
because you point it in the general direction of the TV stations.

Here it is quite different, there are only 2 TV channels over the air,
while at one time there were four. They were all in different directions

and different bands, 1 VHF to the east, one to the far north, and 2 UHF stations near the coast. So a log periodic made no sense and you see lots of yagi antennas.

I was talking the other night to a friend who lives in the U.S. and he is not sure what he is going to do. Although all the transmitters in his city are close to each other and about 8 miles from his house in the same direction, he can't receive HD TV reliably with them.

When analog TV is stopped, he'll probably have to go to cable or DBS.

Geoff.

--
Geoffrey S. Mendelson, Jerusalem, Israel gsm@mendelson.com N3OWJ/4X1GM
IL Voice: (07)-7424-1667 U.S. Voice: 1-215-821-1838
Visit my 'blog at http://geoffstechno.livejournal.com/

465. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 17:51:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nEtgj.34404$JD.16804@newssvr21.news.prodigy.net>
Source record: 29881

Richard Clark wrote:
> The demonstration is remarkable enough to accomplish what
> you set out to do, clear up the confusion about standing waves on a
> Rhombic, and then later a Beverage

There's no confusion. Terminated rhombics and Beverages are
traveling-wave antennas. Their currents are primarily:

I(x,t) = Io*cos(kx-wt)

A 1/2WL dipole is a standing-wave antenna. It's current is
primarily:

I(x,t) = Io*cos(kx)*cos(wt)

There's no confusion except in your mind.
--
73, Cecil http://www.w5dxp.com

466. Re: How Does A TV Antenna Work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 17:53:41 UTC
From: Chuck Olson <chuckolson01@REMOVETHIScomcast.net>
Message-ID: <OoadnWrICunI-h_anZ2dnUVZ_jGdnZ2d@comcast.com>
Source record: 29882

"Randy Yates" <yates@ieee.org> wrote in message
news:m3ejctin5g.fsf@ieee.org...
> Hi Folks,
>
> This is my first post to this group. I'm a EE, so I've
> had all the theory - now I want to know how these things
> work. :)
>
> Basically, my question is this: how can a a TV antanna
> cover, what, 60 MHz to 800 MHz? That's over three octaves,
> and if the antenna elements are designed to be a fixed
> portion of a wavelength, why does this work over such a
> large range?
> --
> % Randy Yates % "So now it's getting late,
> %% Fuquay-Varina, NC % and those who hesitate
> %%% 919-577-9882 % got no one..."
> %%%% <yates@ieee.org> % 'Waterfall', *Face The Music*, ELO
> http://www.digitalsignallabs.com

The more elements it has, the better it works. So a cheap one doesn't work very well due to few elements. But there are ways to spread the bandwidth of elements by making a radiator out of V-shaped pieces of metal or tubes or wires in a V configuration - - the thicker the elements, the wider the bandwidth. Also configurations related to the log periodic array widen the bandwidth. A UHF antenna in the form of a single circular loop evidently has a wide bandwidth.

467. Re: How Does A TV Antenna Work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:04:06 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnfo4qcm.1d72.bit-bucket@shell.config.com>
Source record: 29883

On Mon, 07 Jan 2008 12:03:07 -0500, Randy Yates wrote:
>
> Basically, my question is this: how can a a TV antanna
> cover, what, 60 MHz to 800 MHz? That's over three octaves,
> and if the antenna elements are designed to be a fixed
> portion of a wavelength, why does this work over such a
> large range?

It's all done in marketing. :-)

468. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:09:37 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080107100937.b5fb8b00.rsparks@elltel.net>
Source record: 29884

On Mon, 07 Jan 2008 17:51:15 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Richard Clark wrote:
> > The demonstration is remarkable enough to accomplish what
> > you set out to do, clear up the confusion about standing waves on a
> > Rhombic, and then later a Beverage
>
> There's no confusion. Terminated rhombics and Beverages are
> traveling-wave antennas. Their currents are primarily:
>
> I(x,t) = Io*cos(kx-wt)
>
> A 1/2WL dipole is a standing-wave antenna. It's current is
> primarily:
>
> I(x,t) = Io*cos(kx)*cos(wt)
>
> There's no confusion except in your mind.
> --
> 73, Cecil http://www.w5dxp.com

What is the common reference point of x,t? In other words, when both x and t are zero, where on the antenna is the zero location?
--
Roger Sparks <rsparks@elltel.net>

469. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:12:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <LYtgj.34406$JD.8207@newssvr21.news.prodigy.net>
Source record: 29885

Richard Clark wrote:

> Cecil Moore <nospam@w5dxp.com> wrote:
>> http://www.w5dxp.com/rhombicT.EZ
>> This is a terminated rhombic in free space. The termination
>> resistor is 880 ohms and the 880 ohm feedpoint SWR is 1.032:1.
>
> Which, of course, has nothing to do with Standing Waves ON THE
> ANTENNA.

The SWR on the antenna has nothing to do with the standing
waves on the antenna?????? Good grief, Richard, it makes
sense now. You don't even know what a standing-wave antenna
is - so allow me to explain.

An antenna has a characteristic impedance range. If the
terminating resistor is in the center of that range,
reflections are reduced to a negligible value. That's
why terminated antennas are (usually) classified as
traveling-wave antennas - because they minimize reflections.

The ends of a dipole are (surprise) an open-circuit. All
of the forward wave is reflected. That's why a dipole is
a *standing-wave antenna*. There is nothing except radiation
that can reduce the reflections.

Sorry, nothing else you could have to say would make any
difference with a gross misconception like that.
--
73, Cecil http://www.w5dxp.com

470. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:15:24 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fltq7r$1hk4$1@f04n12.cac.psu.edu>
Source record: 29886

art wrote:
>
> Probably so. But pseudo experts such as Roy and Tom and the three
> Richards can't put o neck hold on the advances of science for ever,
> for people like MK to follow in lockstep in the absence of knoweledge.

Crikeys, Art!

How on earth are your nemeses strangling science? Does anyone in here take these bar room brawls seriously?

I mean just what would this strangulation achieve? Does IEEE keep an archive of rraa? the National Science Foundation?

These arguments, For all their sound and fury, signify nothing.

I rather thought that they boys were all just feeling their oats. At any rate, the great unwashed such as myself find it all amusing.

- 73 de Mike N3LI -

471. Re: How Does A TV Antenna Work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:17:56 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <g1ugj.66953$L%6.38547@bignews3.bellsouth.net>
Source record: 29887

> Basically, my question is this: how can a a TV antanna
> cover, what, 60 MHz to 800 MHz? That's over three octaves,
> and if the antenna elements are designed to be a fixed
> portion of a wavelength, why does this work over such a
> large range?

Its just "magic".

472. Re: Antenna designs for noise cancellation on HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:21:47 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <U4ugj.66957$L%6.24341@bignews3.bellsouth.net>
Source record: 29888

"cliff wright" <c.c.wright@paradise.net.nz> wrote in message
news:4782085f$1@clear.net.nz...
> Hi! Any one come across any designs for recieving antennas for HF
> (especially 14 MHz) for use in a situation with a lot of QRN.
> This seems to be radiated from local power lines, but despite the lnes in
> our subdivision being underground we still get a S6/S7 noise level.
> Yes we have contacted the authorities but so far no useful result.
> It seems somewhat worse on my 5/8 wave vertical than on my G5RV doublet.
> Neither myself no a neighbouring Ham have been able to find a way around
> this problem despite us both being experienced "old timers".
> Some sort of "noise antenna" and phasing arrangement is contemplated but
> we have not as yet found a suitable design.
> Any ideas welcome!
> 73's Cliff Wright ZL1BDA ex G3NIA

I have not tried it myself, but MFJ makes a noise cancelling doo-dad called
the MFJ 1026.
http://www.universal-radio.com/catalog/preamps/3541.html

473. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:34:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <sgugj.7495$6%.7412@nlpi061.nbdc.sbc.com>
Source record: 29889

Roger Sparks wrote:
> What is the common reference point of x,t? In other words, when both x and t are zero, where on the antenna is the zero location?

By convention, x=0 and t=0 are at the feedpoint with the same
phase as the feedpoint signal. Thus, at the feedpoint, the
current is equal, but at no other point until one wavelength
is reached.
--
73, Cecil http://www.w5dxp.com

474. Re: TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:40:32 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o4sh2spe1313b@corp.supernews.com>
Source record: 29890

John KD5YI wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13o3nr95ue6fk3e@corp.supernews.com...
>> I've made a program to help visualize some transmission line phenomena.
>
> (snip program description)
>
> Thanks, Roy. It is very interesting.
>
> I'm having a hard time getting my head around Demo 5. The waves go away
> periodically (every 8 wavelengths?), sort of like a squegging oscillator.
> (By the way, it appears that the line is two wavelengths long rather than
> three.) This was totally unexpected. I will think more about this and try to
> picture the reason.
>
> Nice tool.

You'll find a detailed analysis which derives the reason for the behavior in my posting on Dec. 28 in this thread. You can see it by going to http://tinyurl.com/ypfshd. I agree it's counter-intuitive. It's a consequence of the contrived zero-loss system.

Roy Lewallen, W7EL

475. Re: How Does A TV Antenna Work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:43:45 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <Bpugj.49573$8Z1.845@trnddc05>
Source record: 29891

"Randy Yates" <yates@ieee.org> wrote in message
news:m3ejctin5g.fsf@ieee.org...
> Hi Folks,
>
> This is my first post to this group. I'm a EE, so I've
> had all the theory - now I want to know how these things
> work. :)
>
> Basically, my question is this: how can a a TV antanna
> cover, what, 60 MHz to 800 MHz? That's over three octaves,
> and if the antenna elements are designed to be a fixed
> portion of a wavelength, why does this work over such a
> large range?
> --
> % Randy Yates % "So now it's getting late,
> %% Fuquay-Varina, NC % and those who hesitate
> %%% 919-577-9882 % got no one..."
> %%%% <yates@ieee.org> % 'Waterfall', *Face The Music*, ELO
> http://www.digitalsignallabs.com

Hi Randy

You have probably thought about Log Periodic Antennas. They work by
forcing a null in the direction away from their feed point. The "dipoles"
that most nearly match the line connecting them will be the most active of
all. The active dipoles will be near 1/2 wave long. Each succeeding
dipole is fed 180 degrees from the dipoles on either side.
When the frequency is trippled, the dipole patern changes such that the
lobes add in a way favorable to the desired pattern if the dipoles are bent
to make the Log Periodic Vee Antenna.
There is a 3 to 1 relation inherant in the LPV that coincides with the
near 3 to 1 spread in assigned TV channels.

Jerry KD6JDJ

476. Re: TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:49:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o4t2ig99j3qbd@corp.supernews.com>
Source record: 29892

For those who haven't followed the discussion (which I fully understand), you'll find a mathematical analysis of the system of demos 1-4 in my postings of Jan. 1 in this thread. The voltage distribution development from startup is in http://tinyurl.com/27uzrf, and an analysis of the power at the input and the energy entering the system was in a second posting also on Jan. 1; you can find it at http://tinyurl.com/ypo2b4. The system of demo 5 which has the unusual response was analyzed in my posting of Dec. 28, http://tinyurl.com/ypfshd. The first and third include links to SPICE output plots which illustrate the time responses. (Note that they don't look like the TLVis1 plots because the SPICE plots have time as the horizontal axis while TLVis1 has position along the line as the horizontal axis.)

The analyses, SPICE results, and TLVis1 outputs should all agree.

Roy Lewallen, W7EL

477. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 18:54:26 UTC
From: art <aunwin@insightbb.com>
Message-ID: <191fe8a8-ad0a-42ad-9620-5ec65a04a045@1g2000hsl.googlegroups.com>
Source record: 29893

On 7 Jan, 10:12, Cecil Moore <nos...@w5dxp.com> wrote:
> Richard Clark wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
> >>http://www.w5dxp.com/rhombicT.EZ
> >> This is a terminated rhombic in free space. The termination
> >> resistor is 880 ohms and the 880 ohm feedpoint SWR is 1.032:1.
>
> > Which, of course, has nothing to do with Standing Waves ON THE
> > ANTENNA.
>
> The SWR on the antenna has nothing to do with the standing
> waves on the antenna?????? Good grief, Richard, it makes
> sense now. You don't even know what a standing-wave antenna
> is - so allow me to explain.
>
> An antenna has a characteristic impedance range. If the
> terminating resistor is in the center of that range,
> *reflections are reduced to a negligible value*. That's
> why terminated antennas are (usually) classified as
> *traveling-wave antennas* - because they minimize reflections.
>
> The ends of a dipole are (surprise) an open-circuit. All
> of the forward wave is reflected. That's why a dipole is
> a *standing-wave antenna*. There is nothing except radiation
> that can reduce the reflections.
>
> Sorry, nothing else you could have to say would make any
> difference with a gross misconception like that.
> --
> 73, Cecil http://www.w5dxp.com

Cecil, Can you help me understand that the end of a dipole is an open
circuit?
Nothing falls out because the current changes direction ala AC because
the end of a dipole equates with the time that requires the current
changes direction. So where is the open circuit? I also cannot see why
radiation reduces reflection if the circuit can be completed with
iron!
Best regards
Art

478. Re: How Does A TV Antenna Work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 19:09:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o4u7c5msu5416@corp.supernews.com>
Source record: 29894

Randy Yates wrote:
> Hi Folks,
>
> This is my first post to this group. I'm a EE, so I've
> had all the theory - now I want to know how these things
> work. :)

I highly recommend that you get a couple of basic antenna texts. Very few people understand how antennas work, but they're nonetheless free with advice and explanations. Texts are generally reliable. The _ARRL Antenna Book_ is about the only book I can recommend that covers the topic at less than an engineering level. For engineering texts, Kraus' _Antennas_ is the gold standard. You can find earlier editions at very reasonable prices. There are, of course, a number of other very good texts. Be very careful of information you get from the Internet, including newsgroups.

As a person who develops, sells, and uses antenna modeling software, I also highly recommend this as an educational tool. I guarantee you'll learn a lot about antennas by doing some modeling. The free demo version of EZNEC is available at http://eznec.com, but there are other free programs available.

> Basically, my question is this: how can a a TV antanna
> cover, what, 60 MHz to 800 MHz? That's over three octaves,
> and if the antenna elements are designed to be a fixed
> portion of a wavelength, why does this work over such a
> large range?

One answer to your question is that "work" isn't a binary quantity but a continuum. TV antennas typically work considerably better at some frequencies than others. They just have to work well enough to provide an adequate signal to the receiver, and hopefully provide some directionality to reduce multipath interference. Most are a sort of combination of Yagi and log-periodic designs, with a lot of tweaking and trickery. Another respondent mentioned that elements are sometimes bent into a V shape. This little trick provides an element which has a bidirectional pattern at two frequencies related by a factor of three -- about the ratio of the high VHF to low VHF channels. Elements naturally are resonant at multiple frequencies, including frequencies related by a factor of three.

Good luck with your endeavors!

Roy Lewallen, W7EL

479. Re: TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 19:11:08 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080107111108.d0026b54.rsparks@elltel.net>
Source record: 29895

On Mon, 07 Jan 2008 16:00:33 GMT
"John KD5YI" <groups1.jocjo@xoxy.net> wrote:

> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13o3nr95ue6fk3e@corp.supernews.com...
> > I've made a program to help visualize some transmission line phenomena.
>
> (snip program description)
>
> Thanks, Roy. It is very interesting.
>
> I'm having a hard time getting my head around Demo 5. The waves go away
> periodically (every 8 wavelengths?), sort of like a squegging oscillator.
> (By the way, it appears that the line is two wavelengths long rather than
> three.) This was totally unexpected. I will think more about this and try to
> picture the reason.
>
> Nice tool.
>
> John
>
>

Demo 5 is a demonstration of the pitfalls of dealing with discontinuities. The demonstration portrays equal periods of sequential open circuit conditions and short circuit conditions.

The discontinuity here is that a reflection factor of 1 is used if the returning voltage is less than the initial voltage, but a reflection factor of -1 is used for any returning voltage exceeding the initial voltage.

Demo 5 is a demonstration of why a Thevenin voltage source is much to be prefered over a simple ideal voltage source for continuous running circuits.

Another way of illustrating the problem is to say that the ideal voltage source overwhelms any voltage from a returning wave. If an external voltage less than the initial voltage is applied to the ideal voltage source, vr = 0, vf = videal. If the external voltage exceeds the initial voltage, then vr = 0, vf = 0 This is a discontinuity, which shows up in Demo 5.

A third way of illustrating the discontinuity problem is to say that you can not apply a voltage to two wires that are short circuited at the input. In Demo 5, the reflected wave returns to find the circuit short circuited. On the other hand, the ideal voltage source applied voltage to an open circuit. We can not have it both ways.

73, Roger, W7?WKB

480. Re: TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 19:12:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o4udifkru3h6c@corp.supernews.com>
Source record: 29896

Correction:

Roy Lewallen wrote:
> . . .
> For all demos, the transmission line is lossless, open circuited at the
> end, and 3 wavelengths long. . .

The line is 2, not 3, wavelengths long.

I apologize for the error.

Roy Lewallen, W7EL

481. Re: TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 19:13:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o4ufiob6453cf@corp.supernews.com>
Source record: 29897

John KD5YI wrote:
>>
> (By the way, it appears that the line is two wavelengths long rather than
> three.) . .

You're right, thanks for pointing it out. My apology. I've posted a
correction.

Roy Lewallen, W7EL

482. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 19:25:46 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080107112546.ac4dd8f4.rsparks@elltel.net>
Source record: 29798

On Mon, 07 Jan 2008 12:34:03 -0600
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > What is the common reference point of x,t? In other words, when both x and t are zero, where on the antenna is the zero location?
>
> By convention, x=0 and t=0 are at the feedpoint with the same
> phase as the feedpoint signal. Thus, at the feedpoint, the
> current is equal, but at no other point until one wavelength
> is reached.
> --
> 73, Cecil http://www.w5dxp.com

Thanks Cecil.

This provides a great entry to post my conclusions after studying over the weekend. I use some of Roy's work in this but only as an example of how equations are written, not as an example of accuracy. Thanks Roy, for providing the material.

On Tue, 01 Jan 2008 23:13:18 -0800
Roy Lewallen <w7el@eznec.com> wrote:

> Second analysis: +0.5 input reflection coefficient
>

clip.......

> so that the initial voltage at the line input is simply sin(wt). At any
> point that the forward wave has reached, then,
>
> vf1(t, x) = sin(wt - x)
>
> The open far end of the line has a reflection coefficient of +1, so as
> before the returning wave is:
>
> vr1(t, x) = sin(wt + x)
>
> (The change from -x to +x is due to the reversal of direction of
> propagation. You'll see this with every reflection.) At any time between
> when vf1 reflects from the output end (t = 2*pi/w) and when it reaches
> the input end of the line (t = 4*pi/w), the total voltage at any point
> the returning wave has reached is
>
> vtot = vf1(t, x) + vr1(t, x) = sin(wt - x) + sin(wt + x) [Eq. 1]
>

Roy's work is only provided as an example of the use of mathematical notation.

The notation "vf1(t, x)" is not fully explained in the text, so any reader who is unfamiliar with the notation must do some additional study. This describes my situation, so after some study, this is what I think these terms mean, focusing on the two coordinates, wt and x.

Roy is using phasor math here, a subject comprehensively covered elsewhere. (Link http://campus.murraystate.edu/tsm/tsm118/Ch6/ch6_5/ch6_5.htm) The sum of "wt" and "x" denote the phase angle of the wave, measured in degrees, both referenced to zero. Two angles are needed, one to represent the physical location of each wave as a function of time, the second to locate the point of examination of the wave. "wt" locates the wave in time and physical space . "x" locates the examination point in physical space (on a transmission line in this case).

How is "x" located on the transmission line?

My automatic assumption was that "x" was based at the input to the line. Thus, if the input was on the left side of the page, the line would extend to the right, and x would become larger when moving right. This led to a contradiction when I considered how the wave reflects from the right side upon encountering a discontinuity. Suddenly, a positive reflected wave represented by sine(-x) was made sine(x) at an open circuit. At position sin(90), the wave reversed and became sine(-90). It was if a factor of -1 was applied to the analysis, which was not the case here.

After considerable thought and time, I realized that the origin of "x" was not at the input point, but was at the reflection point. Then the notation made perfect sense.

Forward wave->
input->_____|Reflection point
++x <- increasing x <- Reflected wave 0

Scale both the sine wave and physical line in degrees. The wave will repeat every 360 degrees (2pi radians). The x scale can be as long (in degrees or radians) as desired

Think of the sine wave as an curve traced on a MOVING sheet of paper. The paper/curve moves in the direction of the forward wave. As the sine wave trace passes the zero point, the wave has a(unit) magnitude, described as sin(wt). Pick any wt and match wt to 0 on the physical scale. Then go to the x location of interest to find the magnitude of the sine wave at that location for one instant of time (wt).

If a reflected wave is present, think of the same wave picture but moving in the opposite direction. When the reflection point is an open circuit, the reflected wave is generated by the forward wave so the two waves will always have a 1 to 1 corespondence at the zero point (point of reflection). The two waves are related by

For the forward wave, vf(t, x) = sin(wt - x)
For the reflected wave, vr(t, x) = sin(wt + x)

For the total voltage at any point (open circuit case).
vtot = vf(t, x) + vr(t, x)
= sin(wt - x) + sin(wt + x)

When the reflection point is a short circuit, the voltage becomes zero at the short. The sum of forward and reflected wave voltages (at the short) will always be zero. Mathematically, this is accomplished by multiplying either the forward or reflective part of the equation a factor of -1. The effect is to shift the phase of both forward and reflected waves by 90 degrees for a total of 180 degrees. We will apply the factor of -1 to the forward wave to maintain polarity consistancy with the open circuit case.

vfS(t, x) = -sine(wt - x) For short circuit reflection.

Notice that if x = 0,

vtotS(t, x) = -vfS(t, x) + vrS(t, x)
= -sine(wt) + sine(wt)
= 0

For practice, let's analyze a transmission line fed at one end, open at the other. The relfections will have a voltage equal to the forward voltage at all times so we will use the equation
vtot = sin(wt - x) + sin(wt + x)

Assuming one volt peak for the sine wave amplitude (a unit amplitude), find the voltage at points vtot(wt, x),(0,0),(90,0),(180,0),(270,0),(360,0). Notice that every voltage will be computed at the reflection point, x = 0.

For 0,0, vtot(wt,x) = sine(0 - 0) + sine(0 + 0) = 0
For 90,0 vtot(wt,x) = sine(90 - 0) + sine(90 + 0) = 2v
For 180,0, vtot(wt,x) = sine(180 - 0) + sine(180 + 0) = 0
For 270,0, vtot(wt,x) = sine(270 - 0) + sine(270 + 0) = -2v
For 360,0, vtot(wt,x) = sine(360 - 0) + sine(360 + 0) = 0

In this example, one complete sine wave cycle has passed the x origin.

For the next example, let's assume we want to compute the voltage at the point located 45 degrees from the reflection point at the same time that the voltage at the end is at a maximum. The maximum points for voltage at the end occurs when the 90 and 270 degree phases reach the reflection point. Lets look at the 90 degree case.

For 90,45, vtot(wt,x) = sine(90 - 45) + sine(90 + 45)
= sine(45) + sine(135)
= 0.707 + 0.707
= 1.414v
For 90,135, vtot(wt,x) = sine(90 - 135) + sine(90 + 135) = 0
= sine(-45) + sine(225)
= sine(225) + sine(225)
= -0.707 + (-0.707)
= -1.414v

We can continue this process to find the voltage envelope for any location/phase relationship desired. It works equally well for the short circuit case.

Let's look at the case for short circuited 0 degree case, where the phase is 0 degrees, and examination point is 90 degrees.

For 0,90 (short circuit),
vtotS(wt,x) = - sine(0 - 90) + sine(0 + 90)

= - sine(-90) + sine(90)
= - sine(270) + sine(90)
= -(-1) + 1
= 2

Now advance the phase at 45 degrees, and examine x = 90 degrees

For 45,90 (short circuit)
vtotS(wt,x) = - sine(45 - 90) + sine(45 + 90)
= - sine(-45) + sine(135)
= - sine(315) + sine(135)
= -(-0.707) + (0.707)
= 1.414

Now advance the phase to 90 degrees, examine at x = 90 degrees.
For 90,90, (short circuit),
vtotS(wr,x)= - sine(90 - 90) + sine(90 + 90)
= - sine(0) + sine(180)
= - 0 + 0
= 0

This discussion focused on voltage. Similar notation is used in equations for current and power.

73, Roger, W7WKB

483. Re: TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 19:35:45 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o4vol3bjcb6af@corp.supernews.com>
Source record: 29799

Roger Sparks wrote:
>
> Demo 5 is a demonstration of the pitfalls of dealing with discontinuities. The demonstration portrays equal periods of sequential open circuit conditions and short circuit conditions.
>
> The discontinuity here is that a reflection factor of 1 is used if the returning voltage is less than the initial voltage, but a reflection factor of -1 is used for any returning voltage exceeding the initial voltage.

That's not correct. A voltage source reflection factor of -1 is always used for the perfect source case, both in my analysis and in the program. See my analysis of Dec. 28 http://tinyurl.com/ypfshd.

> Demo 5 is a demonstration of why a Thevenin voltage source is much to be prefered over a simple ideal voltage source for continuous running circuits.

Ideal voltage sources are routinely and properly used in a great deal of circuit analysis. The problem with this transmission line setup isn't the use of perfect voltage source, it's that the entire system has no loss. Putting a finite resistance at the far end of the line, for example, results in a well-behaved system.

It sounds like you're confusing a Thevenin equivalent circuit with a voltage source in series with an impedance. All Thevenin equivalent circuits fit this description, but not all voltage sources in series with a resistance are Thevenin equivalents. I haven't used a Thevenin equivalent circuit in any of my analyses.

> Another way of illustrating the problem is to say that the ideal voltage source overwhelms any voltage from a returning wave. If an external voltage less than the initial voltage is applied to the ideal voltage source, vr = 0, vf = videal. If the external voltage exceeds the initial voltage, then vr = 0, vf = 0 This is a discontinuity, which shows up in Demo 5.

There are no discontinuites in the mathematical analysis. The forward and reverse waves always have a finite value or zero, and they always sum to the source voltage. No infinite currents or voltages occur. You can see from the program that the input voltage stays constant. (That is, it generates a sine wave of constant amplitude.) The only consequence is the oscillatory behavior of the line voltage and current.

> A third way of illustrating the discontinuity problem is to say that you can not apply a voltage to two wires that are short circuited at the input. In Demo 5, the reflected wave returns to find the circuit short circuited. On the other hand, the ideal voltage source applied voltage to an open circuit. We can not have it both ways.

Again, there is no discontinuity.

The demo 5 system doesn't represent anything that can be built in real life, and is basically just a curiosity. It was included mainly to verify that the program works properly under this limiting-case condition. It certainly has spurred some people to think about the meaning of perfect sources and reflection coefficients and revealed a lot of misunderstanding in the process, and I imagine it'll continue to do so.

Roy Lewallen, W7EL

484. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 19:35:54 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fltuursks1@f04n12.cac.psu.edu>
Source record: 29800

Cecil Moore wrote:
> Richard Clark wrote:
>> It is reported with every other aspect of the antenna by EZNEC.
>
> TravWave.EZ is not really an antenna. It is a loaded 1/4WL single-
> wire transmission line designed to display the nature of
> traveling waves. Take a look at the current phase vs the current
> phase of StndWave.EZ. Both files are available from my web page.

Hi Cecil

Are the formulas used for the calculations in Eznec compatible with what
you are trying to prove?

- 73 de Mike N3LI -

485. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 19:42:43 UTC
From: art <aunwin@insightbb.com>
Message-ID: <f423a845-edcc-4182-82b3-ee946e96dd1c@q77g2000hsh.googlegroups.com>
Source record: 29801

On 7 Jan, 10:15, Michael Coslo <m...@psu.edu> wrote:
> art wrote:
>
> > Probably so. But pseudo experts such as Roy and Tom and the three
> > Richards can't put o neck hold on the advances of science for ever,
> > for people like MK to follow in lockstep in the absence of knoweledge.
>
> Crikeys, Art!
>
> How on earth are your nemeses strangling science? Does anyone in here
> take these bar room brawls seriously?
>
> I mean just what would this strangulation achieve? Does IEEE keep an
> archive of rraa? the National Science Foundation?
>
> These arguments, For all their sound and fury, signify nothing.
>
> I rather thought that they boys were all just feeling their oats. At any
> rate, the great unwashed such as myself find it all amusing.
>
> - 73 de Mike N3LI -

In the scientific world it is a closed community and only within that
community can members create change. So you often hear that some very
clever people did not have their ideas examined until after they were
dead which can be a hundred years.Hams are a similar closed community
with respect to what creates radiation since they only accept books
and will not or cannot debate any alternatives.When in college you are
encouraged to debate which is way to retreat to the beginings and
build up a case in opposition to the opponent.This cannot happen in
ham radio because debates cannot happen except by those that deem
themselves as experts whose mission is to protect the status quo Thus
to become an expert one must follow the written word and deride those
that deign to question the status quo.When was the last to you read of
an open debate that was thouroughly discussed to a acceptable
conclusion? Well you haven't heard one because when two heads debate
one will always use personal attack as a means of retaliation.And I
mean always.
There is one discussion on this newsgroup that has gone on for several
years
and thousands of postings about travelling waves which I for one
consider them to be ficticious
in a resonant system. Do you ever believe one side or the other will
demonstrate the concepts

so all are on a common stage.? Hell no! Personal attacks were started
years ago in an attempt to cut down the debate and all must resign
themselves that the instant experts will defend the status quo for
ever. Will we ever see a painter sell his paintings for millions while
he is still alive?
Such is life! Such is death!
Art

486. electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 20:35:17 UTC
From: art <aunwin@insightbb.com>
Message-ID: <e7d00cd2-679a-427f-987e-9c15fd22a90a@j78g2000hsd.googlegroups.com>
Source record: 29802

I just looked the above title up on Google
Guess what! They show a graph of the magnetic wave
in a tipped manner which is exactly what computor programs show for a
radiator
in equilibrium. Shades of a diamagnetic field no less, which is not
the same as one seen when one uses non diamagnetic iron filings when
in junior high school.
These search engines are great since the evidence keeps piling up
where sooner or later the dam is going to break.Remember that guy who
came along with a NEC program that confirmed the tipped radiator. No
body challenged the results of NEC even when it opposed existing book
text! Why? They did not want to suggest that the books were in error
and thus would not debate the reults given independently.
Art

487. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 20:43:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o53nfrmrj7b94@corp.supernews.com>
Source record: 29803

Roger Sparks wrote:
>
> On Tue, 01 Jan 2008 23:13:18 -0800
> Roy Lewallen <w7el@eznec.com> wrote:
>
>> Second analysis: +0.5 input reflection coefficient
>>
>
> clip.......
>
>> so that the initial voltage at the line input is simply sin(wt). At any
>> point that the forward wave has reached, then,
>>
>> vf1(t, x) = sin(wt - x)
>>
>> The open far end of the line has a reflection coefficient of +1, so as
>> before the returning wave is:
>>
>> vr1(t, x) = sin(wt + x)
>>
>> (The change from -x to +x is due to the reversal of direction of
>> propagation. You'll see this with every reflection.) At any time between
>> when vf1 reflects from the output end (t = 2*pi/w) and when it reaches
>> the input end of the line (t = 4*pi/w), the total voltage at any point
>> the returning wave has reached is
>>
>> vtot = vf1(t, x) + vr1(t, x) = sin(wt - x) + sin(wt + x) [Eq. 1]
>>
>
> Roy's work is only provided as an example of the use of mathematical notation.
>
> The notation "vf1(t, x)" is not fully explained in the text, so any
> reader who is unfamiliar with the notation must do some additional
> study. This describes my situation, so after some study, this is what
> I think these terms mean, focusing on the two coordinates, wt and x.
>
> Roy is using phasor math here, a subject comprehensively covered
> elsewhere.

vf1(t, x) means that vf1 is a function of (varies with) both t and x.
Change t and/or x, and vf1 changes. This is not phasor notation, which I
specifically avoided. It is a simple description of the voltage at any
time and position. Plug t and x (and w, which stays fixed for the whole
analysis) into the argument of the sine function, poke it into your

pocket calculator, hit the sin key, and you have the voltage at that
time and place.

(Link http://campus.murraystate.edu/tsm/tsm118/Ch6/ch6_5/ch6_5.htm)

There are only two brief illustrations of a phasor (figs. 6-25 and 6-26)
in that document, which is otherwise just fine. The remainder of it is a
discussion of time functions like I've used.

> The sum of "wt" and "x" denote the phase angle of the wave, measured in
> degrees, both referenced to zero. Two angles are needed, one to represent the physical
location of each wave as a function of time, the second to locate the point of examination
of the wave. "wt" locates the wave in time and physical space . "x" locates the examination
point in physical space (on a transmission line in this case).

That's correct except for the description of wt. wt does not describe
the location of the wave in any way - it only tells how the value of the
wave changes with time. w converts the time, in seconds, to an angle in
radians which the sine function can be applied to.

> How is "x" located on the transmission line?

x is the distance from the input end of the line. It should be in the
same units as wt. I rather carelessly specified that it be in electrical
degrees, but that would be only if wt is also converted to degrees.

> My automatic assumption was that "x" was based at the input to the
> line. Thus, if the input was on the left side of the page, the line
> would extend to the right, and x would become larger when moving
> right.

Yes, that's correct.

> This led to a contradiction when I considered how the wave
> reflects from the right side upon encountering a discontinuity.
> Suddenly, a positive reflected wave represented by sine(-x) was made
> sine(x) at an open circuit. At position sin(90), the wave reversed and
> became sine(-90). It was if a factor of -1 was applied to the
> analysis, which was not the case here.

The change from -x to +x is due to the change in direction of
propagation. The input end of the line is at x = 0. In the examples, the
line is an integral number of wavelengths long, so the far end of the
line is x = n*2*pi radians (or n*360 degrees) where n is an integer. So
at those points, sin(wt - x) and sin(wt + x) are the same value.

> After considerable thought and time, I realized that the origin of "x"
> was not at the input point, but was at the reflection point. Then the
> notation made perfect sense.

Uh, oh.

> Forward wave->
> input->_____________________________________|Reflection point

> ++x <- increasing x <- Reflected wave 0
>
> Scale both the sine wave and physical line in degrees. The wave will repeat every 360 degrees (2pi radians). The x scale can be as long (in degrees or radians) as desired
>
> Think of the sine wave as an curve traced on a MOVING sheet of paper. The paper/curve moves in the direction of the forward wave. As the sine wave trace passes the zero point, the wave has a(unit) magnitude, described as sin(wt). Pick any wt and match wt to 0 on the physical scale. Then go to the x location of interest to find the magnitude of the sine wave at that location for one instant of time (wt).
>
> If a reflected wave is present, think of the same wave picture but moving in the opposite direction. When the reflection point is an open circuit, the reflected wave is generated by the forward wave so the two waves will always have a 1 to 1 corespondence at the zero point (point of reflection). The two waves are related by
>
> For the forward wave, vf(t, x) = sin(wt - x)
> For the reflected wave, vr(t, x) = sin(wt + x)
>
> For the total voltage at any point (open circuit case).
> vtot = vf(t, x) + vr(t, x)
> = sin(wt - x) + sin(wt + x)

This looks ok so far, but with x = 0 at the input end of the line, as I described. Let me show you -- start TLVis1, demo 1, and pause it just as the initial wave reaches the end. (The line is two wavelengths, by the way, not 3 as I incorrectly said in my introductory posting.) You've stopped it at wt = 4*pi radians, or 720 degrees, using a frequency of 1 Hz for simplicity. (I'll use degrees since most of us think better in degrees than radians.) What is the value of the voltage 1/4 wave from the input end of the line (x = 90 degrees)? sin(wt - x) = sin(720 - 90 deg.) = sin(-90 deg) = -1, which you can see is correct. What's the value 1/4 wave from the far end of the line (x = 630 deg.)? sin(720 - 630) = sin(90) = +1, which you can see is also correct.

Now start the analysis again and run it until the reflected wave reaches the source, and pause it again. You're now at wt = 1440 degrees. What's the value of the reflected wave at x = 90 degrees, that is, 90 degrees from the input end of the line? sin(wt + x) = sin(1440 + 90) = sin(90) = +1. 90 degrees from the far end (x = 630 deg), the value is sin(1440 + 630) = -1. These are what what the graph shows. You'll find that at every point, at every time, the value of the forward wave is k * sin(wt - x) and the reverse wave k * sin(wt + x) with x = 0 at the line input. (k changes at each reflection). Please let me know if you see any time or position for which this isn't true.

> When the reflection point is a short circuit, the voltage becomes zero at the short. The sum of forward and reflected wave voltages (at the short) will always be zero.

That's correct.

> Mathematically, this is accomplished by multiplying either the forward or reflective part of the equation a factor of -1.

It's done by applying a reflection coefficient of -1 to the impinging wave to result in a reflected wave which is equal and opposite in phase.

> The effect is to shift the phase of both forward and reflected waves by 90 degrees for a total of 180 degrees.

No. The analysis using superposition treats the forward wave and reverse waves separately. Reflection has no effect on the forward wave, and it creates a reflected wave. The reflected wave is the inverse of the forward wave if the reflection coefficient is -1.

We will apply the factor of -1 to the forward wave to maintain polarity consistancy with the open circuit case.
>
> vfS(t, x) = -sine(wt - x) For short circuit reflection.

I'm not quite sure what you're doing here. If the impinging wave is sin(wt - x), the reflected wave is -sin(wt + x) upon hitting a short circuit. If the impinging wave is sin(wt + x), its reflection is -sin(wt - x).

> Notice that if x = 0,
>
> vtotS(t, x) = -vfS(t, x) + vrS(t, x)
> = -sine(wt) + sine(wt)
> = 0
>
> For practice, let's analyze a transmission line fed at one end, open at the other. The relfections will have a voltage equal to the forward voltage at all times so we will use the equation
> vtot = sin(wt - x) + sin(wt + x)
>
> Assuming one volt peak for the sine wave amplitude (a unit amplitude), find the voltage at points vtot(wt, x),(0,0),(90,0),(180,0),(270,0),(360,0). Notice that every voltage will be computed at the reflection point, x = 0.

I'm not sure, but it looks like you're analyzing the sum of one forward and one reflected wave, at the far end of the line. At wt = 0, there is no voltage at the far end of the line. Perhaps you're also referencing the time to the reflection point, that is, t = 0 is when the wave reflects?

> For 0,0, vtot(wt,x) = sine(0 - 0) + sine(0 + 0) = 0
> For 90,0 vtot(wt,x) = sine(90 - 0) + sine(90 + 0) = 2v
> For 180,0, vtot(wt,x) = sine(180 - 0) + sine(180 + 0) = 0
> For 270,0, vtot(wt,x) = sine(270 - 0) + sine(270 + 0) = -2v
> For 360,0, vtot(wt,x) = sine(360 - 0) + sine(360 + 0) = 0

Those are correct values. You get the same result when you measure x from the input end of the line and time from when the source is turned on.
>
> In this example, one complete sine wave cycle has passed the x origin.

By which I believe you mean the far end of the line.

> For the next example, let's assume we want to compute the voltage at the point located 45 degrees from the reflection point at the same time that the voltage at the end is at a maximum. The maximum points for voltage at the end occurs when the 90 and 270 degree phases reach the reflection point. Lets look at the 90 degree case.
>
> For 90,45, vtot(wt,x) = sine(90 - 45) + sine(90 + 45)
> = sine(45) + sine(135)
> = 0.707 + 0.707
> = 1.414v
> For 90,135, vtot(wt,x) = sine(90 - 135) + sine(90 + 135) = 0
> = sine(-45) + sine(225)
> = sine(225) + sine(225)
> = -0.707 + (-0.707)
> = -1.414v
>
> We can continue this process to find the voltage envelope for any location/phase relationship desired. It works equally well for the short circuit case.

Where this would run into trouble would be on a line which is not an integral number of wavelengths long.

Certainly, you could use any point on or off the line as the x reference, and any time t as the t reference, as long as you modify the equations appropriately, as I believe you've shown. Your equations have reversed the sign of x and the roles of forward and reflected waves, to arrive at the same result when the two are summed.

The equations I presented use the input end of the line as the x reference and the time of source turn-on as the t reference. The equations were simpler because of the chosen line lengths, but apply to all line lengths when the appropriate phase terms are added.

>
> Let's look at the case for short circuited 0 degree case, where the phase is 0 degrees, and examination point is 90 degrees.
>
> For 0,90 (short circuit),
> vtotS(wt,x) = - sine(0 - 90) + sine(0 + 90)
> = - sine(-90) + sine(90)
> = - sine(270) + sine(90)
> = -(-1) + 1
> = 2
>
> Now advance the phase at 45 degrees, and examine x = 90 degrees
>
> For 45,90 (short circuit)
> vtotS(wt,x) = - sine(45 - 90) + sine(45 + 90)
> = - sine(-45) + sine(135)
> = - sine(315) + sine(135)
> = -(-0.707) + (0.707)
> = 1.414

>
> Now advance the phase to 90 degrees, examine at x = 90 degrees.
> For 90,90, (short circuit),
> vtotS(wr,x)= - sine(90 - 90) + sine(90 + 90)
> = - sine(0) + sine(180)
> = - 0 + 0
> = 0
>
> This discussion focused on voltage. Similar notation is used in equations for current and power.
>
This is an interesting alternative analysis. Is there any point on the line at any time for which it predicts a different result than my analysis? Does it correctly show the voltage of each forward and reflected wave individually as well as its sum? If so, then it's an equally valid analysis for this condition of integral wavelength lines.

If I get the time I'll try to extend either the analysis or program, or both, to non-integral-wavelength line lengths.

Roy Lewallen, W7EL

488. Re: TLVis1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 20:46:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tcwgj.3395$El5.1930@newssvr22.news.prodigy.net>
Source record: 29804

Roy Lewallen wrote:
> There are no discontinuites in the mathematical analysis.

Maybe this is the source of a lot of confusion. If the Z0
of a transmission line changes from 50 ohms to 300 ohms,
that *IS* an impedance discontinuity. Any change in Z0
IS an impedance discontinuity, i.e. not a constant Z0.
Only a constant Z0 is not an impedance discontinuity.
--
73, Cecil http://www.w5dxp.com

489. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 20:53:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cjwgj.3396$El5.2423@newssvr22.news.prodigy.net>
Source record: 29805

Michael Coslo wrote:
> Are the formulas used for the calculations in Eznec compatible with what
> you are trying to prove?

EZNEC seems to be reporting the envelope,
not the instantaneous values but that is
sufficient for what I am trying to prove.

"Trying to prove"? Shirley, you jest. What
I am saying was proven more than a century
ago. What the heck has happened to the US
educational system since I went to Texas A&M
during the 50s?

The differences between standing-wave antennas
and traveling-wave antennas have been understood
for more than a century. That there is so much
ignorance exhibited on this newsgroup is not my
fault.
--
73, Cecil http://www.w5dxp.com

490. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 20:57:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lmwgj.3397$El5.1731@newssvr22.news.prodigy.net>
Source record: 29806

Roy Lewallen wrote:
> This is an interesting alternative analysis. Is there any point on the
> line at any time for which it predicts a different result than my
> analysis? Does it correctly show the voltage of each forward and
> reflected wave individually as well as its sum? If so, then it's an
> equally valid analysis for this condition of integral wavelength lines.

In the past, you have absolutely rejected any and all equally valid
analysis. Are you now changing your mind?
--
73, Cecil http://www.w5dxp.com

491. Re: Antenna designs for noise cancellation on HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 21:44:50 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <SNIATCjS1pgHFAIw@ifwtech.co.uk>
Source record: 29807

cliff wright wrote:
>Hi! Any one come across any designs for recieving antennas for HF
>(especially 14 MHz) for use in a situation with a lot of QRN.
>This seems to be radiated from local power lines, but despite the lnes
>in our subdivision being underground we still get a S6/S7 noise level.
>Yes we have contacted the authorities but so far no useful result.
>It seems somewhat worse on my 5/8 wave vertical than on my G5RV doublet.
>Neither myself no a neighbouring Ham have been able to find a way
>around this problem despite us both being experienced "old timers".
>Some sort of "noise antenna" and phasing arrangement is contemplated
>but we have not as yet found a suitable design.
>Any ideas welcome!
>73's Cliff Wright ZL1BDA ex G3NIA

Chip Angle, N6CA, presents some very interesting ideas for a 50MHz noise cancelling system at: http://tinyurl.com/22gqab

The circuits for phase adjustment, gain control and summing (cancellation) should all scale easily to HF. However, the noise can only be cancelled completely if it behaves like a signal originating from single point. Noise from power lines may be arriving with a spread of amplitudes and phases.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

492. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 22:01:32 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <iYydnS0B7sSnPB_anZ2dnUVZ_qainZ2d@bright.net>
Source record: 29808

To add to what PA3DJS has observed:

I have seen the use of near-field measurements to determine directivity and gain at the (then) NBS in Bolder, Col. A huge x-y table was used to move a probe over the face of an energized microwave antenna. Lasers (with cycle counters and mirrors) were used to measure the actual coordinates of the probe! A staggering amount of data was collected over a long period of time and then digested over another long period of time. This was done inside of a very large building where reflections were minimal.

To use this technique at, say, 10 MHz with a yagi would be improbable, but not impossible.

73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Wimpie" <wimtel@tetech.nl> wrote in message
news:215edac9-d84c-4303-97c2-f10c8951b960@v29g2000hsf.googlegroups.com...
> On 7 ene, 04:25, richardharri...@webtv.net (Richard Harrison) wrote:

<snip>
> Hi Richard,
>
> You can determine radiated power and radiation pattern by near field
> measurements (theoretically). Please search for "poynting theorem"
> and "Huygens principle", "Huygens Source" or "Fresnel diffraction
> theory". Most texts require differential vector calculus.
>
> Because determining radiated power based on E- and H-Field measurement
> is generally not feasible for amateurs (and even for many
> professionals), I suggested another approach based on E-field
> measurements and EM simulation.
>
> As absolute E-field measurement and EM simulation are within the reach
> of amateur radio operators, one can both tune for maximum field and
> determine absolute radiated power.
>
> Of course you don't know how much power is dissipated in nearby
> structures (buildings, etc).
>
> Best regards,
>
> Wim
> PA3DJS

> www.tetech.nl

493. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 22:53:26 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080107145326.9715ed86.rsparks@elltel.net>
Source record: 29809

```
On Mon, 07 Jan 2008 12:43:24 -0800
Roy Lewallen <w7el@eznec.com> wrote:

> Roger Sparks wrote:
> >
> > On Tue, 01 Jan 2008 23:13:18 -0800
> > Roy Lewallen <w7el@eznec.com> wrote:
> >
> >> Second analysis: +0.5 input reflection coefficient
> >>
> >
> > clip.......
> >
> >> so that the initial voltage at the line input is simply sin(wt). At any
> >> point that the forward wave has reached, then,
> >>
> >> vf1(t, x) = sin(wt - x)
> >>
> >> The open far end of the line has a reflection coefficient of +1, so as
> >> before the returning wave is:
> >>
> >> vr1(t, x) = sin(wt + x)
> >>
> >> (The change from -x to +x is due to the reversal of direction of
> >> propagation. You'll see this with every reflection.) At any time between
> >> when vf1 reflects from the output end (t = 2*pi/w) and when it reaches
> >> the input end of the line (t = 4*pi/w), the total voltage at any point
> >> the returning wave has reached is
> >>
> >> vtot = vf1(t, x) + vr1(t, x) = sin(wt - x) + sin(wt + x) [Eq. 1]
> >>
> >
> > Roy's work is only provided as an example of the use of mathematical notation.
> >
> > The notation "vf1(t, x)" is not fully explained in the text, so any
> > reader who is unfamiliar with the notation must do some additional
> > study. This describes my situation, so after some study, this is what
> > I think these terms mean, focusing on the two coordinates, wt and x.
> >
> > Roy is using phasor math here, a subject comprehensively covered
> > elsewhere.
>
> vf1(t, x) means that vf1 is a function of (varies with) both t and x.
> Change t and/or x, and vf1 changes. This is not phasor notation, which I
```

> specifically avoided. It is a simple description of the voltage at any
> time and position. Plug t and x (and w, which stays fixed for the whole
> analysis) into the argument of the sine function, poke it into your
> pocket calculator, hit the sin key, and you have the voltage at that
> time and place.
>
> (Link http://campus.murraystate.edu/tsm/tsm118/Ch6/ch6_5/ch6_5.htm)
>
> There are only two brief illustrations of a phasor (figs. 6-25 and 6-26)
> in that document, which is otherwise just fine. The remainder of it is a
> discussion of time functions like I've used.
>
> > The sum of "wt" and "x" denote the phase angle of the wave, measured in
> > degrees, both referenced to zero. Two angles are needed, one to represent the physical location of each wave as a function of time, the second to locate the point of examination of the wave. "wt" locates the wave in time and physical space . "x" locates the examination point in physical space (on a transmission line in this case).
>
> That's correct except for the description of wt. wt does not describe
> the location of the wave in any way - it only tells how the value of the
> wave changes with time. w converts the time, in seconds, to an angle in
> radians which the sine function can be applied to.
>
> > How is "x" located on the transmission line?
>
> x is the distance from the input end of the line. It should be in the
> same units as wt. I rather carelessly specified that it be in electrical
> degrees, but that would be only if wt is also converted to degrees.
>
> > My automatic assumption was that "x" was based at the input to the
> > line. Thus, if the input was on the left side of the page, the line
> > would extend to the right, and x would become larger when moving
> > right.
>
> Yes, that's correct.
>
> > This led to a contradiction when I considered how the wave
> > reflects from the right side upon encountering a discontinuity.
> > Suddenly, a positive reflected wave represented by sine(-x) was made
> > sine(x) at an open circuit. At position sin(90), the wave reversed and
> > became sine(-90). It was if a factor of -1 was applied to the
> > analysis, which was not the case here.
>
> The change from -x to +x is due to the change in direction of
> propagation. The input end of the line is at x = 0. In the examples, the
> line is an integral number of wavelengths long, so the far end of the
> line is x = n*2*pi radians (or n*360 degrees) where n is an integer. So
> at those points, sin(wt - x) and sin(wt + x) are the same value.
>
> > After considerable thought and time, I realized that the origin of "x"

> > was not at the input point, but was at the reflection point. Then the
> > notation made perfect sense.
>
> Uh, oh.
>
> > Forward wave->
> > input->_____|Reflection point
> > ++x <- increasing x <- Reflected wave 0
> >
> > Scale both the sine wave and physical line in degrees. The wave will repeat every 360 degrees (2pi radians). The x scale can be as long (in degrees or radians) as desired
> >
> > Think of the sine wave as an curve traced on a MOVING sheet of paper. The paper/curve moves in the direction of the forward wave. As the sine wave trace passes the zero point, the wave has a(unit) magnitude, described as sin(wt). Pick any wt and match wt to 0 on the physical scale. Then go to the x location of interest to find the magnitude of the sine wave at that location for one instant of time (wt).
> >
> > If a reflected wave is present, think of the same wave picture but moving in the opposite direction. When the reflection point is an open circuit, the reflected wave is generated by the forward wave so the two waves will always have a 1 to 1 corespondence at the zero point (point of reflection). The two waves are related by
> >
> > For the forward wave, vf(t, x) = sin(wt - x)
> > For the reflected wave, vr(t, x) = sin(wt + x)
> >
> > For the total voltage at any point (open circuit case).
> > vtot = vf(t, x) + vr(t, x)
> > = sin(wt - x) + sin(wt + x)
>
> This looks ok so far, but with x = 0 at the input end of the line, as I
> described. Let me show you -- start TLVis1, demo 1, and pause it just as
> the initial wave reaches the end. (The line is two wavelengths, by the
> way, not 3 as I incorrectly said in my introductory posting.) You've
> stopped it at wt = 4*pi radians, or 720 degrees, using a frequency of 1
> Hz for simplicity. (I'll use degrees since most of us think better in
> degrees than radians.) What is the value of the voltage 1/4 wave from
> the input end of the line (x = 90 degrees)? sin(wt - x) = sin(720 - 90
> deg.) = sin(-90 deg) = -1, which you can see is correct. What's the
> value 1/4 wave from the far end of the line (x = 630 deg.)? sin(720 -
> 630) = sin(90) = +1, which you can see is also correct.
>
> Now start the analysis again and run it until the reflected wave reaches
> the source, and pause it again. You're now at wt = 1440 degrees. What's
> the value of the reflected wave at x = 90 degrees, that is, 90 degrees
> from the input end of the line? sin(wt + x) = sin(1440 + 90) = sin(90) =
> +1. 90 degrees from the far end (x = 630 deg), the value is sin(1440 +
> 630) = -1. These are what what the graph shows. You'll find that at
> every point, at every time, the value of the forward wave is k * sin(wt
> - x) and the reverse wave k * sin(wt + x) with x = 0 at the line input.

> (k changes at each reflection). Please let me know if you see any time
> or position for which this isn't true.
>
> > When the reflection point is a short circuit, the voltage becomes zero at the short.
The sum of forward and reflected wave voltages (at the short) will always be zero.
>
> That's correct.
>
> > Mathematically, this is accomplished by multiplying either the forward or reflective
part of the equation a factor of -1.
>
> It's done by applying a reflection coefficient of -1 to the impinging
> wave to result in a reflected wave which is equal and opposite in phase.
>
> > The effect is to shift the phase of both forward and reflected waves by 90 degrees for
a total of 180 degrees.
>
> No. The analysis using superposition treats the forward wave and reverse
> waves separately. Reflection has no effect on the forward wave, and it
> creates a reflected wave. The reflected wave is the inverse of the
> forward wave if the reflection coefficient is -1.
>
> We will apply the factor of -1 to the forward wave to maintain
> polarity consistancy with the open circuit case.
> >
> > vfS(t, x) = -sine(wt - x) For short circuit reflection.
>
> I'm not quite sure what you're doing here. If the impinging wave is
> sin(wt - x), the reflected wave is -sin(wt + x) upon hitting a short
> circuit. If the impinging wave is sin(wt + x), its reflection is -sin(wt
> - x).
>
> > Notice that if x = 0,
> >
> > vtotS(t, x) = -vfS(t, x) + vrS(t, x)
> > = -sine(wt) + sine(wt)
> > = 0
> >
> > For practice, let's analyze a transmission line fed at one end, open at the other. The
relfections will have a voltage equal to the forward voltage at all times so we will use
the equation
> > vtot = sin(wt - x) + sin(wt + x)
> >
> > Assuming one volt peak for the sine wave amplitude (a unit amplitude), find the voltage
at points vtot(wt, x),(0,0),(90,0),(180,0),(270,0),(360,0). Notice that every voltage will
be computed at the reflection point, x = 0.
>
> I'm not sure, but it looks like you're analyzing the sum of one forward
> and one reflected wave, at the far end of the line. At wt = 0, there is
> no voltage at the far end of the line. Perhaps you're also referencing

> the time to the reflection point, that is, t = 0 is when the wave reflects?
>
> > For 0,0, vtot(wt,x) = sine(0 - 0) + sine(0 + 0) = 0
> > For 90,0 vtot(wt,x) = sine(90 - 0) + sine(90 + 0) = 2v
> > For 180,0, vtot(wt,x) = sine(180 - 0) + sine(180 + 0) = 0
> > For 270,0, vtot(wt,x) = sine(270 - 0) + sine(270 + 0) = -2v
> > For 360,0, vtot(wt,x) = sine(360 - 0) + sine(360 + 0) = 0
>
> Those are correct values. You get the same result when you measure x
> from the input end of the line and time from when the source is turned on.
> >
> > In this example, one complete sine wave cycle has passed the x origin.
>
> By which I believe you mean the far end of the line.
>
> > For the next example, let's assume we want to compute the voltage at the point located 45 degrees from the reflection point at the same time that the voltage at the end is at a maximum. The maximum points for voltage at the end occurs when the 90 and 270 degree phases reach the reflection point. Lets look at the 90 degree case.
> >
> > For 90,45, vtot(wt,x) = sine(90 - 45) + sine(90 + 45)
> > = sine(45) + sine(135)
> > = 0.707 + 0.707
> > = 1.414v
> > For 90,135, vtot(wt,x) = sine(90 - 135) + sine(90 + 135) = 0
> > = sine(-45) + sine(225)
> > = sine(225) + sine(225)
> > = -0.707 + (-0.707)
> > = -1.414v
> >
> > We can continue this process to find the voltage envelope for any location/phase relationship desired. It works equally well for the short circuit case.
>
> Where this would run into trouble would be on a line which is not an
> integral number of wavelengths long.

No, it would work for any line length. The line length is the largest x value picked. For instance, to see the voltages at 597 degrees for a line 597 degrees long, make the x line at least 597 degrees long. Because the phase completely rotates every 360 degrees, a line 597-360 = 237 degrees long will have the same voltage relationship.

Assume we want to compute the total voltage at the input when the input is at peak applied voltage (as if from in ideal source) at +90 degrees. Using the 597 degree long line, wt at the end of the line will be 90 + 597 = 687 degrees. We are examining the line at 597 degrees so x would be 597 degrees.

For 687,597, vtot(wt,x) = sine(687 - 597) + sine(687 + 597)
= sine(327 - 237) + sine(327 + 237)
= sine(90) + sine(564)
= sine(90) + sine(204)
= 1 + (-.406)

= 0.594v

I hope you come up with the same value.

>
> Certainly, you could use any point on or off the line as the x
> reference, and any time t as the t reference, as long as you modify the
> equations appropriately, as I believe you've shown. Your equations have
> reversed the sign of x and the roles of forward and reflected waves, to
> arrive at the same result when the two are summed.
>
> The equations I presented use the input end of the line as the x
> reference and the time of source turn-on as the t reference. The
> equations were simpler because of the chosen line lengths, but apply to
> all line lengths when the appropriate phase terms are added.
>
> >
> > Let's look at the case for short circuited 0 degree case, where the phase is 0 degrees,
and examination point is 90 degrees.
> >
> > For 0,90 (short circuit),
> > vtotS(wt,x) = - sine(0 - 90) + sine(0 + 90)
> > = - sine(-90) + sine(90)
> > = - sine(270) + sine(90)
> > = -(-1) + 1
> > = 2
> >
> > Now advance the phase at 45 degrees, and examine x = 90 degrees
> >
> > For 45,90 (short circuit)
> > vtotS(wt,x) = - sine(45 - 90) + sine(45 + 90)
> > = - sine(-45) + sine(135)
> > = - sine(315) + sine(135)
> > = -(-0.707) + (0.707)
> > = 1.414
> >
> > Now advance the phase to 90 degrees, examine at x = 90 degrees.
> > For 90,90, (short circuit),
> > vtotS(wr,x)= - sine(90 - 90) + sine(90 + 90)
> > = - sine(0) + sine(180)
> > = - 0 + 0
> > = 0
> >
> > This discussion focused on voltage. Similar notation is used in equations for current
and power.
> >
> This is an interesting alternative analysis. Is there any point on the
> line at any time for which it predicts a different result than my
> analysis?

Not that I know of. I think you are not really using x, but x plus line length in your equations. This continues to have me confused.

> Does it correctly show the voltage of each forward and
> reflected wave individually as well as its sum? If so, then it's an
> equally valid analysis for this condition of integral wavelength lines.

So far as I have tested, yes. There is no reason to use the reflection point as the reference unless it simplifies the equations or improves understanding.

>
> If I get the time I'll try to extend either the analysis or program, or
> both, to non-integral-wavelength line lengths.
>
> Roy Lewallen, W7EL

Using the reflection point as the zero reference seems to correspond with an observation you made about the end of the line controlling the SWR.

73, Roger, W7WKB

494. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 23:20:12 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fluc3hqat1@aioe.org>
Source record: 29810

"art" wrote
> I just looked the above title up on Google
> Guess what! They show a graph of the magnetic wave
> in a tipped manner which is exactly what computor programs show for a
> radiator in equilibrium.

"art"

I decided to try your search method, which returned about 363,000 hits.

If you want to prove your belief, you would do well to post the URL
to whatever website(s) you claim will do so.

RF

495. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 23:26:16 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4782b51a$0$28839$4c368faf@roadrunner.com>
Source record: 29811

"Richard Clark" <kb7qhc@comcast.net> wrote in message

> Now, if you would simply take my advice to heart: strip away the
> static and ask the question that is plaguing you.

OK. Thank you for your patience. You said "The SWR on the wire is load-
based and is equal to 8:1 as evidenced by CURRENT on the wire. :-)

You cannot make a SWR measurement on a receive antenna any other way."

My very simple question: How do I measure that ISWR current?

Please describe possible meters and probes and where on the receive antenna
do I measure this current? At the input? At the nodes? At the zero crosses?
How do you calculate ISWR? Is it Imax/Imin? I am only trying to
conceptualize what you mean. Do you have to block the reverse current
somehow and measure forward current and vice versa? What does this do to the
standing wave? What does any direct current measurement do to the ISWR
itself?

496. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-07 23:50:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <vle5o3llhq8pbslvgo6nis91p05qbmmh2v@4ax.com>
Source record: 29812

On Mon, 07 Jan 2008 18:12:59 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>>>feedpoint SWR is 1.032:1.
>>
>> Which, of course, has nothing to do with Standing Waves ON THE
>> ANTENNA.

497. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 00:35:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9pe5o3ljgtbvbj8ivu66t7s6p75mr9897p@4ax.com>
Source record: 29813

On Mon, 7 Jan 2008 18:26:16 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>
>> Now, if you would simply take my advice to heart: strip away the
>> static and ask the question that is plaguing you.
>
>OK. Thank you for your patience. You said "The SWR on the wire is load-
>based and is equal to 8:1 as evidenced by CURRENT on the wire. :-)

Hi Dan,

Well, in fact I don't recall having said anything about "Load-Based,"
but it is immaterial to your question(s).

>You cannot make a SWR measurement on a receive antenna any other way."

You are still trapped in a loose thread of associations.

We will get back to that in a moment (I hate doing this, trying to
intuit what you are after). The specific comment you recite above is
wholly out of context, and is being joined to a new one. This is why
I ask you to strip out the noise and ask the question that is
bothering you.

>My very simple question: How do I measure that ISWR current?

Specifically, as you have already suggested, with a loop pickup.
However, in my career I have never encountered its use as a precision
device when measuring voltage is so much easier. EZNEC does not
report voltage (although it could be computed, I will leave that to
others as there is no significant information obtained in that
exercise).

>Please describe possible meters and probes and where on the receive antenna
>do I measure this current?

I've commented on that already. But this tied back into receive and
you will not find a satisfactory, bench answer for that which is
practical (in the sense of $).

>At the input?

For waves on a line you go to the line. EZNEC provides this quite
clearly and even provides a graphic solution if you are not into the
actual numbers.

>At the nodes? At the zero crosses?
>How do you calculate ISWR? Is it Imax/Imin?

That is the conventional way to observe Standing Waves.

>I am only trying to
>conceptualize what you mean. Do you have to block the reverse current
>somehow and measure forward current and vice versa? What does this do to the
>standing wave? What does any direct current measurement do to the ISWR
>itself?

Dan, you've got yourself wrapped around the axle and here I have to force a solution to your problem that you only vaguely offer through a chain of disconnected references above.

First, you spend an inordinate amount of effort quoting to the point of receiving, and yet none of your questions appear to be aware of the significance of receiving with these breed of (Traveling Wave) antennas.

Cecil's wire, one foot off the ground, is strongly influenced by its proximity. I demonstrated that. However, Cecil divorces this effect while embracing his goal of explaining away the confusion about Traveling Wave antennas. This one foot high monstrosity is most closely allied with the Beverage antenna which was developed with ground in mind and even here, Cecil corrupts this concept to turn his model into a Traveling Wave transmission line. In effect, his is a bait and switch argument as he abandoned the "explanation" 350 posts ago and never returned until I forced the argument.

Cecil, under protest to my proofs of Standing Wave on these Traveling Wave, then supplied a citation that heads this very thread:
>>"Because the Beverage is a
>>traveling wave, terminated antenna, it has no standing
>>waves resulting from radio signals."

It contains FROM radio signals. FROM is an externality. In other words the antenna must be externally excited to test the validity of this specific statement. Further, this statement has its own internal logic in that the antenna (the Beverage) is a RECEIVE antenna. Further, this statement has its own internal logic in that a Beverage antenna employs ground as an active element. Hence, all internal logical characteristics are consistent with the statement about externality. Any reference to source SWR is wholly inappropriate.

EZNEC is perfectly capable of measuring a receive antenna, if you can supply an antenna to excite it. I did so explicitly. The reports offered by EZNEC will give you a source SWR reading like Cecil quoted, but that is entirely unrelated to the receive antenna performance. I did not report that reading for that reason, Cecil did - for whatever reason, but a reason that bore no relation to Standing/Traveling waves on the test antenna.

EZNEC will report all currents on all wires everywhere. When the Beverage is excited by a source 100 kilometers away, those currents in the wires defining the Beverage exhibit classic Standing Waves. This is quite simple.

Now as to your enquiry in how to measure those currents. That is not practical at the nanoAmpere levels, but software does it quite easily. If I were tasked to do it, I would immediately transform this into the voltage model, modulate the source with an unique pattern, and perform a synchronous detection of the levels involved along the length of the line. A trivial concept that is difficult in practice.

Now, I have pounded out a lot of words in an effort to eke out your question. Was it answered?

73's
Richard Clark, KB7QHC

498. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 00:41:08 UTC
From: art <aunwin@insightbb.com>
Message-ID: <d67fdb6f-7b58-44af-b610-82d43a34912d@i12g2000prf.googlegroups.com>
Source record: 29814

On 7 Jan, 15:20, "Richard Fry" <r...@adams.net> wrote:
> "art" wrote> I just looked the above title up on Google
> > Guess what! They show a graph of the magnetic wave
> > in a tipped manner which is exactly what computor programs show for a
> > radiator in equilibrium.
>
> ------
>
> "art"
>
> I decided to try your search method, which returned about 363,000 hits.
>
> If you want to prove your belief, you would do well to post the URL
> to whatever website(s) you claim will do so.
>
> RF

Yes, that would help if hams were intersted but they are not.They do not agree that a diamagnetic field is different to any other field and the ham radio books will not tell them otherwise. Look at the simple math of adding a time varient field to Gaussian law makes it exactly the same as Maxwells law.but hams will not accept the math. Is it any wonder that manufacturers are going overseas for engineers because american education is one of rote. If you add up the post graduates working on research at any american university foreign graduates out number american students. Micro soft wants more engineers , not from America tho. As far as the URL it was the first one on the list If hams were interested in ham radio for other than only talking they would have no problem finding it. Fact is that they have no idea what a diamagnetic material actualy is or why they should care. I doubt that it is even mentioned anywhere by the ARRL.I wonder why you are checking things out,as an engineer you should be aware of the facts already.Not one ham on this newsgroup could verfy the shape of a diamagnetic
field wth respect to current flow. Yet all consider themselves as competant enough to describe a bouncing wave even tho they don't know the qualities required for a radiation material.
Art

499. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 00:56:53 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4782ca49$0$8797$4c368faf@roadrunner.com>
Source record: 29815

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:nEtgj.34404$JD.16804@newssvr21.news.prodigy.net...
> Richard Clark wrote:
>> The demonstration is remarkable enough to accomplish what
>> you set out to do, clear up the confusion about standing waves on a
>> Rhombic, and then later a Beverage
>
> There's no confusion. Terminated rhombics and Beverages are
> traveling-wave antennas. Their currents are primarily:
>
> I(x,t) = Io*cos(kx-wt)
>
> A 1/2WL dipole is a standing-wave antenna. It's current is
> primarily:
>
> I(x,t) = Io*cos(kx)*cos(wt)
>
> There's no confusion except in your mind.

But I think this is a very difficult point for many, even physicists and engineers who do not deal with it often.

People need to understand the huge difference in the 2 waveforms that you present. The traveling wave (1st equation) is an oscillating cosine function in the normal sense where phase changes can be measured. It "travels" down the wire dustance. The "Io*cos(kx)*cos(kt) describes a fixed envelope over distance, of oscillating cosine functions over time, that does not travel (move) over the wire distance...it literally "stands". Some people somehow measure the 'delay' in a standing wave because they think they see a "phase" change. There is none. But once you get past the zero crosses theire will be variations in amplitude with time, at whichever point the standing wave "stands". Obviously that has nothing to do with phase changes.

500. Re: r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 01:05:28 UTC
From: art <aunwin@insightbb.com>
Message-ID: <e6e86fa8-0728-408e-84ab-70f1ade2bdfd@i3g2000hsf.googlegroups.com>
Source record: 29816

On 6 Jan, 18:39, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:ab630d0b-572c-4c4c-b287-c92c582c1fb8@d21g2000prf.googlegroups.com...
>
> "Did you ever think that your post would last this long? Obviously the
> regular contributors
> in this group cannot handle the truth and thus will not consult
> anything.Now the experts are argueing over the term SWR a very, very,
> deep discussion revealing things unknown to the amateur community at
> this time. [...]"
>
> Hello Art, the concept of SWR is extremely misunderstood even by people with
> degrees in electronics engineering. It is assumed to be simple, yet many
> people get it wrong. Indeed, a good understanding is essential for antenna
> development. I do not fault anyone for not understanding the concept because
> standing waves, simple as they may seem, are actually expressed as the
> product of a cos wave over distance and a sine wave over time. Many things
> are happening over the length of the antenna as the function is operating.
> If you think of it, it is the essence of space-time and it may be productive
> for you to consider it even more broadly in your own hypotheses, more
> broadly that is by possibly incorporating the mechancial SWR analogues to
> voltage/current SWR's and who knows what new ideas may come to mind with
> your model.

I don't understand a lot of this talk about waves bouncing which is
fortunate. Icould not possibly stay on a thread where everybody is
talking past each other and then changing the subject as they didn't
understand the subject in the first place. In ham radio nothing is
believed if it is contrary to the norm.This bouncing wave thing will
never come to closure as all participants are deaf. As far as me
getting involved all the answers involved in my description of radio
are known facts in the scientific world and fully coroberated. Heck
they are even corroberated by existing antenna computor programs and
actual tests. I can't see how these waves fit in with classical
science so it must be another invented science that it referes to. Now
if the trend changed to debate the voracity of existing accepted data
is proved to be incorrect then they would have my attention but the
group is not competant enough for that trail.
Regards
Art

501. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 01:13:32 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4782ce31$0$8846$4c368faf@roadrunner.com>
Source record: 29817

```
"Roger Sparks" <rsparks@elltel.net> wrote in message
news:20080107112546.ac4dd8f4.rsparks@elltel.net...
> On Mon, 07 Jan 2008 12:34:03 -0600
> Cecil Moore <nospam@w5dxp.com> wrote:
>
>> Roger Sparks wrote:
>> > What is the common reference point of x,t? In other words, when both x
>> > and t are zero, where on the antenna is the zero location?
>>
>> By convention, x=0 and t=0 are at the feedpoint with the same
>> phase as the feedpoint signal. Thus, at the feedpoint, the
>> current is equal, but at no other point until one wavelength
>> is reached.
>> --
>> 73, Cecil http://www.w5dxp.com
>
> Thanks Cecil.
>
> This provides a great entry to post my conclusions after studying over the
> weekend. I use some of Roy's work in this but only as an example of how
> equations are written, not as an example of accuracy. Thanks Roy, for
> providing the material.
>
>
> On Tue, 01 Jan 2008 23:13:18 -0800
> Roy Lewallen <w7el@eznec.com> wrote:
>
>> Second analysis: +0.5 input reflection coefficient
>>
>
> clip.......
>
>> so that the initial voltage at the line input is simply sin(wt). At any
>> point that the forward wave has reached, then,
>>
>> vf1(t, x) = sin(wt - x)
>>
>> The open far end of the line has a reflection coefficient of +1, so as
>> before the returning wave is:
>>
>> vr1(t, x) = sin(wt + x)
>>
>> (The change from -x to +x is due to the reversal of direction of
>> propagation. You'll see this with every reflection.) At any time between
```

>> when vf1 reflects from the output end (t = 2*pi/w) and when it reaches
>> the input end of the line (t = 4*pi/w), the total voltage at any point
>> the returning wave has reached is
>>
>> vtot = vf1(t, x) + vr1(t, x) = sin(wt - x) + sin(wt + x) [Eq. 1]
>>
>
> Roy's work is only provided as an example of the use of mathematical
> notation.
>
> The notation "vf1(t, x)" is not fully explained in the text, so any
> reader who is unfamiliar with the notation must do some additional
> study. This describes my situation, so after some study, this is what
> I think these terms mean, focusing on the two coordinates, wt and x.
>
> Roy is using phasor math here, a subject comprehensively covered
> elsewhere. (Link
> http://campus.murraystate.edu/tsm/tsm118/Ch6/ch6_5/ch6_5.htm)
> The sum of "wt" and "x" denote the phase angle of the wave, measured in
> degrees, both referenced to zero. Two angles are needed, one to represent
> the physical location of each wave as a function of time, the second to
> locate the point of examination of the wave. "wt" locates the wave in
> time and physical space . "x" locates the examination point in physical
> space (on a transmission line in this case).
>
> How is "x" located on the transmission line?
>
> My automatic assumption was that "x" was based at the input to the
> line. Thus, if the input was on the left side of the page, the line
> would extend to the right, and x would become larger when moving
> right. This led to a contradiction when I considered how the wave
> reflects from the right side upon encountering a discontinuity.
> Suddenly, a positive reflected wave represented by sine(-x) was made
> sine(x) at an open circuit. At position sin(90), the wave reversed and
> became sine(-90). It was if a factor of -1 was applied to the
> analysis, which was not the case here.
>
> After considerable thought and time, I realized that the origin of "x"
> was not at the input point, but was at the reflection point. Then the
> notation made perfect sense.
>
> Forward wave->
> input->_____________________________________|Reflection point
> ++x <- increasing x <- Reflected wave 0
>
> Scale both the sine wave and physical line in degrees. The wave will
> repeat every 360 degrees (2pi radians). The x scale can be as long (in
> degrees or radians) as desired
>
> Think of the sine wave as an curve traced on a MOVING sheet of paper. The

> paper/curve moves in the direction of the forward wave.

Try this:

Pick a distance x = pi/3. Now take the sheet of paper perpendicular to the dipole wire. Move it at a constant velocity in the perpendicular direction with a pen recorder tracing the magnitude of the voltage on the antenna to the paper as it moves. There will be a cosine function drawn on the paper.

Given: I = Io*cos(kx)*cos(wt)

At pi/3 radians, cos(pi/3) = 0.5

The cosine function drawn on the paper moving at right angles to the antenna will be:

I = 0.5*Io*cos(kt).

Now move the paper to x = pi/2.

cos(pi/2) = 0

The function drawn on the paper will be I = 0.

Now move the paper to x = pi

cos(pi) = -1

The function drawn on the paper, at RIGHT ANGLES tio the antenna will be:

I = -Io*cos(wt)

That is how a standing wave operates.

502. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 01:17:05 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fluivnjbg1@news.service.uci.edu>
Source record: 29818

```
Cecil Moore wrote:
> Jim Kelley wrote:
>
>> Cecil Moore wrote:
>>
>>> Sorry Jim, but [Io*cos(kx)*cos(wt)] and [Io*cos(kx+wt)] *ARE*
>>> different.
>>
>>
>> Evidently, you can't recognize a trig identity when you see one.
>
>
> One really should take a look at the math before waving one's
> hands and opening one's mouth in ignorance.
>
> Please enlighten us as to exactly what trig "identity" will make
> the following terms equal.
>
> E1*e^j(wt-kx) ?=? E2*e^j(wt-kx) + E2*e^j(wt+kx)
>
> Seems to me the only condition for which they are equal is when
> E2=0, i.e. when reflections (and therefore standing waves) don't
> exist.

The purpose of pointing out the trigonometric relationship between the
sum of sines and the product of sine and cosine was to illustrate
that, contrary to your assertion, there isn't a difference in the
waves. The traveling waves can either be written mathematically as
two separate traveling waves, or as one standing wave. It makes no
difference; the waves are the same in either case irrespective of how
you choose to describe them mathematically. Do you grasp the meaning
here, or not?

Thanks,

ac6xg
```

503. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 01:54:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o5lv48sr9id27@corp.supernews.com>
Source record: 29819

Richard Clark wrote:
> . . .
> Specifically, as you have already suggested, with a loop pickup.
> However, in my career I have never encountered its use as a precision
> device when measuring voltage is so much easier. EZNEC does not
> report voltage (although it could be computed, I will leave that to
> others as there is no significant information obtained in that
> exercise).
> . . .

As a general rule, the voltage can't be computed because of the spacing between the wire and whatever reference point you're measuring voltage to. The voltage depends on the path taken between the two points (conceptually, how you arrange the voltmeter leads), so there's no single answer. That's why EZNEC computes only current.

This is also one of the several problems with treating an antenna like a transmission line. The similarity between the two is just enough to tempt people to take the analogy farther than it holds.

Roy Lewallen, W7EL

504. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 02:03:35 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4782d9eb$0$8842$4c368faf@roadrunner.com>
Source record: 29820

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:9pe5o3ljgtbvbj8ivu66t7s6p75mr9897p@4ax.com...
> On Mon, 7 Jan 2008 18:26:16 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>
>>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>
>>> Now, if you would simply take my advice to heart: strip away the
>>> static and ask the question that is plaguing you.
>>
>>OK. Thank you for your patience. You said "The SWR on the wire is load-
>>based and is equal to 8:1 as evidenced by CURRENT on the wire. :-)
>
> Hi Dan,
>
> Well, in fact I don't recall having said anything about "Load-Based,"
> but it is immaterial to your question(s).
>
>>You cannot make a SWR measurement on a receive antenna any other way."
>
> You are still trapped in a loose thread of associations.
>
> We will get back to that in a moment (I hate doing this, trying to
> intuit what you are after). The specific comment you recite above is
> wholly out of context, and is being joined to a new one. This is why
> I ask you to strip out the noise and ask the question that is
> bothering you.
>
>>My very simple question: How do I measure that ISWR current?
>
> Specifically, as you have already suggested, with a loop pickup.
> However, in my career I have never encountered its use as a precision
> device when measuring voltage is so much easier. EZNEC does not
> report voltage (although it could be computed, I will leave that to
> others as there is no significant information obtained in that
> exercise).
>
>>Please describe possible meters and probes and where on the receive
>>antenna
>>do I measure this current?
>
> I've commented on that already. But this tied back into receive and
> you will not find a satisfactory, bench answer for that which is
> practical (in the sense of $).

>
>>At the input?
>
> For waves on a line you go to the line. EZNEC provides this quite
> clearly and even provides a graphic solution if you are not into the
> actual numbers.
>
>>At the nodes? At the zero crosses?
>>How do you calculate ISWR? Is it Imax/Imin?
>
> That is the conventional way to observe Standing Waves.
>
>>I am only trying to
>>conceptualize what you mean. Do you have to block the reverse current
>>somehow and measure forward current and vice versa? What does this do to
>>the
>>standing wave? What does any direct current measurement do to the ISWR
>>itself?
>
> Dan, you've got yourself wrapped around the axle and here I have to
> force a solution to your problem that you only vaguely offer through a
> chain of disconnected references above.
>
> First, you spend an inordinate amount of effort quoting to the point
> of receiving, and yet none of your questions appear to be aware of the
> significance of receiving with these breed of (Traveling Wave)
> antennas.
>
> Cecil's wire, one foot off the ground, is strongly influenced by its
> proximity. I demonstrated that. However, Cecil divorces this effect
> while embracing his goal of explaining away the confusion about
> Traveling Wave antennas. This one foot high monstrosity is most
> closely allied with the Beverage antenna which was developed with
> ground in mind and even here, Cecil corrupts this concept to turn his
> model into a Traveling Wave transmission line. In effect, his is a
> bait and switch argument as he abandoned the "explanation" 350 posts
> ago and never returned until I forced the argument.
>
> Cecil, under protest to my proofs of Standing Wave on these Traveling
> Wave, then supplied a citation that heads this very thread:
>>>"Because the Beverage is a
>>>traveling wave, terminated antenna, it has no standing
>>>waves resulting from radio signals."
>
> It contains FROM radio signals. FROM is an externality. In other
> words the antenna must be externally excited to test the validity of
> this specific statement. Further, this statement has its own internal
> logic in that the antenna (the Beverage) is a RECEIVE antenna.
> Further, this statement has its own internal logic in that a Beverage
> antenna employs ground as an active element. Hence, all internal

> logical characteristics are consistent with the statement about
> externality. Any reference to source SWR is wholly inappropriate.
>
> EZNEC is perfectly capable of measuring a receive antenna, if you can
> supply an antenna to excite it. I did so explicitly. The reports
> offered by EZNEC will give you a source SWR reading like Cecil quoted,
> but that is entirely unrelated to the receive antenna performance. I
> did not report that reading for that reason, Cecil did - for whatever
> reason, but a reason that bore no relation to Standing/Traveling waves
> on the test antenna.
>
> EZNEC will report all currents on all wires everywhere. When the
> Beverage is excited by a source 100 kilometers away, those currents in
> the wires defining the Beverage exhibit classic Standing Waves. This
> is quite simple.
>
> Now as to your enquiry in how to measure those currents. That is not
> practical at the nanoAmpere levels, but software does it quite easily.
> If I were tasked to do it, I would immediately transform this into the
> voltage model, modulate the source with an unique pattern, and perform
> a synchronous detection of the levels involved along the length of the
> line. A trivial concept that is difficult in practice.
>
> Now, I have pounded out a lot of words in an effort to eke out your
> question. Was it answered?
>
> 73's
> Richard Clark, KB7QHC

Well, you said the only way to measure SWR on a receive antenna is by measuring current (sort of as an aside). I wanted to know the significance of that. Now I know that the reason you said that was to support your SWR calculation for a receive antenna using EZNEC, which is based on current (method of moments). You were not saying it in terms of making physical measurements but only to support the accuracy of your statement (i.e. there's no better way to determine SWR on a receiving antenna than to measure current, and, EZNEC is based on current). I know this was not your main point, it was just an aside, but I don't agree with it; however, that in itself does not diminish your main point.

73 de AI4QJ

505. Re: r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 02:39:24 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4782e251$0$8847$4c368faf@roadrunner.com>
Source record: 29821

"art" <aunwin@insightbb.com> wrote in message
news:e6e86fa8-0728-408e-84ab-70f1ade2bdfd@i3g2000hsf.googlegroups.com...
> On 6 Jan, 18:39, "AI4QJ" <nos...@yahoo.com> wrote:
>> "art" <aun...@insightbb.com> wrote in message
>>
>> news:ab630d0b-572c-4c4c-b287-c92c582c1fb8@d21g2000prf.googlegroups.com...
>>
>> "Did you ever think that your post would last this long? Obviously the
>> regular contributors
>> in this group cannot handle the truth and thus will not consult
>> anything.Now the experts are argueing over the term SWR a very, very,
>> deep discussion revealing things unknown to the amateur community at
>> this time. [...]"
>>
>> Hello Art, the concept of SWR is extremely misunderstood even by people
>> with
>> degrees in electronics engineering. It is assumed to be simple, yet many
>> people get it wrong. Indeed, a good understanding is essential for
>> antenna
>> development. I do not fault anyone for not understanding the concept
>> because
>> standing waves, simple as they may seem, are actually expressed as the
>> product of a cos wave over distance and a sine wave over time. Many
>> things
>> are happening over the length of the antenna as the function is
>> operating.
>> If you think of it, it is the essence of space-time and it may be
>> productive
>> for you to consider it even more broadly in your own hypotheses, more
>> broadly that is by possibly incorporating the mechancial SWR analogues to
>> voltage/current SWR's and who knows what new ideas may come to mind with
>> your model.
>
> I don't understand a lot of this talk about waves bouncing which is
> fortunate. Icould not possibly stay on a thread where everybody is
> talking past each other and then changing the subject as they didn't
> understand the subject in the first place. In ham radio nothing is
> believed if it is contrary to the norm.This bouncing wave thing will
> never come to closure as all participants are deaf. As far as me
> getting involved all the answers involved in my description of radio
> are known facts in the scientific world and fully coroberated. Heck
> they are even corroberated by existing antenna computor programs and
> actual tests. I can't see how these waves fit in with classical
> science so it must be another invented science that it referes to. Now

> if the trend changed to debate the voracity of existing accepted data
> is proved to be incorrect then they would have my attention but the
> group is not competant enough for that trail.
> Regards
> Art

You are a mechanical engineer, right? Consider acoustic "radiation". Pluck a guitar string; the fundamental wavelength of the sound your hear (and its harmonics) will be related to the length of the string and the speed of the wave in the string (not the speed of sound) which depends on the tension and density of the string. f*length = v. The 'radiation resistance' is the string's standing wave pushing against the air and producing sound energy from applied kinetic energy stored in the *vibrating string*. The musical note you hear does move at the speed of sound. This is somewhat analagous to an antenna. Now I agree that to be a musician it is not neccesary to understand these principles but to design guitar strings (antennas) it would be advantageous to understand it (though not mandatory). In order to discuss the reasons why certain guitar strings work better or sound different than others, it is essential to understand this and to understand it, you must first understand what an acoustic standing wave is. You are working on an antenna model; you may be a ham and you may even be designing antennas but you do not know how standing waves work. It is not compusory. You can still operate and design antennas without knowing how this works. But, it sounds like you need some more tools. You are dealing with EM fields and waves and you are also dealing with vibrations of particles making your model, if it works, almost as related to a mechancial wave as an electrical wave...a combination of both? I think on the track that you are on, which is not real clear to me, I would advise getting out the physics books and getting familiar with these concepts...they are not only EE related, there is an ME analog (as there often is for fundamental EE problems).

506. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 03:23:06 UTC
From: richardharrison@webtv.net
Message-ID: <23304-4782EC9A-336@storefull-3258.bay.webtv.net>
Source record: 29822

Art wrote:
"I wonder why you are checking things out, as an engineer you should be aware of facts already."

A fact is a reality. An opinion lacking credible testimony is not a proven fact.

Wave tilt is a known phenomenon. A wave traveling along the surface of the earth is slightly slowed by the earth, so it seems to tilt slightly in its direction of travel, like "dragging its feet".

A wave reflected by grazing a surface has an angle of reflection equal to its angle of incidence. An incoming wave reflected by the ionosphere has a tilt with respect to the horizontal.

A Beverage antenna can be as simple as a wire supported at low altitude above the earth, and a seeming paradox is that although horizontal, the wire is sensitive to vertically polarized waves. Despite Art`s questioning that hams would know about wave tilt, an ARRL publication, ON4UN`s "Low-Band DXing", begins its chapter on Special Receiving Antennas with the Beverage.

Most engineers in this newsgroup are well aware of the facts needed in their profession. One particular mechanical engineer is claiming new discoveries without sufficient supporting information.

Best regards, Richard Harrison, KB5WZI

507. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 03:51:23 UTC
From: art <aunwin@insightbb.com>
Message-ID: <329b3840-90cf-4038-a639-5a51010761f8@q77g2000hsh.googlegroups.com>
Source record: 29823

On 7 Jan, 19:23, richardharri...@webtv.net (Richard Harrison) wrote:
> Art wrote:
>
> "I wonder why you are checking things out, as an engineer you should be
> aware of facts already."
>
> A fact is a reality. An opinion lacking credible testimony is not a
> proven fact.
>
> Wave tilt is a known phenomenon. A wave traveling along the surface of
> the earth is slightly slowed by the earth, so it seems to tilt slightly
> in its direction of travel, like "dragging its feet".
>
> A wave reflected by grazing a surface has an angle of reflection equal
> to its angle of incidence. An incoming wave reflected by the ionosphere
> has a tilt with respect to the horizontal.
>
> A Beverage antenna can be as simple as a wire supported at low altitude
> above the earth, and a seeming paradox is that although horizontal, the
> wire is sensitive to vertically polarized waves. Despite Art`s
> questioning that hams would know about wave tilt, an ARRL publication,
> ON4UN`s "Low-Band DXing", begins its chapter on Special Receiving
> Antennas with the Beverage.
>
> Most engineers in this newsgroup are well aware of the facts needed in
> their profession. One particular mechanical engineer is claiming new
> discoveries without sufficient supporting information.
>
> Best regards, Richard Harrison, KB5WZI

I understand that a diamagnetic field is oriented differently to the
norm
Thus a diamagnetic field on a radiator is different to the norm.
This I see as the lynch pin of radiation. Hams do not recognise what
science has found for some reason. There is not a physics based ham on
the group that will explain this type of field
and it was not known by Terman so the dark ages persist. Also I claim
no new discoveries. Every thing I have described is documented on
Google which you do not have the ability to check out....Tough.You
don't know how to use an antenna computor program so you can't see
tilt for your self. You are in sad shape.If you can point to anything
that I stated is NOT fact
then speak up with the details and share with the group

508. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 04:00:06 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080107200006.dc5e3a83.rsparks@elltel.net>
Source record: 29824

On Mon, 7 Jan 2008 20:13:32 -0500
"AI4QJ" <nospam@yahoo.com> wrote:

>
> "Roger Sparks" <rsparks@elltel.net> wrote in message
> news:20080107112546.ac4dd8f4.rsparks@elltel.net...
> > On Mon, 07 Jan 2008 12:34:03 -0600
> >
> > After considerable thought and time, I realized that the origin of "x"
> > was not at the input point, but was at the reflection point. Then the
> > notation made perfect sense.
> >
> > Forward wave->
> > input->_____|Reflection point
> > ++x <- increasing x <- Reflected wave 0
> >
> > Scale both the sine wave and physical line in degrees. The wave will
> > repeat every 360 degrees (2pi radians). The x scale can be as long (in
> > degrees or radians) as desired
> >
> > Think of the sine wave as an curve traced on a MOVING sheet of paper. The
> > paper/curve moves in the direction of the forward wave.
>
> Try this:
>
> Pick a distance x = pi/3. Now take the sheet of paper perpendicular to the
> dipole wire. Move it at a constant velocity in the perpendicular direction
> with a pen recorder tracing the magnitude of the voltage on the antenna to
> the paper as it moves. There will be a cosine function drawn on the paper.
>
> Given: I = Io*cos(kx)*cos(wt)

Thanks for the examples. You use the term "I" which is usually the current, but the math makes sense for voltage.

To find the distance x = pi/3, I assume you mean from one end of the dipole, back toward the dipole center?

>
> At pi/3 radians, cos(pi/3) = 0.5
>
> The cosine function drawn on the paper moving at right angles to the antenna
> will be:
>
> I = 0.5*Io*cos(kt).

>
> Now move the paper to x = pi/2.
>
> cos(pi/2) = 0
>
> The function drawn on the paper will be I = 0.
>
> Now move the paper to x = pi
>
> cos(pi) = -1
>
> The function drawn on the paper, at RIGHT ANGLES tio the antenna will be:
>
> I = -Io*cos(wt)

As cos(wt) rotates between 0 and 2pi, cos(wt) moves between +1 and -1. The voltage will always be the negative of the initial voltage times the cosine of the instantaneous angle wt.
>
> That is how a standing wave operates.
>
OK, I think I understand.

Thanks for sending the examples.

73, Roger W7WKB

509. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 04:19:10 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <flutjo$2iv$1@news.albasani.net>
Source record: 29825

J. Mc Laughlin wrote:

> ...
> To use this technique at, say, 10 MHz with a yagi would be improbable, but
> not impossible.
>
> 73, Mac N8TT
>

It would be interesting to hear ideas of those on "probes", methods,
etc., on how to do such, would be attempted--implemented-imployed ...
never say never.

I think it would be interesting to hear on endeavors along these lines,
brave hearted individuals may be willing to share their experiences,
findings, guesses, etc. ... the bark is often much more dangerous
sounding than the the "bite." :-)

Frankly, "re-inventing the wheel" is welcomed here!

Regards,
JS

510. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 04:20:53 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4782fa1b$0$8825$4c368faf@roadrunner.com>
Source record: 29826

```
"Roger Sparks" <rsparks@elltel.net> wrote in message
news:20080107200006.dc5e3a83.rsparks@elltel.net...
> On Mon, 7 Jan 2008 20:13:32 -0500
> "AI4QJ" <nospam@yahoo.com> wrote:
>
>>
>> "Roger Sparks" <rsparks@elltel.net> wrote in message
>> news:20080107112546.ac4dd8f4.rsparks@elltel.net...
>> > On Mon, 07 Jan 2008 12:34:03 -0600
>> >
>> > After considerable thought and time, I realized that the origin of "x"
>> > was not at the input point, but was at the reflection point. Then the
>> > notation made perfect sense.
>> >
>> > Forward wave->
>> > input->_____________________________________|Reflection point
>> > ++x <- increasing x <- Reflected wave 0
>> >
>> > Scale both the sine wave and physical line in degrees. The wave will
>> > repeat every 360 degrees (2pi radians). The x scale can be as long (in
>> > degrees or radians) as desired
>> >
>> > Think of the sine wave as an curve traced on a MOVING sheet of paper.
>> > The
>> > paper/curve moves in the direction of the forward wave.
>>
>> Try this:
>>
>> Pick a distance x = pi/3. Now take the sheet of paper perpendicular to
>> the
>> dipole wire. Move it at a constant velocity in the perpendicular
>> direction
>> with a pen recorder tracing the magnitude of the voltage on the antenna
>> to
>> the paper as it moves. There will be a cosine function drawn on the
>> paper.
>>
>> Given: I = Io*cos(kx)*cos(wt)
>
> Thanks for the examples. You use the term "I" which is usually the
> current, but the math makes sense for voltage.

Maybe (I might have reversed them). But it doesn't matter for the concept.
```

>
> To find the distance x = pi/3, I assume you mean from one end of the
> dipole, back toward the dipole center?
>
>>
>> At pi/3 radians, cos(pi/3) = 0.5
>>
>> The cosine function drawn on the paper moving at right angles to the
>> antenna
>> will be:
>>
>> I = 0.5*Io*cos(kt).
>>
>> Now move the paper to x = pi/2.
>>
>> cos(pi/2) = 0
>>
>> The function drawn on the paper will be I = 0.
>>
>> Now move the paper to x = pi
>>
>> cos(pi) = -1
>>
>> The function drawn on the paper, at RIGHT ANGLES tio the antenna will be:
>>
>> I = -Io*cos(wt)
>
> As cos(wt) rotates between 0 and 2pi, cos(wt) moves between +1 and -1.
> The voltage will always be the negative of the initial voltage times the
> cosine of the instantaneous angle wt.

Right, at pi radians, I moves between 0 and -1*Io. At that point, the
standing wave is always zero to negative reaching a minima at -1*Io. Here
the wave "stands" at its minimum point. The "envelope" of the wave is -1
negative; it oscillates over time between 0 and -1*Io at frequency w.

>>
>> That is how a standing wave operates.
>>
> OK, I think I understand.
>
> Thanks for sending the examples.
>
>
> 73, Roger W7WKB

511. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 04:22:56 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4782fa95$0$8878$4c368faf@roadrunner.com>
Source record: 29827

"art" <aunwin@insightbb.com> wrote in message
news:191fe8a8-ad0a-42ad-9620-5ec65a04a045@1g2000hsl.googlegroups.com...
On 7 Jan, 10:12, Cecil Moore <nos...@w5dxp.com> wrote:
> Richard Clark wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
> >>http://www.w5dxp.com/rhombicT.EZ
> >> This is a terminated rhombic in free space. The termination
> >> resistor is 880 ohms and the 880 ohm feedpoint SWR is 1.032:1.
>
> > Which, of course, has nothing to do with Standing Waves ON THE
> > ANTENNA.
>
> The SWR on the antenna has nothing to do with the standing
> waves on the antenna?????? Good grief, Richard, it makes
> sense now. You don't even know what a standing-wave antenna
> is - so allow me to explain.
>
> An antenna has a characteristic impedance range. If the
> terminating resistor is in the center of that range,
> *reflections are reduced to a negligible value*. That's
> why terminated antennas are (usually) classified as
> *traveling-wave antennas* - because they minimize reflections.
>
> The ends of a dipole are (surprise) an open-circuit. All
> of the forward wave is reflected. That's why a dipole is
> a *standing-wave antenna*. There is nothing except radiation
> that can reduce the reflections.
>
> Sorry, nothing else you could have to say would make any
> difference with a gross misconception like that.
> --
> 73, Cecil http://www.w5dxp.com

"Cecil, Can you help me understand that the end of a dipole is an open
circuit?
Nothing falls out because the current changes direction ala AC because
the end of a dipole equates with the time that requires the current
changes direction. So where is the open circuit? I also cannot see why
radiation reduces reflection if the circuit can be completed with
iron!"

OK Cecil, I'm waiting for your answer on this one! ;-)

512. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 04:32:15 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fluuc9$2iv$2@news.albasani.net>
Source record: 29828

John Smith wrote:

> ...
> Frankly, "re-inventing the wheel" is welcomed here!
>
> Regards,
> JS

Yanno? That was a vague response, the above ...

What I meant to say is, YES! I worry that "in close" measurements with my field strength meter are/is inaccurate--and, I am ignorant on how to correct this (without going to far-field.) Indeed, it can easily be proven this is the case, EZNEC gives much different results than those plotted with a "close" field strength meter--has anyone found different. If so, I am GREATLY interested, and what am I doing wrong?

Sometimes it is just good to ask ...

Warm regards,
JS

513. Re: Antenna designs for noise cancellation on HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 04:54:42 UTC
From: Sum Ting Wong <sumtingwong@privacy.net>
Message-ID: <6206o390p5o0on605guhighif36iv4141m@4ax.com>
Source record: 29829

On Tue, 08 Jan 2008 00:09:36 +1300, cliff wright
<c.c.wright@paradise.net.nz> wrote:

>Any ideas welcome!

Get yourself a portable VHF radio that receives AM and use a handheld Yagi to trace down the noise. Powerline interference is much easier to DF at VHF. Pull the main breaker on your house to make sure the noise isn't being generated within your residence. Here in the USA, the power companies are obligated to eliminate interference emanating from their equipment, but don't know about ZL. It never hurts to ask. The power companies up here have very skilled folks who track down powerline interference complaints.

Good luck with finding the source.

S.T.W.

514. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 05:39:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <n0Egj.31034$4V6.1842@newssvr14.news.prodigy.net>
Source record: 29830

AI4QJ wrote:
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>
>> Now, if you would simply take my advice to heart: strip away the
>> static and ask the question that is plaguing you.
>
> OK. Thank you for your patience. You said "The SWR on the wire is load-
> based and is equal to 8:1 as evidenced by CURRENT on the wire. :-)

That was an ignorant mistake. Like a rank novice, Richard assumed
a 50 ohm SWR but the antenna is *NOT* a 50 ohm antenna. The
acutal SWR is barely above 1.0:1.
--
73, Cecil http://www.w5dxp.com

515. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 05:47:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <s7Egj.3476$EI5.1686@newssvr22.news.prodigy.net>
Source record: 29831

Richard Clark wrote:
> Cecil, under protest to my proofs of Standing Wave on these Traveling
> Wave, then supplied a citation that heads this very thread:
>>> "Because the Beverage is a
>>> traveling wave, terminated antenna, it has no standing
>>> waves resulting from radio signals."
>
> It contains FROM radio signals.

That was a quote from one of my references. But I suspect
that a Beverage antenna must be excited in its directional
dimension for that to be true. It probably would have been
more accurate to say it has no reflections rather than to
say it has no standing waves.
--
73, Cecil http://www.w5dxp.com

516. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 05:50:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <IaEgj.3477$EI5.696@newssvr22.news.prodigy.net>
Source record: 29832

AI4QJ wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>> There's no confusion. Terminated rhombics and Beverages are
>> traveling-wave antennas. Their currents are primarily:
>> I(x,t) = Io*cos(kx-wt)
>> A 1/2WL dipole is a standing-wave antenna. It's current is
>> primarily:
>> I(x,t) = Io*cos(kx)*cos(wt)
>>
> People need to understand the huge difference in the 2 waveforms that you
> present.

I agree with you but what do you do with people who choose
to remain ignorant? Allow their ignorance to dominate the
newsgroup simply because they think they already know
everything?
--
73, Cecil http://www.w5dxp.com

517. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 06:03:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <jnEgj.31172$4V6.11816@newssvr14.news.prodigy.net>
Source record: 29833

Jim Kelley wrote:
> The purpose of pointing out the trigonometric relationship between the
> sum of sines and the product of sine and cosine was to illustrate that,
> contrary to your assertion, there isn't a difference in the waves.

Jim, please go ask the head of your math department if
there's any difference in those equations. That you don't
see any difference is just extreme ignorance on your part.

Set cos(kx-wt) = cos(kx)*cos(wt) and wrestle with the
trig identities until you alleviate your ignorance.

You are extremely wrong and ignorant of mathematics.
You will realize that fact when you are unable to
prove your assertions even to yourself.

Hint: cos(kx+wt) = cos(kx)*cos(wt) - sin(kx)*sin(wt)
You are obviously missing half of the terms when you
say there "isn't a difference in the waves". (FYI,
anyone who knows anything about mathematics is laughing
at you.)
--
73, Cecil http://www.w5dxp.com

518. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 06:07:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <zqEgj.31195$4V6.27696@newssvr14.news.prodigy.net>
Source record: 29834

Roy Lewallen wrote:
> As a general rule, the voltage can't be computed because of the spacing
> between the wire and whatever reference point you're measuring voltage
> to. The voltage depends on the path taken between the two points
> (conceptually, how you arrange the voltmeter leads), so there's no
> single answer. That's why EZNEC computes only current.
>
> This is also one of the several problems with treating an antenna like a
> transmission line. The similarity between the two is just enough to
> tempt people to take the analogy farther than it holds.

Just because the voltage is hard to measure doesn't mean it
isn't proportional to the E-field.
--
73, Cecil http://www.w5dxp.com

519. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 06:19:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <DBEgj.31266$4V6.29437@newssvr14.news.prodigy.net>
Source record: 29835

AI4QJ wrote:
> "Cecil, Can you help me understand that the end of a dipole is an open
> circuit?
> Nothing falls out because the current changes direction ala AC because
> the end of a dipole equates with the time that requires the current
> changes direction. So where is the open circuit? I also cannot see why
> radiation reduces reflection if the circuit can be completed with
> iron!"
>
> OK Cecil, I'm waiting for your answer on this one! ;-)

The end of a dipole is like an open circuit transmission line.
The traveling wave hits the open-circuit and is reflected.
The forward current and reflected current are equal in magnitude
at the end point and 180 degrees out of phase. Therefore, the
current is zero. That's logical.

The forward voltage and reflected voltage are in phase. Therefore,
the voltage is at a maximum at the ends of the dipole. That's known.
That voltage can be calculated to a certain accuracy.

At the feedpoint of a dipole, the forward wave energy is about
20% higher than the reflected wave energy. That 20% difference
between forward wave and reflected wave is the amount of power
lost to losses and radiation.

A #14 horizontal wire 30 feet in the air has a characteristic
impedance of 600 ohms. That's all you need to know to perform
the voltage and current calculations for a particular power
input to the antenna.
--
73, Cecil http://www.w5dxp.com

520. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 07:39:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <vn86o352bovvnsrb69473uibvbdnffhpk6@4ax.com>
Source record: 29836

On Mon, 7 Jan 2008 21:03:35 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>Well, you said the only way to measure SWR on a receive antenna is by
>measuring current (sort of as an aside). I wanted to know the significance
>of that. Now I know that the reason you said that was to support your SWR
>calculation for a receive antenna using EZNEC, which is based on current
>(method of moments). You were not saying it in terms of making physical
>measurements but only to support the accuracy of your statement (i.e.
>there's no better way to determine SWR on a receiving antenna than to
>measure current, and, EZNEC is based on current). I know this was not your
>main point, it was just an aside, but I don't agree with it; however, that
>in itself does not diminish your main point.

Hi Dan,

It is merely a response to the "framing" of a specific expectation
within the context of Cecil's citation. The citation demanded an
externality, I supplied a stimulus external to the antenna.

However, this does not mean that there is no other indicator of
Standing Waves on a Traveling Wave antenna, and it does not make this
exotic testing the only proof of Standing Waves on a Traveling Wave
antenna. There is, after all, the concept of reciprocity.

If you look at the reciprocal actions offered by exciting a Traveling
Wave antenna with a source directly attached to it (and Cecil's last
example proves this), you find Standing Waves. This may confound the
SWR meter, but then that meter doesn't indicate what is on the wires,
it indicates what is impressed upon the finals.

Now, if you want to discard EZNEC (which for some odd reason you seem
to approach method of moments with a sneer), conventional methods
would still bear out the same results. Lord knows I've sat at the
bench doing it the conventional way for thousands of measurements.
I've probably made more physical measurements in a day, than anyone
here has in a lifetime.

Others, don't bore us with indignities about all your SWR meter
readings in reply to that last statement. :-)

So now to the shoe you dropped:
> I know this was not your
>main point, it was just an aside, but I don't agree with it

What was my main point, and how is yours conflict with it? Is yours a
philosophical triviality so common to these threads, or does it come
with physical measurements experience?

73's
Richard Clark, KB7QHC

521. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 07:46:02 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tca6o3hdgov2476k7gnh6sr2u7h78ti43q@4ax.com>
Source record: 29837

On Tue, 08 Jan 2008 17:46:26 +1100, slackj
<slackj_delete@optusnet.com.au> wrote:

> I'll concentrate on the alternator itself and
>the DC line which powers the car kit.

Hi Stewart,

Take your DC off the battery post, not the distribution system (but
make sure to fuse that lead). The bonding you speak of is
prinicipally for RF feedback, and ground loops up in that region;
alternator whine arrives through the DC feed.

73's
Richard Clark, KB7QHC

522. Website Promotion in Orange County, The Two Best SEO Resources

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 09:09:04 UTC
From: apzc18ti <saydf727b@gmail.com>
Message-ID: <02001f19-b9e3-4f6f-a495-d8a12aa006eb@n20g2000hsh.googlegroups.com>
Source record: 29838

This is for the benefit of everyone who wants to benefit from really good organic search engine optimization.

http://socialmediaoptimization.tv/social-media-optimization/

that link has plenty of helpful videos and if you want it done right then there is only one company that i can rely on, atleast in orange country california.

http://www.atomicseo.net
these guys are so cocky but they now their stuff and I actually had results within a week because they did a lot of social marketing and that works better than google in my opinion
adwords is the biggest joke the amount of money you waste, it must be nice to have cash like that...

523. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 09:27:59 UTC
From: "Helmut Wabnig"
Message-ID: <afg6o359uvfhbpdk09lu9d45lqlao6bqdi@4ax.com>
Source record: 29839

On Mon, 07 Jan 2008 23:46:02 -0800, Richard Clark <kb7qhc@comcast.net>
wrote:

>On Tue, 08 Jan 2008 17:46:26 +1100, slackj
><slackj_delete@optusnet.com.au> wrote:
>
>> I'll concentrate on the alternator itself and
>>the DC line which powers the car kit.
>
>Hi Stewart,
>
>Take your DC off the battery post, not the distribution system (but
>make sure to fuse that lead). The bonding you speak of is
>prinicipally for RF feedback, and ground loops up in that region;
>alternator whine arrives through the DC feed.
>
>73's
>Richard Clark, KB7QHC

he may have to feed 12 Volts trhough a DC filter
made of 2 chokes and 2 caps.

w.

524. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 12:00:01 UTC
From: "Helmut Wabnig"
Message-ID: <dcp6o35u9m0kbq99nqsahqe76ndob94vk3@4ax.com>
Source record: 29840

On Tue, 08 Jan 2008 21:34:17 +1100, slackj
<slackj_delete@optusnet.com.au> wrote:

>.....

> taking the easy way out
>and just using a commercial coupled on-glass antenna

Forget it, quick, as fast as you can.

w.

525. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 12:16:01 UTC
From: Jimmie <Geefender@carolina.rr.com>
Message-ID: <4783697e$0$5152$4c368faf@roadrunner.com>
Source record: 29841

Richard Harrison wrote:
> Art wrote:
> "I wonder why you are checking things out, as an engineer you should be
> aware of facts already."
>
> A fact is a reality. An opinion lacking credible testimony is not a
> proven fact.
>
> Wave tilt is a known phenomenon. A wave traveling along the surface of
> the earth is slightly slowed by the earth, so it seems to tilt slightly
> in its direction of travel, like "dragging its feet".
>
> A wave reflected by grazing a surface has an angle of reflection equal
> to its angle of incidence. An incoming wave reflected by the ionosphere
> has a tilt with respect to the horizontal.
>
> A Beverage antenna can be as simple as a wire supported at low altitude
> above the earth, and a seeming paradox is that although horizontal, the
> wire is sensitive to vertically polarized waves. Despite Art`s
> questioning that hams would know about wave tilt, an ARRL publication,
> ON4UN`s "Low-Band DXing", begins its chapter on Special Receiving
> Antennas with the Beverage.
>
> Most engineers in this newsgroup are well aware of the facts needed in
> their profession. One particular mechanical engineer is claiming new
> discoveries without sufficient supporting information.
>
> Best regards, Richard Harrison, KB5WZI
>
If Art's a mechanical engineer its a pity he doesn't apply his skill in
that area. We could use one.

Jimmie

526. Re: Standing morphing to travelling waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 12:32:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <w3Kgj.7614$6%.6984@nlpi061.nbdc.sbc.com>
Source record: 29842

My daughter's surgery went well.
I will be away from my computer for a week.
--
73, Cecil http://www.w5dxp.com

527. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 12:45:01 UTC
From: Yuri Blanarovich <K3BU@optonline.net>
Message-ID: <nfKgj.1$o92.0@newsfe11.lga>
Source record: 29843

>
> Most engineers in this newsgroup are well aware of the facts needed in
> their profession. One particular mechanical engineer is claiming new
> discoveries without sufficient supporting information.
>
> Best regards, Richard Harrison, KB5WZI
>

I will be more blunt.
Art with his crap about stupid hams, lousy education system in US and other incoherent rants here and on eHam is poor picture of Ham and nuisance troll that is so "brilliant" that can't even spell or use proper words for things.
I was hoping to spot a grain of something that perhaps would lead to something new or something that we overlooked, but the cup has spilled over with crap and mumbo jumbo and time to ignore anything that is coming out of "art".
Sayonara, plonk!!!

bada BUm

528. Re: How Does A TV Antenna Work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 14:03:00 UTC
From: MTV <NoSpam_mtvew@netscape.net>
Message-ID: <4783829e$0$31777$4c368faf@roadrunner.com>
Source record: 29844

Randy Yates wrote:
> Hi Folks,
>
> This is my first post to this group. I'm a EE, so I've
> had all the theory - now I want to know how these things
> work. :)
>
> Basically, my question is this: how can a a TV antanna
> cover, what, 60 MHz to 800 MHz? That's over three octaves,
> and if the antenna elements are designed to be a fixed
> portion of a wavelength, why does this work over such a
> large range?

There are two parts to the TV antenna which cover two bands. Separate
elements for each band, but all on the same boom.

Marv

--
This mail checked and found to be free of any virus.
Mozilla Thunderbird mail & Firefox browser
GO ASTROS!!!!! Yeh Dynamo MLS Champions!

529. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 14:39:37 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fm01v9$1jpu$1@f04n12.cac.psu.edu>
Source record: 29845

art wrote:
> On 7 Jan, 10:15, Michael Coslo <m...@psu.edu> wrote:
>> art wrote:
>>
>>> Probably so. But pseudo experts such as Roy and Tom and the three
>>> Richards can't put o neck hold on the advances of science for ever,
>>> for people like MK to follow in lockstep in the absence of knoweledge.
>> Crikeys, Art!
>>
>> How on earth are your nemeses strangling science? Does anyone in here
>> take these bar room brawls seriously?
>>
>> I mean just what would this strangulation achieve? Does IEEE keep an
>> archive of rraa? the National Science Foundation?
>>
>> These arguments, For all their sound and fury, signify nothing.
>>
>> I rather thought that they boys were all just feeling their oats. At any
>> rate, the great unwashed such as myself find it all amusing.
>>
>> - 73 de Mike N3LI -
>
> In the scientific world it is a closed community and only within that
> community can members create change.

This sounds like an indictment of the whole peer reviewed process. It's
kind of like saying that People who have driver's licenses are a closed
group.

> So you often hear that some very
> clever people did not have their ideas examined until after they were
> dead which can be a hundred years.

Any cites here?

> Hams are a similar closed community
> with respect to what creates radiation since they only accept books
> and will not or cannot debate any alternatives.

Here we really disagree! There is an amazing amount of antenna hokum
scattered about among amateurs.

> When in college you are
> encouraged to debate which is way to retreat to the beginings and
> build up a case in opposition to the opponent.This cannot happen in
> ham radio because debates cannot happen except by those that deem

> themselves as experts whose mission is to protect the status quo Thus
> to become an expert one must follow the written word and deride those
> that deign to question the status quo.When was the last to you read of
> an open debate that was thouroughly discussed to a acceptable
> conclusion? Well you haven't heard one because when two heads debate
> one will always use personal attack as a means of retaliation.And I
> mean always.

Art, here is where you make a huge mistake. You are bringing personal "feelings" into the equation. Who really gives a whoop doop dingle about feelings?

With your Mechanical engineering background, I assume that you must have sat in on design and other meetings. Many of the ones I have sat in have become plenty heated.

So What? We leave the meeting and go get the job done. Then we enjoy a beer with the people we were arguing with after work.

> There is one discussion on this newsgroup that has gone on for several
> years
> and thousands of postings about travelling waves which I for one
> consider them to be ficticious
> in a resonant system. Do you ever believe one side or the other will
> demonstrate the concepts so all are on a common stage.? Hell no!

Respectfully Art, there are people who will not ever hold with ideas that are considered mainstream. If *their* alternative ideas were accepted as fact, then there is an excellent chance that they will abandon them and move on to something else. This is especially true if feeling somehow come into their science. I see this fairly often. Politics often comes to mind, in which one group is excellent at castigation, pointing out example after example of others wrongdoing but when in power, they seem to not be able to effectively function.

IOW, is the rebel right because they found out something new, and can promote the idea, or are they right because they are a rebel?

> Personal attacks were started
> years ago in an attempt to cut down the debate and all must resign
> themselves that the instant experts will defend the status quo for
> ever.

I see personal attacks on both sides of the long drawn out arguments here. All are guilty.

Will we ever see a painter sell his paintings for millions while
> he is still alive?

I think there are more painters making millions than there are scientifically respected postings on usenet.

- 73 de Mike N3LI -

530. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 15:23:52 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <a757o3t88iitgdd9g4d1llinv129ua05d2@4ax.com>
Source record: 29846

On Tue, 08 Jan 2008 21:34:17 +1100, slackj
<slackj_delete@optusnet.com.au> wrote:

>Helmut & Richard,
>
>Yeah, thanks for that. Like I said it's been ages since I've needed
>to do any of this, but most of it's in my memory banks somewhere -
>lol. Do they still make those big metal encased pass-through
>capacitors with a grounding tag? They used to be handy, and yes I may
>need to put together a little filter network. The good thing is that
>the kit won't draw much current.

Hi Stewart,

There's no reason for filters, the battery is already the biggest
capacitor in the world - for all practical purposes. Also, the
regulator disconnects it from the alternator 5 minutes after you've
started the car.

73's
Richard Clark, KB7QHC

531. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 16:59:16 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080108085916.448c0a6c.rsparks@elltel.net>
Source record: 29847

On Tue, 08 Jan 2008 07:23:52 -0800
Richard Clark <kb7qhc@comcast.net> wrote:

> On Tue, 08 Jan 2008 21:34:17 +1100, slackj
> <slackj_delete@optusnet.com.au> wrote:
>
> >Helmut & Richard,
> >
> >Yeah, thanks for that. Like I said it's been ages since I've needed
> >to do any of this, but most of it's in my memory banks somewhere -
> >lol. Do they still make those big metal encased pass-through
> >capacitors with a grounding tag? They used to be handy, and yes I may
> >need to put together a little filter network. The good thing is that
> >the kit won't draw much current.
>
> Hi Stewart,
>
> There's no reason for filters, the battery is already the biggest
> capacitor in the world - for all practical purposes. Also, the
> regulator disconnects it from the alternator 5 minutes after you've
> started the car.
>
> 73's
> Richard Clark, KB7QHC

I am not so confident that the lead cell battery (or any battery) is a replacement for a filter. A battery demonstrates about 75 to 85 percent efficiency for charging and discharging, but a capacitor is just under 100 percent efficient. When used as a filter, a battery is a capacitor with a series resistor.

Battery efficiency is probably less at radio frequencies.

The regulators that I am familiar with do not disconnect the battery from the alternator. They reduce the alternator field current so that the alternator output voltage is reduced.

73, Roger, W7WKB

532. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 17:05:18 UTC
From: art <aunwin@insightbb.com>
Message-ID: <c002081a-547a-432b-9ba8-63952d725c5a@s19g2000prg.googlegroups.com>
Source record: 29748

On 8 Jan, 06:39, Michael Coslo <m...@psu.edu> wrote:
> art wrote:
> > On 7 Jan, 10:15, Michael Coslo <m...@psu.edu> wrote:
> >> art wrote:
>
> >>> Probably so. But pseudo experts such as Roy and Tom and the three
> >>> Richards can't put o neck hold on the advances of science for ever,
> >>> for people like MK to follow in lockstep in the absence of knoweledge.
> >> Crikeys, Art!
>
> >> How on earth are your nemeses strangling science? Does anyone in here
> >> take these bar room brawls seriously?
>
> >> I mean just what would this strangulation achieve? Does IEEE keep an
> >> archive of rraa? the National Science Foundation?
>
> >> These arguments, For all their sound and fury, signify nothing.
>
> >> I rather thought that they boys were all just feeling their oats. At any
> >> rate, the great unwashed such as myself find it all amusing.
>
> >> - 73 de Mike N3LI -
>
> > In the scientific world it is a closed community and only within that
> > community can members create change.
>
> This sounds like an indictment of the whole peer reviewed process. It's
> kind of like saying that People who have driver's licenses are a closed
> group.
>
> > So you often hear that some very
> > clever people did not have their ideas examined until after they were
> > dead which can be a hundred years.
>
> Any cites here?
>
> > Hams are a similar closed community
> > with respect to what creates radiation since they only accept books
> > and will not or cannot debate any alternatives.
>
> Here we really disagree! There is an amazing amount of antenna hokum
> scattered about among amateurs.
>
> > When in college you are

> > encouraged to debate which is way to retreat to the beginings and
> > build up a case in opposition to the opponent.This cannot happen in
> > ham radio because debates cannot happen except by those that deem
> > themselves as experts whose mission is to protect the status quo Thus
> > to become an expert one must follow the written word and deride those
> > that deign to question the status quo.When was the last to you read of
> > an open debate that was thouroughly discussed to a acceptable
> > conclusion? Well you haven't heard one because when two heads debate
> > one will always use personal attack as a means of retaliation.And I
> > mean always.
>
> Art, here is where you make a huge mistake. You are bringing personal
> "feelings" into the equation. Who really gives a whoop doop dingle about
> feelings?
>
> With your Mechanical engineering background, I assume that you must
> have sat in on design and other meetings. Many of the ones I have sat in
> have become plenty heated.
>
> So What? We leave the meeting and go get the job done. Then we enjoy a
> beer with the people we were arguing with after work.
>
> > There is one discussion on this newsgroup that has gone on for several
> > years
> > and thousands of postings about travelling waves which I for one
> > consider them to be ficticious
> > in a resonant system. Do you ever believe one side or the other will
> > demonstrate the concepts so all are on a common stage.? Hell no!
>
> Respectfully Art, there are people who will not ever hold with ideas
> that are considered mainstream. If *their* alternative ideas were
> accepted as fact, then there is an excellent chance that they will
> abandon them and move on to something else. This is especially true if
> feeling somehow come into their science. I see this fairly often.
> Politics often comes to mind, in which one group is excellent at
> castigation, pointing out example after example of others wrongdoing but
> when in power, they seem to not be able to effectively function.
>
> IOW, is the rebel right because they found out something new, and can
> promote the idea, or are they right because they are a rebel?
>
> > Personal attacks were started
> > years ago in an attempt to cut down the debate and all must resign
> > themselves that the instant experts will defend the status quo for
> > ever.
>
> I see personal attacks on both sides of the long drawn out arguments
> here. All are guilty.
>
> Will we ever see a painter sell his paintings for millions while

>
> > he is still alive?
>
>   I think there are more painters making millions than there are
> scientifically respected postings on usenet.
>
>   - 73 de Mike N3LI -- Hide quoted text -
>
> - Show quoted text -

Things changed when the influx of CBers came into the hobby. As
president of the local club it was my job to welcome them despite the
animosity that was floating around. After 5 years I quit
and watched as ham radio went down hill so I also quit getting on the
air.As Age crept up on me
I could not play around with mixers anymore so I chose antennas which
my eyes could handle.
I then got insulted when I shared what I was doing on this group as
were my patents. I got so many insults that I even dropped one I had
just applied for and left this newsgroup. I still carried on with my
work and some years ago again shared it with the group. Insults
immediately started coming thru without examining that I was
sharing.But this time it is different. I am not going away even tho
hams are not interested in new ideas and in fact push them away. True
my writing gets worse as I age which is a sorry state of affairs butI
am not willing to fade away. I WILL HANG ON AND STAY.I worked hard
during the night scouring the internet to find a link that would
explain part of the things that I talk about and which all reject and
apply insults.
I finally found a suitable site that also came with diagrams to make
it easier to understand.
It will be on another thread so please read it. If it is of interest
then you will see I am not blabbering.Never the less I am willing to
share the rest of my work with true radio amateurs that have the
manners that are required for a suitable discussion or debate.
Regards
Art Unwin KB9MZ....XG (uk)
Art

533. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 18:09:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9bb7o39v03ni28mlib0tidsn63hh1csc2v@4ax.com>
Source record: 29749

On Tue, 8 Jan 2008 08:59:16 -0800, Roger Sparks <rsparks@elltel.net>
wrote:

>I am not so confident that the lead cell battery (or any battery) is a replacement for a filter.

Hi Roger,

My experience across several cars tends to indicate it is an excellent source. I have never used filters except once in the 60s and even then it was a poor solution.

>When used as a filter, a battery is a capacitor with a series resistor. A very, very, very small resistor.

The practical matter of this, is that it is far easier and cheaper to simply make the connection to see if it does the job, instead of investing in a filter that might not work.

73's
Richard Clark, KB7QHC

534. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 18:33:58 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm0fmm$d7e$1@news.albasani.net>
Source record: 29750

art wrote:

>> ...
> Art

When I fire up my rig, the one composed of an electric motor (constructed with recovered metal from the Roswell crash) spinning at 1,000,000 R.P.S., with the neodymium magnet attached to the shaft--what do you thing the wave(s) look like? How are protons being released from the static field of the magnets poles? Can't the need for a media (properties of which are unknown/unexplored) which can be "excited" be easily visualized?

Warm regards,
JS

535. Re: Standing morphing to travelling waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 18:40:24 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm0g2p$ee7$1@news.albasani.net>
Source record: 29751

Cecil Moore wrote:
> My daughter's surgery went well.
> I will be away from my computer for a week.

I cannot express the relief I feel that all has gone well for your
daughterj--and yourself ...

We will be here when you get back, take your time and take care OM ...

Warmest regards,
JS

536. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 19:39:57 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm0jnfndp1@news.service.uci.edu>
Source record: 29752

Cecil Moore wrote:

> That you don't
> see any difference is just extreme ignorance on your part.
>
> Set cos(kx-wt) = cos(kx)*cos(wt) and wrestle with the
> trig identities until you alleviate your ignorance.

Cecil,

There are an infinite number of different functions one could write to describe an infinite number of different possible wave shapes. And none of them would necessarily be mathematically equivalent to another. But when you write the equation for the superposition of traveling waves and claim that resultant standing wave is a different kind of electromagnetic wave, that is a misguided point of view. The equation for a standing wave is simply a different way of writing the sum of two traveling waves. Being that there is only one kind to chose from, there cannot be a different kind of electromagnetic wave. Is it impossible for you to acknowledge this simple point in a gentlemanly fashion?

> You are extremely wrong and ignorant of mathematics.

Any 'extreme wrongness' notwithstanding, what I don't know about mathematics could fill a book. On the other hand, you almost inevitably end up lying and turning technical discussions into personal attacks. Ask anyone.

ac6xg

537. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 20:54:58 UTC
From: art <aunwin@insightbb.com>
Message-ID: <161abae5-0eab-484b-837a-88dd3bda6d7a@i12g2000prf.googlegroups.com>
Source record: 29753

On 7 Jan, 22:19, Cecil Moore <nos...@w5dxp.com> wrote:
> AI4QJ wrote:
> > "Cecil, Can you help me understand that the end of a dipole is an open
> > circuit?
> > Nothing falls out because the current changes direction ala AC because
> > the end of a dipole equates with the time that requires the current
> > changes direction. So where is the open circuit? I also cannot see why
> > radiation reduces reflection if the circuit can be completed with
> > iron!"
>
> > OK Cecil, I'm waiting for your answer on this one! ;-)
>
> The end of a dipole is like an open circuit transmission line.
> The traveling wave hits the open-circuit and is reflected.
snip.
> --
STOP STOP STOOOOOOOOOP RIGHT THERE
Thank you Lord for this opportinity you have given meto bring Ham
radio back to reality after Terman went to heaven
Gentleman this is a relativistic statement where Einstein tried to get
a unification theory
\before he died. He failed.You all know your houses are wired for AC,
usually a ring circuit.
Yes 50/60 is frequency just like 10 metrrs. Now go homw and cut the
wire in the kitchen to make it an open circuit Now ham r5adio says the
cuyrrent will turn around where you cutt it and it will go back. Well
science has not seen a trace of this new frequency of 100, 110 0r 220
line double its frequency to twice what it was before. On top of that
the lights went out on the circuit before and after the wire was cut
which means the current stopped when it was cut.
Same for a antenna which usually has a higher frequency. No the
current does not turn back or fall of the end. Right from the get go
the current knows that it must travel forward regards until the time
of half a period comes about. It cannot turn around and collide with
current that is obeying the rules. When it first started its travels
up the radiator the current travelled on or above the skin that
encloses the conductor knowing it can only referse at a specific
time. When the current6 reaches the top it will turn around if the
time alloted has also exspired. If this hasn't happenned it sees that
the inside of the antenna has nothing but decaying particles on its
inside which is really just a resistor. The current flows down the
center of this resistance. True it is not radiating at this point as
it is on the wrongside
of this decaying skin. Fortunately forward time expires just at the

time the current reached the bottom end of the radiator at the same time half a period expired. So the current retraces its path up the center and down the outside of the antenna where it can again radiate. It reaches its starting point at exactly the same time as two haf periods have elavsed which is one cycle. Yes the cuurent traveled a full circuit which it must do as we know current flow today. No open circuits and no current flow each and every way because it was forced somehow to change direction and ofcourse all the lights went out.

All of this started because physicsts could not reconcile the laws of electricity or Maxwell with those of Newton and ofcourse Gauss. This thinking continues to this day even tho Einstein died without proving things. Was this thread really worth it just to carry on the legacy of Terman and Einstein regardless of the facts? Now look at the URL i have supplied on another thread and note how a diamagnetic field is somehow different from what you have been taught.
Note especially that the lines of force do not follow the same direction that you expected.
If a paricle gets carried by these special lines of force the particle becomes ejected AWAY from the field. Now.Is all this "blabbering" or is it worth pursueing in the absence of Einstein? Can't we get back to classical physics that the masters of which Newton, Maxwell and Gauss stood on the shoulders of. Their science and our science is the same. Let us not kick the legs from under them by inventing new sciences so that our difficulties in understanding can be resolved.
Read the URL PLEASE .
I have found for you a description which also has picture as well as words and mull over the implications of what I place before you.
Art Unwin KB9MZ...xg (uk)

>
>
> 73, Cecil http://www.w5dxp.com

538. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 23:12:04 UTC
From: Dave <noone@nowhere.com>
Message-ID: <8rTgj.6298$EN6.450@trndny07>
Source record: 29754

"Gene Fuller" <W4SZzzzzzz@att.net> wrote in message
news:C_egj.387480$kj1.117876@bgtnsc04-news.ops.worldnet.att.net...
> art wrote:
>
>> WHY? bECAUSE THE MAGNETIC FIELD LINES FROM A DIAMAGNETIC MATERIAL
>> SUCGH AS ALUMINUM OR COPPER IS AT RIGHT ANGLES TO THE AXIS OF CURRENT
>> FLOW WHICH IS NOT THE SAME AS WITH A FERRITE MAGNETIC MATERIAL
>>
>
>
> Does it matter that aluminum and copper are paramagnetic rather than
> diamagnetic? Perhaps you should consider a bismuth antenna. That is the
> poster child for diamagnetic metals.
>
> 73,
> Gene
> W4SZ

oh, don't go getting all technical on him, he's having so much fun thinking he's pulling everyone's leg with his bafflegab... I get a good laugh out of it every day at least.

539. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-08 23:20:44 UTC
From: Dave <noone@nowhere.com>
Message-ID: <gzTgj.8047$LL6.1973@trndny06>
Source record: 29755

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47818950$0$5097$4c368faf@roadrunner.com...
>
> The VSWR meter on the ham rig is merely looking at the balance of forward
> and reflected "power" and it is calibrated to read it out as VSWR (or
> SWR). It may as well say "ISWR"; it is all the same thing. But it is not
> measured by sensing either voltage ot current going into the antenna...it
> measures the delta power.
>

how do you measure 'power'?? you don't. and no swr meter in the world
measures 'power'. they all take samples of voltage and/or current and drive
a simple meter circuit that just happens to be calibrated in units of watts
because thats what most users of cheap meters want to see. they could just
as easily be calibrated in volts or amps referenced to 50 ohms

540. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 00:27:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5758o3hm383maq9dd956g182ca8rkrfj7r@4ax.com>
Source record: 29756

On Tue, 08 Jan 2008 23:20:44 GMT, "Dave" <noone@nowhere.com> wrote:

> they could just
>as easily be calibrated in volts or amps referenced to 50 ohms

Which is power.

541. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 00:57:18 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47841bef$0$9577$4c368faf@roadrunner.com>
Source record: 29757

"Dave" <noone@nowhere.com> wrote in message
news:gzTgj.8047$LL6.1973@trndny06...
>
> "AI4QJ" <nospam@yahoo.com> wrote in message
> news:47818950$0$5097$4c368faf@roadrunner.com...
>>
>> The VSWR meter on the ham rig is merely looking at the balance of forward
>> and reflected "power" and it is calibrated to read it out as VSWR (or
>> SWR). It may as well say "ISWR"; it is all the same thing. But it is not
>> measured by sensing either voltage ot current going into the antenna...it
>> measures the delta power.
>>
>
> how do you measure 'power'?? you don't. and no swr meter in the world
> measures 'power'. they all take samples of voltage and/or current and
> drive a simple meter circuit that just happens to be calibrated in units
> of watts because thats what most users of cheap meters want to see. they
> could just as easily be calibrated in volts or amps referenced to 50 ohms

If I directly measure I or V, that is one thing. If I measure I**2 or V**2,
which I must for power into 50 ohms, that is something else. Thus, the way
that the meter is graduated is of prime importance. Either I have a meter
whose circuit directly measures the delta of I**2 or V**2 into the antenna
with linear scale, or it indirectly measures delta I**2 or delta V**2 by
squared graduations on the meter scale/ In all cases, it is still measuring
power. So I do not understand the point. I have not seen a meter that
appears to directly measure the ratio of Vmax forward/Vmax reflected or Imax
forward/Imax reflected, which *would* be a direct SWR measurement.

542. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 01:10:32 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5n78o35dgegcl8cvqbmffoj3skb2du939u@4ax.com>
Source record: 29758

On Tue, 8 Jan 2008 19:57:18 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>measures delta I**2 or delta V**2

What is delta, specifically as you use it here?

73's
Richard Clark, KB7QHC

543. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 01:20:38 UTC
From: art <aunwin@insightbb.com>
Message-ID: <ed8023e1-82d5-49f1-b3c3-1a18d6b4477f@f47g2000hsd.googlegroups.com>
Source record: 29759

On 8 Jan, 10:33, John Smith <assemblywiz...@gmail.com> wrote:
> art wrote:
>
> >> ...
>
> > > Art
>
snip>
> Warm regards,
> JS

http://www.sensormag.com/articles/0301/30/main.shtml

Hopefully this url will get you to what I want you to read.
Read, think for your self and then decide why the use of
aluminium is relavent to our hobby. I have also placed an
abstract on the forming of radiation on E Ham forum to get
as wide a distribution as I could. Hopefully this will a new
beginning for ham radio. Also get an optimiser computor
program to obtain the tipping angle of a radiator for your self.
Google for information every time you are unsure. For goodness
sake don't guess but follow the lead of present day science.
Somebody will burst out without reading or thinking.
Is that person going to be you?
Very best regards
Art Unwin.....KB9MZ.....XG (uk)

544. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 01:26:03 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478422ac$0$9630$4c368faf@roadrunner.com>
Source record: 29760

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:vn86o352bovvnsrb69473uibvbdnffhpk6@4ax.com...

> Now, if you want to discard EZNEC (which for some odd reason you seem
> to approach method of moments with a sneer), conventional methods
> would still bear out the same results.

The NEC program is just a computer model, for discussion purposes only. I think there are far too many variables in real life for the program to take into account. It may be valuable but I am not yet convinced it is infallible.

> Lord knows I've sat at the
> bench doing it the conventional way for thousands of measurements.

That is the only way to do it in my opinion. I am not very convinced that the NEC models can be used as a first source to support any proposals in these discussions although they are useful as a secondary level of corroboration. Although we accept them because we are usually too busy to perform hardware measurements, at least one should consider exactly how one "would" or "could" make a hardware emasurement in real life. The less likely you are able to measure in real life, the more likely your proposal is heavy on abstractions and light on reality. For example. I think the more significant recent developments in quantum theory, such as "string theory", although they may attract a lot of research dollars to fund professors at our Universities, are actually quite useless in practice because no one will ever be able to prove it true by empirical measurments. I can say "God created the universe" which may seem plausible until I am challenged to prove the existence of God, which I cannot now and never will be able to do. Belief requires faith or even a suspension of logical thought, neither of which I am prepared to do for science.

> I've probably made more physical measurements in a day, than anyone
> here has in a lifetime.
>
> Others, don't bore us with indignities about all your SWR meter
> readings in reply to that last statement. :-)
>
> So now to the shoe you dropped:
>> I know this was not your
>>main point, it was just an aside, but I don't agree with it
>
> What was my main point, and how is yours conflict with it?

You were arguing about an SWR on a NEC model being 8:1, due, I have heard, to an erroneous assumption of Zo. No problem with me. But when you made an

assertion that I thought could not be measured easily, I hesitated to take it true using faith based science. As you can see, the NEC model falls apart by making one simple erroneous assumption. Or was it? You can argue about that. That is the problem with these models, nobody is so intelligent that they are free of errors and no model is infallible either.

> Is yours a
> philosophical triviality so common to these threads, or does it come
> with physical measurements experience?

It is philosophical as above but I do not consider it trivial. To me it was not a waste of time; thanks for the exchange Richard.

AI4QJ

545. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 01:38:40 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478425a1$0$9613$4c368faf@roadrunner.com>
Source record: 29761

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:5n78o35dgegcl8cvqbmffoj3skb2du939u@4ax.com...
> On Tue, 8 Jan 2008 19:57:18 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>measures delta I**2 or delta V**2
>
> What is delta, specifically as you use it here?

The delta between what is sent forward and what is reflected back. If the
delta is zero, SWR = 1:1.

546. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 01:51:28 UTC
From: art <aunwin@insightbb.com>
Message-ID: <a2d92b6c-670e-4098-a1d8-9ab2aa2ae792@f47g2000hsd.googlegroups.com>
Source record: 29762

```
On 8 Jan, 17:26, "AI4QJ" <nos...@yahoo.com> wrote:
> "Richard Clark" <kb7...@comcast.net> wrote in message
>
> news:vn86o352bovvnsrb69473uibvbdnffhpk6@4ax.com...
>
> > Now, if you want to discard EZNEC (which for some odd reason you seem
> > to approach method of moments with a sneer), conventional methods
> > would still bear out the same results.
>
> The NEC program is just a computer model, for discussion purposes only. I
> think there are far too many variables in real life for the program to take
> into account. It may be valuable but I am not yet convinced it is
> infallible.
>
> > Lord knows I've sat at the
> > bench doing it the conventional way for thousands of measurements.
>
> That is the only way to do it in my opinion. I am not very convinced that
> the NEC models can be used as a first source to support any proposals in
> these discussions although they are useful as a secondary level of
> corroboration. Although we accept them because we are usually too busy to
> perform hardware measurements, at least one should consider exactly how one
> "would" or "could" make a hardware emasurement in real life. The less likely
> you are able to measure in real life, the more likely your proposal is heavy
> on abstractions and light on reality. For example. I think the more
> significant recent developments in quantum theory, such as "string theory",
> although they may attract a lot of research dollars to fund professors at
> our Universities, are actually quite useless in practice because no one will
> ever be able to prove it true by empirical measurments. I can say "God
> created the universe" which may seem plausible until I am challenged to
> prove the existence of God, which I cannot now and never will be able to do.
> Belief requires faith or even a suspension of logical thought, neither of
> which I am prepared to do for science.
>
> > I've probably made more physical measurements in a day, than anyone
> > here has in a lifetime.
>
> > Others, don't bore us with indignities about all your SWR meter
> > readings in reply to that last statement.   :-)
>
> > So now to the shoe you dropped:
> >> I know this was not your
> >>main point, it was just an aside, but I don't agree with it
>
```

> > What was my main point, and how is yours conflict with it?
>
> You were arguing about an SWR on a NEC model being 8:1, due, I have heard,
> to an erroneous assumption of Zo. No problem with me. But when you made an
> assertion that I thought could not be measured easily, I hesitated to take
> it true using faith based science. As you can see, the NEC model falls apart
> by making one simple erroneous assumption. Or was it? You can argue about
> that. That is the problem with these models, nobody is so intelligent that
> they are free of errors and no model is infallible either.
>
> > Is yours a
> > philosophical triviality so common to these threads, or does it come
> > with physical measurements experience?
>
> It is philosophical as above but I do not consider it trivial. To me it was
> not a waste of time; thanks for the exchange Richard.
>
> AI4QJ

Oh my!
I wish I was as eloquent as you. You would explained the problem so
much better than I did. When an assumption was made in addition to the
use of Maxwell's laws it was to make the program conform with known
results. And then the assuption made regarding sino soidal current
flow was made is found to be in error, thus the absolute validity of
the programs comes into question. Were they generated to follow
Maxwells laws explicably or were they made to reflect empirical
results? I suspect that Maxwells laws overode external human
influences
imposed by the programmer who are not infallable
Best regards
Art Unwin...KB9MZ...xg (uk).

547. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 01:57:42 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm19mmfob1@news.albasani.net>
Source record: 29763

art wrote:

> ...
> http://www.sensormag.com/articles/0301/30/main.shtml
>
> Hopefully this url will get you to what I want you to read.

> Art Unwin.....KB9MZ.....XG (uk)

I would be more than willing to read it, as with most, however, that page, in my browser, results in an 404 error (page not found) and a redirect to this page:

http://www.motionnet.com/

Which is a rip off ...

Regards,
JS

548. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 02:03:03 UTC
From: art <aunwin@insightbb.com>
Message-ID: <f9daa664-a8cb-47ac-a93b-14543b133324@e25g2000prg.googlegroups.com>
Source record: 29764

On 8 Jan, 17:57, John Smith <assemblywiz...@gmail.com> wrote:
> art wrote:
> > ...
> >http://www.sensormag.com/articles/0301/30/main.shtml
>
> > Hopefully this url will get you to what I want you to read.
> > Art Unwin.....KB9MZ.....XG (uk)
>
> I would be more than willing to read it, as with most, however, that
> page, in my browser, results in an 404 error (page not found) and a
> redirect to this page:
>
> http://www.motionnet.com/
>
> Which is a rip off ...
>
> Regards,
> JS

I'm sorry. I did the best I could. I am not computor savvy as you are
Again apologies
Art

549. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 02:09:44 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm1ad8fob2@news.albasani.net>
Source record: 29765

Dave wrote:
> "AI4QJ" <nospam@yahoo.com> wrote in message
> news:47818950$0$5097$4c368faf@roadrunner.com...
>> The VSWR meter on the ham rig is merely looking at the balance of forward
>> and reflected "power" and it is calibrated to read it out as VSWR (or
>> SWR). It may as well say "ISWR"; it is all the same thing. But it is not
>> measured by sensing either voltage ot current going into the antenna...it
>> measures the delta power.
>>
>
> how do you measure 'power'?? you don't. and no swr meter in the world
> measures 'power'. they all take samples of voltage and/or current and drive
> a simple meter circuit that just happens to be calibrated in units of watts
> because thats what most users of cheap meters want to see. they could just
> as easily be calibrated in volts or amps referenced to 50 ohms
>
>

SWR meters calibrated in watts? Really, where?

However, I do find it enough that my watt meter reads 2.5 KW and my
linear is 5 KW--loaded lightly to achieve the 2.5 KW. Somehow it just
makes sense ... and, I am running it into a dummy load--of course! :-D

Regards,
JS

550. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 02:12:58 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm1ajafob3@news.albasani.net>
Source record: 29766

art wrote:
> On 8 Jan, 17:57, John Smith <assemblywiz...@gmail.com> wrote:
>> art wrote:
>>> ...
>>> http://www.sensormag.com/articles/0301/30/main.shtml
>>> Hopefully this url will get you to what I want you to read.
>>> Art Unwin.....KB9MZ.....XG (uk)
>> I would be more than willing to read it, as with most, however, that
>> page, in my browser, results in an 404 error (page not found) and a
>> redirect to this page:
>>
>> http://www.motionnet.com/
>>
>> Which is a rip off ...
>>
>> Regards,
>> JS
>
> I'm sorry. I did the best I could. I am not computor savvy as you are
> Again apologies
> Art

No problem Art, perhaps my browser has been hijacked?

I was just hoping you could provide a link which would present the page
to me. I will download "hijack this" and search for
spyware/malware/trojans/etc., in the meantime ...

Warm regards,
JS

551. Re: electro-magnetic radiation-URL fixed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 02:13:10 UTC
From: gwatts <gwatts@frontiernet.net>
Message-ID: <W4Wgj.1719$Sa1.320@news02.roc.ny>
Source record: 29767

art wrote:
...
> http://www.sensormag.com/articles/0301/30/main.shtml

try
http://www.sensorsmag.com/articles/0301/30/main.shtml

552. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 02:19:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <r598o39l3i2e3lkno2r0eecu6uusukvakh@4ax.com>
Source record: 29768

On Tue, 8 Jan 2008 20:26:03 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>news:vn86o352bovvnsrb69473uibvbdnffhpk6@4ax.com...
>
>> Now, if you want to discard EZNEC (which for some odd reason you seem
>> to approach method of moments with a sneer), conventional methods
>> would still bear out the same results.
>
>The NEC program is just a computer model,

Hi Dan,

"Just a" is a familiar dismissal for almost anything offered. Without corroborating evidence for the fear that is associated with its usage; then such an expression is a totem or religious chant to chase away spirits.

"Computer model"s are as useful as they are predictive. EZNEC conforms to NEC which in turn conforms to field tests. The chain of evidence is quite strong and I have yet to hear of any real-life design that has defied NEC analysis.

>for discussion purposes only. I
>think there are far too many variables in real life for the program to take
>into account. It may be valuable but I am not yet convinced it is
>infallible.

"Infallible" is a feeble demand to the gods for proof of their existence. I very seriously doubt you have ever encountered anything infallible in your life, so why start now? This desire for guarantee is usually a crutch for the turmoil of nervous youth.

A computer model is explicitly not "real life" except to the extent by which it is included as a parameter. You don't name anything in particular that troubles you about "real life," so you don't appear to be looking for assurance, just negation.

NEC has certainly responded to "real life" through the iterations of its successive designs (something that Roy may have more to say). There are explicit allowances for Ohmic loss of the conductor, and dielectric loss of insulation. Also added is the issue of the proximity of earth, and NEC offers similar parameter controls for describing it. In fact, you (or anyone) is probably far more ignorant of the characteristics of the earth in their "real life" than would be the problem of NEC to successfully model it.

As to this last statement, the problem with modeling is far more operator error borne than computer borne. If you have any suspicions, gripes, grief, or indecision, it can frequently be laid at the feet of the designer. That is why I use the designer's own designs to split open their logic to reveal the corruption. If the model lacks interior fidelity, it is not the fault of NEC.

Any review of EZNEC's help files will quickly reveal there are many trip points that can result in low accuracy, or outright errors. These can be investigated by simply asking for the model and examining it yourself. I revealed a couple from Cecil's offering: a strongly earth associated design modeled against a perfect earth; remote stimulus. I explicitly described changes of one or two parameters (expressly demanded by Cecil) and revealed that Traveling Wave antennas have Standing Waves upon them. This is hardly a monumental observation - except when it upsets the horse cart of celebrity.

If you want to remain unconvinced, that is a rather passive activity of low participation and little information. I would suspect that of the 6 billion inhabitants of earth, there are 6 billion like you, but they don't write here. Their motivations lie elsewhere where they participate in activities to their interests.

>> What was my main point, and how is yours conflict with it?
>
>You were arguing about an SWR on a NEC model being 8:1, due, I have heard,
>to an erroneous assumption of Zo.

Well, with nothing more substantial than that, this is not a particularly condemning point. You should note that you are trapped by your own passivity into accepting other people's "word for it." This is an odd position to be in when you are writing in a community of Modelers who exchange designs for review and can either confirm or deny claims against rather more substantial evidence than what was overheard.

>No problem with me. But when you made an
>assertion that I thought could not be measured easily, I hesitated to take
>it true using faith based science. As you can see, the NEC model falls apart
>by making one simple erroneous assumption. Or was it? You can argue about
>that. That is the problem with these models, nobody is so intelligent that
>they are free of errors and no model is infallible either.

You would stand to learn far more by examining the model yourself than have me swear on my credentials. You could stand to learn far more by asking for data instead of pondering the emotional chemistry of writing to a newsgroup, or second guessing how a model might fail.

Those that stand to lose the most in celebrity, rarely offer correlating data or respond in true faith to enquiry for details. This is, after all, the point of the exchange of correspondence where celebrities post merely to pronounce their claims a spark of invention to be validated here. That just isn't the way it works here, or in

"real life" either.

73's
Richard Clark, KB7QHC

553. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 02:38:29 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <pec8o3hb2ilghs31dhdj6gshtgtj58haee@4ax.com>
Source record: 29769

On Tue, 8 Jan 2008 20:38:40 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>news:5n78o35dgegcl8cvqbmffoj3skb2du939u@4ax.com...
>> On Tue, 8 Jan 2008 19:57:18 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>>measures delta I**2 or delta V**2
>>
>> What is delta, specifically as you use it here?
>
>The delta between what is sent forward and what is reflected back. If the
>delta is zero, SWR = 1:1.
>

Hi Dan,

I was trying to untangle this expression from your statement:
>>> I have not seen a meter that
>>>appears to directly measure the ratio of Vmax forward/Vmax reflected or Imax
>>>forward/Imax reflected, which *would* be a direct SWR measurement.

How does you lack of exposure to such an instrument impact this
thread? Do you need it for assurance? Does it demonstrate something
lacking in other methods of determination? I've already written to a
method of determining not only SWR but the phase of reflections using
one meter, switched between three points along a line (or probed
directly). Such a method does not deny the accuracy of other methods
or reveal any more information.

In short, what significance is there in a "direct SWR measurement?" My
skill at it is hardly remarkable until you get to some rather obscure
situations (and a lot of what is obscure here passes as discovery of
the ages stuff, but those discoverers lack the skill).

73's
Richard Clark, KB7QHC

554. Re: electro-magnetic radiation-URL fixed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 02:54:26 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm1d12fob4@news.albasani.net>
Source record: 29770

gwatts wrote:
> art wrote:
> ...
>> http://www.sensormag.com/articles/0301/30/main.shtml
>
> try
> http://www.sensorsmag.com/articles/0301/30/main.shtml

Thanks gwatts--that does it!

Regards,
JS

555. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 03:01:06 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o8e7mmge7ha1c@corp.supernews.com>
Source record: 29771

AI4QJ wrote:
>
> The NEC program is just a computer model, for discussion purposes only. I
> think there are far too many variables in real life for the program to take
> into account. It may be valuable but I am not yet convinced it is
> infallible. . .

Exactly the same can be said of any of the other models we successfully use daily. "Resistances", "impedances", "capacitances", and other objects we routinely use in circuit analysis, are "just" models of real objects. Likewise, the equations we use for solving all kinds of problems, including transmission line and circuit analysis problems, are "just" models of actual behavior. Ohm's law is "just" a model of the relationship among V, I, and Z. The fundamental equations relating currents and fields, Maxwell's equations, and all other equations used in engineering are "just" models of real behavior.

All models are subject to intelligent use. A person modeling a real resistor as a pure resistance at 50 GHz will get just as bad results as a person modeling a dipole on a circuit board in a smart key in a pocket as a free-space dipole. No model, not even a simple resistance, is infallible -- even it can be misused by someone not having the underlying knowledge necessary to apply it. So of course computer models aren't infallible either.

But there are many, many real life antennas which can be modeled with great accuracy with NEC. I use EZNEC regularly myself in my consulting work to design antennas, and find very good correlation with anechoic chamber pattern tests, network analyzer impedance tests, and performance results. So do the many aerospace companies, military organizations, space agencies, universities, research labs, domestic and international broadcasters, and many other companies that use EZNEC daily to help design real antennas that work as predicted. But those aren't the only people successfully modeling with EZNEC -- a large number of amateurs successfully use it also.

I'm not sure what it is that makes models inherently less accurate or believable if the equations are solved with a computer than if they're solved by some other method. Perhaps you could explain.

Roy Lewallen, W7EL

556. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 03:17:40 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47843cd9$0$9572$4c368faf@roadrunner.com>
Source record: 29772

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:r598o39l3i2e3lkno2r0eecu6uusukvakh@4ax.com...
>
> Those that stand to lose the most in celebrity, rarely offer
> correlating data or respond in true faith to enquiry for details. This
> is, after all, the point of the exchange of correspondence where
> celebrities post merely to pronounce their claims a spark of invention
> to be validated here. That just isn't the way it works here, or in
> "real life" either.

Your entire post seems to indicate that, in order to participate in this newsgroup, you must use EZNEC. Forget about all those tiresome formulae and the concept building; you need not know how a standing wave works or the mathematics thereof. I'm sure it was a boon for you when the slide rule was replaced by the electronic calculator, leaving your mind free from having to wrestle with the true science and mathematics that is going on with your engineering problems and just let the machine do it for you. If you make a stupid mistake, don't fret, somebody will correct the parameters and re-run the program until it fits. No need to understand maxwell, calculus, vectors, phasors, just let the program do it all for your using the brute force method of moments. Transistors are dirt cheap and efficient calculations are no longer necessary. No need for analog computers. Just plug it into a method of moments calculator and you are done.

What's missing with this, of course, is the part your grey matter is supposed to do. Grey matter can take a permenent vacation.

I see no problem using a NEC to confirm a calculation or concept. But you seem to advocate its exclusive use as the only authoritative, indeed, available, tool.

Of course, I disagree and think that rraa still has room for real math and scientific concepts and indeed there is room for NEC. However, if the choice is given to prefer one over the other, I prefer the former because creative design does not occur by arbitrary and random use computer problems such as NEC, CADAM and the like, it comes from scientific method which requires human thought.

557. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 03:18:53 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13o8f90ob6f36e5@corp.supernews.com>
Source record: 29773

Richard Clark wrote:
> . . .
> "Computer model"s are as useful as they are predictive. EZNEC
> conforms to NEC which in turn conforms to field tests. The chain of
> evidence is quite strong and I have yet to hear of any real-life
> design that has defied NEC analysis.

I don't think you said quite what you meant.

There are many real-life designs which are beyond NEC's (and hence EZNEC's) ability to analyze. One common example is a microstrip (patch) antenna; NEC has no way to account for the dielectric. A user with even minimal knowledge should realize the significance of this shortcoming, and not expect to be able to get accurate results from a model with the dielectric excluded.

However, and I think this is probably what you meant, the accuracy of NEC is strikingly good whenever a model can be constructed that does a good job of mimicking the real antenna. All this really proves are two things: 1. The fundamental electromagnetic equations solved by NEC are sound, and 2. Most of the bugs have been worked out of the code, so it correctly solves the equations.

The equations solved by NEC can't be solved in closed form. That means there is no formula into which you can plug numbers and calculate a result. The method it uses can be done manually for very simple cases and with very limited accuracy -- see Kraus' _Antennas_, 2nd Edition or later, for a good example. A number of very simple antennas with simple geometry can be analyzed using approximations which have been developed over the years, but they're usually strictly limited to a narrow range of conditions. For example, there have been many methods developed for finding the input impedance of a simple, straight dipole of various lengths and diameters. (I have a large collection of papers and references on this topic, accumulated before MININEC became available.) All are based on approximations, and some are better than others at certain lengths and diameters. None are terribly good over a wide range, and bending the elements, for example, invalidates any of the methods. Now, why should we expect results from these methods to be better in some way than results from NEC, "just" a computer model, when NEC can solve the problem for any length, diameter, and shape, to an arbitrary degree of accuracy, in a fraction of a second?

Roy Lewallen, W7EL

558. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 03:24:09 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47843e5a$0$9545$4c368faf@roadrunner.com>
Source record: 29774

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:pec8o3hb2ilghs31dhdj6gshtgtj58haee@4ax.com...
> On Tue, 8 Jan 2008 20:38:40 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>
>>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>news:5n78o35dgegcl8cvqbmffoj3skb2du939u@4ax.com...
>>> On Tue, 8 Jan 2008 19:57:18 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>
>>>>measures delta I**2 or delta V**2
>>>
>>> What is delta, specifically as you use it here?
>>
>>The delta between what is sent forward and what is reflected back. If the
>>delta is zero, SWR = 1:1.
>>
>
> Hi Dan,
>[...] I've already written to a
> method of determining not only SWR but the phase of reflections using
> one meter, switched between three points along a line (or probed
> directly). Such a method does not deny the accuracy of other methods
> or reveal any more information.

The measurement itself will change the SWR significantly once you start
adding probes to the antenna.

>
> In short, what significance is there in a "direct SWR measurement?"

None.

73 de AI4QJ

559. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 03:54:15 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rig8o3d2ao1ki3gt9eetc8h5hu7c1t4s84@4ax.com>
Source record: 29776

On Tue, 8 Jan 2008 22:17:40 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>news:r598o39l3i2e3lkno2r0eecu6uusukvakh@4ax.com...
>>
>> Those that stand to lose the most in celebrity, rarely offer
>> correlating data or respond in true faith to enquiry for details. This
>> is, after all, the point of the exchange of correspondence where
>> celebrities post merely to pronounce their claims a spark of invention
>> to be validated here. That just isn't the way it works here, or in
>> "real life" either.
>
>Your entire post seems to indicate that, in order to participate in this
>newsgroup, you must use EZNEC.

Hi Dan,

No, it explicitly informs you that if you don't have any modeler, you
are only guessing. Modelers offer solutions that I doubt you could
obtain through your own efforts.

>Forget about all those tiresome formulae and
>the concept building; you need not know how a standing wave works or the
>mathematics thereof.

Forget? Well, this certainly describes someone who will certainly
contribute to pilot error. I dare say, those who are eminently
familiar with how a standing wave works, or the math, use modelers.
Those who don't know how a standing wave works, or the math, are
rather flat-footed.

>I'm sure it was a boon for you when the slide rule was
>replaced by the electronic calculator, leaving your mind free from having to
>wrestle with the true science and mathematics that is going on with your
>engineering problems and just let the machine do it for you.

Fortunately, I don't pursue issues that don't survive a simple
rationality check. This can even eclipse the need of a slide rule
with a few figures sketch on a paper, and some simple computations.

>If you make a
>stupid mistake, don't fret, somebody will correct the parameters and re-run
>the program until it fits. No need to understand maxwell, calculus, vectors,
>phasors, just let the program do it all for your using the brute force
>method of moments. Transistors are dirt cheap and efficient calculations are
>no longer necessary. No need for analog computers. Just plug it into a

>method of moments calculator and you are done.

Ah, but the introduction of this last quote is significant: the
mistake is caught. One needn't be a conductor to enjoy music. On the
other hand, a conductor is eminently qualified (if one can use the
word) to enjoy music.

>What's missing with this, of course, is the part your grey matter is
>supposed to do. Grey matter can take a permenent vacation.

Again, you have already revealed a thought process of recognizing a
mistake. Stupid or otherwise is merely a value to the problem, not to
the process of obtaining the solution.

>I see no problem using a NEC to confirm a calculation or concept. But you
>seem to advocate its exclusive use as the only authoritative, indeed,
>available, tool.

I am still waiting for you to reveal something that does it better.
Simply throwing brain cells at it hasn't offered us much product here
- except when the internal logic of some proclamation fails on the
starting blocks.

>Of course, I disagree and think that rraa still has room for real math and
>scientific concepts and indeed there is room for NEC. However, if the choice
>is given to prefer one over the other, I prefer the former because creative
>design does not occur by arbitrary and random use computer problems such as
>NEC, CADAM and the like, it comes from scientific method which requires
>human thought.

A long and winding road, that. But cursing at air traffic because it
gets others there faster doesn't make blisters on your feet ennobling,
especially when you are as likely to arrive at the wrong destination
as any air traveler.

73's
Richard Clark, KB7QHC

560. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 03:55:22 UTC
From: art <aunwin@insightbb.com>
Message-ID: <b0d96905-7a09-414e-923b-0b2729c75060@k2g2000hse.googlegroups.com>
Source record: 29775

On 8 Jan, 19:01, Roy Lewallen <w...@eznec.com> wrote:
> AI4QJ wrote:
>
> > The NEC program is just a computer model, for discussion purposes only. I
> > think there are far too many variables in real life for the program to take
> > into account. It may be valuable but I am not yet convinced it is
> > infallible. . .
>
> Exactly the same can be said of any of the other models we successfully
> use daily. "Resistances", "impedances", "capacitances", and other
> objects we routinely use in circuit analysis, are "just" models of real
> objects. Likewise, the equations we use for solving all kinds of
> problems, including transmission line and circuit analysis problems, are
> "just" models of actual behavior. Ohm's law is "just" a model of the
> relationship among V, I, and Z. The fundamental equations relating
> currents and fields, Maxwell's equations, and all other equations used
> in engineering are "just" models of real behavior.
>
> *All* models are subject to intelligent use. A person modeling a real
> resistor as a pure resistance at 50 GHz will get just as bad results as
> a person modeling a dipole on a circuit board in a smart key in a pocket
> as a free-space dipole. No model, not even a simple resistance, is
> infallible -- even it can be misused by someone not having the
> underlying knowledge necessary to apply it. So of course computer models
> aren't infallible either.
>
> But there are many, many real life antennas which can be modeled with
> great accuracy with NEC. I use EZNEC regularly myself in my consulting
> work to design antennas, and find very good correlation with anechoic
> chamber pattern tests, network analyzer impedance tests, and performance
> results. So do the many aerospace companies, military organizations,
> space agencies, universities, research labs, domestic and international
> broadcasters, and many other companies that use EZNEC daily to help
> design real antennas that work as predicted. But those aren't the only
> people successfully modeling with EZNEC -- a large number of amateurs
> successfully use it also.
>
> I'm not sure what it is that makes models inherently less accurate or
> believable if the equations are solved with a computer than if they're
> solved by some other method. Perhaps you could explain.
>
> Roy Lewallen, W7EL

Answer why Maxwells laws must have a proviso added when they are considered LAWS
nOT theory but law When you jump the traffic lights you have broken the law.
Maybe your exception has a good reason but by its very use you have invalidated the laws that you are seeking to abide by.This does not mean that the program does not reproduce actual antennas because numourous modifications to make sure that it does. Doing this is tantamount to saying that Maxwells laws need the help of experts such as your self. Seems like a good job is being done but it doesn't change the facts. You have taken the lead offered by Maxwell but have reserved the right to modify these laws to obtain a better computor model.
Why was this deviation added when the discharge of a capacitor is in no way sino-soidal?
Same goes for a inductor. Explain your deviation from the laws of Maxwell!
As a computor programmer you never gave credence to other antenna programs that produced tipped radiators for maximum gain for the polararisation required? You stayed quiet to protect the sales of your own program and thus by your silence allowed true facts to be distorted on this newsgroup. There were many opportunities for you to say that Eznec confirmed this finding
but you said nothing, which in itself is a insult to ham radio. You modified Maxwell's laws and that is prohibited in mathematics if one is to follow a mathematical law which you then invalidate.
Nothing personal intended, just a statement of facts as I see them. I will accept factual changes if you deign to point them out in detail so they can be confirmed or denied.
Art

561. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 03:56:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2ch8o392juvf20rj1t59pa3t41qqgrqog6@4ax.com>
Source record: 29777

On Tue, 8 Jan 2008 22:24:09 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>The measurement itself will change the SWR significantly once you start
>adding probes to the antenna.

Hi Dan,

I've done it with remote, fiber optic probes. If this is another
absolutism about "change" then my being on the same planet will
disturb that certainly.

73's
Richard Clark, KB7QHC

562. Re: r.r.a.a WARNING!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 04:03:11 UTC
From: art <aunwin@insightbb.com>
Message-ID: <1d57a3f9-a64e-48ec-ae31-17c75e1bff1c@v29g2000hsf.googlegroups.com>
Source record: 29778

On 7 Jan, 18:39, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:e6e86fa8-0728-408e-84ab-70f1ade2bdfd@i3g2000hsf.googlegroups.com...
>
>
>
>
>
> > On 6 Jan, 18:39, "AI4QJ" <nos...@yahoo.com> wrote:
> >> "art" <aun...@insightbb.com> wrote in message
> >
> >>news:ab630d0b-572c-4c4c-b287-c92c582c1fb8@d21g2000prf.googlegroups.com...
> >
> >> "Did you ever think that your post would last this long? Obviously the
> >> regular contributors
> >> in this group cannot handle the truth and thus will not consult
> >> anything.Now the experts are argueing over the term SWR a very, very,
> >> deep discussion revealing things unknown to the amateur community at
> >> this time. [...]"
> >
> >> Hello Art, the concept of SWR is extremely misunderstood even by people
> >> with
> >> degrees in electronics engineering. It is assumed to be simple, yet many
> >> people get it wrong. Indeed, a good understanding is essential for
> >> antenna
> >> development. I do not fault anyone for not understanding the concept
> >> because
> >> standing waves, simple as they may seem, are actually expressed as the
> >> product of a cos wave over distance and a sine wave over time. Many
> >> things
> >> are happening over the length of the antenna as the function is
> >> operating.
> >> If you think of it, it is the essence of space-time and it may be
> >> productive
> >> for you to consider it even more broadly in your own hypotheses, more
> >> broadly that is by possibly incorporating the mechancial SWR analogues to
> >> voltage/current SWR's and who knows what new ideas may come to mind with
> >> your model.
> >
> > I don't understand a lot of this talk about waves bouncing which is
> > fortunate. Icould not possibly stay on a thread where everybody is
> > talking past each other and then changing the subject as they didn't
> > understand the subject in the first place. In ham radio nothing is

> > believed if it is contrary to the norm.This bouncing wave thing will
> > never come to closure as all participants are deaf. As far as me
> > getting involved all the answers involved in my description of radio
> > are known facts in the scientific world and fully coroberated. Heck
> > they are even corroberated by existing antenna computor programs and
> > actual tests. I can't see how these waves fit in with classical
> > science so it must be another invented science that it referes to. Now
> > if the trend changed to debate the voracity of existing accepted data
> > is proved to be incorrect then they would have my attention but the
> > group is not competant enough for that trail.
> > Regards
> > Art
>
> You are a mechanical engineer, right? Consider acoustic "radiation". Pluck a
> guitar string; the fundamental wavelength of the sound your hear (and its
> harmonics) will be related to the length of the string and the speed of the
> wave in the string (not the speed of sound) which depends on the tension and
> density of the string. f*length = v. The 'radiation resistance' is the
> string's standing wave pushing against the air and producing sound energy
> from applied kinetic energy stored in the *vibrating string*. The musical
> note you hear does move at the speed of sound. This is somewhat analagous to
> an antenna. Now I agree that to be a musician it is not neccesary to
> understand these principles but to design guitar strings (antennas) it would
> be advantageous to understand it (though not mandatory). In order to discuss
> the reasons why certain guitar strings work better or sound different than
> others, it is essential to understand this and to understand it, you must
> first understand what an acoustic standing wave is. You are working on an
> antenna model; you may be a ham and you may even be designing antennas but
> you do not know how standing waves work. It is not compusory. You can still
> operate and design antennas without knowing how this works. But, it sounds
> like you need some more tools. You are dealing with EM fields and waves and
> you are also dealing with vibrations of particles making your model, if it
> works, almost as related to a mechancial wave as an electrical wave...a
> combination of both? I think on the track that you are on, which is not real
> clear to me, I would advise getting out the physics books and getting
> familiar with these concepts...they are not only EE related, there is an ME
> analog (as there often is for fundamental EE problems).- Hide quoted text -
>
> - Show quoted text -

I was being facietious in my comments regarding the change of
direction to SWR.
If it upset you I apologise,as I do to David and Richard with their
comments
with respect to SWR meters and I thus withdraw said comment.
Best regards
Art

563. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 08:08:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5509o3t4j0fh5f076i74hhi26r80iclt06@4ax.com>
Source record: 29779

On Wed, 09 Jan 2008 18:33:18 +1100, slackj
<slackj_delete@optusnet.com.au> wrote:

>Comments welcome.

Hi Stewart,

Consider an Inverted F antenna:
http://www.qsl.net/kb7qhc/antenna/Inverted%20F/index.htm

As for your complaint about transmit, is this from reports of hearing
the alternator during your transmission?

73's
Richard Clark, KB7QHC

564. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 10:42:40 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <Ay1hj.4949$hS.302@trnddc08>
Source record: 29780

"slackj" <slackj_delete@optusnet.com.au> wrote in message
news:n529o3tsf5s38fsgmp3lvpmg2c48eg4eer@4ax.com...
> Hi Richard,
>
> I had a quick look at the inverted F and will probably give it a miss
> thanks. One of the reasons for wanting to stay with a groundplane
> style is that I can utilise different radiators on the standard base
> (all on the one band of course). I would only use the max gain
> element when out in the desert regions, but in mountain country scale
> down to a lesser gain.
>
> Re the hash - my own reports - evaluated by dialling my home answering
> machine, then reviewing the playback. I added a commentary as to
> which accessories were on and loading up the alternator at each stage,
> and what rpm on the tacho etc.
>
> Thanks for your continuing interest BTW. You must be an insomniac (or
> just a typical amateur) - lol.
>
> Stewart.
>>
>>As for your complaint about transmit, is this from reports of hearing
>>the alternator during your transmission?

Hi Stewart

Are you providing a *pair* of relatively large wires from the battery, one
for plus and one for minus?
This is like a puzzle and it is interesting to follow this thread. I
consider it impractical, but it would be interesting to learn if a small,
sealed lead acid battery located close to the phone lowers the "noise"
(after the pair if +/- is also installed).

If this was my project, I'd test the phone line quality with a test
antenna thats *not* grounded. That way I could be more confident that the
"noise" will be acceptable with some ungrounded antenna.

Jerry KD6JDJ

565. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 16:03:30 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fm2r8i$16fq$1@f04n12.cac.psu.edu>
Source record: 29781

AI4QJ wrote:

> The NEC program is just a computer model, for discussion purposes only. I
> think there are far too many variables in real life for the program to take
> into account. It may be valuable but I am not yet convinced it is
> infallible.

Oh darnit! Here I went and built several antennas designed with Eznec,
and they have worked just like the program said they would.

I guess I'll have to take the remaining ones down, since I was only
supposed to discuss them, not actually make and use them. Thanks for the
correction!

- 73 de Mike N3LI -

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Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 17:04:49 UTC
From: huangcba6@gmail.com
Message-ID: <1c6cd975-b542-4762-8763-e3e64644f9ec@x69g2000hsx.googlegroups.com>
Source record: 29782

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567. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 19:04:15 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <7aa7d6a1-6872-4097-8b35-01e1bc995147@l32g2000hse.googlegroups.com>
Source record: 29783

On Jan 8, 2:39 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> But when you write the equation for the superposition of
> traveling waves and claim that resultant standing wave is a different
> kind of electromagnetic wave, that is a misguided point of view.

That's not true unless you consider Eugene Hecht to be misguided. He said standing waves are so different from traveling waves that they probably shouldn't even be considered to be waves at all since they are not even moving. Standing waves could hardly be any different from traveling waves and tend to create strange illusions in human brains. I have plotted the envelopes of the waves at http://www.w5dxp.com/TravStnd.gif Those waveforms could hardly be any different yet you asserted that they are linked by a trig identity.

A standing wave is not only different from an EM traveling wave, it cannot correctly even be called an EM wave because it is not moving at the speed of light in the medium, a technical requirement for EM waves.

I have asked you to prove your assertion that, using your trig identity, cos(kx-wt) = cos(kx)+cos(wt). Where is that proof?

> ... you almost inevitably end up lying ...

Misunderstanding you and repeating it back to you is not lying. Neither are my personal opinions proof of lying. I joke a lot but lying is against my ethics and religion. Being called a liar by liar is unacceptable proof. Would it be too much to ask to post one of my alleged lies instead of hoping that your handwaving and implications will accomplish that underhanded trick.

P.S. I'm on my daughter's computer posting from Google.
--
73, Cecil, w5dxp.com

568. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 19:36:37 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <c8d935bc-1d50-4615-be30-220b798ad34b@l6g2000prm.googlegroups.com>
Source record: 29784

On Jan 8, 3:54 pm, art <aun...@insightbb.com> wrote:
> Yes 50/60 is frequency just like 10 metrrs. Now go homw and cut the
> wire in the kitchen to make it an open circuit Now ham r5adio says the
> cuyrrent will turn around where you cutt it and it will go back. Well
> science has not seen a trace of this new frequency of 100, 110 0r 220
> line double its frequency to twice what it was before.

Art, please think about what you are saying.

The wavelength of 20 MHz is 70 ft. The wavelength of 60 Hz is
16,400,000 feet (3100 miles).

There is a power factor correcting capacitor every city block or so on
the 60 Hz system, i.e. approximately every 0.00003 wavelength. Are
there any power factor correcting capacitors hanging on a 20m dipole?
If the standing wave power factor was corrected on a 20m dipole, the
standing waves would disappear just like they do on the power wires.
Correcting the power factor on a standing wave dipole antenna would
turn it into a traveling wave antenna and there would be no
reflections from the end of the dipole. Our 50/60 Hz power
distribution systems are overwhelmingly traveling wave systems. The
power companies simply don't allow reflections to exist because they
don't get paid for reflected energy and they sure don't want it coming
back to the generator.

If you had a 60Hz generator feeding a low-loss 3100 mile open-
circuited transmission line, you would certainly observe a forward
wave, reflected wave, and standing wave all obeying the distributed
network reflection model rules.
--
73, Cecil, w5dxp.com

569. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 19:42:57 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <5t9hj.402885$kj1.43935@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29785

Cecil Moore wrote:
.
>
> A standing wave is not only different from an EM traveling wave, it
> cannot correctly even be called an EM wave because it is not moving at
> the speed of light in the medium, a technical requirement for EM
> waves.

Cecil,

I showed you exactly how the energy in a standing wave travels at the speed of light. Did you miss that message, or are you just pretending it didn't happen?

Neither you nor your buddy Hecht are likely to overturn more than 100 years of successful use of standing waves.

8-)

73,
Gene
W4SZ

570. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 19:48:12 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <db7c61cc-04ff-48fe-8ac3-f66e1ab7b6a9@t1g2000pra.googlegroups.com>
Source record: 29786

On Jan 8, 9:19 pm, Richard Clark <kb7...@comcast.net> wrote:
> I
> explicitly described changes of one or two parameters (expressly
> demanded by Cecil) and revealed that Traveling Wave antennas have
> Standing Waves upon them. This is hardly a monumental observation -
> except when it upsets the horse cart of celebrity.

You wasted your time, Richard. Everyone should already know that there
are received reflected waves of all different frequencies on a
traveling wave antenna. However, they can all be completely ignored
since we are only interested in the one frequency on which we are
transmitting *and* in the direction to which we are transmitting.
Introducing all the other extraneous frequencies and directions that
exist is an act of desperation.

In particular, we are not interested in the received standing waves
that are incident upon our terminated rhombic when they are coming
from the side or back of the antenna. That they exist proves
absolutely nothing of value.
--
73, Cecil, w5dxp.com

571. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 20:01:15 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <6b3d23f9-5e14-4539-a401-8656d2a60a7e@t1g2000pra.googlegroups.com>
Source record: 29787

On Jan 9, 2:42 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> I showed you exactly how the energy in a standing wave travels at the
> speed of light. Did you miss that message, or are you just pretending it
> didn't happen?

I don't think I missed it, Gene, but it is possible. There is no net energy movement in a standing wave because the forward Poynting vector, Pz+, and reverse Poynting vector, Pz-, are equal magnitude and opposite directions. Therefore, no net energy movement is possible in a standing wave.

In contrast to that standing wave, there is always net energy movement in a traveling wave. If you can prove net energy movement in a standing wave, you will have violated the definition of a standing wave.
--
73, Cecil, w5dxp.com

572. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 20:13:29 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm3afsjev1@news.service.uci.edu>
Source record: 29790

Cecil Moore wrote:
> On Jan 8, 2:39 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>
>>But when you write the equation for the superposition of
>>traveling waves and claim that resultant standing wave is a different
>>kind of electromagnetic wave, that is a misguided point of view.
>
>
> That's not true unless you consider Eugene Hecht to be misguided.

Of course it's true, and Dr. Hecht does post here.

> He
> said standing waves are so different from traveling waves that they
> probably shouldn't even be considered to be waves at all since they
> are not even moving.

On what page has Dr. Hecht written "a standing wave is a different
kind of electromagnetic wave"?

> Those waveforms could hardly be any different yet you asserted that
> they are linked by a trig identity.

I asserted that expression for the sum of traveling waves and the
expression for the resulting standing wave pattern are related by trig
identity, as per page 140 of the 28th Edition of the CRC Standard
Mathematical Tables Handbook.

> A standing wave is not only different from an EM traveling wave, it
> cannot correctly even be called an EM wave because it is not moving at
> the speed of light in the medium, a technical requirement for EM
> waves.

The 'wave' which stands is merely an amplitude envelope for the waves
which move. It's not a "different kind of electromagnetic wave." If
you were to instead characterize a 'standing wave' as a different kind
of interference pattern, then we would in fact be in agreement.

ac6xg

573. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 20:23:40 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <4baao3pbnucc565illegc15gcdgpl75mbl@4ax.com>
Source record: 29788

On Wed, 9 Jan 2008 11:48:12 -0800 (PST), Cecil Moore
<w5dxp@hotmail.com> wrote:

>On Jan 8, 9:19 pm, Richard Clark <kb7...@comcast.net> wrote:
>> I
>> explicitly described changes of one or two parameters (expressly
>> demanded by Cecil) and revealed that Traveling Wave antennas have
>> Standing Waves upon them. This is hardly a monumental observation -
>> except when it upsets the horse cart of celebrity.
>
>You wasted your time, Richard. Everyone should already know that there
>are received reflected waves of all different frequencies on a
>traveling wave antenna. However, they can all be completely ignored
>since we are only interested in the one frequency on which we are
>transmitting *and* in the direction to which we are transmitting.
>Introducing all the other extraneous frequencies and directions that
>exist is an act of desperation.
>
>In particular, we are not interested in the received standing waves
>that are incident upon our terminated rhombic when they are coming
>from the side or back of the antenna. That they exist proves
>absolutely nothing of value.

Hi Dan,

I want you to take this quote above and observe that it offers nothing of data, and certainly says nothing of any model (except by the slightest of inference), and there is nothing of a practical measurement.

It does touch on the gray matter you aspire to keep active in the game, but only to recite homilies that do not attend the discussion. One could as easily demand that Ohm's law describes conduction, but say nothing about current, voltage, or resistance. Yes, all very true about Ohm, but hardly dismissive of prior models presented or their data that they deliver (by whatever means), nor how the sum of these typical engineering considerations fails to conform to the logic of Cecil's proposed argument.

By the points:
!. different frequencies is not an issue, only one has ever been expressed;
2. direction is not an issue, excitation is by degree only, nothing changes the energy distribution in relative phases nor period;
3. termination was not my issue (although I conformed to Cecil's demand that it should be) as I had already accounted for it;

4. they (Standing Waves) exist may be nothing of value, but only for a desperate celebrity who discounts his argument, impeaches his models and disinherits their data.

If you still find EZNEC a poor mechanism to support an argument through its means of presenting what you might call suspect data, then the quoted response to my posting above, has to be light years further from a rational conclusive demonstration. ;-)

73's
Richard Clark, KB7QHC

574. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 20:30:06 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <i9ahj.120641$MJ6.78539@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29789

Cecil Moore wrote:
> On Jan 9, 2:42 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>> I showed you exactly how the energy in a standing wave travels at the
>> speed of light. Did you miss that message, or are you just pretending it
>> didn't happen?
>
> I don't think I missed it, Gene, but it is possible. There is no net
> energy movement in a standing wave because the forward Poynting
> vector, Pz+, and reverse Poynting vector, Pz-, are equal magnitude and
> opposite directions. Therefore, no net energy movement is possible in
> a standing wave.
>
> In contrast to that standing wave, there is always net energy movement
> in a traveling wave. If you can prove net energy movement in a
> standing wave, you will have violated the definition of a standing
> wave.
> --
> 73, Cecil, w5dxp.com

So do we now have a new requirement for waves and photons that there must be *net* energy flow? Who cares what the average or *net* is. Think *instantaneous* if you want to understand photons. After all, they don't stand still, and they don't interact with each other.

You claimed that standing waves cannot be real waves because they cannot obey photon rules. I easily demonstrated that idea is incorrect.

The message was sent on January 3, at 4:32 pm, in the thread "Re: Standing-Wave Current vs Traveling-Wave Current".

73,
Gene
W4SZ

575. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 20:33:09 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <9cahj.403079$kj1.385225@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29791

Cecil Moore wrote:
> On Jan 8, 3:54 pm, art <aun...@insightbb.com> wrote:
>> Yes 50/60 is frequency just like 10 metrrs. Now go homw and cut the
>> wire in the kitchen to make it an open circuit Now ham r5adio says the
>> cuyrrent will turn around where you cutt it and it will go back. Well
>> science has not seen a trace of this new frequency of 100, 110 0r 220
>> line double its frequency to twice what it was before.
>
> Art, please think about what you are saying.
>
> The wavelength of 20 MHz is 70 ft. The wavelength of 60 Hz is
> 16,400,000 feet (3100 miles).
>
> There is a power factor correcting capacitor every city block or so on
> the 60 Hz system, i.e. approximately every 0.00003 wavelength. Are
> there any power factor correcting capacitors hanging on a 20m dipole?
> If the standing wave power factor was corrected on a 20m dipole, the
> standing waves would disappear just like they do on the power wires.
> Correcting the power factor on a standing wave dipole antenna would
> turn it into a traveling wave antenna and there would be no
> reflections from the end of the dipole. Our 50/60 Hz power
> distribution systems are overwhelmingly traveling wave systems. The
> power companies simply don't allow reflections to exist because they
> don't get paid for reflected energy and they sure don't want it coming
> back to the generator.
>
> If you had a 60Hz generator feeding a low-loss 3100 mile open-
> circuited transmission line, you would certainly observe a forward
> wave, reflected wave, and standing wave all obeying the distributed
> network reflection model rules.
> --
> 73, Cecil, w5dxp.com

Cecil,

That is an interesting tale, but mostly baloney.

When you get back to the wilds of Texas go check out some rural power lines. Count the number of power factor correcting capacitors you see. I bet it is a lot less than the equivalent of one per city block. Power factor correcting capacitors are intended to correct for reactive loads, such as motors, not for reflections or standing waves on open ended power transmission lines.

But you already know that.

73,
Gene
W4SZ

576. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 20:50:31 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm3clulpg1@news.service.uci.edu>
Source record: 29792

Before Cecil jumps on the typo, see below. My profuse apologies.

Jim Kelley wrote:

> Cecil Moore wrote:
>
>> On Jan 8, 2:39 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>>
>>> But when you write the equation for the superposition of
>>> traveling waves and claim that resultant standing wave is a different
>>> kind of electromagnetic wave, that is a misguided point of view.
>>
>>
>>
>> That's not true unless you consider Eugene Hecht to be misguided.
>
>
> Of course it's true, and Dr. Hecht does post here.

and Dr. Hecht does not post here.

>> He
>> said standing waves are so different from traveling waves that they
>> probably shouldn't even be considered to be waves at all since they
>> are not even moving.
>
>
> On what page has Dr. Hecht written "a standing wave is a different kind
> of electromagnetic wave"?
>
>> Those waveforms could hardly be any different yet you asserted that
>> they are linked by a trig identity.
>
>
> I asserted that expression for the sum of traveling waves and the
> expression for the resulting standing wave pattern are related by trig
> identity, as per page 140 of the 28th Edition of the CRC Standard
> Mathematical Tables Handbook.
>
>> A standing wave is not only different from an EM traveling wave, it
>> cannot correctly even be called an EM wave because it is not moving at
>> the speed of light in the medium, a technical requirement for EM
>> waves.
>
>

> The 'wave' which stands is merely an amplitude envelope for the waves
> which move. It's not a "different kind of electromagnetic wave." If you
> were to instead characterize a 'standing wave' as a different kind of
> interference pattern, then we would in fact be in agreement.
>
> ac6xg
>

577. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 21:10:52 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fm3d8p$ll4$1@news.jpl.nasa.gov>
Source record: 29795

Wimpie wrote:
> On 7 ene, 04:25, richardharri...@webtv.net (Richard Harrison) wrote:
>
>>art wrote:
>>
>>"You did not 'determine" radiated power.....period"
>>
>>Exactly right. Power in the near field is largely reactive. To determine
>>radiated power you measure the in-phase volt-amperes with a wattmeter.
>>The multimeter on the hood maximizes output same as a Bird wattmeter for
>>practical results, but you hanen`t quantified watts out.
>>
>>Best regards, Richard Harrison, KB5WZI
>
>
> Hi Richard,
>
> You can determine radiated power and radiation pattern by near field
> measurements (theoretically). Please search for "poynting theorem"
> and "Huygens principle", "Huygens Source" or "Fresnel diffraction
> theory". Most texts require differential vector calculus.

This is what is done on a near-field antenna range. For certain
scanning geometries, the math is fairly straightforward (e.g. Fourier
transforms). For others, it gets complex, especially if the scanning
points are not evenly spaced.

A further complication is that you need to make 3 axis measurements of
both E and H.

Jim, W6RMK

578. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 21:23:19 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm3e07$661$1@news.albasani.net>
Source record: 29793

Cecil Moore wrote:

>> ...
> P.S. I'm on my daughter's computer posting from Google.
> --
> 73, Cecil, w5dxp.com

Cecil:

Break down and buy a laptop (even a used one.) Make sure it has a wireless card or, get a USB wireless dongle (make sure the laptop has USB ports!)

Jiwire(http://www.jiwire.com) can be used to find any free wireless hotspots in the areas you are in, or even paid ones--for that matter.

Without you, it's too boring ... Sometimes this is better than an Indiana Jones movie! You know, the type of movies where the natives want his head on a stick. <LOL>

Warm regards,
JS

579. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 21:23:51 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fm3e17$1vq$1@news.jpl.nasa.gov>
Source record: 29796

John Smith wrote:
> J. Mc Laughlin wrote:
>
>> ...
>> To use this technique at, say, 10 MHz with a yagi would be improbable,
>> but not impossible.
>>
>> 73, Mac N8TT
>>
>
> It would be interesting to hear ideas of those on "probes", methods,
> etc., on how to do such, would be attempted--implemented-imployed ...
> never say never.

The challenge is that one needs a probe that measures 3 axis E and H. There are some clever designs out there based on a sphere with 6 half loops sticking out. They've been used to make near field measurements of broadcast stations, among other things. See, for instance, Gassman and Furrer, 1993. Silva, et al., published an interesting fiber optic probe scheme in 97. Driver and Kanda published a optically linked sensor for making Poynting vector measurements in the near field in 1988 (IEEE Trans EMC). In the microwave area, the probe is usually an open ended section of waveguide.

There are some clever techniques (see, for instance, the work of Bolomey) where you put an array of small (non resonant) dipoles with switches in the near field, and turn them on and off. You look at the antenna's feedpoint impedance and from that, you can tell what part of the field is affected by that dipole.

Once you've got your near field data, you need to post process. A gentleman, A.C. Newell, literally wrote the book(s) on this technique at NIST/NBS.

>
> I think it would be interesting to hear on endeavors along these lines,
> brave hearted individuals may be willing to share their experiences,
> findings, guesses, etc. ... the bark is often much more dangerous
> sounding than the the "bite." :-)
>
> Frankly, "re-inventing the wheel" is welcomed here!
>
> Regards,
> JS

580. Re: electro-magnetic radiation-URL fixed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 21:52:56 UTC
From: Dave <noone@nowhere.com>
Message-ID: <Ymbhj.4614$tZ6.1412@trndny03>
Source record: 29794

"gwatts" <gwatts@frontiernet.net> wrote in message
news:W4Wgj.1719$Sa1.320@news02.roc.ny...
> art wrote:
> ...
>> http://www.sensormag.com/articles/0301/30/main.shtml
>
> try
> http://www.sensorsmag.com/articles/0301/30/main.shtml

and just what does that page have to do with em waves?

581. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 22:12:54 UTC
From: dfinn1@nc.rr.com
Message-ID: <285003c3-a88c-4f61-a1e9-22088909e335@k39g2000hsf.googlegroups.com>
Source record: 29797

On Jan 9, 11:03 am, Michael Coslo <m...@psu.edu> wrote:
> AI4QJwrote:
> > The NEC program is just a computer model, for discussion purposes only. I
> > think there are far too many variables in real life for the program to take
> > into account. It may be valuable but I am not yet convinced it is
> > infallible.
>
> Oh darnit! Here I went and built several antennas designed with Eznec,
> and they have worked just like the program said they would.
>
> I guess I'll have to take the remaining ones down, since I was only
> supposed to discuss them, not actually make and use them. Thanks for the
> correction!
>
> - 73 de Mike N3LI -

But you may have a problem discussing on the ng exactly "why" they
work. Why would you want to discuss an antenna if you don't care "how"
it works, you only care "that" it works? There are some people that
operate at 27MHz who don't care how their radios work, only that they
can peg your meter at 10 pounds.

582. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 22:18:10 UTC
From: dfinn1@nc.rr.com
Message-ID: <393e3f9a-666f-4039-9c01-ce5da29ec1a1@z17g2000hsg.googlegroups.com>
Source record: 29698

On Jan 9, 2:42 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> Cecil Moore wrote:
>
> .
>
>
>
> > A standing wave is not only different from an EM traveling wave, it
> > cannot correctly even be called an EM wave because it is not moving at
> > the speed of light in the medium, a technical requirement for EM
> > waves.
>
> Cecil,
>
> I showed you exactly how the energy in a standing wave travels at the
> speed of light. Did you miss that message, or are you just pretending it
> didn't happen?
>
> Neither you nor your buddy Hecht are likely to overturn more than 100
> years of successful use of standing waves.
>
> 8-)
>
> 73,
> Gene
> W4SZ

Semantics. The standing wave doesn't 'travel' anywhere, much less at
the speed of light. However, it does vibrate. Each vibration cycle
occurs at a frequency that, when multiplied by its wavelength, would
be equal to the speed of light. I find this an interesting concept.

583. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 22:24:23 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13oaicr23u78pea@corp.supernews.com>
Source record: 29699

Roger Sparks wrote:

> Using the reflection point as the zero reference seems to correspond with an observation you made about the end of the line controlling the SWR.

The choice of zero reference is entirely arbitrary; any point on the line, or off the line, for that matter, can be used. I used the input end of the line as the x = 0 reference, so my equations are correct only when that reference is used. The choice of a reference has no effect on the SWR or any other aspect of line operation; it simply modifies the equations.

For example, my equations for the first forward and first reflected voltage wave were:

vf1(t, x) = sin(wt - x)
vr1(t, x) = Gl * sin(wt + x)

and for the second set:

vf2(t, x) = Gs * sin(wt - x)
vr2(t, x) = Gs * Gl * sin(wt + x)

where here I've explicitly shown the source and load reflection coefficients as Gs and Gl respectively. They were 0.5 and 1 in my second analysis (the one with a 150 ohm resistor at the source).

The more general case where the line is some length L, rather than the integral number of wavelengths in the example,

vf1(t, x) = sin(wt - x)
vr1(t, x) = Gl * sin(wt + x - 2L)

vf2(t, x) = Gs * Gl * sin(wt - x - 2L)
vr2(t, x) = Gs * Gl^2 * sin(wt + x - 4L)

In general,

(1) vfn(t, x) = (Gs * Gl)^n * sin(wt - x - 2nL)
(2) vrn(t, x) = Gl * (Gs * Gl)^n * sin(wt + x - (2n + 1)L)

where L is expressed in the same units as x and wt (degrees or radians).

These equations are correct with x being the distance from the input end of the line.

You could, as I mentioned, use a different reference, for example x' = L - x, where L is the line length in radians or degrees (same units as x and wt). Then you have, simply by substituting L - x' for x:

vf1(t, x') = sin(wt - L + x')
vr1(t, x') = sin(wt + L - x' - 2L) = sin(wt - L - x')

and so forth, and for the general case,

(3) vfn(t, x') = (Gs * Gl)^n * sin(wt + x' - (2n + 1) * L)
(4) vrn(t, x') = (Gs * Gl)^n * sin(wt - x' - 2nL)

or, you can use x for the forward wave and x' for the reverse wave or vice-versa in order to reference to the point the wave was reflected from or where it will be reflected from. Any combination of the equations is equally valid and will give correct results. You can't, however, simply redefine the reference point without a corresponding change in the equation. In general, equation 1 and equation 3 will give different results if you put in the same value for x and x'; likewise equations 2 and 4. There are some special cases, as you showed, where you can change the reference without modifying the equations and not have any impact on the sum of the waves. However, you can see from the equations that this won't usually work.

The general case with complex reflection coefficients and arbitrary line length is mathematically a little more difficult than the simple example I worked earlier. Not only does each reflection have a different amplitude than the previous one, it also has a different phase angle, due to the line length and the reflection coefficients. Consequently, the simple a / (1 - r) formula I used for summing the infinite series of waves can't be applied to the equations in the form I used. This is where a change to phasor notation is really beneficial, since the phase delay simply becomes e raised to an imaginary exponent which can be treated more conveniently than its constituent sine and cosine functions. With phasor notation, the summing formula can be used even for the general case to find the steady state results from the individual reflected waves. There's a very excellent treatment of this in Chipman's _Transmission Lines_ (Schaum's Outline Series). He does just about exactly what I did in my earlier posting, except for the general case and using phasors rather than time representations. It's an excellent text and reference, and I highly recommend it for anyone seriously interested in transmission lines.

Roy Lewallen, W7EL

584. Re: electro-magnetic radiation-URL fixed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 22:50:57 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm3j4h$661$2@news.albasani.net>
Source record: 29700

Dave wrote:

> ...
> and just what does that page have to do with em waves?
>
>

Hmmm, maybe better to ask, "What does electro-magnetism have to do with magnetic fields"--you will get more answers ... sounds like you know what you are speaking about, also.

JS

585. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-09 23:08:17 UTC
From: richardharrison@webtv.net
Message-ID: <11281-478553E1-150@storefull-3252.bay.webtv.net>
Source record: 29701

Art wrote:
"Yes 50/60 is frequency just like 10 meters."

What is wrong with that statement?

The frequency corresponding to 10 meters is 30 million cycles per second. The wavelength corresponding to 50 Hz is 6 million meters.

A point a few meters from another along a 50 Hz line must have the same voltage as that of the other point on the line a few meters away because the 50 Hz wave changes its value so slowly as compared with wave velocity, about 300 million meters per second.

At the same distance between points on a 30 MHz line, the voltages of two points are surely different at the same instant because the wave changes its value rapidly.

Cut a line carying HF of 30 MHz and the voltage doubles at the open circuit while the current is completely reflected, making a sum of zero amperes at the cut.

Best regards, Richard Harrison, KB5WZI

586. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 00:03:52 UTC
From: richardharrison@webtv.net
Message-ID: <11281-478560E8-163@storefull-3252.bay.webtv.net>
Source record: 29703

Jim Kelley, AC6XG wrote:
"On what page has Dr. Hecht written "A standing wave is a different kind of electromagnetic wave?"

In "Schaum`s College Physics Outline" by Bueche & Hecht on page 214 is written:
"Standing Waves:....These might better not be called waves at all since they do not transport energy and momentum."

Best regards, Richard Harrison, KB5WZI

587. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 00:13:37 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47856332$0$31770$4c368faf@roadrunner.com>
Source record: 29702

"Helmut Wabnig" <hwabnig@ .- --- -. DOT .- t> wrote in message
news:afg6o359uvfhbpdk09lu9d45lqlao6bqdi@4ax.com...
> On Mon, 07 Jan 2008 23:46:02 -0800, Richard Clark <kb7qhc@comcast.net>
> wrote:
>
>>On Tue, 08 Jan 2008 17:46:26 +1100, slackj
>><slackj_delete@optusnet.com.au> wrote:
>>
>>> I'll concentrate on the alternator itself and
>>>the DC line which powers the car kit.
>>
>>Hi Stewart,
>>
>>Take your DC off the battery post, not the distribution system (but
>>make sure to fuse that lead). The bonding you speak of is
>>prinicipally for RF feedback, and ground loops up in that region;
>>alternator whine arrives through the DC feed.
>>
>>73's
>>Richard Clark, KB7QHC
>
> he may have to feed 12 Volts trhough a DC filter
> made of 2 chokes and 2 caps.

I don't think so. If he comes directly off the bat, there is no filter
system that he can construct that would equal the capacitance of the battery
for effectivity.

588. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 00:18:44 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47856465$0$31777$4c368faf@roadrunner.com>
Source record: 29704

"Roger Sparks" <rsparks@elltel.net> wrote in message
news:20080108085916.448c0a6c.rsparks@elltel.net...
> On Tue, 08 Jan 2008 07:23:52 -0800
> Richard Clark <kb7qhc@comcast.net> wrote:
>
>> On Tue, 08 Jan 2008 21:34:17 +1100, slackj
>> <slackj_delete@optusnet.com.au> wrote:
>>
>> >Helmut & Richard,
>> >
>> >Yeah, thanks for that. Like I said it's been ages since I've needed
>> >to do any of this, but most of it's in my memory banks somewhere -
>> >lol. Do they still make those big metal encased pass-through
>> >capacitors with a grounding tag? They used to be handy, and yes I may
>> >need to put together a little filter network. The good thing is that
>> >the kit won't draw much current.
>>
>> Hi Stewart,
>>
>> There's no reason for filters, the battery is already the biggest
>> capacitor in the world - for all practical purposes. Also, the
>> regulator disconnects it from the alternator 5 minutes after you've
>> started the car.
>>
>> 73's
>> Richard Clark, KB7QHC
>
> I am not so confident that the lead cell battery (or any battery) is a
> replacement for a filter. A battery demonstrates about 75 to 85 percent
> efficiency for charging and discharging, but a capacitor is just under 100
> percent efficient. When used as a filter, a battery is a capacitor with a
> series resistor.
>
> Battery efficiency is probably less at radio frequencies.

I disagree. There is no better filter for alternator noise than the battery.
If more people realized this, they sure would sell a lot less filters. All
filters also have series resistance. What do you mean by filter efficiency?
The amount of noise turned into heat? How hot does a battery get from
alternator noise?

589. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 00:48:40 UTC
From: art <aunwin@insightbb.com>
Message-ID: <2d5bd578-912f-4b1e-bdba-2ed26e96a1df@j78g2000hsd.googlegroups.com>
Source record: 29705

On 9 Jan, 11:36, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 8, 3:54 pm, art <aun...@insightbb.com> wrote:
>
> > > Yes 50/60 is frequency just like 10 metrrs. Now go homw and cut the
> > > wire in the kitchen to make it an open circuit Now ham r5adio says the
> > > cuyrrent will turn around where you cutt it and it will go back. Well
> > > science has not seen a trace of this new frequency of 100, 110 0r 220
> > > line double its frequency to twice what it was before.
>
> Art, please think about what you are saying.
>
> The wavelength of 20 MHz is 70 ft. The wavelength of 60 Hz is
> 16,400,000 feet (3100 miles).
>
> There is a power factor correcting capacitor every city block or so on
> the 60 Hz system, i.e. approximately every 0.00003 wavelength. Are
> there any power factor correcting capacitors hanging on a 20m dipole?
> If the standing wave power factor was corrected on a 20m dipole, the
> standing waves would disappear just like they do on the power wires.
> Correcting the power factor on a standing wave dipole antenna would
> turn it into a traveling wave antenna and there would be no
> reflections from the end of the dipole. Our 50/60 Hz power
> distribution systems are overwhelmingly traveling wave systems. The
> power companies simply don't allow reflections to exist because they
> don't get paid for reflected energy and they sure don't want it coming
> back to the generator.
>
> If you had a 60Hz generator feeding a low-loss 3100 mile open-
> circuited transmission line, you would certainly observe a forward
> wave, reflected wave, and standing wave all obeying the distributed
> network reflection model rules.
> --
> 73, Cecil, w5dxp.com

Thank you for responding Cecil as well as not being abusive.
Still looking at the first statement as I cannot move on without
closure.
Your point about a antenna having a open circuit at the top is a
troubling point for me.
For a given frequency the wave travells a certain distance forward and
the a certain distance back.What you are saying is if the antenna is
short then the wave or current flow will always about turn.
Thus it is the length of the antenna by your statement is what turns
around the current

regardless of the frequency applied. Thus if I reduced the antenna to 1 inch length the current will turn around multiple times by the time that a period for say 10 metres has expired.
Since the current supplied travels on the outside of the antenna it will be radiating all the time (as I understand what you are saying) without pulsating . I suppose you can prove this being a electrical person! For me it is the time that the antenna is actually radiating for a given frequency that is important so perhaps you will kindly relate travel distance, time taken
with the period duration of the frequency applied? There will be efforts to change the subject under discussion which would make this one small point last a few years but I do think it is worth clarifying for all so a solid base can be built. I would appreciate it if you would clarify what sort of antenna we are referring to ie a full electrical wave or a half electrical wave (resonant or otherwise)so that I may relate to either a series circuit or a parallel circuit such that the discussion is neatly enclosed to prevent deviation.
Very Best Regards
Art Unwin

590. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 01:01:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13oarjk7bvmsr36@corp.supernews.com>
Source record: 29706

Corrections:

The equations I gave aren't adequate for complex reflection coefficients, which I didn't explicitly state. Also, I inadvertently omitted a multiplying factor in two equations.

Roy Lewallen wrote:
> . . .
> For example, my equations for the first forward and first reflected
> voltage wave were:
>
> vf1(t, x) = sin(wt - x)
> vr1(t, x) = Gl * sin(wt + x)
>
> and for the second set:
>
> vf2(t, x) = Gs * sin(wt - x)
> vr2(t, x) = Gs * Gl * sin(wt + x)
>
> where here I've explicitly shown the source and load reflection
> coefficients as Gs and Gl respectively. They were 0.5 and 1 in my second
> analysis (the one with a 150 ohm resistor at the source).

The above equations are valid only for purely real reflection coefficients, as in the analysis I did.

> The more general case where the line is some length L, rather than the
> integral number of wavelengths in the example,
>
> vf1(t, x) = sin(wt - x)
> vr1(t, x) = Gl * sin(wt + x - 2L)
>
> vf2(t, x) = Gs * Gl * sin(wt - x - 2L)
> vr2(t, x) = Gs * Gl^2 * sin(wt + x - 4L)
>
> In general,
>
> (1) vfn(t, x) = (Gs * Gl)^n * sin(wt - x - 2nL)
> (2) vrn(t, x) = Gl * (Gs * Gl)^n * sin(wt + x - (2n + 1)L)
>

For complex reflection coefficients,

vf1(t, x) = sin(wt - x)
vr1(t, x) = |Gl| * sin(wt + x - 2L + /_Gl)

vf2(t, x) = |Gs * Gl| * sin(wt - x - 2L + /_(Gs * Gl))
vr2(t, x) = |Gs * Gl^2| * sin(wt + x - 4L + /_(Gs * Gl^2)

In general,

(1) vfn(t, x) = |(Gs * Gl)^n| * sin(wt - x - 2nL + /_((Gs * Gl)^n))
(2) vrn(t, x) = |Gl * (Gs * Gl)^n| * sin(wt + x - (2n + 1)L + /_(Gl *
(Gs * Gl)^n)

where /_(qty) is the phase angle of qty.

> where L is expressed in the same units as x and wt (degrees or radians).
>
> These equations are correct with x being the distance from the input end
> of the line.
>
> You could, as I mentioned, use a different reference, for example x' = L
> - x, where L is the line length in radians or degrees (same units as x
> and wt). Then you have, simply by substituting L - x' for x:
>
> vf1(t, x') = sin(wt - L + x')
> vr1(t, x') = sin(wt + L - x' - 2L) = sin(wt - L - x')
>
> and so forth, and for the general case,
>
> (3) vfn(t, x') = (Gs * Gl)^n * sin(wt + x' - (2n + 1) * L)
> (4) vrn(t, x') = (Gs * Gl)^n * sin(wt - x' - 2nL)

A Gl term was inadvertently omitted from the equations for vr. With that
error corrected, and with complex reflection coefficients,

vf1(t, x') = sin(wt - L + x')
vr1(t, x') = |Gl| * sin(wt + L - x' - 2L + /_Gl) = sin(wt - L - x' +
/_Gl)

and so forth, and for the general case,

(3) vfn(t, x') = |(Gs * Gl)^n| * sin(wt + x' - (2n + 1) * L + /_((Gs
* Gl)^n)
(4) vrn(t, x') = |Gl * (Gs * Gl)^n| * sin(wt - x' - 2nL + /_(Gl + (Gs
+ Gl)^n))

The reflection coefficient phase terms are easily handled in phasor
analysis, in the same manner as the phase term related to the line length.

Roy Lewallen, W7EL

591. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 01:17:32 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4785722e$0$31769$4c368faf@roadrunner.com>
Source record: 29707

"Jim Kelley" <jwkelley@uci.edu> wrote in message
news:fm3clulpg1@news.service.uci.edu...

>> The 'wave' which stands is merely an amplitude envelope for the waves
>> which move. It's not a "different kind of electromagnetic wave." If you
>> were to instead characterize a 'standing wave' as a different kind of
>> interference pattern, then we would in fact be in agreement.

I agree the standing wave can be described as an "amplitude envelope" but it is also a real wave (that carries no power). If you consider the "superposition" of forward and reflected waves to be a new wave whose envelope is the resultant wave of the superposition, then I agree. The wave does not travel over distance but it vibrates such that its frequency, when multiplied by its wavelength, results in the speed of light.

But the wave travels nowhere.

Strange but true...;-)

AI4QJ

592. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 01:35:25 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <MK-dna4TYZTB6xjanZ2dnUVZ_gWdnZ2d@bright.net>
Source record: 29708

Dear Jim Lux W6RMK:

I was not able to examine the probes that I saw in use at NBS in what was probably the mid-70s.

The probes that I did see and use comprised three, orthogonal, very short doublets with attached means for rectifying. The resulting DC was conveyed away through a resistive, plastic transmission-line crafted to be almost transparent to RF. These probes were used to estimate the size of strong EM signals in the vicinity of equipment so as to be able to put better numbers on EMC capabilities.

While one can make a reasonable estimate of field strength inside of a TEM cell (a big piece of transmission line) from external measurements, it is desirable to be able to estimate FS at spots inside of the cell. It is important to note that even with care, significant uncertainties remain in the estimates. All measurement comprise a minimum of two numbers: an estimate of the value and an estimate of the uncertainty of that estimate. You, and most on the group, know this, but it needs to be repeated.

Safety of life was involved with the testing then done. With the profusion of transmitters in close proximity of safety equipment today, it is a wonder that more lives are not lost with inappropriate actuations just within present cars. A reminder that the need for savvy RF engineers will not diminish, and sending that work off-shore to a low-bidder is dangerous and probably criminally negligent. The major US car makers, to pick an industry, expend a large, expensive effort to see that their cars are safe using resident engineers.

Warm regards, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:fm3e17$1vq$1@news.jpl.nasa.gov...
:
>> J. Mc Laughlin wrote:
>>
>>> ...
>>> To use this technique at, say, 10 MHz with a yagi would be improbable,
>>> but not impossible.
>>>
>>> 73, Mac N8TT
>>>
>>

>
>
> The challenge is that one needs a probe that measures 3 axis E and H.
> There are some clever designs out there based on a sphere with 6 half
> loops sticking out. They've been used to make near field measurements of
> broadcast stations, among other things. See, for instance, Gassman and
> Furrer, 1993. Silva, et al., published an interesting fiber optic probe
> scheme in 97. Driver and Kanda published a optically linked sensor for
> making Poynting vector measurements in the near field in 1988 (IEEE Trans
> EMC). In the microwave area, the probe is usually an open ended section of
> waveguide.
>
> There are some clever techniques (see, for instance, the work of Bolomey)
> where you put an array of small (non resonant) dipoles with switches in
> the near field, and turn them on and off. You look at the antenna's
> feedpoint impedance and from that, you can tell what part of the field is
> affected by that dipole.
>
> Once you've got your near field data, you need to post process. A
> gentleman, A.C. Newell, literally wrote the book(s) on this technique at
> NIST/NBS.
>
>

593. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 01:50:02 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080109175002.f823dbde.rsparks@elltel.net>
Source record: 29709

On Wed, 9 Jan 2008 19:18:44 -0500
"AI4QJ" <nospam@yahoo.com> wrote:

>
> "Roger Sparks" <rsparks@elltel.net> wrote in message
> news:20080108085916.448c0a6c.rsparks@elltel.net...
> > On Tue, 08 Jan 2008 07:23:52 -0800
> > Richard Clark <kb7qhc@comcast.net> wrote:
> >
> >> On Tue, 08 Jan 2008 21:34:17 +1100, slackj
> >> <slackj_delete@optusnet.com.au> wrote:
> >>
> >> >Helmut & Richard,
> >> >
> >> >Yeah, thanks for that. Like I said it's been ages since I've needed
> >> >to do any of this, but most of it's in my memory banks somewhere -
> >> >lol. Do they still make those big metal encased pass-through
> >> >capacitors with a grounding tag? They used to be handy, and yes I may
> >> >need to put together a little filter network. The good thing is that
> >> >the kit won't draw much current.
> >>
> >> Hi Stewart,
> >>
> >> There's no reason for filters, the battery is already the biggest
> >> capacitor in the world - for all practical purposes. Also, the
> >> regulator disconnects it from the alternator 5 minutes after you've
> >> started the car.
> >>
> >> 73's
> >> Richard Clark, KB7QHC
> >
> > I am not so confident that the lead cell battery (or any battery) is a
> > replacement for a filter. A battery demonstrates about 75 to 85 percent
> > efficiency for charging and discharging, but a capacitor is just under 100
> > percent efficient. When used as a filter, a battery is a capacitor with a
> > series resistor.
> >
> > Battery efficiency is probably less at radio frequencies.
>
> I disagree. There is no better filter for alternator noise than the battery.
> If more people realized this, they sure would sell a lot less filters. All
> filters also have series resistance. What do you mean by filter efficiency?
> The amount of noise turned into heat? How hot does a battery get from
> alternator noise?

>
>
Richard added a good comment:

>When used as a filter, a battery is a capacitor with a series resistor.
"A very, very, very small resistor.

The practical matter of this, is that it is far easier and cheaper to
simply make the connection to see if it does the job, instead of
investing in a filter that might not work."

This was good, practical advice.

Someone else added that a dedicated ground wire direct from battery ground post to ground of transceiver could also help. More good advice.

Of course the goal of direct connection to the battery is to minimize series resistance which would raise the impedance of the battery filter, reducing it's effectiveness as a short circuit to alternator noise. After doing the very practical step of direct battery connection, the next step is additonal L-C filters on both power leads from battery to transceiver. Consider that the power leads are a transmission line for noise from alternator to transceiver.

73, Roger, W7WKB

594. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 02:02:45 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13oav69g7rf2dc@corp.supernews.com>
Source record: 29710

dfinn1@nc.rr.com wrote:
> On Jan 9, 11:03 am, Michael Coslo <m...@psu.edu> wrote:
>> AI4QJwrote:
>>> The NEC program is just a computer model, for discussion purposes only. I
>>> think there are far too many variables in real life for the program to take
>>> into account. It may be valuable but I am not yet convinced it is
>>> infallible.
>> Oh darnit! Here I went and built several antennas designed with Eznec,
>> and they have worked just like the program said they would.
>>
>> I guess I'll have to take the remaining ones down, since I was only
>> supposed to discuss them, not actually make and use them. Thanks for the
>> correction!
>>
>> - 73 de Mike N3LI -
>
> But you may have a problem discussing on the ng exactly "why" they
> work. Why would you want to discuss an antenna if you don't care "how"
> it works, you only care "that" it works? There are some people that
> operate at 27MHz who don't care how their radios work, only that they
> can peg your meter at 10 pounds.

A whole lot of people have gained a better understanding of why antennas work by using computer modeling. They observe how they work, discover it's not how they thought they worked, and are prodded into learning why they work. I've learned a great deal myself this way, and many conversations with EZNEC users over the years shows this to be a common benefit from modeling. It allows you to immediately see if your concepts are sound by showing you the results of their application. NEC and EZNEC don't design antennas; they only tell you how the antenna you've designed works. Chances are you won't design a very effective antenna if you have no idea why they work. People truly interested in learning more about why antennas work will arm themselves with as many available tools as possible.

A recent example of this philosophy was the transmission line analysis I recently posted. After working through all the math, which came from a basic understanding of transmission line analysis, I simulated the line with SPICE to confirm that my analysis was correct. Had it shown something different, I would have gone back to the math, or the model, or my basic view of transmission line operation, to resolve the discrepancy.

Arguments against using computer programs for antenna analysis are about the same as those against using a calculator to perform arithmetic. No, on second thought, more like arguing against using a computer to solve

systems of differential equations.

But, each to his own.

Roy Lewallen, W7EL

595. Re: A simple test to detrmine if you can understand a basic general relativity concept

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 02:13:53 UTC
From: Robert Smts <bob@rsmits.ca>
Message-ID: <cdfc2860ba917e30a2f45ad45d340317@grapevine.islandnet.com>
Source record: 29712

Michael Coslo wrote:

> Cecil Moore wrote:
>> Stefan Wolfe wrote:
>>> "There was a young lady called Bright
>>> Who could travel much faster than light;
>>> She went out one day,
>>> In a relative way,
>>> And came back the previous night."
>>
>> There was a young lady from Hunt,
>> Who had an adorable stunt, ...
>
> There was a young man from Nantucket, Who carried his...
>
>
> Ohh this is deteriorating so..... ;^)
>
>
> - 73 de Mike N3LI -

Yeah, but it's first genuinely funny item in the newsgroup for
ages.............

Bob, VE7HS

596. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 02:14:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13oavrhciqvl67b@corp.supernews.com>
Source record: 29711

Dave wrote:
>
> ah, so once you have a standing wave on a line then no energy can cross the
> voltage or current nodes?? thats interesting. so at the place where
> current is 'always' 0 the voltage is a max right? so what happens to the
> V^2/Z power at that point? is that not flowing past that point?
> conversely, at the point where voltage is always zero, what happens to the
> large I^2*R power at that point??? where does that go? . . .

You can see graphically exactly where the energy and power are at every point along the line at every instant, with the program I made for the purpose. It even separately shows the energy stored in the E and H fields. See the recent TLVis1 thread.

Roy Lewallen, W7EL

597. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 02:24:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ob0f7o87bmdeb@corp.supernews.com>
Source record: 29713

While a car battery might have a reasonably low terminal-to-terminal impedance at RF (or might not - I don't have any direct experience, and think it's entirely possible it's not that good), the wire from the negative terminal to the chassis is typically on the order of a quarter wavelength at 2 meters. Even at lower frequencies, it can have considerable (inductive) impedance. So there can be a lot of RF between the battery and chassis. A car's ignition line, which connects to the battery, often has spikes of tens of volts or more, ringing at hundreds of kHz or less, relative to the chassis -- enough that the design of electronics which can survive in that environment is a challenging discipline.

Roy Lewallen, W7EL

598. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 02:44:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ob1k6tg49nve2@corp.supernews.com>
Source record: 29714

Keith Dysart wrote:
>
> I'd suggest that this is only if the concept of the
> waves in question does not include energy. In the
> limiting case of the two waves being identical no
> energy crosses the nodes. In other cases, only a
> portion of the energy crosses the nodes.
>
> If the concept of the waves includes energy, some
> explanation is required to account for the wave
> crossing the node, but its energy does not.

Take a look at demo 4 with the TLVis1 program (described in the TLVis1 thread). Let it run to steady state, then single step. In the upper trace, look at one of the points where the power is always zero, i.e., where it crosses the center line. But as you step, you can see that the energy at that point increases and decreases with time. In fact, at some times it's zero and at other times it's one of the points of maximum energy density along the line. So how can this be? The power is always zero at that point, yet the energy is increasing and decreasing with time.

The answer is that equal amounts of energy are moving to the right and left of that point at all times; energy is flowing into and out of that point equally from both sides. So although there are points where the power is always zero, those aren't the points where the energy isn't moving.

There are, in fact, points along the line where the energy doesn't change with time, but they coincide with the points where the power is maximum. This simply means that, at those points, however much energy flows into a point flows out at any given time, leaving the total energy at those points constant. (Mathematically, this amounts to the existence of a constant when you integrate power to get energy.)

So at all points along the open circuited line and at all times, energy is either moving, increasing, or decreasing. There aren't any static spots at all.

I find it very helpful to look at this visually -- that's why I wrote the program. It also shows how misleading it is to mix power and energy.

> Some readers like to superpose energy just as
> they do voltage, but in general this is not a
> valid operation so I am uncomfortable using
> it as the explanation.

I agree, you can't assign energy or power to the traveling waves separately and superpose them as you do voltage and current. TLVis1 calculates power and energy from the total voltage and current.

Roy Lewallen, W7EL

599. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 02:49:25 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478587b6$0$31766$4c368faf@roadrunner.com>
Source record: 29715

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13ob0f7o87bmdeb@corp.supernews.com...
> While a car battery might have a reasonably low terminal-to-terminal
> impedance at RF (or might not - I don't have any direct experience, and
> think it's entirely possible it's not that good), the wire from the
> negative terminal to the chassis is typically on the order of a quarter
> wavelength at 2 meters. Even at lower frequencies, it can have
> considerable (inductive) impedance. So there can be a lot of RF between
> the battery and chassis. A car's ignition line, which connects to the
> battery, often has spikes of tens of volts or more, ringing at hundreds of
> kHz or less, relative to the chassis -- enough that the design of
> electronics which can survive in that environment is a challenging
> discipline.
>
> Roy Lewallen, W7EL

Come to think of it, there was a question in the extra class pool that deals
with this:

E4D05

Q. How can conducted and radiated noise caused by an automotive alternator
be suppressed?

A. By connecting the radio power leads directly to the battery and by
installing coaxial capacitors in the alternator leads.

AI4QJ

600. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 02:53:54 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <b264607f-fad9-41f4-bd47-1ce5d7f26aa2@v46g2000hsv.googlegroups.com>
Source record: 29716

On Jan 9, 3:30 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> So do we now have a new requirement for waves and photons that there
> must be *net* energy flow?

It's not a new requirement, Gene, just a very old requirement of physics. Photonic, i.e. EM waves, do not flow back and forth as you are implying. As long as the medium is homogeneous, i.e. doesn't change, a photon travels at the speed of light in one direction in a medium. So yes, net energy flow is absolutely a requirement for photons.

EM waves *are* photons and do not vibrate back and forth in a medium. They travel in one direction at the speed of light in the medium until they encounter an impedance discontinuity. Virtually any physics book with a diagram of the EM wave E-field and H-field will show the direction of travel as one direction without the "one step forward and one step back" concept that you are proposing.

> You claimed that standing waves cannot be real waves because they cannot
> obey photon rules. I easily demonstrated that idea is incorrect.v

All you demonstrated was your ignorance of the nature of photons. Your analysis was incorrect. You are seeing the standing wave illusion and assuming an impossibility of physics. It is very clear that you and others simply do not understand the nature and physics of photons and photonic waves.
--
73, Cecil, w5dxp.com

601. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 02:54:38 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm41dekpf1@news.albasani.net>
Source record: 29717

J. Mc Laughlin wrote:
> ... A reminder that the need for savvy RF engineers will not
> diminish, and sending that work off-shore to a low-bidder is dangerous and
> probably criminally negligent. The major US car makers, to pick an
> industry, expend a large, expensive effort to see that their cars are safe
> using resident engineers.
>
> Warm regards, Mac N8TT

My gawd man, you are paying attention.

My question would be, with the constitution guaranteeing us the rights
to bear arms against a government which has become insensitive to the
majority--when will we finally find it intolerable and correct "them."
Or, when the common man has to think of the government as a "separate
entity" to the population--it is time for serious correction ...

Amen brother, it IS criminal!

Warm regards,
JS

602. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 02:58:06 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm41jukpf2@news.albasani.net>
Source record: 29718

Roy Lewallen wrote:
> dfinn1@nc.rr.com wrote:
>> On Jan 9, 11:03 am, Michael Coslo <m...@psu.edu> wrote:
>>> AI4QJwrote:
>>>> The NEC program is just a computer model, for discussion purposes
>>>> only. I
>>>> think there are far too many variables in real life for the program
>>>> to take
>>>> into account. It may be valuable but I am not yet convinced it is
>>>> infallible.
>>> Oh darnit! Here I went and built several antennas designed
>>> with Eznec,
>>> and they have worked just like the program said they would.
>>>
>>> I guess I'll have to take the remaining ones down, since I
>>> was only
>>> supposed to discuss them, not actually make and use them. Thanks for the
>>> correction!
>>>
>>> - 73 de Mike N3LI -
>>
>> But you may have a problem discussing on the ng exactly "why" they
>> work. Why would you want to discuss an antenna if you don't care "how"
>> it works, you only care "that" it works? There are some people that
>> operate at 27MHz who don't care how their radios work, only that they
>> can peg your meter at 10 pounds.
>
> A whole lot of people have gained a better understanding of why antennas
> work by using computer modeling. They observe how they work, discover
> it's not how they thought they worked, and are prodded into learning why
> they work. I've learned a great deal myself this way, and many
> conversations with EZNEC users over the years shows this to be a common
> benefit from modeling. It allows you to immediately see if your concepts
> are sound by showing you the results of their application. NEC and EZNEC
> don't design antennas; they only tell you how the antenna you've
> designed works. Chances are you won't design a very effective antenna if
> you have no idea why they work. People truly interested in learning more
> about why antennas work will arm themselves with as many available tools
> as possible.
>
> A recent example of this philosophy was the transmission line analysis I
> recently posted. After working through all the math, which came from a
> basic understanding of transmission line analysis, I simulated the line
> with SPICE to confirm that my analysis was correct. Had it shown

> something different, I would have gone back to the math, or the model,
> or my basic view of transmission line operation, to resolve the
> discrepancy.
>
> Arguments against using computer programs for antenna analysis are about
> the same as those against using a calculator to perform arithmetic. No,
> on second thought, more like arguing against using a computer to solve
> systems of differential equations.
>
> But, each to his own.
>
> Roy Lewallen, W7EL

Computer modeling is wonderful ...

Constant examination and keeping it up-to-date will allow it to hold
this status ... it is hardly in a finished form ...

Regards,
JS

603. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 03:02:41 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm41shkpf3@news.albasani.net>
Source record: 29719

Roy Lewallen wrote:
> Corrections:
>
> The equations I gave aren't adequate for complex reflection
> coefficients, which I didn't explicitly state. Also, I inadvertently
> omitted a multiplying factor in two equations.
> ...
> Roy Lewallen, W7EL

Or, in honest terms, "forget about anything 'unifying', to make this ten gorilla float it is going to take tons of "special cases."

In my humble opinion, complete proof "something is missing." I do NOT claim to know what that "something" is, only that it is QUITE obvious!

Regards,
JS

604. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 03:21:58 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47858f59$0$31801$4c368faf@roadrunner.com>
Source record: 29720

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13oav69g7rf2dc@corp.supernews.com...
> dfinn1@nc.rr.com wrote:
>> On Jan 9, 11:03 am, Michael Coslo <m...@psu.edu> wrote:
>>> AI4QJwrote:
>>>> The NEC program is just a computer model, for discussion purposes only.
>>>> I
>>>> think there are far too many variables in real life for the program to
>>>> take
>>>> into account. It may be valuable but I am not yet convinced it is
>>>> infallible.
>>> Oh darnit! Here I went and built several antennas designed with
>>> Eznec,
>>> and they have worked just like the program said they would.
>>>
>>> I guess I'll have to take the remaining ones down, since I was
>>> only
>>> supposed to discuss them, not actually make and use them. Thanks for the
>>> correction!
>>>
>>> - 73 de Mike N3LI -
>>
>> But you may have a problem discussing on the ng exactly "why" they
>> work. Why would you want to discuss an antenna if you don't care "how"
>> it works, you only care "that" it works? There are some people that
>> operate at 27MHz who don't care how their radios work, only that they
>> can peg your meter at 10 pounds.
>
> A whole lot of people have gained a better understanding of why antennas
> work by using computer modeling. They observe how they work, discover it's
> not how they thought they worked, and are prodded into learning why they
> work. I've learned a great deal myself this way, and many conversations
> with EZNEC users over the years shows this to be a common benefit from
> modeling. It allows you to immediately see if your concepts are sound by
> showing you the results of their application. NEC and EZNEC don't design
> antennas; they only tell you how the antenna you've designed works.
> Chances are you won't design a very effective antenna if you have no idea
> why they work. People truly interested in learning more about why antennas
> work will arm themselves with as many available tools as possible.
>
> A recent example of this philosophy was the transmission line analysis I
> recently posted. After working through all the math, which came from a
> basic understanding of transmission line analysis, I simulated the line
> with SPICE to confirm that my analysis was correct. Had it shown something

> different, I would have gone back to the math, or the model, or my basic
> view of transmission line operation, to resolve the discrepancy.
>
> Arguments against using computer programs for antenna analysis are about
> the same as those against using a calculator to perform arithmetic. No, on
> second thought, more like arguing against using a computer to solve
> systems of differential equations.
>
> But, each to his own.
>
> Roy Lewallen, W7EL

I do understand the value of the software and agree with you 100%. I was reacting more to the sarcasm of the post.

605. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 03:27:36 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <3503d9a8-ab05-46ef-b43d-0375d8e738e5@j78g2000hsd.googlegroups.com>
Source record: 29721

On Jan 9, 3:13 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> On what page has Dr. Hecht written "a standing wave is a different
> kind of electromagnetic wave"?

Since I didn't say that Dr. Hecht said that, it must be a rhetorical question. Here's what Dr. Hecht did say: In "Schaum`s College Physics Outline" by Bueche & Hecht on page 214 is written: "Standing Waves:....These might better not be called waves at all since they do not transport energy and momentum." (Thanks to Richard Harrison for that quote.) I agree with Dr. Hecht. Standing waves should not be called waves at all since they do not meet the definition and requirements for EM waves.

> I asserted that expression for the sum of traveling waves and the
> expression for the resulting standing wave pattern are related by trig
> identity, as per page 140 of the 28th Edition of the CRC Standard
> Mathematical Tables Handbook.

Sorry Jim, that's not what you said. You asked if I recognized the trig identity that (presumably) equated a standing wave to a traveling wave. If that was not your meaning, it is time to say exactly what meaning I was supposed to assume.

> The 'wave' which stands is merely an amplitude envelope for the waves
> which move.

Key word there is "waves". A standing wave is NOT self sufficient - it requires the superposition of a forward-traveling wave and a reverse-traveling wave. A standing wave loses its EM wave identity in the process of that superposition and apparently creates an illusion capable of mass hysteria. To alleviate that hysteria, one has only to compare the equations for standing waves and traveling waves or the corresponding graphs of those functions to see that they are hardly anything alike.
--
73, Cecil, w5dxp.com

606. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 03:27:51 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm43bnkpf4@news.albasani.net>
Source record: 29722

Roy Lewallen wrote:

> ...
> You can see graphically exactly where the energy and power are at every
> point along the line at every instant, with the program I made for the
> purpose. It even separately shows the energy stored in the E and H
> fields. See the recent TLVis1 thread.
>
> Roy Lewallen, W7EL

My sisters' son has drawn some nice pictures on his bedroom wall with crayons--I can actually appreciate them--especially for his age--he does show some "artistic" leanings, in my humble opinion ... of course, I don't have to clean the crayon off the wall.

I am sure your endeavors, at least, should enjoy such observations/considerations ... :-D

Regards,
JS

607. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 03:46:53 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <855606b4-c23c-42a3-9a4f-f9321ab8b89d@v29g2000hsf.googlegroups.com>
Source record: 29723

On Jan 9, 3:33 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> When you get back to the wilds of Texas go check out some rural power
> lines. Count the number of power factor correcting capacitors you see. I
> bet it is a lot less than the equivalent of one per city block. Power
> factor correcting capacitors are intended to correct for reactive loads,
> such as motors, not for reflections or standing waves on open ended
> power transmission lines.

Within the city limits of my home town of Madisonville, TX, there is
approximately one capacitor every city block. I had one in my front
yard. But the exact number and distances do not matter one iota. Those
capacitors exist to neutralize the inductive reactance in the system
at the load. I use exactly the same method to twist the feedpoint
impedance of my 75m Bugcatcher to 50 ohms.

You said: "Power factor correcting capacitors are intended to correct
for reactive loads,"

:-) Reactive loads cause reflections. The opposite reactance reduces
reflections. Does that scheme of matching a transmission line to a
load sound familiar? :-) My Bugcatcher antenna has about 25=j25 ohm
feedpoint impedance on 40m. I install a -j50 cap from antenna to
ground to achieve 50+j0 at the feedpoint. That's exactly what the
power company capacitors do.

Reflections *ARE* power factor problems. When the power company brings
the power factor to unity, they have eliminated reflections and turned
the system into a traveling wave energy delivery system. That you do
not recognize the similarity between VARS and standing waves is really
strange indeed. Standing waves contain nothing except VARS.
--
73, Cecil, w5dxp.com

608. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 03:49:46 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm44kp$q0d$1@news.albasani.net>
Source record: 29724

John Smith wrote:
> art wrote:
>
> >> ...
>> Art
>
> When I fire up my rig, the one composed of an electric motor
> (constructed with recovered metal from the Roswell crash) spinning at
> 1,000,000 R.P.S., with the neodymium magnet attached to the shaft--what
> do you thing the wave(s) look like? How are protons being released from
> the static field of the magnets poles? Can't the need for a media
> (properties of which are unknown/unexplored) which can be "excited" be
> easily visualized?
>
> Warm regards,
> JS

OK. Let me go further then. If I were to allow "speculation" on the
existence of the ether--than I could further expand this "speculation"
to allow for a "lag" in the ether--and "to" that of the spinning
magnetic fields--and, if such "speculation" were allowed, then going one
step further would allow for the possibility of the "deformation" of the
"wave" thus generated by such a "lag" ...

Regards,
JS

609. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 03:59:38 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <f3c81ab7-6bfd-45de-b54c-b73fc7d077b8@f47g2000hsd.googlegroups.com>
Source record: 29725

On Jan 9, 7:48 pm, art <aun...@insightbb.com> wrote:
> Thus it is the length of the antenna by your statement is what turns
> around the current regardless of the frequency applied.

The feedpoint impedance of these standing wave antennas can be closely
approximated by

Zfp = (Vfor+Vref)/(Ifor+Iref)

where all values are phasors. For instance, the reflected voltage will
be out of phase with the forward voltage at the feedpoint for a
resonant 1/2WL dipole while the reflected current will be in phase
with the forward current. The feedpoint impedance of a 1/2WL dipole is
very close to (|Vfor|-|Vref|)/(|Ifor|+|Iref|). See if you can figure
it out for other lengths of dipoles.
--
73, Cecil, w5dxp.com

610. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 04:06:24 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478599c1$0$31795$4c368faf@roadrunner.com>
Source record: 29726

"AI4QJ" <nospam@yahoo.com> wrote in message
news:4785722e$0$31769$4c368faf@roadrunner.com...
>
> "Jim Kelley" <jwkelley@uci.edu> wrote in message
> news:fm3clulpg1@news.service.uci.edu...
>
>>> The 'wave' which stands is merely an amplitude envelope for the waves
>>> which move. It's not a "different kind of electromagnetic wave." If you
>>> were to instead characterize a 'standing wave' as a different kind of
>>> interference pattern, then we would in fact be in agreement.
>
> I agree the standing wave can be described as an "amplitude envelope" but
> it is also a real wave (that carries no power). If you consider the
> "superposition" of forward and reflected waves to be a new wave whose
> envelope is the resultant wave of the superposition, then I agree. The
> wave does not travel over distance but it vibrates such that its
> frequency, when multiplied by its wavelength, results in the speed of
> light.
>
> But the wave travels nowhere.
>
> Strange but true...;-)
>
> AI4QJ

More accurately, I should say

...(the standing wave is a)...real wave (that carries no REAL power. It does contain REACTIVE power, which was called "imaginary power" at the University of Wisconsin, measured in VA's, not watts.

The standing wave current is 90 degrees out of phase with the standing wave voltage, thus energy (power X time) IS STORED in a standing wave but NEVER transmitted by the standing wave.

However, in a standing wave antenna (a lossy resonant system) the power contained in a standing wave will ultimately be dissipated by the radiation resistance and ohmic resistance, where the current and voltage stored in the standing wave are converted to REAL power as a traveling wave. With no ohmic or radiation resistance losses as in a perfect superconductor with no path to free space, the standing wave would simply oscillate forever with zero power applied at the feedpoint.

611. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 04:22:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ob7bpi17u47f2@corp.supernews.com>
Source record: 29727

Just what is a "wave", anyway? Are there different "kinds" of electromagnetic wave? If so, what are they? Does a "wave" have to travel in order to be a "wave", or can it just "vibrate" or "oscillate"? Or just "stand"?

Most of my references call a standing wave a "pattern". Is a "pattern" a "wave"? Can a "wave" be a "pattern"?

That should be good for another few hundred posts, at least. Sheesh.

Roy Lewallen, W7EL

612. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 05:23:11 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4785abc0$0$31763$4c368faf@roadrunner.com>
Source record: 29728

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13ob7bpi17u47f2@corp.supernews.com...
> Just what is a "wave", anyway? Are there different "kinds" of
> electromagnetic wave? If so, what are they? Does a "wave" have to travel
> in order to be a "wave", or can it just "vibrate" or "oscillate"? Or just
> "stand"?
>
> Most of my references call a standing wave a "pattern". Is a "pattern" a
> "wave"? Can a "wave" be a "pattern"?
>
> That should be good for another few hundred posts, at least. Sheesh.
>
> Roy Lewallen, W7EL

Roy,

The standing wave is the mathematical sum of the forward and reflected waves. This sum is a superposition wave. The components of the superposition wave no longer exist by themselves; they form part of the summation which is the non-traveling "standing wave". Like its forward and reverse components (each containing "real" power) that would have been traveling waves prior to superposition, and which have now ceased to exist, the summation wave is also a real wave that vibrates at a frequency that, when multiplied by its wavelength, equals c (but traveling nowhere), and stored with "imaginary" or "reactive" power, where the real power components have been changed to reactive power components. Energy is conserved. The real energy in the traveling waves has been changed temporarily to potential or reactive VA (Cecil calls it VAR....same thing) energy until it dissipates into the radiation resitance by the radiation of photons/waves through free space (ignoring ohmic losses which also dissipate real power). After dissipation of each photon or wave into free space (where E=hf, take your pick) from the theoretical radiation resistor, the generator (transmitter) source must replenish energy into the antenna to keep the standing wave stored-energy system oscillating and then depleting into radiation. Without constant replenishment from the generator, the standing wave diminishes to zero.

It is like an inductor, capacitor and radiation "resistor", all connected in parallel, and whose impedance is the radiation resistance of the antenna, which itself is related to the impedance of free space and the geometry of the antenna (as you know). What is not intuitive is where the other terminal of the "radiation resistor" is connected. But that is indeed where the traveling wave from the dissipated standing wave 'travels' to. That is where I find Art's material interesting. I do not think I have ever seen a depiction of this phenomenon that can be conceptualized but I think Art is trying.

OK, go ahead. Lock, load and fire ;-)

AI4QJ

613. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 06:25:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13obejjod48dp78@corp.supernews.com>
Source record: 29729

After reading this, I understand why you find Art's material interesting.

But, what's a "wave"?

Roy Lewallen, W7EL

AI4QJ wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13ob7bpi17u47f2@corp.supernews.com...
>> Just what is a "wave", anyway? Are there different "kinds" of
>> electromagnetic wave? If so, what are they? Does a "wave" have to travel
>> in order to be a "wave", or can it just "vibrate" or "oscillate"? Or just
>> "stand"?
>>
>> Most of my references call a standing wave a "pattern". Is a "pattern" a
>> "wave"? Can a "wave" be a "pattern"?
>>
>> That should be good for another few hundred posts, at least. Sheesh.
>>
>> Roy Lewallen, W7EL
>
> Roy,
>
> The standing wave is the mathematical sum of the forward and reflected
> waves. This sum is a superposition wave. The components of the superposition
> wave no longer exist by themselves; they form part of the summation which is
> the non-traveling "standing wave". Like its forward and reverse components
> (each containing "real" power) that would have been traveling waves prior to
> superposition, and which have now ceased to exist, the summation wave is
> also a real wave that vibrates at a frequency that, when multiplied by its
> wavelength, equals c (but traveling nowhere), and stored with "imaginary" or
> "reactive" power, where the real power components have been changed to
> reactive power components. Energy is conserved. The real energy in the
> traveling waves has been changed temporarily to potential or reactive VA
> (Cecil calls it VAR....same thing) energy until it dissipates into the
> radiation resitance by the radiation of photons/waves through free space
> (ignoring ohmic losses which also dissipate real power). After dissipation
> of each photon or wave into free space (where E=hf, take your pick) from the
> theoretical radiation resistor, the generator (transmitter) source must
> replenish energy into the antenna to keep the standing wave stored-energy
> system oscillating and then depleting into radiation. Without constant
> replenishment from the generator, the standing wave diminishes to zero.
>
> It is like an inductor, capacitor and radiation "resistor", all connected in
> parallel, and whose impedance is the radiation resistance of the antenna,

> which itself is related to the impedance of free space and the geometry of
> the antenna (as you know). What is not intuitive is where the other terminal
> of the "radiation resistor" is connected. But that is indeed where the
> traveling wave from the dissipated standing wave 'travels' to. That is where
> I find Art's material interesting. I do not think I have ever seen a
> depiction of this phenomenon that can be conceptualized but I think Art is
> trying.
>
> OK, go ahead. Lock, load and fire ;-)
>
> AI4QJ
>
>

614. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 07:00:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <6bgbo31511qr2bd53mg0nhj2seuupnn7rv@4ax.com>
Source record: 29730

On Thu, 10 Jan 2008 17:25:10 +1100, slackj
<slackj_delete@optusnet.com.au> wrote:

>Yup - earlier back in the thread. No noticeable noise if the antenna
>is ungrounded.

Hi Stewart,

Then a likely problem is in the audio side where it is supposed to be
floating, perhaps the lack of an isolation capacitor from a dual
supply amp that is working with a single supply (you can do this by
floating the ground return, as long as another ground isn't mixed in).
Basically, the audio ground is lifted to 6 volts and the audio swings
to either side of this, instead of +/- around zero.

Does your set come with an external speaker? If so, measure both
sides to ground (without the coax grounded, of course).

73's
Richard Clark, KB7QHC

615. Re: Antenna designs for noise cancellation on HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 10:27:34 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <4785f310$1@clear.net.nz>
Source record: 29731

Sum Ting Wong wrote:
> On Tue, 08 Jan 2008 00:09:36 +1300, cliff wright
> <c.c.wright@paradise.net.nz> wrote:
>
>
>>Any ideas welcome!
>
>
> Get yourself a portable VHF radio that receives AM and use a handheld
> Yagi to trace down the noise. Powerline interference is much easier to
> DF at VHF. Pull the main breaker on your house to make sure the noise
> isn't being generated within your residence. Here in the USA, the
> power companies are obligated to eliminate interference emanating from
> their equipment, but don't know about ZL. It never hurts to ask. The
> power companies up here have very skilled folks who track down
> powerline interference complaints.
>
> Good luck with finding the source.
>
> S.T.W.
Hi STW.
Been There Done that!!!
Yes OM we've tried all sorts of search receivers and antennas. Had some success in locating some vey poorly maitained insulators in a 32Kv overhead line about 500 metres from our 2 QTH's. Problem is the liabilty for interfernce is very poorly defined here in NZ. The power generating companies and line companies are separate and poorly coordinated as a result of abortive privatisation in the 1980's an 90's.
We have our people from our Trade and Industry dept involved already. These are the equivalent of our Radio Inspectors of earlier times and are of some help.
However we are now both concerned that the interference may be carried or even caused by faulty earthing arrangements in our local underground "neutral earthed" system. I am a registered electrician and my fellow Ham is actually employed by a lines company.
So much for my nice electrically quiet section on a hilltop for my retirement!!!
However I will follow up some of the pointers which have been suggested and hope that now the main summer holidays are coming to an end down here some maintenance work will get done.
73's Cliff Wright

616. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 13:11:03 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <HPohj.5689$hS.5216@trnddc08>
Source record: 29732

"slackj" <slackj_delete@optusnet.com.au> wrote in message
news:vmebo3d3h05t0lehfjovtpom96aks7n8v5@4ax.com...
>
> Geez guys I didn't know what I was starting here.
>
> OK here's what I plan to do.
>
> I will as suggested (just for the exercise) place another (charged)
> lead acid battery close to the phone kit to see if it absorbs any of
> the hash and I'll report back. Won't be until the weekend though.
>
> Seeing as the noise is only present when the antenna base is earthed,
> I have a number of magnetic bases about and will have a play - but due
> to some thread incompatibilty (metric vs quarter inch) and the lack of
> an FME to -PL-259 or N type adaptor it won't be for a week or two. I
> may even buy one with a multi-trapped commercial whip which covers
> each of the 3 possible cell phone bands over here.
> There's one supplier - way out of town - who has center loaded open
> coil whips available both in metric & quarter inch, so there's another
> option. Once again I'll let you know the results.
>
> When I next go to the auto-elec I'll grab one of the old fashioned
> co-axial capacitors with the earthing tag on the side and fit it in
> the alternator line, then revert to the original earthed antenna. I
> can't find any in the shed. I'll report on that too.
>
> Thanks again to everyone for their constructive help.
>
> Stewart.

Hi Stewart

Is it practical to *open the braid* of the coax? I wonder if it is
practical to cut the outer conductor of the coax and solder a 1/4 wave stub
across the gap.

Jerry

617. How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 13:59:33 UTC
From: "John, N9JG" <john@Xremove.MeYgotwals.com>
Message-ID: <9xphj.41449$G23.11374@newsreading01.news.tds.net>
Source record: 29733
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

May not be directly antenna related, but ...
http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode_tech

618. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 14:37:35 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fm5ajf$fi4$1@f04n12.cac.psu.edu>
Source record: 29734

dfinn1@nc.rr.com wrote:
> On Jan 9, 11:03 am, Michael Coslo <m...@psu.edu> wrote:
>> AI4QJwrote:
>>> The NEC program is just a computer model, for discussion purposes only. I
>>> think there are far too many variables in real life for the program to take
>>> into account. It may be valuable but I am not yet convinced it is
>>> infallible.
>> Oh darnit! Here I went and built several antennas designed with Eznec,
>> and they have worked just like the program said they would.
>>
>> I guess I'll have to take the remaining ones down, since I was only
>> supposed to discuss them, not actually make and use them. Thanks for the
>> correction!
>>
>> - 73 de Mike N3LI -
>
> But you may have a problem discussing on the ng exactly "why" they
> work. Why would you want to discuss an antenna if you don't care "how"
> it works, you only care "that" it works?

Non sequitar here?

I do care about why and how the antenna works. I just don't agree with AI4QJ's premise that Eznec is for discussion purposes only. It isn't, it works just fine for design and implementation of them also.

Its a good tool for design of antennas. It gives me the data I need and the expected outcome. I've designed simple antennas using "personal level math" too. I don't do that much any more. I did the calculations on paper too. I don't know if that makes them better than if they were done using a calculator though.

> There are some people that
>> operate at 27MHz who don't care how their radios work, only that they
>> can peg your meter at 10 pounds.

And there are some sanctimonius people out there who are educated orders of magnitude beyond their intelligence, ready to throw out veiled insults at the drop of a hat.......

Fortunately no one like that is in this conversation, eh?

- 73 de Mike N3LI -

619. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 15:42:02 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm5ec8$3kk$1@news.albasani.net>
Source record: 29735

Michael Coslo wrote:

> ...
> Non sequitar here?
>
> I do care about why and how the antenna works. I just don't agree with
> AI4QJ's premise that Eznec is for discussion purposes only. It isn't, it
> works just fine for design and implementation of them also.
>
> Its a good tool for design of antennas. It gives me the data I need and
> the expected outcome. I've designed simple antennas using "personal
> level math" too. I don't do that much any more. I did the calculations
> on paper too. I don't know if that makes them better than if they were
> done using a calculator though.
>
>> There are some people that
>>> operate at 27MHz who don't care how their radios work, only that they
>>> can peg your meter at 10 pounds.
>
> And there are some sanctimonius people out there who are educated
> orders of magnitude beyond their intelligence, ready to throw out veiled
> insults at the drop of a hat.......
>
> Fortunately no one like that is in this conversation, eh?
>
> - 73 de Mike N3LI -

I really don't want to be involved, the complexities of this argument
are too great a demand for my time, and I lack the deep understanding to
add beyond where others have already gone (indeed, they have gone well
beyond my understandings--I play a game of catch-up.)

However, I don't believe anyone is actually dismissing EZNEC. I know of
no better which does what EZNEC does. Nor am I aware of anyone actually
attacking the personalities behind or around EZNEC--it is the premises,
formulas, equations EZNEC is based on which harbors the discussion ...
and such discussion cannot hurt.

I believe the above is most accurate--just now and then a temper might
flare ...

Regards,
JS

620. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 15:46:05 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <SsidnTlkVO--dBvanZ2dnUVZ_rWtnZ2d@giganews.com>
Source record: 29678
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

John, N9JG wrote:
> May not be directly antenna related, but ...
> http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode_tech

That's pretty groovy! If you Google the callsign F2FO and then click the
"Translate this page" link, you'll have a plethora of text available to
read.
73,
Bryan WA7PRC

621. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 15:55:13 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <Bdrhj.122915$MJ6.11847@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29736

Cecil Moore wrote:
> On Jan 9, 3:33 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>> When you get back to the wilds of Texas go check out some rural power
>> lines. Count the number of power factor correcting capacitors you see. I
>> bet it is a lot less than the equivalent of one per city block. Power
>> factor correcting capacitors are intended to correct for reactive loads,
>> such as motors, not for reflections or standing waves on open ended
>> power transmission lines.
>
> Within the city limits of my home town of Madisonville, TX, there is
> approximately one capacitor every city block. I had one in my front
> yard. But the exact number and distances do not matter one iota. Those
> capacitors exist to neutralize the inductive reactance in the system
> at the load. I use exactly the same method to twist the feedpoint
> impedance of my 75m Bugcatcher to 50 ohms.
>
> You said: "Power factor correcting capacitors are intended to correct
> for reactive loads,"
>
> :-) Reactive loads cause reflections. The opposite reactance reduces
> reflections. Does that scheme of matching a transmission line to a
> load sound familiar? :-) My Bugcatcher antenna has about 25=j25 ohm
> feedpoint impedance on 40m. I install a -j50 cap from antenna to
> ground to achieve 50+j0 at the feedpoint. That's exactly what the
> power company capacitors do.
>
> Reflections *ARE* power factor problems. When the power company brings
> the power factor to unity, they have eliminated reflections and turned
> the system into a traveling wave energy delivery system. That you do
> not recognize the similarity between VARS and standing waves is really
> strange indeed. Standing waves contain nothing except VARS.
> --
> 73, Cecil, w5dxp.com

You never give up, do you? Even when you are caught in an utter lie. You know exactly what the capacitors are for, and it isn't to control transmission line reflections from open ends of the line.

73,
Gene
W4SZ

622. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 15:59:44 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <Qhrhj.122925$MJ6.100187@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29737

Cecil Moore wrote:
> On Jan 9, 3:30 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>> So do we now have a new requirement for waves and photons that there
>> must be *net* energy flow?
>
> It's not a new requirement, Gene, just a very old requirement of
> physics. Photonic, i.e. EM waves, do not flow back and forth as you
> are implying. As long as the medium is homogeneous, i.e. doesn't
> change, a photon travels at the speed of light in one direction in a
> medium. So yes, net energy flow is absolutely a requirement for
> photons.
>
> EM waves *are* photons and do not vibrate back and forth in a medium.
> They travel in one direction at the speed of light in the medium until
> they encounter an impedance discontinuity. Virtually any physics book
> with a diagram of the EM wave E-field and H-field will show the
> direction of travel as one direction without the "one step forward and
> one step back" concept that you are proposing.
>
>> You claimed that standing waves cannot be real waves because they cannot
>> obey photon rules. I easily demonstrated that idea is incorrect.v
>
> All you demonstrated was your ignorance of the nature of photons. Your
> analysis was incorrect. You are seeing the standing wave illusion and
> assuming an impossibility of physics. It is very clear that you and
> others simply do not understand the nature and physics of photons and
> photonic waves.
> --
> 73, Cecil, w5dxp.com

It is really amazing that you can make up so many requirements that are completely unknown to the rest of the world. Is that a Mensa thing?

73,
Gene
W4SZ

623. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 15:59:48 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm5ffv$qr4$1@news.service.uci.edu>
Source record: 29739

Richard Harrison wrote:
> Jim Kelley, AC6XG wrote:
> "On what page has Dr. Hecht written "A standing wave is a different kind
> of electromagnetic wave?"
>
> In "Schaum`s College Physics Outline" by Bueche & Hecht on page 214 is
> written:
> "Standing Waves:....These might better not be called waves at all since
> they do not transport energy and momentum."

I hope my question was not interpretted to imply that standing waves
transport energy and momentum.

Thanks for the page number.

73, ac6xg

624. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 16:02:44 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm5fj2$3kk$4@news.albasani.net>
Source record: 29738

Gene Fuller wrote:

> ...
> You never give up, do you? Even when you are caught in an utter lie. You
> know exactly what the capacitors are for, and it isn't to control
> transmission line reflections from open ends of the line.
>
> 73,
> Gene
> W4SZ

I do know it has been speculated that events on the sun have caused "phenomenon" in utility lines to the point of power outages. Indeed, I think there is still some mystery about why this occurs. And, I know power companies have tried some fixes to these ... decades ago I had line noise to the point I contacted the power company. They sent someone out and, I thought, installed some sort of cap/filter on the line--anyway, they did "stick something up there you could see." I did notice a slight improvement--but finally ended up giving up the battle with them ... a move to a quieter location changed everything.

Regards,
JS

625. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 16:08:41 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm5g0k$r03$1@news.service.uci.edu>
Source record: 29740

Cecil Moore wrote:

> On Jan 9, 3:13 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>
>>On what page has Dr. Hecht written "a standing wave is a different
>>kind of electromagnetic wave"?
>
>
> Since I didn't say that Dr. Hecht said that, it must be a rhetorical
> question. Here's what Dr. Hecht did say: In "Schaum`s College Physics
> Outline" by Bueche & Hecht on page 214 is written: "Standing
> Waves:....These might better not be called waves at all since they do
> not transport energy and momentum." (Thanks to Richard Harrison for
> that quote.)

Hi Cecil - please note that Dr. Hecht does not post to this newsgroup. If you follow this thread back, you will find that you were the one who wrote "a standing wave is a different kind of electromagnetic wave".

> I agree with Dr. Hecht. Standing waves should not be
> called waves at all since they do not meet the definition and
> requirements for EM waves.

And so do I. But as I said, I am not disputing anything that Dr. Hecht has written in his textbooks. Though, there are more elegantly written physics books.

>>I asserted that expression for the sum of traveling waves and the
>>expression for the resulting standing wave pattern are related by trig
>>identity, as per page 140 of the 28th Edition of the CRC Standard
>>Mathematical Tables Handbook.
>
>
> Sorry Jim, that's not what you said. You asked if I recognized the
> trig identity that (presumably) equated a standing wave to a traveling
> wave. If that was not your meaning, it is time to say exactly what
> meaning I was supposed to assume.

See above.

ac6xg

626. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 16:55:03 UTC
From: art <aunwin@insightbb.com>
Message-ID: <a77229ac-ee3e-49d7-b74b-49a6e985b0f0@e6g2000prf.googlegroups.com>
Source record: 29741
Cross-posted to: rec.radio.amateur.antenna, rec.radio.amateur.homebrew

On 10 Jan, 05:59, "John, N9JG" <j...@Xremove.MeYgotwals.com> wrote:
> May not be directly antenna related, but
...http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode...

What a craftsman!
Art

627. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 17:14:39 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080110091439.294d99f0.rsparks@elltel.net>
Source record: 29742

Hi Roy,

This helps a lot. I much better understand exactly how you are running the calculations.

I have just three comments/suggestions mixed into your posting.

On Wed, 09 Jan 2008 14:24:23 -0800
Roy Lewallen <w7el@eznec.com> wrote:

> Roger Sparks wrote:
>
> > Using the reflection point as the zero reference seems to correspond with an observation you made about the end of the line controlling the SWR.
>
> The choice of zero reference is entirely arbitrary; any point on the
> line, or off the line, for that matter, can be used. I used the input
> end of the line as the x = 0 reference, so my equations are correct only
> when that reference is used. The choice of a reference has no effect on
> the SWR or any other aspect of line operation; it simply modifies the
> equations.
>
> For example, my equations for the first forward and first reflected
> voltage wave were:
>
> vf1(t, x) = sin(wt - x)
> vr1(t, x) = Gl * sin(wt + x)
>
> and for the second set:
>
> vf2(t, x) = Gs * sin(wt - x)
> vr2(t, x) = Gs * Gl * sin(wt + x)
>
> where here I've explicitly shown the source and load reflection
> coefficients as Gs and Gl respectively. They were 0.5 and 1 in my second
> analysis (the one with a 150 ohm resistor at the source).
>
> The more general case where the line is some length L, rather than the
> integral number of wavelengths in the example,
>
> vf1(t, x) = sin(wt - x)
> vr1(t, x) = Gl * sin(wt + x - 2L)
>
> vf2(t, x) = Gs * Gl * sin(wt - x - 2L)
> vr2(t, x) = Gs * Gl^2 * sin(wt + x - 4L)

Should we add an L to vf1(t, x, L) to keep the notation consistant in that we are considering 3 phase components. Rewriting,
vf1(t, x, L) = sin(wt - x + 0*L) (input point is congruent with refection point)
vr1(t, x, L) = Gl * sin(wt + x - 2L)(2L evaluates the entire line travel time)
>
> In general,
>
> (1) vfn(t, x) = (Gs * Gl)^n * sin(wt - x - 2nL)
> (2) vrn(t, x) = Gl * (Gs * Gl)^n * sin(wt + x - (2n + 1)L)
>
> where L is expressed in the same units as x and wt (degrees or radians).
>
> These equations are correct with x being the distance from the input end
> of the line.

I get your drift here. You are writting the general equation as if the first event is event zero, computer programming style.

Shouldn't these be written like this, changing the term "(2n + 1)L"?

(1) vfn(t, x) = (Gs * Gl)^n * sin(wt - x - 2nL)
(2) vrn(t, x) = Gl * (Gs * Gl)^n * sin(wt + x - 2(n+1)L)

>
> You could, as I mentioned, use a different reference, for example x' = L
> - x, where L is the line length in radians or degrees (same units as x
> and wt). Then you have, simply by substituting L - x' for x:
>
> vf1(t, x') = sin(wt - L + x')
> vr1(t, x') = sin(wt + L - x' - 2L) = sin(wt - L - x')
>
> and so forth, and for the general case,
>
> (3) vfn(t, x') = (Gs * Gl)^n * sin(wt + x' - (2n + 1) * L)
> (4) vrn(t, x') = (Gs * Gl)^n * sin(wt - x' - 2nL)
>
> or, you can use x for the forward wave and x' for the reverse wave or
> vice-versa in order to reference to the point the wave was reflected
> from or where it will be reflected from. Any combination of the
> equations is equally valid and will give correct results. You can't,
> however, simply redefine the reference point without a corresponding
> change in the equation. In general, equation 1 and equation 3 will give
> different results if you put in the same value for x and x'; likewise
> equations 2 and 4. There are some special cases, as you showed, where
> you can change the reference without modifying the equations and not
> have any impact on the sum of the waves. However, you can see from the
> equations that this won't usually work.

Yes, the discussion becomes confusing quickly. If we were to have a rigorus discussion, we would need diagrams locating the points and directions. Lacking that, we are adrift.

>
> The general case with complex reflection coefficients and arbitrary line

> length is mathematically a little more difficult than the simple example
> I worked earlier. Not only does each reflection have a different
> amplitude than the previous one, it also has a different phase angle,
> due to the line length and the reflection coefficients. Consequently,
> the simple a / (1 - r) formula I used for summing the infinite series of
> waves can't be applied to the equations in the form I used. This is
> where a change to phasor notation is really beneficial, since the phase
> delay simply becomes e raised to an imaginary exponent which can be
> treated more conveniently than its constituent sine and cosine
> functions. With phasor notation, the summing formula can be used even
> for the general case to find the steady state results from the
> individual reflected waves. There's a very excellent treatment of this
> in Chipman's _Transmission Lines_ (Schaum's Outline Series). He does
> just about exactly what I did in my earlier posting, except for the
> general case and using phasors rather than time representations. It's an
> excellent text and reference, and I highly recommend it for anyone
> seriously interested in transmission lines.
>
> Roy Lewallen, W7EL

This has been very productive for me Roy. I am gaining a much better appreciation for the whole subject, especially the use of phasors. Your use of the phase angle (posted with the corrections) was particularly helpful. I am planning to find Chipman's book.

Thanks for your efforts.

73, Roger, W7WKB

628. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 17:48:48 UTC
From: richardharrison@webtv.net
Message-ID: <11281-47865A80-296@storefull-3252.bay.webtv.net>
Source record: 29743

A14QJ wrote, quoting Roy:
"Just what is a "wave", anyway?"

Wikipedia says:
"Waves travel and transport energy from one point to another, often with no permanent displacement (mass transport) of particles in the medium; instead there are oscillations around almost fixed positions. A traveling wave varies with both time and distance. Phase velocity=Lambda(f).
A standing wave remains in a constant position and only may be the result of interference between two waves traveling in opposite directions

When two opposed waves cancel, there is no net propagation of energy."

The "Hutchin Encyclopedia" says:
"Nodes (positions of zero vibration) and antinodes (Positions of maximum vibration) do not move.

Water and EM waves can form standing waves in the same way."

A14QJ also wrote:
"The standing wave is the mathematical sum of forward and reflected waves. This sum is a superposition wave. The components of the superposition wave no lonnger exist by themselves;----"

The components are not cancelled. Were that so, the Bird Thruline Wattmeter could not function and the standing wave would be independent of the forward and reflected waves. Instead, it is only a manifestation of interference.

Best regards, Richard Harrison, KB5WZI

629. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 18:14:11 UTC
From: jimlux@earthlink.net
Message-ID: <223fc924-f359-4959-b33e-aa20e11b9e11@i12g2000prf.googlegroups.com>
Source record: 29744

On Jan 9, 5:35 pm, "J. Mc Laughlin" <j...@power-net.net> wrote:
> Dear Jim Lux W6RMK:
>
> I was not able to examine the probes that I saw in use at NBS in what was
> probably the mid-70s.
>
> The probes that I did see and use comprised three, orthogonal, very short
> doublets with attached means for rectifying. The resulting DC was conveyed
> away through a resistive, plastic transmission-line crafted to be almost
> transparent to RF. These probes were used to estimate the size of strong EM
> signals in the vicinity of equipment so as to be able to put better numbers
> on EMC capabilities.

Yes.. The older works (50s and 60s) used carbon loaded string or
thread, but newer stuff uses conductive plastic. If the sheet
resistance of the material is 377 ohms/square then it's sort of like
lossy freespace.

Those three axis probes work fine for measuring the magnitude and
direction of the field, but they can't measure the phase, and to do
the nearfield to far field conversion you also need the phase.

630. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 18:48:33 UTC
From: richardharrison@webtv.net
Message-ID: <2879-47866881-216@storefull-3258.bay.webtv.net>
Source record: 29745

Art wrote:
"This dust is what Gauss refers to as static particles in a
gravitational field in equilibrium."

What evidence do you have that gravity is related to static particles
other than attracting their mass or that gravity affects radio waves
significantly?

Our universe may not have uniform acceleration, so are you sure about
equilibrium?

Maxwell did not need a medium for radio propagation. He was able to
calculate the velocity of radio waves and believed that because it
equaled the known speed of light his equations were correct.

Best regards, Richard Harrison, KB5WZI

631. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 18:56:42 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <50db62fa-e357-4c07-bbcd-cacd12ac4a96@l1g2000hsa.googlegroups.com>
Source record: 29746

On Jan 9, 11:22 pm, Roy Lewallen <w...@eznec.com> wrote:
> Just what is a "wave", anyway? Are there different "kinds" of
> electromagnetic wave?

Take a look at the E-field, H-field, and direction of travel for an EM (photonic) wave. An RF standing wave does not behave like an EM wave nor does it meet the definition of an EM wave which can be represented by a Poynting vector. The Poynting vector for an RF standing wave has a magnitude of zero and no direction.
--
73, Cecil, w5dxp.com

632. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 19:21:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ocs24qr90j08d@corp.supernews.com>
Source record: 29747

Roger Sparks wrote:
> Roy Lewallen <w7el@eznec.com> wrote:
>>. . .
>> The more general case where the line is some length L, rather than the
>> integral number of wavelengths in the example,
>>
>> vf1(t, x) = sin(wt - x)
>> vr1(t, x) = Gl * sin(wt + x - 2L)
>>
>> vf2(t, x) = Gs * Gl * sin(wt - x - 2L)
>> vr2(t, x) = Gs * Gl^2 * sin(wt + x - 4L)
>
> Should we add an L to vf1(t, x, L) to keep the notation consistant in that we are considering 3 phase components. Rewriting,

Yes, that's fine. It can be viewed as either a variable or a constant, but it won't change during the course of a single analysis.

> vf1(t, x, L) = sin(wt - x + 0*L) (input point is congruent with refection point)

It's not necessary to explicitly add the 0*L term, even if you consider vf to be a function of a variable L. And it adds unnecessary clutter and potential confusion without any effect on the result.

> vr1(t, x, L) = Gl * sin(wt + x - 2L)(2L evaluates the entire line travel time)

The equation is correct and what I wrote. I don't understand the parenthetical comment.

>> In general,
>>
>> (1) vfn(t, x) = (Gs * Gl)^n * sin(wt - x - 2nL)
>> (2) vrn(t, x) = Gl * (Gs * Gl)^n * sin(wt + x - (2n + 1)L)
>>
>> where L is expressed in the same units as x and wt (degrees or radians).
>>
>> These equations are correct with x being the distance from the input end
>> of the line.
>
> I get your drift here. You are writting the general equation as if the first event is event zero, computer programming style.

Sorry, I don't know what event you're talking about. And it's not "computer programming style", but standard notation as you'll find in any text. I am making the assumption that the line is initially discharged, if that's what you mean.

> Shouldn't these be written like this, changing the term "(2n + 1)L"?
>
> (1) vfn(t, x) = (Gs * Gl)^n * sin(wt - x - 2nL)
> (2) vrn(t, x) = Gl * (Gs * Gl)^n * sin(wt + x - 2(n+1)L)
>

You're right. I made an error -- thanks for spotting it. The reflected
wave has an additional 2L delay relative to the corresponding forward
wave, and I didn't write it correctly. I apologize for the error.

>> You could, as I mentioned, use a different reference, for example x' = L
>> - x, where L is the line length in radians or degrees (same units as x
>> and wt). Then you have, simply by substituting L - x' for x:
>>
>> vf1(t, x') = sin(wt - L + x')
>> vr1(t, x') = sin(wt + L - x' - 2L) = sin(wt - L - x')
>>
>> and so forth, and for the general case,
>>
>> (3) vfn(t, x') = (Gs * Gl)^n * sin(wt + x' - (2n + 1) * L)
>> (4) vrn(t, x') = (Gs * Gl)^n * sin(wt - x' - 2nL)

Equation 3 has the same error.

>> or, you can use x for the forward wave and x' for the reverse wave or
>> vice-versa in order to reference to the point the wave was reflected
>> from or where it will be reflected from. Any combination of the
>> equations is equally valid and will give correct results. You can't,
>> however, simply redefine the reference point without a corresponding
>> change in the equation. In general, equation 1 and equation 3 will give
>> different results if you put in the same value for x and x'; likewise
>> equations 2 and 4. There are some special cases, as you showed, where
>> you can change the reference without modifying the equations and not
>> have any impact on the sum of the waves. However, you can see from the
>> equations that this won't usually work.
>
> Yes, the discussion becomes confusing quickly. If we were to have a rigorus discussion,
we would need diagrams locating the points and directions. Lacking that, we are adrift.

It depends on your ability to visualize equations, which usually
improves as you work with them. But sketches of the waves are definitely
very helpful in keeping track of what's going on. I hope my little
program will also prove helpful for this.

> This has been very productive for me Roy. I am gaining a much better appreciation for the
whole subject, especially the use of phasors. Your use of the phase angle (posted with the
corrections) was particularly helpful. I am planning to find Chipman's book.
>
> Thanks for your efforts.

You're welcome. I'm glad to help when I can. Chipman's book might be
hard to find, but it's well worth the search. I have more than a dozen
texts dealing with transmission lines, but Chipman's has material, like

the concise development of steady state from startup, that you'll find in few others.

I haven't used phasors in these postings at all, but would have to in order to sum the waves for the general case. In phasor notation,

vfn(t, x) = (Gs * Gl)^n * exp(j(-x - 2nL))
vrn(t, x) = Gl * (Gs * Gl)^n * exp(j(x - 2(n + 1)L))

where Gs and Gl are complex. So the ratio of successive terms vfn(t, x) / vfn-1(t, x) = vrn(t, x) / vrn-1(t, x) is a multiplier term Gs * Gl * exp(-j2nL). So we can use the formula for summing an infinite series to get

vf(ss)(t, x) = vf1 / (1 - Gs * Gl * exp(-j2nL))
vr(ss)(t, x) = vr1 / (1 - Gs * Gl * exp(-j2nL))

which can be evaluated as complex numbers and converted back to time functions for evaluation. While the summation of the infinite series could almost certainly be done by clever application of trig identities, it's trivial with phasors.

Roy Lewallen, W7EL

633. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 19:25:56 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm5rj9$9l6$1@news.service.uci.edu>
Source record: 29648

Cecil Moore wrote:

> An RF standing wave does not behave like an EM wave
> nor does it meet the definition of an EM wave which can be represented
> by a Poynting vector. The Poynting vector for an RF standing wave has
> a magnitude of zero and no direction.

So much for the Poynting vector of a position envelope. What are your thoughts regarding the Poynting vector for a time varying envelope of an electromagnetic wave? :-)

ac6xg

634. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 19:34:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8msco3p7mfu5139vllmhaickl6v7lbkon1@4ax.com>
Source record: 29649

On Thu, 10 Jan 2008 11:25:56 -0800, Jim Kelley <jwkelley@uci.edu>
wrote:

>>the Poynting vector for an RF standing wave has
>> a magnitude of zero and no direction.
>
>So much for the Poynting vector of a position envelope. What are your
>thoughts regarding the Poynting vector for a time varying envelope of
>an electromagnetic wave? :-)

Hi Jim,

Imagine even more the dilemma this puts the dipole in! It has
suddenly collapsed into a shielded, dummy load. ;-)

DAMN! Did my TV screen just go blank?

73's
Richard Clark, KB7QHC

635. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 20:33:34 UTC
From: art <aunwin@insightbb.com>
Message-ID: <28dd1047-3cce-4b36-ac42-fc9bad078f54@k39g2000hsf.googlegroups.com>
Source record: 29650

On 10 Jan, 11:25, Jim Kelley <jwkel...@uci.edu> wrote:
> Cecil Moore wrote:
> > An RF standing wave does not behave like an EM wave
> > nor does it meet the definition of an EM wave which can be represented
> > by a Poynting vector. The Poynting vector for an RF standing wave has
> > a magnitude of zero and no direction.
>
> So much for the Poynting vector of a position envelope. What are your
> thoughts regarding the Poynting vector for a time varying envelope of
> an electromagnetic wave? :-)
>
> ac6xg

Keep going guys. You are nearly at the end. Must be! Richard has
already started on "I knew that all the time" in an effort to take all
the credit. Mohammed has come to the mountain
and found that Richard the bard was already there.LOL
Art Unwin...KB9MZ...XG(uk)

636. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 21:35:21 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <49e4b162-b487-408c-8ba7-566138c3e790@s12g2000prg.googlegroups.com>
Source record: 29651

High Mac,

About a year ago I was at an EMC test house. They were experimenting with three axis short dipoles with a detector diode in between. I never saw such a small package for a diode, maybe it was just the chip on top of the substrate.

The output goes via a high resistance metallic layer to the interface. The whole interface is fed by fiber optic (data also goes via fiber optic). It wasn't used for antenna design measurements but for EMC high field strength measurements. Their intention was to use it up to 18 GHz. Of course sensitivity (conversion from E-field to DC output) is very poor, but for high incident field that isn't a problem.

For indicative measurements I like today's easy to get medium barrier microwave schottky rectifiers (like BAT15 and BAT 62). Together with a CMOS input stage opamp one can make a nice zero bias detector with good temperature stability and that outputs the full available EMF from the rectifying diode. So you can calculate back the incident E-field.

Best regards,

Wim
PA3DJS
www.tetech.nl

On 10 ene, 02:35, "J. Mc Laughlin" <j...@power-net.net> wrote:
> Dear Jim Lux W6RMK:
>
> I was not able to examine the probes that I saw in use at NBS in what was
> probably the mid-70s.
>
> The probes that I did see and use comprised three, orthogonal, very short
> doublets with attached means for rectifying. The resulting DC was conveyed
> away through a resistive, plastic transmission-line crafted to be almost
> transparent to RF. These probes were used to estimate the size of strong EM
> signals in the vicinity of equipment so as to be able to put better numbers
> on EMC capabilities.
>
> While one can make a reasonable estimate of field strength inside of a TEM
> cell (a big piece of transmission line) from external measurements, it is
> desirable to be able to estimate FS at spots inside of the cell. It is
> important to note that even with care, significant uncertainties remain in
> the estimates. All measurement comprise a minimum of two numbers: an
> estimate of the value and an estimate of the uncertainty of that estimate.

> You, and most on the group, know this, but it needs to be repeated.
>
> Safety of life was involved with the testing then done. With the profusion
> of transmitters in close proximity of safety equipment today, it is a wonder
> that more lives are not lost with inappropriate actuations just within
> present cars. A reminder that the need for savvy RF engineers will not
> diminish, and sending that work off-shore to a low-bidder is dangerous and
> probably criminally negligent. The major US car makers, to pick an
> industry, expend a large, expensive effort to see that their cars are safe
> using resident engineers.
>
> Warm regards, Mac N8TT
[rest deleted]

637. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 21:55:50 UTC
From: dfinn1@nc.rr.com
Message-ID: <270198f6-ce4c-48aa-a35c-cd40f8d0c739@i72g2000hsd.googlegroups.com>
Source record: 29652

On Jan 10, 1:25 am, Roy Lewallen <w...@eznec.com> wrote:
> After reading this, I understand why you find Art's material interesting.
>
> But, what's a "wave"?

A wave is any periodic function f(x) where f(x) = amplitude and whose
period X defines one cycle.

638. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 22:12:21 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13od629qda3ph61@corp.supernews.com>
Source record: 29653

dfinn1@nc.rr.com wrote:
> On Jan 10, 1:25 am, Roy Lewallen <w...@eznec.com> wrote:
>> After reading this, I understand why you find Art's material interesting.
>>
>> But, what's a "wave"?
>
> A wave is any periodic function f(x) where f(x) = amplitude and whose
> period X defines one cycle.

So if we send a single pulse down a transmission line, no wave is
created or exists?

Roy Lewallen, W7EL

639. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 22:19:06 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13od6ev6u6a6f79@corp.supernews.com>
Source record: 29654

Richard Harrison wrote:
> A14QJ wrote, quoting Roy:
> "Just what is a "wave", anyway?"
>
> Wikipedia says:
> "Waves travel and transport energy from one point to another, often with
> no permanent displacement (mass transport) of particles in the medium;
> instead there are oscillations around almost fixed positions. A
> traveling wave varies with both time and distance. Phase
> velocity=Lambda(f).
> A standing wave remains in a constant position and only may be the
> result of interference between two waves traveling in opposite
> directions

The first sentence says that waves travel. The second describes a wave
which doesn't. Which is it?

> When two opposed waves cancel, there is no net propagation of energy."

It's statements like that which make me very leery of Wikipedia.

> The "Hutchin Encyclopedia" says:
> "Nodes (positions of zero vibration) and antinodes (Positions of maximum
> vibration) do not move.
>
> Water and EM waves can form standing waves in the same way."

That's fine and good. But it doesn't define what a wave is.

> A14QJ also wrote:
> "The standing wave is the mathematical sum of forward and reflected
> waves. This sum is a superposition wave. The components of the
> superposition wave no lonnger exist by themselves;----"
>
> The components are not cancelled. Were that so, the Bird Thruline
> Wattmeter could not function and the standing wave would be independent
> of the forward and reflected waves. Instead, it is only a manifestation
> of interference.

A Bruene wattmeter circuit measures "forward power" and "reverse power"
just fine simply by measuring the voltage and current at a single point
on the line. It doesn't measure separate forward and reverse waves, but
only the total V and I. Was Bruene more clever than Bird, who you say
can't figure out how to do that?

Roy Lewallen, W7EL

640. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 23:26:32 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4786a9a9$0$5134$4c368faf@roadrunner.com>
Source record: 29655

"Michael Coslo" <mjc5@psu.edu> wrote in message
news:fm5ajf$fi4$1@f04n12.cac.psu.edu...
>
> And there are some sanctimonius people out there who are educated orders
> of magnitude beyond their intelligence,

Gosh, I apologize. I did not realize I was communicating with someone of such a greater IQ than I. Can you tell me your MENSA number or perhaps where you recived your PhdD?

ready to throw out veiled
> insults at the drop of a hat.......
>
> Fortunately no one like that is in this conversation, eh?

Well, there was the one person who started this exchange with a very sarcastic comment. I'm not sure who it was but this mystery person said:

"Oh darnit! Here I went and built several antennas designed with Eznec, and they have worked just like the program said they would.

I guess I'll have to take the remaining ones down, since I was only supposed to discuss them, not actually make and use them. Thanks for the correction!"

Unexpected and unnecessary sarcasm pointed in my direction tends to make me appear sanctimonious and to respond in kind.

Anyway,

73 de AI4QJ

>
> - 73 de Mike N3LI -

641. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-10 23:29:49 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4786aa71$0$5146$4c368faf@roadrunner.com>
Source record: 29656

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13od629qda3ph61@corp.supernews.com...
> dfinn1@nc.rr.com wrote:
>> On Jan 10, 1:25 am, Roy Lewallen <w...@eznec.com> wrote:
>>> After reading this, I understand why you find Art's material
>>> interesting.
>>>
>>> But, what's a "wave"?
>>
>> A wave is any periodic function f(x) where f(x) = amplitude and whose
>> period X defines one cycle.
>
> So if we send a single pulse down a transmission line, no wave is created
> or exists?
>
> Roy Lewallen, W7EL

The single pulse can be decribed by its fourier series a superposition of
sinudoidal waves so you would actually be sending wave(S) down the line, of
varying harmonic frequencies, but only for the time defined by the pulse
width.

642. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 00:02:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13odchfk971254c@corp.supernews.com>
Source record: 29657

AI4QJ wrote:
>
> The single pulse can be decribed by its fourier series a superposition of
> sinudoidal waves so you would actually be sending wave(S) down the line, of
> varying harmonic frequencies, but only for the time defined by the pulse
> width.

So a sine wave consisting of only two cycles is considered a periodic function? How about one cycle? Half cycle? Does a truncated sine wave fit the proposed definition of f(x) where x is the period? Would the pulse then be one wave or an infinite number of waves (since the spectrum of any time-limited function is infinite in width)?

Wouldn't it be fun to calculate the power in each of the infinite number of sine waves and add them together like Cecil does to get the total power? Boy, I'll bet you'd have a *lot*!

Roy Lewallen, W7EL

643. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 00:37:08 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fm6dni$v6a$1@news.albasani.net>
Source record: 29658

Richard Harrison wrote:
> A14QJ wrote, quoting Roy:
> "Just what is a "wave", anyway?"
>
> Wikipedia says:
> "Waves travel and transport energy from one point to another, often with
> no permanent displacement (mass transport) of particles in the medium;
> instead there are oscillations around almost fixed positions. A
> traveling wave varies with both time and distance. Phase
> velocity=Lambda(f).
> A standing wave remains in a constant position and only may be the
> result of interference between two waves traveling in opposite
> directions
>
> When two opposed waves cancel, there is no net propagation of energy."
>
> The "Hutchin Encyclopedia" says:
> "Nodes (positions of zero vibration) and antinodes (Positions of maximum
> vibration) do not move.
>
> Water and EM waves can form standing waves in the same way."
>
> A14QJ also wrote:
> "The standing wave is the mathematical sum of forward and reflected
> waves. This sum is a superposition wave. The components of the
> superposition wave no lonnger exist by themselves;----"
>
> The components are not cancelled. Were that so, the Bird Thruline
> Wattmeter could not function and the standing wave would be independent
> of the forward and reflected waves. Instead, it is only a manifestation
> of interference.
>
> Best regards, Richard Harrison, KB5WZI
>

PLONK, need I say more ...

JS

644. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 00:51:28 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4786bd90$0$5129$4c368faf@roadrunner.com>
Source record: 29659

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13odchfk971254c@corp.supernews.com...
> AI4QJ wrote:
>>
>> The single pulse can be decribed by its fourier series a superposition of
>> sinudoidal waves so you would actually be sending wave(S) down the line,
>> of varying harmonic frequencies, but only for the time defined by the
>> pulse width.
>
> So a sine wave consisting of only two cycles is considered a periodic
> function?

Yes, for a time period of 2 cycles it is consuidered a periodic function.
When it is interrupted, it stops existing.

> How about one cycle?

Same as above.

> Half cycle?

Same as above.

>Does a truncated sine wave fit the proposed definition of f(x) where x is
>the period?

Yes, absolutely. So does a square wave, a sawtooth or any periodic wave.

> Would the pulse then be one wave or an infinite number of waves (since the
> spectrum of any time-limited function is infinite in width)?

Yes. It is possible that the pulse could be described, for example, as the
summation Capital Sigma [limit n =1 to infinity]{1/n**2*(cos(n*2*pi*f*t)}
which would be an infinite number of cosine waves whose amplitudes (and
energy) gradually approach zero in accordance with n**2.

>
> Wouldn't it be fun to calculate the power in each of the infinite number
> of sine waves

Periodic waves are typically in the above form or similar. Integrating the
"infinite" number of waves the above expression is trivial and results in a
finite number as long as time "t" is a finite number. It is normal to
integrate any periodic wave over a finite time period and get a finite
result, even if the fourier series indicates an infinite number of
sine/cosine waves. That's just calculus.

> and add them together like Cecil does to get the total power? Boy, I'll
> bet you'd have a *lot*!

I'm sorry but this taunt rings a little hollow...it just isn't funny because
you can/will get a finite number for power.

AI4QJ

645. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:01:49 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4786bffd$0$5112$4c368faf@roadrunner.com>
Source record: 29660

"AI4QJ" <nospam@yahoo.com> wrote in message
news:4786bd90$0$5129$4c368faf@roadrunner.com...
> Yes. It is possible that the pulse could be described, for example, as
> the summation Capital Sigma [limit n =1 to
> infinity]{1/n**2*(cos(n*2*pi*f*t)} which would be an infinite number of
> cosine waves whose amplitudes (and energy) gradually approach zero in
> accordance with n**2.

CORRECTION: Should be 'approach zero in accordance with 1/n**3' as that will
be how the term shows up when solving the integral.

646. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:03:57 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <982fc21e-3d0e-488c-b766-783d21378ab8@j78g2000hsd.googlegroups.com>
Source record: 29661

On Jan 10, 10:55 am, Gene Fuller <W4SZzzz...@att.net> wrote:
.> You never give up, do you? Even when you are caught in an utter lie. You
> know exactly what the capacitors are for, and it isn't to control
> transmission line reflections from open ends of the line.

I'm sorry, Gene, but I cannot alleviate your ignorance with one posting. Given a voltage phasor and a current phasor with a phase angle between them, there is absolutely no way to distinguish between a mismatch and a reflection. The purpose of those power factor capacitors on the power line poles is to turn those transmission lines into money-making traveling wave delivery systems rather than allow money-losing standing wave systems. Please stop your emoting long enough to realize what I have said is true.

If the capacitors were not there, the inductive loads would cause reflections just as they do on an RF transmission line. The only difference is that the 60 Hz transmission line is a small fraction of a wavelength. If you scaled the 60 Hz system to 6 MHz, all the same laws of physics would apply and the similarities would be readily apparent.
--
73, Cecil, w5dxp.com

647. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:07:20 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <c6c5a655-b80d-4939-88c6-2b9d0fa404c0@m34g2000hsf.googlegroups.com>
Source record: 29662

On Jan 10, 10:59 am, Gene Fuller <W4SZzzz...@att.net> wrote:
.> It is really amazing that you can make up so many requirements that
are
> completely unknown to the rest of the world. Is that a Mensa thing?

Methinks you need to study and comprehend the nature of photons and
photonic waves.
--
73, Cecil, w5dxp.com

648. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:18:39 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <cbd0aa2a-d260-44ad-bb32-41db5aecda13@q39g2000hsf.googlegroups.com>
Source record: 29663

On Jan 10, 11:08 am, Jim Kelley <jwkel...@uci.edu> wrote:
> If you follow this thread back, you will find that you were the one
> who wrote "a standing wave is a different kind of electromagnetic wave".

I don't remember saying that and I apologize if I ever did. What I
remember saying is that an RF standing wave doesn't meet the
definition of an EM wave which is essentially the same thing that Dr.
Hecht said: "Standing Waves:....These might better not be called waves
at all since they do not transport energy and momentum."

RF standing waves, unlike other EM waves, do not transport energy and
momentum at the speed of light in the medium. Therefore, they are
technically not EM (photonic) waves.
--
73, Cecil, w5dxp.com

649. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:30:56 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <6sKdndaXW9I_WxvanZ2dnUVZ_tGonZ2d@bright.net>
Source record: 29664

Dear Jim: Please see below....

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
<jimlux@earthlink.net> wrote in message
news:223fc924-f359-4959-b33e-aa20e11b9e11@i12g2000prf.googlegroups.com...
> On Jan 9, 5:35 pm, "J. Mc Laughlin" <j...@power-net.net> wrote:
>> Dear Jim Lux W6RMK:
>>
>> I was not able to examine the probes that I saw in use at NBS in what was
>> probably the mid-70s.
>>
>> The probes that I did see and use comprised three, orthogonal, very short
>> doublets with attached means for rectifying. The resulting DC was
>> conveyed
>> away through a resistive, plastic transmission-line crafted to be almost
>> transparent to RF. These probes were used to estimate the size of strong
>> EM
>> signals in the vicinity of equipment so as to be able to put better
>> numbers
>> on EMC capabilities.
>
> Yes.. The older works (50s and 60s) used carbon loaded string or
> thread, but newer stuff uses conductive plastic. If the sheet
> resistance of the material is 377 ohms/square then it's sort of like
> lossy freespace.

Exactly. With a high input resistance voltmeter at the far end, the net
resistance of the resistive line has little (and predictable) effect. What
I saw was not loaded string - it was a conductive plastic.

>
> Those three axis probes work fine for measuring the magnitude and
> direction of the field, but they can't measure the phase, and to do
> the nearfield to far field conversion you also need the phase.
>

Exactly. I did not intend to leave a suggestion that the probes used to
estimate the size of strong EM fields could provide phase information. The
utility of the probes that I saw and used resided in their insensitivity to
the local polarization and their useful sensitivity to the magnitude of E.
The testing of such polarization sensitivity and the calibration of
magnitude of E is straight forward when one has a TEM cell, a power
amplifier, a calibrated high-power attenuator, and a trustworthy power

meter. Still, the results of EMC testing will have uncertainty.

Once upon a time, a major effort was made to estimate the strongest E to be found in the environment. Testing took place on SW broadcast sites and a host of other places. I ran a mobile test on a drive from the East Michigan area to Chicago. My testing found CB signals and VOR signals to be the strongest. The former because our van was passed by a car transmitting at 27 MHz and the latter because the (about) 200 watt VOR was at ground level, near the highway, and its antenna was surrounded by a very large ground-plane. Others found a particularly strong signal from an FM broadcast station with a mis-designed antenna having a major lobe straight down! Today, many more RF hazards exist. Thanks for your expansion of what I wrote. 73, Mac N8TT

650. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:31:24 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <e97c67d6-0cd0-4484-8607-a30d4f76f56b@i3g2000hsf.googlegroups.com>
Source record: 29665

On Jan 10, 2:25 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> So much for the Poynting vector of a position envelope. What are your
> thoughts regarding the Poynting vector for a time varying envelope of
> an electromagnetic wave? :-)

If the wire runs in the 'x' direction, the standing wave phasors
rotate only in the 'yz' plane. Since the Poynting vector is always
normal to the E-field and H-field, seems the instantaneous value of
the Poynting vector for a standing wave is still zero.
--
73, Cecil, w5dxp.com

651. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:35:42 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <ebd61982-2a87-455e-908f-68c211d863cb@c4g2000hsg.googlegroups.com>
Source record: 29666

On Jan 10, 2:34 pm, Richard Clark <kb7...@comcast.net> wrote:
> Imagine even more the dilemma this puts the dipole in! It has
> suddenly collapsed into a shielded, dummy load. ;-)

Sorry, the dipole standing waves are only about 80% of the energy on
the antenna. The other 20% of the energy is radiated (or lost to
heat). If the waves on the 1/2WL dipole were 100% standing waves, the
antenna would have a zero feedpoint impedance, but it doesn't
--
73, Cecil, w5dxp.com
.

652. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:42:00 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <1fa6a0c3-b4d9-439d-b6d0-91a7ea385002@c4g2000hsg.googlegroups.com>
Source record: 29667

On Jan 10, 7:02 pm, Roy Lewallen <w...@eznec.com> wrote:
> Wouldn't it be fun to calculate the power in each of the infinite number
> of sine waves and add them together like Cecil does to get the total
> power?

Optical scientists have been "adding" EM wave power densities for
centuries using the irradiance equation which includes the phase angle
between the E-fields. I'm surprised you are still ignorant of that
fact of physics.
--
73, Cecil, w5dxp.com

653. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:52:38 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5mido3ds3gou1ismourebmcbbs5gb3gq0b@4ax.com>
Source record: 29668

On Thu, 10 Jan 2008 17:35:42 -0800 (PST), Cecil Moore
<w5dxp@hotmail.com> wrote:

> dipole standing waves are only about

Ah, yes! The devil is in the "about" where Cecil can prove a new
fundamental law with errors of only 50%. Naturally, we will have to
subscribe to newsletters to find the data. Let me anticipate the next
burst of evidence:
"But you MUST admit that 1 amp through 1 ohm is 1 volt.
Denying this makes you a liar!"

73's
Richard Clark, KB7QHC

654. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:54:29 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm6ie7$32h$1@news.service.uci.edu>
Source record: 29670

Cecil Moore wrote:

> I don't remember saying that and I apologize if I ever did. What I
> remember saying is that an RF standing wave doesn't meet the
> definition of an EM wave which is essentially the same thing that Dr.
> Hecht said: "Standing Waves:....These might better not be called waves
> at all since they do not transport energy and momentum."

You could shortcut the whole process and just have Dr. Hecht post his ideas here instead. I bet ya anything there would be far fewer arguments about physics. :-)

> RF standing waves, unlike other EM waves, do not transport energy and
> momentum at the speed of light in the medium. Therefore, they are
> technically not EM (photonic) waves.

Technically, they're just spatial interference patterns, so of course they don't propagate energy. They're like any other spatial interference pattern in that regard.

ac6xg

655. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 01:55:30 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <YpqdnVAZZrYNURvanZ2dnUVZ_vamnZ2d@bright.net>
Source record: 29669

Dear Wim: Your observations are appreciated. I am delighted to learn of evidence of improvements in instrumentation.

Along with my early observation of the need for capable RF engineers (and that includes antennas), note in the digital age the continuing need for smart analog-electronic engineers, as exhibited by your examples. Western Europe, USA, Canada, ZL, and VK still have such people, but many are reaching retirement. I am please to say that my university still has as one of its objectives to educate engineers who have a good feel for when analog is needed and when digital is needed. They might not have the full analog insight, skill, or experience, but they know when an analog expert is needed.

... and now for a moment with tongue-in-cheek: Too many words in English sound the same, but are spelled differently. Some are spelled the same but have multiple meanings that one must gather from context. This is the consequence of borrowing from many languages - very notably from the north part of your country. "Hi Mac" is a salutation. It should come as no surprise that this Mac has never been "High."
The most wonderful thing about English is that because of its inherent redundancies and the way it uses grammar, it is relatively difficult for anyone to loose the meaning - especially in a technical forum. As a contrast, consider the drastic consequences of making an error in an ending of a Slavic language word. The word can become unintelligible.

Your contributions are always read with interest. 73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Wimpie" <wimtel@tetech.nl> wrote in message
news:49e4b162-b487-408c-8ba7-566138c3e790@s12g2000prg.googlegroups.com...
> High Mac,
>
> About a year ago I was at an EMC test house. They were experimenting
> with three axis short dipoles with a detector diode in between. I
> never saw such a small package for a diode, maybe it was just the chip
> on top of the substrate.
>
> The output goes via a high resistance metallic layer to the interface.
> The whole interface is fed by fiber optic (data also goes via fiber
> optic). It wasn't used for antenna design measurements but for EMC
> high field strength measurements. Their intention was to use it up to
> 18 GHz. Of course sensitivity (conversion from E-field to DC output)
> is very poor, but for high incident field that isn't a problem.

>
> For indicative measurements I like today's easy to get medium barrier
> microwave schottky rectifiers (like BAT15 and BAT 62). Together with a
> CMOS input stage opamp one can make a nice zero bias detector with
> good temperature stability and that outputs the full available EMF
> from the rectifying diode. So you can calculate back the incident E-
> field.
>
> Best regards,
>
> Wim
> PA3DJS
> www.tetech.nl
>
> On 10 ene, 02:35, "J. Mc Laughlin" <j...@power-net.net> wrote:
>> Dear Jim Lux W6RMK:
>>
>> I was not able to examine the probes that I saw in use at NBS in what was
>> probably the mid-70s.
>>
>> The probes that I did see and use comprised three, orthogonal, very short
>> doublets with attached means for rectifying. The resulting DC was
>> conveyed
>> away through a resistive, plastic transmission-line crafted to be almost
>> transparent to RF. These probes were used to estimate the size of strong
>> EM
>> signals in the vicinity of equipment so as to be able to put better
>> numbers
>> on EMC capabilities.
>>
>> While one can make a reasonable estimate of field strength inside of a
>> TEM
>> cell (a big piece of transmission line) from external measurements, it is
>> desirable to be able to estimate FS at spots inside of the cell. It is
>> important to note that even with care, significant uncertainties remain
>> in
>> the estimates. All measurement comprise a minimum of two numbers: an
>> estimate of the value and an estimate of the uncertainty of that
>> estimate.
>> You, and most on the group, know this, but it needs to be repeated.
>>
>> Safety of life was involved with the testing then done. With the
>> profusion
>> of transmitters in close proximity of safety equipment today, it is a
>> wonder
>> that more lives are not lost with inappropriate actuations just within
>> present cars. A reminder that the need for savvy RF engineers will not
>> diminish, and sending that work off-shore to a low-bidder is dangerous
>> and
>> probably criminally negligent. The major US car makers, to pick an

>> industry, expend a large, expensive effort to see that their cars are
>> safe
>> using resident engineers.
>>
>> Warm regards, Mac N8TT
> [rest deleted]

656. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 02:23:18 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm6k4j$4nl$1@news.service.uci.edu>
Source record: 29671

Cecil Moore wrote:

> On Jan 10, 2:25 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>
>>So much for the Poynting vector of a position envelope. What are your
>>thoughts regarding the Poynting vector for a time varying envelope of
>>an electromagnetic wave? :-)
>
>
> If the wire runs in the 'x' direction, the standing wave phasors
> rotate only in the 'yz' plane.

A standing wave is an amplitude vs position envelope. An amplitude vs
time envelope is modulation! :-)

ac6xg

657. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 02:36:32 UTC
From: numeric <numeric@att.net>
Message-ID: <QCAhj.409941$kj1.228642@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29672
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

"John, N9JG" <john@Xremove.MeYgotwals.com> wrote in message
news:9xphj.41449$G23.11374@newsreading01.news.tds.net...
> May not be directly antenna related, but ...
> http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode_tech
>
>

See, anything is possible with a Swiss Army Knife ;-)

658. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 02:52:28 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <99d22e20-5160-488f-8b8a-7a5d3e384ed4@k39g2000hsf.googlegroups.com>
Source record: 29673

Thanks for offering the two capacitor/one capacitor view of the middle
of the line. It took a bit of time to decide whether the commingling
of the charge in the single capacitor at the middle of the line would
solve my dilemma.

So I considered this one capacitor in the exact center of a perfect
transmission line. It is the perfect capacitor, absolutely
symmetrical. So as the exactly equal currents flow into it on
the exactly symmetrical leads, the charge is perfectly balanced
so that the charge coming from each side exactly occupies its
side of the conductor. As the two flows of charge flow over
the perfectly symmetrical plates, they meet in the exact
center, and flow no more. I conclude that a surface can
be found exactly in the center of this capacitor across
which no charge flows. Thus (un)happily returning me exactly
to where I was before; there is a line across which no
charge, and hence no energy, flows.

More comments below.

On Jan 2, 7:38 pm, Roy Lewallen <w...@eznec.com> wrote:
> I'm top posting this so readers won't have to scroll down to see it, but
> so I can include the original posting completely as a reference.
>
> Keith, you've presented a very good and well thought out argument. But
> I'm not willing to embrace it without a lot of further critical thought.
> Some of the things I find disturbing are:
>
> 1. There are no mathematics to quantitatively describe the phenomenon.
> 2. I don't understand the mechanism which causes waves to bounce.

I take this to imply that you are not happy with the simple "like
charge
repels"?

> 3. No test has been proposed which gives measurable results that will
> be different if this phenomenon exists than if it doesn't. (I
> acknowledge your proposed test but don't believe it fits in this category.)
> 4. I'm skeptical that this mechanism wouldn't cause visible
> distortion when dissimilar waves collide. But without any describing
> mathematics or physical basis for the phenomenon, there's no way to
> predict what should or shouldn't occur.
> 5. Although the argument about no energy crossing the zero-current
> node is compelling, I don't feel that an adequate argument has been
> given to justify the wave "bouncing" theory over all other possible
> explanations.

I would really appreciate seeing some other possible explanations.

One other one which I have seen and am not confortable with is the explanation that energy in the waves pass through the point in each direction and sum to zero. But this is indistinguishable from superposing power which most agree is inappropriate. As well, this explanation means that P(t) is not equal to V(t) times I(t), something that I am quite reluctant to agree with.

The other explanation seen is that the voltage waves or the current waves travel down the line superpose, yielding a total voltage and current function at each point on the line which can be used to compute the power. With this explanation, P(t) is definitely equal to V(t) time I(t), which I do appreciate. The weakness of this explanation is that it seems to deny that the wave moves energy. And yet before the pulses collide it is easy to observe the energy moving in the line, and if a pulse was not coming in the other direction, there would be no dispute that the energy travelled to the end of the line and was absorbed in the load. Yet when the pulses collide, no energy crosses the middle of the line. Yet energy can be observed travelling in the line before and after the pulses collide.

So...

I can give up on pulses (or waves) moving energy. I am not happy doing that.
I can give up on P(t) = V(t) * I(t). I am not happy doing that either.

So the (poorly developped) "charge bouncing" explanation seems like a way out, but I certainly would appreciate other explanations for consideration.

> None of these make an argument with your logical development, although I
> think I might be able to do that too. But I'm very reluctant to accept a
> view of wave interaction that's apparently contrary to established and
> completely successful theory and one, if true, might have profound
> effects on our understanding of how things work. So frankly I'm looking
> hard for a flaw in your argument. And I may have found one.

So I am not convinced that it any way goes against established theory. I have not seen established theory attempt an explanation of how the waves can both transport energy as well as not do so when waves of equal energy collide.

> A large part of the argument seems to revolve around a single point in a
> perfect transmission line, where the current is exactly zero. This is an
> infinitesimal point on a perfect line, so some anomalous things might be
> expected to happen there.
>
> Let's consider a transmission line as a huge number of series inductors
> and shunt capacitors, each an ideal lumped device. In the ideal case, of

> course, there would be an infinite number of each, and each would have
> an infinitesimal value. However, the LC product and ratio must remain
> correct even in the limiting case. Each L and C is an ideal device, so
> the current into one terminal of an inductor has to equal the current
> out of the other. A consequence of this is that either we have a whole
> inductor with zero current, or the zero current point occurs between
> inductors, at a node to which a capacitor is connected. I think we'll
> get the same result using either scenario, but let's consider the second.
>
> If we analyze this situation carefully, we'll find that the inductor on
> each side of the zero-current point does have a finite current, equal in
> amplitude and flowing in opposite directions. So for half of the cycle,
> both are putting positive charge in the capacitor, and for the other
> half of the cycle, both are removing charge. The capacitor voltage goes
> up and down as a result, as we can also see by looking at the voltage at
> this zero-current point. So current from both sides is contributing to
> the capacitor charge, and turning off either one would change the line
> conditions. Any change in the current from the inductor on one side
> would change the capacitor voltage, and hence the current on the other
> side. So there is an interchange of information from one side to the
> other. Each inductor is conveying energy to the capacitor, which is
> storing and returning it.
>
> Ok, so let's break the capacitor into two, each being half the original
> value, and constrain each inductor to deliver charge only to "its"
> capacitor. The wire between the capacitors carries no current because
> the capacitors always have equal voltages, and can be cut with no effect.
>
> When there was one capacitor, it shared energy from both sides. When we
> broke it into two, there was no mixing of energy from either side. Why
> might one be a better description of reality than the other? It looks to
> me like the argument devolves into speculation about how small the
> "point" is at which the current drops to zero.

It is very, very small.

> It would be instructive to see what happens as, for example, the load
> resistance is increased toward infinity or decreased toward zero
> arbitrarily closely, but not at the point at which it's actually there.
> If the "bouncing" phenomenon is necessary only to explain the limiting
> case of infinite SWR on a perfect line but no others, then an argument
> can be made that it's not necessary at all. I suspect this is the case.

The same concern that arises for pulses of equal voltage also
occurs for pulses of different voltage. While the mid-point no
longer has zero current, the actual current is only the difference
of the two currents in the pulses, the charge that crosses is only
the difference in the charge between the two pulses, and the
power at the mid-point is exactly the power that is needed
to move the difference in the energy of the two pulses.

So the challenge is not so starkly obvious as it is when the
power at the mid-point is always 0, but P(t) = V(t) * I(t) can
still be computed and it will not be sufficient to allow
the energy in the two pulses to cross the mid-point (unless
one likes superposing power, in which case it will be
numerologically correct).

> I agree with your argument about two sources energized in turn, and have
> used that argument a number of times myself to refute the notion of
> superposing powers. Once two voltage or current waves occupy the same
> space, the only reality is the sum. We're free to split them up into
> traveling waves or any other combination we might dream up, with the
> sole requirement being that the sum of all our creations equals the
> correct total. (And the behavior of waves you're describing seemingly go
> beyond this.)

I sometimes think that this may actually be a debate about the
conceptual view of waves. If waves consist only of voltage and
current, then all is well, superposition works, the correct
answers are achieved. And if the power is computed after the
voltages and currents are arrived at, all is well.

But if one conceives waves as also including energy, then it
seems that the question 'where does the energy go' is valid
and the common explanations do not seem to hold up well.

> The advantage to the non-interacting traveling wave model
> is that it so neatly predicts transient phenomena such as TDR and run-up
> to steady state. I spent a number of years designing TDR circuitry,
> interfacing with customers, and on several occasions developing and
> teaching classes on TDR techniques, without ever encountering any
> phenomena requiring explanations beyond classical traveling wave theory.
> So you can understand my reluctance to embrace it based on a problem
> with energy transfer across a single infinitesimal point in an ideal line.

Yes, indeed. Though any (new) explanation would have to remain
consistent with the existing body of knowledge which works so well.

...Keith

> Roy Lewallen, W7ELKeith Dysart wrote:
> > On Dec 30 2007, 6:18 pm, Roy Lewallen <w...@eznec.com> wrote:
> >> Keith Dysart wrote:
[snip]

659. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 03:10:02 UTC
From: art <aunwin@insightbb.com>
Message-ID: <cccee8df-7ea2-4357-ba8f-5594662eec78@k2g2000hse.googlegroups.com>
Source record: 29674

On 10 Jan, 10:48, richardharri...@webtv.net (Richard Harrison) wrote:
> Art wrote:
>
> "This dust is what Gauss refers to as static particles in a
> gravitational field in equilibrium."
>
> What evidence do you have that gravity is related to static particles
> other than attracting their mass or that gravity affects radio waves
> significantly?
I amnot sure how they came into the earths atmosphere but Gauss has
them placed in a field in equilibrium. I do not believe and I have
not said that earths gravity has any affect on propagation.
Remember, the static particles have a very weak anti gravity
force which nullifies the earths gravitational or magnetic forces.
Thus the static particles can take a straight line velocity.

>
> Our universe may not have uniform acceleration, so are you sure about
> equilibrium?

Yes I am. That is a basic for a Pointings vector and most certainly
for Gauss.
Both of these analysis are dependent on the gravitational field being
spherical
so the calculations have to be modified slightly because out earth is
lemon shape
but it is close enough for calculations

>
> Maxwell did not need a medium for radio propagation. He was able to
> calculate the velocity of radio waves and believed that because it
> equaled the known speed of light his equations were correct.

Well his equations are correct as are the laws that he condensed.
Lorenz law however was on the basis of deduction or observance
which turned out to be correct but there were no details for
Maxwell to hang on to which leaves all as a very difficult puzzle
I started the aproach of continuing Gausses work on static which
the books seem to relate as a subset of electro magnetics.
So I added a time varient to a static field which provided
a direct connection to Maxwells laws. Thus at this point I
accept the static particles at rest and inserted a radiator
in the field which ofcourse must be resonant and in equilibrium
so it didn't upset the Gaussian field. When this was done we
have a dynamic field from which we can draw the statement

that a radiator made from a diamagnetic material can be any
\hape, size elevation e.t.c as long as it is in equilibrium.
Thus this observation or deduction states that a helical
antenna is not in equilibrium unles the windings have
balancing contra windings. Thus any wound design such as EH
ntennas or Vincent antenna must have contra windings to be
in equilibrium and thus fully efficient.
Armed with the above I placed a radiator into a computor program
with an optimizer and confirmed the above i.e. it was not planar.
So why was the element tipped from parallel to the earths surface?
If you make a vector analysis of a radiator with it's many vectors
the resultant single vector is not parallel to the axis of the
radiator.
In addition I look at a helical design and not that the pitch angle is
the same
found by Kraus experimentally was the same angle as the resultant
vector of a radiator.
We then examine the radiator with a static particle at rest on it's
surface and then make a electri9cal circuit of what we see. The result
for equilibrium must be a tank circuit where
all enrgy is interchanged between the energy storage tanks(inductance
and capacitance)
Both of these expend there energy as if the terminals were shorted,
and who hasn't shorted a capacitor to generate an explosion.One can
imagine a explosive force sliding or lifting the static particles to
the inductor reciever which because the material is diamagnetic the
lines of force of the magnetic field will levitate or thrust the
particles away from the
radiator. Using Newtons law we can see that the reactionary force of
the ejected particles
will imping on the radiator itself ad make it occilated. Of course the
particles are many and the number of periods in the frequency applied
is like generating a horrendous number of samples of oscillation, much
more than the human ear does and these samplers will then apply
a mirror image of the occillationd to the recieving radiator.
So like a jigsaw puzzle the measure of difficulty in solving the given
problem is determined by the starting point. And tho I manipulated
Gauss to a Maxwell form which was the same masthematical law,as with
all things it is not only the destination that counts but everything
one observes on the way.
The bottom line is that for best efficiency for the unit volume
supplied an array must be in equilibrium. Thus distances between
radiators become smaller and elements which can be helically wound is
also shorter and by virtue of the array not being planar we have a
single feed plus the "stacked"gain.
I have not made an array but I have made many helical designs and the
like.Programs confirm
these as being legitamate. The fact that I modified the static law to
a dynamic law is the only thing that is "different". Every other
action along my travels are extensivly studied in the books tho not

relavent to radiation. I say again, the complexity depends on where
you start
and I did not view static as a subset like the books do.
Art Unwin KB9MZ...XG

> Best regards, Richard Harrison, KB5WZI

660. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 03:24:09 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <de6e50d6-b52b-46cc-ae5d-caf2ebf6f696@c23g2000hsa.googlegroups.com>
Source record: 29675

On Jan 9, 10:46 pm, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 9, 3:33 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> Reflections *ARE* power factor problems. When the power company brings
> the power factor to unity, they have eliminated reflections and turned
> the system into a traveling wave energy delivery system.

This would not be quite correct. The power factor correction
capacitors make the load impedance real, they do not match
the load to the impedance of the distribution line. As such,
they have not eliminated reflections.

Since the customer decides on the load impedance (infinity
when the equipment is disconnected), the power company is
always dealing with mismatched loads. And does not seem
too concerned as long as the load is close to real.

It might be instructive to consider some real transmission
systems. From La Grande-2 (5.6 GW) or Churchill Falls (5.4 GW)
to the first significant load center is about 1/4 wave
at 60 Hertz. Churchill Falls has three 735 kV lines to move
the energy; 1.8 GW per line. At 735 kV, that's about a
300 ohm load impedance. I've seen estimates that put power
line impedance between 100 and 400 ohms. So there might be
a match at full load, but at no load there is serious
mismatch. Of course the generator impedance is close
to zero (feedback achieves this) so there is no attempt
to match at that end. (The above quick analysis ignores
that it is actually a three phase system).

There are apparently serious challenges with keeping
the output voltage down on lightly loaded lines (q.v.
Ferranti effect).

And what happens when the load breakers at the end of
the line trip. 4 milliseconds later the reflected wave
arrives back at the plant. What happens when it hits
the 0 output impedance of the generators?
And how does one stop 11 columns of water 1000 feet
high (500 psi) and 20 feet in diameter before the
generators overspeed?

I am betting there is a story there.

...Keith

661. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 03:28:16 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <a3a02384-6070-41de-9608-933959df8c2e@f47g2000hsd.googlegroups.com>
Source record: 29676

On Jan 10, 9:23 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> A standing wave is an amplitude vs position envelope.

Sorry, that is a false statement. Please reference "Fields and Waves in Communication Electronics" by Ramo, Whinnery, and Van Duzer, page 343. The equation for the standing wave voltage is: Ez = Efor*e^j(wt-Bz) + Eref*e^j(wt+Bz)

The equation for a standing wave *envelope* does not contain an (omega*t) term. The equation for the *standing wave* indeed does obviously contain (omega*t) terms since the equation for a standing wave is the sum of the two component traveling waves each containing an (omega*t) term.

If the (omega*t) term is omitted it is an envelope equation, not a wave equation.
--
73, Cecil, w5dxp.com

662. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 03:42:48 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <b0fca84e-d640-41be-9fe5-0a6f3de5fff8@i3g2000hsf.googlegroups.com>
Source record: 29677

```
On Jan 10, 8:54 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> Technically, they're just spatial interference patterns, so of course
> they don't propagate energy. They're like any other spatial
> interference pattern in that regard.

Thus Hecht's suggestion that they don't deserve to be called waves. I
think they should be called illusionary waves.
--
73, Cecil, w5dxp.com
```

663. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 04:34:33 UTC
From: art <aunwin@insightbb.com>
Message-ID: <d92b6667-9127-4a1a-b309-9900790b580d@z17g2000hsg.googlegroups.com>
Source record: 29679

On 9 Jan, 19:59, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 9, 7:48 pm, art <aun...@insightbb.com> wrote:
>
> > > Thus it is the length of the antenna by your statement is what turns
> > > around the current regardless of the frequency applied.
>
> The feedpoint impedance of these standing wave antennas can be closely
> approximated by
>
> Zfp = (Vfor+Vref)/(Ifor+Iref)
>
> where all values are phasors. For instance, the reflected voltage will
> be out of phase with the forward voltage at the feedpoint for a
> resonant 1/2WL dipole while the reflected current will be in phase
> with the forward current. The feedpoint impedance of a 1/2WL dipole is
> very close to (|Vfor|-|Vref|)/(|Ifor|+|Iref|). See if you can figure
> it out for other lengths of dipoles.
> --
> 73, Cecil, w5dxp.com

We haven't moved forward a bit on that first sentence of the other
post
which is " what created the reflecting voltage" of this resonant
radiator
when it is a fractional wavelength or a electrically full wave length?
Since I am interested in a time varying current for propagation why
should I
worry about anything else ?
Art

664. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 04:40:43 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4786f34e$0$5130$4c368faf@roadrunner.com>
Source record: 29680

"Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
news:de6e50d6-b52b-46cc-ae5d-caf2ebf6f696@c23g2000hsa.googlegroups.com...
On Jan 9, 10:46 pm, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 9, 3:33 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> Reflections *ARE* power factor problems. When the power company brings
> the power factor to unity, they have eliminated reflections and turned
> the system into a traveling wave energy delivery system.

This would not be quite correct. The power factor correction
capacitors make the load impedance real, they do not match
the load to the impedance of the distribution line. As such,
they have not eliminated reflections.

Since the customer decides on the load impedance (infinity
when the equipment is disconnected), the power company is
always dealing with mismatched loads. And does not seem
too concerned as long as the load is close to real.

It might be instructive to consider some real transmission
systems. From La Grande-2 (5.6 GW) or Churchill Falls (5.4 GW)
to the first significant load center is about 1/4 wave
at 60 Hertz. Churchill Falls has three 735 kV lines to move
the energy; 1.8 GW per line. At 735 kV, that's about a
300 ohm load impedance. I've seen estimates that put power
line impedance between 100 and 400 ohms. So there might be
a match at full load, but at no load there is serious
mismatch. Of course the generator impedance is close
to zero (feedback achieves this) so there is no attempt
to match at that end. (The above quick analysis ignores
that it is actually a three phase system).

There are apparently serious challenges with keeping
the output voltage down on lightly loaded lines (q.v.
Ferranti effect).

And what happens when the load breakers at the end of
the line trip. 4 milliseconds later the reflected wave
arrives back at the plant. What happens when it hits
the 0 output impedance of the generators?
And how does one stop 11 columns of water 1000 feet
high (500 psi) and 20 feet in diameter before the
generators overspeed?

I am betting there is a story there.

==========

Due to the vast amounts of power generated, we are told it is probably not even possible to solve all of the problems at the utility level. The appliance industries and the utility custromers are held responsible to collectively keep the grid in good order. Governments basically work in behalf of the the utilities by enforcing the design standards via product certification, an interesting cooperative effort by industry and government that works to the extreme benefit of the power companies and the very high cost ultimately paid by appliance customers and ultinately the citizens (consumers). The power company lobbyiosts are very strong: Just look at BPL today (and BPL is just another reason to keep the lines clean).

Over the past 10-15 years, the power industries worldwide have successfully lobbied their governments to clean up the grids by requiring appliances to meet standards like IEC61000-1.-2 etc.. The idea is to get unity power factor in appliances that use significant shares of the grid. Sometimes, capacitors are required on inductive loads (motors etc.) and sometimes inductance is required, for example on products using switching power supplies with capacitive front ends. Almost every PC shipped today that exceeds 75W costs an extra US $0.50 due to a 20mH choke (yes, millihenry) that brings the power factor (cos theta of P-reactive/p-real) to about 0.90. You can notice it when holding the power supply; that choke has a lot of metal mass to it. You can sometimes see this massive thing by peering through the vents of the power supply in your PC. For server products, active power factor correction is more economical and with active circuits, it is very easy to make the cos theta PF is nearly 1 (unity power factor). A number of bad things happen to the grid when the loads become reactive. If you observe the current waveform going into the front end of a typical capacitive front end of a switcher (non-corrected will have a power factor of about 0.60), what you see is a distortion due to the ripple current of the bulk caps in the front end. These distorted currents do 2 very problematic things. First, as discussed earlier, these distorted waves generate large odd current harmomics (square waves are generally summations of the odds), particularly the 3rd, the 5th is usually very high and the 7th. After that, the amplitudes of the harmonics drop quickly and they are not so much a factor (although IEC61000 gives limts to harmonics in the 30th order). These harmonics cause currents to *add* in the neutral conductors of the 3 phase distribution systems. If there were pure sine waves on the system and the loads of the phases were balanced as originally intended, the currents on the neutral would cancel, each 120 degrees out of phase with one another, to zero. I have heard stories of the past years where discussions were made by code writers to leave out the neutral conductors in installations where there were no sever motors loads in the installation (switchers were not invented yet and capacitance was not a problem). The advent of installing hundreds of PC's, servers and other computer equipment in office buildings and elsewhere ended these discusions! Now if you try to eliminate the neutral and just pull phase to phase you will cause the transformers to overheat. For Y systems, the neutral conductors still overheat and cause fires depending on the summation of the power factors of the appliances being used at any given time. For Delta power systems, sometimes the transformers don't even have neutral conductors and the transformers overheat and sometimes even explode. The second problem is that

the distorted current also distorts the voltage sine wave from the power line making it look more like a square wave which is not nice for many applications such as motor loads. So, a lot of this has to do with safety and a lot has to do with good 'stewardship' of the grid in supplying higher quality power. There definitely is an impedance to match to be concerned with; ideal is 50 ohms. Products are universally measured using 'line impedance stabilization networks' (LISN's) of 50 ohms. However, power factor correction does not have to do with matching to the 50 ohm impedance of the LISN; the 50 ohm LISN is only used to provide repeatable measurements.

665. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 04:45:56 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4786f484$0$5103$4c368faf@roadrunner.com>
Source record: 29681

"Cecil Moore" <w5dxp@hotmail.com> wrote in message
news:b0fca84e-d640-41be-9fe5-0a6f3de5fff8@i3g2000hsf.googlegroups.com...
> On Jan 10, 8:54 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>> Technically, they're just spatial interference patterns, so of course
>> they don't propagate energy. They're like any other spatial
>> interference pattern in that regard.
>
> Thus Hecht's suggestion that they don't deserve to be called waves. I
> think they should be called illusionary waves.

But: The closer standing wave ratio of the illusionary is to 1:1, the closer we are to antenna resonance so the illusion has more significance than, say a mirage in the desert. ;-)

666. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 05:46:29 UTC
From: Bob <bobsakol@hotmail.com>
Message-ID: <cf9e4$478702ab$4c0a8c1d$20546@TEKSAVVY.COM-Free>
Source record: 29682
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Magnifique!

"John, N9JG" <john@Xremove.MeYgotwals.com> wrote in message
news:9xphj.41449$G23.11374@newsreading01.news.tds.net...
> May not be directly antenna related, but ...
> http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode_tech
>

667. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 05:50:18 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4787039a$0$5100$4c368faf@roadrunner.com>
Source record: 29683

"Cecil Moore" <w5dxp@hotmail.com> wrote in message
news:b0fca84e-d640-41be-9fe5-0a6f3de5fff8@i3g2000hsf.googlegroups.com...
> On Jan 10, 8:54 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>> Technically, they're just spatial interference patterns, so of course
>> they don't propagate energy. They're like any other spatial
>> interference pattern in that regard.
>
> Thus Hecht's suggestion that they don't deserve to be called waves. I
> think they should be called illusionary waves.
> --
> 73, Cecil, w5dxp.com

I think it is an "important" illusion.

It should be possible to measure, along the distance of the antenna, voltage nodes at maxima and minima distances using instrumentation. A sine wave exists with distance. At the zero points instruments should measure zero voltage. At those nodes, the the current measurements will be out of phase with current over distance. The point is, peak reading meters will measure real values that look like a sine wave dependent on distance, not time. This sine wave is significant.

Pluck a guitar string and you get a standing wave that is an envelope that determines the note. The note depends on the speed of the vibration of the string which is determined by its wavelength (like a VSW, it is also a distance wave). The wavelength multiplied by the speed of the vibration becomes the frequency of the note. The note becomes sound which moves at a different speed, i.e.a traveling wave at the speed of sound, not the speed of the vibration. Kinetic energy converts to acoustic energy. The vibration is not an illusion, it really exists. It determines the frequency of the sound energy that its kinetic energy is converted to, and, it can be physically observed. So it is a bit more than an illusion. In RF, the standing wave merely determines the frequency of the effeiciently transmitted EM wave, it is not the EM wave itself.

The RF standing wave is important in that it it's WAVELENGTH (distance), like the guitar string, also determines the frequency at which the EM radiated frequency (like the musical note) is most efficiently transmitted in a resonant antenna (like the guitar string), where f = c/wavelength (just like the guitar string but substituting c for the speed of the string vibration (not speed of sound))). Does this make sense?

The wavelength of the RF standing wave (a distance measurement) determines the frequency of the RF "note" that ends up being radiated.

And remember that time t is just another dimesion just like distance x,y,z
in a space-time continuum, so what is wrong with the concept of a "distance
wave"
;-)

AI4QJ

668. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 06:21:28 UTC
From: richardharrison@webtv.net
Message-ID: <2879-47870AE8-321@storefull-3258.bay.webtv.net>
Source record: 29684

Art wrote:
"So I added a time varient to a static field which provided a direct connection to Maxwell`s laws."

It is said that Maxwell began with Faraday`s law of electromagnetic induction, which seems reasonable, as the voltage in one loop of wire inductively coupled to another is proportional to the derivative dphi/dt of current produced magnetic flux from the primary loop.

Induced voltage does not arise at a single point on the loop but is the sum of all the infinitesimal bits of voltage distributed around the loop. Maxwell developed his first field equation from this start.

Faraday`s law already deals with a time varying current to obtain induction.

Different derivations are possible but Maxwell`s equations can express all known electromagnetic conditions at once.

Oliver Heaviside made it his job to study Maxwell`s "Electromagnetic Theory", learn its mathematics, and reduce it to vector analysis. Heaviside published his results beginning a series of papers in 1887 in a British publication, "The Electrician", in a very understandable way. This has been called the start of modern communication engineering.

Art also wrote:
"The result for equilibrium must be a tank circuit where all energy is interchanged between the energy storage tanks (inductance and capacitance)"

True that an EM wave exchanges its energy between an electric field and a magnetic field. Not true that a tank circuit type antenna is needed to launch or capture EM waves. An isolated wire, resonant or non-resonant is all that`s needed if it carries alternating current.

Nor are explosives needed to generate radio waves. Less disruptive methods are quite acceptable.

Art also wrote:
"The bottom line is that for best efficiency for the unit volune supplied to an array must be in equilibrium."

The above doesn`t square with what I`ve seen.
Efficiency is output over input. Antenna efficiency is usually Radiation Resistance / Radiation Resistance + Loss Resistance. For the most antenna for the money, Terman suggests the Yagi or the Corner Reflector.

Enough debunking for tonight.

Best regards, Richard Harrison, KB5WZI

669. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 07:27:45 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <UkgdL4FxpxhHFAvP@ifwtech.co.uk>
Source record: 29685
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

numeric wrote:
>
>"John, N9JG" <john@Xremove.MeYgotwals.com> wrote in message
>news:9xphj.41449$G23.11374@newsreading01.news.tds.net...
>> May not be directly antenna related, but ...
>> http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode_tech
>>
>>
>
>See, anything is possible with a Swiss Army Knife ;-)
>

Does anyone else make thumb-operated scissors? The straight handle makes
them much easier to control than the normal type.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

670. Re: Measuring the fieldstrenght nearby is not reliable.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 10:36:24 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <2f6ed340-d212-4480-a7d9-d92ff0cde009@k2g2000hse.googlegroups.com>
Source record: 29686

Hello Mac,

A little bit OT, it happens more often that I enter English words with
Dutch spelled characters. This sometimes leads to strange
constructions... English wasn't my best language when I was at school.
Sorry for the mistake.

Best regards,

Wim
PA3DJS
www.tetech.nl

On 11 ene, 02:55, "J. Mc Laughlin" <j...@power-net.net> wrote:
> Dear Wim: Your observations are appreciated. I am delighted to learn of
> evidence of improvements in instrumentation.
>
> Along with my early observation of the need for capable RF engineers (and
> that includes antennas), note in the digital age the continuing need for
> smart analog-electronic engineers, as exhibited by your examples. Western
> Europe, USA, Canada, ZL, and VK still have such people, but many are
> reaching retirement. I am please to say that my university still has as one
> of its objectives to educate engineers who have a good feel for when analog
> is needed and when digital is needed. They might not have the full analog
> insight, skill, or experience, but they know when an analog expert is
> needed.
>
> ... and now for a moment with tongue-in-cheek: Too many words in English
> sound the same, but are spelled differently. Some are spelled the same but
> have multiple meanings that one must gather from context. This is the
> consequence of borrowing from many languages - very notably from the north
> part of your country. "Hi Mac" is a salutation. It should come as no
> surprise that this Mac has never been "High."
> The most wonderful thing about English is that because of its inherent
> redundancies and the way it uses grammar, it is relatively difficult for
> anyone to loose the meaning - especially in a technical forum. As a
> contrast, consider the drastic consequences of making an error in an ending
> of a Slavic language word. The word can become unintelligible.
>
> Your contributions are always read with interest. 73, Mac N8TT
>
> --
> J. McLaughlin; Michigan, USA

[rest deleted]

671. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 13:00:11 UTC
From: Dave <noone@nowhere.com>
Message-ID: <vLJhj.9791$4o.7177@trndny02>
Source record: 29687

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:2879-47870AE8-321@storefull-3258.bay.webtv.net...
> Art wrote:
> "So I added a time varient to a static field which provided a direct
> connection to Maxwell`s laws."
>
> It is said that Maxwell began with Faraday`s law of electromagnetic

can we do this... Maxwell did not write 'laws'. all of my references refer to "Maxwell's equations". Maxwell collected laws from Faraday, Gauss, Ohm, Ampere, and probably a few others and as far as I know added just the displacement current concept to turn them into a concise description of time varying electromagnetic phenomenon that has never been disproved. This set of equations is indeed what all antenna, feedline, waveguide, motors, power transmission, and related electromagnetic phenomenon are modeled with successfully in all environments that we have experienced. (neglecting things like black holes anyway) This includes diamagnetic, paramagnetic, ferromagnetic, insulators, conductors, dielectrics, and even the new man made negative refractive index materials. it is not necessary to add a new 'time varient' part to any of Maxwell's equations, they already contain all the time variant parts that are needed to explain any electromagnetic fields you can come up with.

672. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 13:12:33 UTC
From: Dave <noone@nowhere.com>
Message-ID: <5XJhj.8347$%A6.4114@trndny08>
Source record: 29688

"Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
news:99d22e20-5160-488f-8b8a-7a5d3e384ed4@k39g2000hsf.googlegroups.com...
> Thanks for offering the two capacitor/one capacitor view of the middle
> of the line. It took a bit of time to decide whether the commingling
> of the charge in the single capacitor at the middle of the line would
> solve my dilemma.
>
> So I considered this one capacitor in the exact center of a perfect
> transmission line. It is the perfect capacitor, absolutely
> symmetrical. So as the exactly equal currents flow into it on
> the exactly symmetrical leads, the charge is perfectly balanced
> so that the charge coming from each side exactly occupies its
> side of the conductor. As the two flows of charge flow over
> the perfectly symmetrical plates, they meet in the exact
> center, and flow no more. I conclude that a surface can
> be found exactly in the center of this capacitor across
> which no charge flows. Thus (un)happily returning me exactly
> to where I was before; there is a line across which no
> charge, and hence no energy, flows.

absolutely correct. no charge flows through the insulator of a capacitor.
you don't have to try hard to set up this condition, it is true of any
capacitor that has no resistive losses. the concept you are struggling with
is called the 'displacement current'. This is the unique concept that
Maxwell added to the laws of Gauss, Faraday, et al when he compiled his set
of electromagnetic equations. once you understand that then all will become
clear.

>> 2. I don't understand the mechanism which causes waves to bounce.
>
> I take this to imply that you are not happy with the simple "like
> charge
> repels"?
>

waves do not bounce. waves superimpose on each other, but the original
waves that meet in a homogenious, linear medium DO NOT INTERACT in any way.
they each proceed happily on their way without any change. it is only due
to the limited capability of your measurement instruments to measure the
superimposed field that results that causes the confusion. if you could
easily separate out the forward and reflected waves it would become
intuitively obvious... however the poor instruments (swr meters and other
'power' meters) that have caused the confusion and resulted in the misnomer
'standing wave'. It is of course not a 'wave', nor does it 'stand'... it is
just the result of superposition of 2 waves traveling in opposite

directions.

> So the (poorly developped) "charge bouncing" explanation
> seems like a way out, but I certainly would appreciate
> other explanations for consideration.

you don't need a 'way out' you need to go back to basics and learn the proper explanation.

>> A large part of the argument seems to revolve around a single point in a
>> perfect transmission line, where the current is exactly zero. This is an
>> infinitesimal point on a perfect line, so some anomalous things might be
>> expected to happen there.

but the current, or voltage, is only zero because of the superimposed oppositely traveling waves. it is only your poor measurement instrument that only responds to the superimposed waves that causes the confusion.

there. that ought to cause enough controversy to push this thread over the 1000 mark pretty quick! the wx is bad and i needed something to do today anyway since i can't go out and work on my maxwell compliant antennas.

673. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 13:17:54 UTC
From: Dave <noone@nowhere.com>
Message-ID: <60Khj.7734$xA6.1280@trndny09>
Source record: 29689

"AI4QJ" <nospam@yahoo.com> wrote in message
news:4786bd90$0$5129$4c368faf@roadrunner.com...
> and add them together like Cecil does to get the total power? Boy, I'll
>> bet you'd have a *lot*!
>
> I'm sorry but this taunt rings a little hollow...it just isn't funny
> because you can/will get a finite number for power.
>

its called the Dirac delta function. and infinitely narrow, infinitely
high, single pulse that contains finite energy... the Fourier spectrum of it
includes frequencies from zero to infinity which extend in time from
negative infinity to positive infinity... the function that doesn't exist,
yet has influence across all time and has infinite numbers of uses when
analyzing circuits even though no one can generate it.

674. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 13:59:43 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <7a28b448-2571-46c6-b9c9-b424d72385fa@s8g2000prg.googlegroups.com>
Source record: 29690

On Jan 10, 10:24 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> The power factor correction
> capacitors make the load impedance real, they do not match
> the load to the impedance of the distribution line. As such,
> they have not eliminated reflections.

It's a little more complicated than that. If the voltage and current are actually brought into phase all along the transmission line, the system is indeed a traveling wave system free of reflections. If the power factor is exactly 1.0 at all points up and down the line, the line is flat, i.e. matched by definition. Of course, it's not a perfect system and the power factor is rarely exactly 1.0 so the system usually exhibits signs of a mismatch, an overhead expense for the power company.
--
73, Cecil, w5dxp.com

675. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 14:18:04 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <f376c8c0-2992-4875-ad3d-8189b0fa1d1d@s12g2000prg.googlegroups.com>
Source record: 29691

On Jan 10, 11:34 pm, art <aun...@insightbb.com> wrote:
> We haven't moved forward a bit on that first sentence of the other
> post which is " what created the reflecting voltage" of this resonant
> radiator when it is a fractional wavelength or a electrically full wave length?

The characteristic impedance of the horizontal wire above ground is in
the neighborhood of 600 ohms. The "load" impedance at the end of the
wire can be considered to be infinite. The reflection coefficient at
the tip of a dipole is 1.0, i.e. all the forward voltage is reflected
in phase. This is true no matter what the length of the dipole. The
round trip delay that the forward wave makes can be used to get a fair
approximation of the feedpoint impedance using transmission line
equations and assigning an appropriate value to the alpha loss factor
which not only includes real losses but also "losses" due to
radiation.
--
73, Cecil, w5dxp.com

676. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 14:27:29 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <811ef7a8-00c0-43c6-a0b3-d5651f4410b6@e10g2000prf.googlegroups.com>
Source record: 29692

On Jan 10, 11:45 pm, "AI4QJ" <nos...@yahoo.com> wrote:
> But: The closer standing wave ratio of the illusionary is to 1:1, the closer
> we are to antenna resonance so the illusion has more significance than, say
> a mirage in the desert. ;-)

By "illusionary", I certainly didn't mean "imaginary". A magician's
act contains illusions based on real events. It's just that the
audience doesn't comprehend what is really happening. That's exactly
what is occurring here with standing waves. The standing waves, like
the magician's illusions, certainly have a real existence but many of
the conclusions about standing waves that are presented here are based
on the illusions created by those real standing waves (which do not
meet the definition for EM, i.e. photonic waves).
--
73, Cecil, w5dxp.com

677. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 14:56:03 UTC
From: art <aunwin@insightbb.com>
Message-ID: <50d42e77-6049-40fa-8876-f1efdaf923ba@e4g2000hsg.googlegroups.com>
Source record: 29693

On 11 Jan, 06:18, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 10, 11:34 pm, art <aun...@insightbb.com> wrote:
>
> > We haven't moved forward a bit on that first sentence of the other
> > post which is " what created the reflecting voltage" of this resonant
> > radiator when it is a fractional wavelength or a electrically full wave length?
>
> The characteristic impedance of the horizontal wire above ground is in
> the neighborhood of 600 ohms. The "load" impedance at the end of the
> wire can be considered to be infinite. The reflection coefficient at
> the tip of a dipole is 1.0, i.e. all the forward voltage is reflected
> in phase. This is true no matter what the length of the dipole. The
> round trip delay that the forward wave makes can be used to get a fair
> approximation of the feedpoint impedance using transmission line
> equations and assigning an appropriate value to the alpha loss factor
> which not only includes real losses but also "losses" due to
> radiation.
> --
> 73, Cecil, w5dxp.com

Thanks for the reply Cecil which has opened my eyes regarding the
trend of your thoughts.
Try to change your thinking to the following. An alternating current
is created by a generator
that moves in a circular fashion. The + and _ functions are a
mathematical tool obtained by the sine .cosine etc. This is a measure
ONLY of the amplitide only at a particular point in time. If you put a
scope on it you will see a wave like function only because your eyes
e.t.c.
is not fast enough to take more samples at the point in question. Thus
it is an illusion to think of forward travel. Another way of looking
at it is to stand in the center of a football field and watch the
spectators stand up in sequence. At any point of what you are viewing
you /
your eye mechanism,are seing a movement upwards at a single position
at a single point in time.
At no time is there anything moving forward thus this reflection of
yours cannot occur.
I think we can end out interchange at this point
Very best regards
Art Unwin KB9MZ....xg(uk)

678. Re: Vehicle groundplane - theory question. Mobile phone-slightly OT.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 15:29:25 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <pXLhj.1$Ue3.0@trnddc07>
Source record: 29694

"slackj" <slackj_delete@optusnet.com.au> wrote in message
news:gjaeo3pe1un2538nnaqlom8nr4le84k30p@4ax.com...
>
> Hi Jerry,
>
> That was the very beginning of this thread as in following section:
>
> ----------
> "Additional Notice for Car Kit Installations
> 1. The antenna must be isolated from the vehicle ground
> Make sure you isolate the antenna from the vehicle chassis (ground).
> If the antenna is grounded then noise can be introduced into the car
> kit. Always use a rubber mount to separate the antenna base from the
> car body or use a glass mount antenna."
>
> I already had a roof mounted centre loaded antenna for that band (was
> CDMA), and the above does not make sense to me. However I've done as
> they suggest and interrupted the braid at the antenna base.
>
> Anyone care to clue me up as to why this would be so?
> ----------
>
> I have since restored the co-ax to achieve some gain from the ground
> plane centre loaded antenna but that introduced the hash being
> discussed.
>
> I did not try a stub, but the science in this instance escapes me as
> it would be below the ground plane already formed by the roof and the
> antenna base. Do you mean that it would alter the phasing of the
> radiator relative to the grounding of the co-ax? The science is a bit
> much for me, but yes I can get to the bottom of the antennna again if
> you care to elaborate.
>
> Maybe I should have installed a zipper in the headlining - lol.
>
> Stewart.
>

Hi Stewart

I was aware that my "stub' comment was brief. Whenever I am unsure of
the knowledge level of a reader, I assume they know at least as much as Ii
do.

My suggestion for eliminating the DC path thru the antenna coax is to cut the coax *outer conductor* to make a small gap. Perhaps a 5 mm gap is reasonable. It could be a 10 mm gap. Just dont make the length of the gap in the outer conductor excessively wide.

Make a length of coax that is slightly over 1/4 wave long. Lets assume you use RG 58 and it has a velocity factor of 0.66 and the operating frequency is 850 MHz. A 6 centimeter length of RG 58 with one open and the other end trimmed to allow it to be connected across the gap.
The outer conductor of the stub is connected to the outer conductor of the "phone coax". The inner conductor of the stub is connected to the other side of the gap in the "phone coax".

The thought beneith this plan is -- A quarterwave open circuit length of transmission line looks like a Short Circuit at the other end.

It might be interesting to even make something more elaborate to DC isolate the coax line. A pair of discs with a quarterwave radius would be very interesting. A set of concentric tubes into which the coax could fit, could be a more attractive way to get DC isolation while the RF path is retained. But, first,I'd try the system when only a short length of open circuit coax bridges the gap.

Jerry KD6JDJ

679. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 15:45:35 UTC
From: art <aunwin@insightbb.com>
Message-ID: <a6d55b5d-1e08-4c15-ac58-c165a587d9d6@f47g2000hsd.googlegroups.com>
Source record: 29695

On 11 Jan, 05:00, "Dave" <no...@nowhere.com> wrote:
> "Richard Harrison" <richardharri...@webtv.net> wrote in message
>
> news:2879-47870AE8-321@storefull-3258.bay.webtv.net...
>
> > Art wrote:
> > "So I added a time varient to a static field which provided a direct
> > connection to Maxwell`s laws."
>
> > It is said that Maxwell began with Faraday`s law of electromagnetic
>
> can we do this... Maxwell did not write 'laws'. all of my references refer
> to "Maxwell's equations". Maxwell collected laws from Faraday, Gauss, Ohm,
> Ampere, and probably a few others and as far as I know added just the
> displacement current concept to turn them into a concise description of time
> varying electromagnetic phenomenon that has never been disproved. This set
> of equations is indeed what all antenna, feedline, waveguide, motors, power
> transmission, and related electromagnetic phenomenon are modeled with
> successfully in all environments that we have experienced. (neglecting
> things like black holes anyway) This includes diamagnetic, paramagnetic,
> ferromagnetic, insulators, conductors, dielectrics, and even the new man
> made negative refractive index materials. it is not necessary to add a new
> 'time varient' part to any of Maxwell's equations, they already contain all
> the time variant parts that are needed to explain any electromagnetic fields
> you can come up with.

I added a time varient to GAUSSIAN law to make it the same as
Maxwellian laws, not the other way around as you are inferring.
Before Maxwell came a long there were multiple laws stated many
different ways.
Maxwell saw that many of these laws tho written differently condensed
to the same thing.
So he condensed these multiple laws to a few but an no time did debunk
the laws that already were in situ. All of these multiple laws as with
Maxwell were built on the shoulders of Newton
and those that contributed before him, all of which are derived around
the pivot of gravity
and equilibrium

680. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 16:15:09 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080111081509.378e920d.rsparks@elltel.net>
Source record: 29696

On Thu, 10 Jan 2008 18:52:28 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:
snip.....

> I would really appreciate seeing some other possible explanations.
>
> One other one which I have seen and am not confortable with is the
> explanation that energy in the waves pass through the point in
> each direction and sum to zero. But this is indistinguishable from
> superposing power which most agree is inappropriate. As well, this
> explanation means that P(t) is not equal to V(t) times I(t),
> something that I am quite reluctant to agree with.
>
> The other explanation seen is that the voltage waves or the
> current waves travel down the line superpose, yielding a total
> voltage and current function at each point on the line which
> can be used to compute the power. With this explanation, P(t)
> is definitely equal to V(t) time I(t), which I do appreciate.
> The weakness of this explanation is that it seems to deny
> that the wave moves energy. And yet before the pulses collide
> it is easy to observe the energy moving in the line, and if
> a pulse was not coming in the other direction, there would
> be no dispute that the energy travelled to the end of the
> line and was absorbed in the load. Yet when the pulses
> collide, no energy crosses the middle of the line. Yet
> energy can be observed travelling in the line before
> and after the pulses collide.
>
> So...
>
> I can give up on pulses (or waves) moving energy. I am not
> happy doing that.
> I can give up on P(t) = V(t) * I(t). I am not happy doing
> that either.
>
> So the (poorly developped) "charge bouncing" explanation
> seems like a way out, but I certainly would appreciate
> other explanations for consideration.

Hi Keith,

I think you are putting too much emphasis on the measurement of energy in the pulse, or maybe not enought, depending upon how you are making and using the measurements.

I hope you agree that the transmission line you are pulsing has no standing waves. If not, then the pulse must be a treveling wave. If it is a traveling wave, the impedance of the wave will be the impedance of the transmission line, except where the two pulses cross paths. At the crossing point, the impedance will jump to infinity, Z = v/i = v/zero = infinity.

How about the energy/power levels? Except at the center, as the pulse passes, current and voltage can be measured, so power is being delivered from one section of the line to a second section more distant from the source. The energy delivered by the power equation can be measured by U = (v^2)/r = (i^2)*r where r is the Zo if the transmission line.

Where the two pulses cross, the energy level must be the sum of the two energy levels, which would be 2U = 2*(v^2)/r (assuming two pulses of equal voltage). As you have pointed out, power would not flow at the point of wave first meeting, spreading from the meeting point back towards the two sources a distance equal to the square pulse width. Energy is present however, measured as U = (v^2)/r.

The transmission line can be considered as a lineal capacitor, so U = (CV^2)/2, where C is the capacitance per unit length. If the waves "bounce", and occupy physical space for a period of time, they should comingle, stop, and fill the capacitor during that time. If so,

2U = C*V'^2
= 2*(V^2)/r where v is the voltage of a single pulse and V' = 1,414*v = voltage observed at point of crossing.

At a disconinuity, we find a doubling of the voltages, not an increase of 1.414. This leads me to believe that the crossing pulses never stop in a physical sense. They do stop in the sense that power is not delived through the center point.

73, Roger, W7WKB

681. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 16:44:01 UTC
From: art <aunwin@insightbb.com>
Message-ID: <be14c269-59f3-4a20-a86f-ee74d5a01a24@j78g2000hsd.googlegroups.com>
Source record: 29697

```
On 11 Jan, 08:15, Roger Sparks <rspa...@elltel.net> wrote:
> On Thu, 10 Jan 2008 18:52:28 -0800 (PST)Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> snip.............
>
>
>
>
>
>
>
> > I would really appreciate seeing some other possible explanations.
>
> > One other one which I have seen and am not confortable with is the
> > explanation that energy in the waves pass through the point in
> > each direction and sum to zero. But this is indistinguishable from
> > superposing power which most agree is inappropriate. As well, this
> > explanation means that P(t) is not equal to V(t) times I(t),
> > something that I am quite reluctant to agree with.
>
> > The other explanation seen is that the voltage waves or the
> > current waves travel down the line superpose, yielding a total
> > voltage and current function at each point on the line which
> > can be used to compute the power. With this explanation, P(t)
> > is definitely equal to V(t) time I(t), which I do appreciate.
> > The weakness of this explanation is that it seems to deny
> > that the wave moves energy. And yet before the pulses collide
> > it is easy to observe the energy moving in the line, and if
> > a pulse was not coming in the other direction, there would
> > be no dispute that the energy travelled to the end of the
> > line and was absorbed in the load. Yet when the pulses
> > collide, no energy crosses the middle of the line. Yet
> > energy can be observed travelling in the line before
> > and after the pulses collide.
>
> > So...
>
> > I can give up on pulses (or waves) moving energy. I am not
> > happy doing that.
> > I can give up on P(t) = V(t) * I(t). I am not happy doing
> > that either.
>
> > So the (poorly developped) "charge bouncing" explanation
> > seems like a way out, but I certainly would appreciate
```

> > other explanations for consideration.
>
> Hi Keith,
>
> I think you are putting too much emphasis on the measurement of energy in the pulse, or maybe not enought, depending upon how you are making and using the measurements.
>
> I hope you agree that the transmission line you are pulsing has no standing waves. If not, then the pulse must be a treveling wave. If it is a traveling wave, the impedance of the wave will be the impedance of the transmission line, except where the two pulses cross paths. At the crossing point, the impedance will jump to infinity, Z = v/i = v/zero = infinity.
>
> How about the energy/power levels? Except at the center, as the pulse passes, current and voltage can be measured, so power is being delivered from one section of the line to a second section more distant from the source. The energy delivered by the power equation can be measured by U = (v^2)/r = (i^2)*r where r is the Zo if the transmission line.
>
> Where the two pulses cross, the energy level must be the sum of the two energy levels, which would be 2U = 2*(v^2)/r (assuming two pulses of equal voltage). As you have pointed out, power would not flow at the point of wave first meeting, spreading from the meeting point back towards the two sources a distance equal to the square pulse width. Energy is present however, measured as U = (v^2)/r.
>
> The transmission line can be considered as a lineal capacitor, so U = (CV^2)/2, where C is the capacitance per unit length. If the waves "bounce", and occupy physical space for a period of time, they should comingle, stop, and fill the capacitor during that time. If so,
>
> 2U = C*V'^2
>   = 2*(V^2)/r where v is the voltage of a single pulse and V' = 1,414*v = voltage observed at point of crossing.
>
> At a disconinuity, we find a doubling of the voltages, not an increase of 1.414. This leads me to believe that the crossing pulses never stop in a physical sense. They do stop in the sense that power is not delived through the center point.
>
> 73, Roger, W7WKB- Hide quoted text -
>
> - Show quoted text -

Roger you are conversing with old men most of which oppose change.
Having been taught some fifty years ago they want to protect those
teachings the originators of which are all dead.
Thus regardless of what has happened and discovered or intruded upon
by inquiring minds they wish to stay in the past.In the past, statics
was viewed as a subset of electro-dynamics and the old timers want it
to stay that way. By starting with Gauss and adding a time varient I
added a visual to Maxwell that was missing from his equations because
Gauss was not the leading
contributor to the time varient theme. It is this that the old timers

are resisting because it brings away the thought that statics is just a subset. Thus you see that there is inherrent resistance to the mathematics that supplies a visual to Mawellian equations. It took Richard several months to accept the legitimacy of the mathematics involved in the steps I took. As yet nobody else has admitted to the legitamacy of the mathematics. Thus protecting the notion of static being just a subset. This manoever has placed ham radio into a quagmire from which they cannot extricate themselves and thus advance to analyse the intricacies of propagation.
Who would have believed that ham radio would take to task of a Doctor working at MIT on space reseach for NASA for faulty use of mathematics to prove the relavence of statics?
Can science really be held up while old men are still living?
Art Unwin KB9MZ...XG

682. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 17:06:38 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <ymNhj.413262$kj1.217657@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29598

Cecil Moore wrote:
> On Jan 9, 11:22 pm, Roy Lewallen <w...@eznec.com> wrote:
>> Just what is a "wave", anyway? Are there different "kinds" of
>> electromagnetic wave?
>
> Take a look at the E-field, H-field, and direction of travel for an EM
> (photonic) wave. An RF standing wave does not behave like an EM wave
> nor does it meet the definition of an EM wave which can be represented
> by a Poynting vector. The Poynting vector for an RF standing wave has
> a magnitude of zero and no direction.
> --
> 73, Cecil, w5dxp.com

Cecil,

That is flat out wrong. For a plane wave the E and H fields are perpendicular for either traveling waves or standing waves. For a coaxial cable operating in the normal TEM mode, the E field is radial and the H field is circular around the center conductor. Again, the E field and H field are always perpendicular. Unless one or both of the fields are exactly zero, the Poynting vector will be nonzero. It will have a magnitude and direction.

I suppose what you are looking at is some sort of time average. In that case the average of the Poynting vector at a single point in space may be different for standing waves and traveling waves. However, that information is essentially useless. The only thing with physical reality, related to Poynting vectors, is the integral of the Poynting vector over a closed surface. Equivalently, the only thing with physical reality is the divergence of the Poynting vector.

In the lossless cases we are typically discussing, the time-averaged integral or the divergence is exactly zero for either the traveling wave case or the standing wave case. The Poynting vector is no help in making any sort of distinction at all.

73,
Gene
W4SZ

683. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 17:10:08 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <QpNhj.125915$MJ6.79674@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29599

Cecil Moore wrote:
> On Jan 10, 10:59 am, Gene Fuller <W4SZzzz...@att.net> wrote:
> .> It is really amazing that you can make up so many requirements that
> are
>> completely unknown to the rest of the world. Is that a Mensa thing?
>
> Methinks you need to study and comprehend the nature of photons and
> photonic waves.
> --
> 73, Cecil, w5dxp.com

Cecil,

I have been doing that for decades. Is there some tutorial material I seemed to have overlooked? (other than RRAA, of course) I already have tons of books on physics, engineering, and optics.

What do you recommend as the definitive reference on "the nature of photons and photonic waves"?

73,
Gene
W4SZ

684. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 17:13:48 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <gtNhj.125926$MJ6.43787@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29600

Cecil Moore wrote:
> On Jan 10, 10:55 am, Gene Fuller <W4SZzzz...@att.net> wrote:
> .> You never give up, do you? Even when you are caught in an utter
> lie. You
>> know exactly what the capacitors are for, and it isn't to control
>> transmission line reflections from open ends of the line.
>
> I'm sorry, Gene, but I cannot alleviate your ignorance with one
> posting. Given a voltage phasor and a current phasor with a phase
> angle between them, there is absolutely no way to distinguish between
> a mismatch and a reflection. The purpose of those power factor
> capacitors on the power line poles is to turn those transmission lines
> into money-making traveling wave delivery systems rather than allow
> money-losing standing wave systems. Please stop your emoting long
> enough to realize what I have said is true.
>
> If the capacitors were not there, the inductive loads would cause
> reflections just as they do on an RF transmission line. The only
> difference is that the 60 Hz transmission line is a small fraction of
> a wavelength. If you scaled the 60 Hz system to 6 MHz, all the same
> laws of physics would apply and the similarities would be readily
> apparent.
> --
> 73, Cecil, w5dxp.com

Cecil,

I am glad to see you have now acknowledged the real purpose of the capacitors. You avoided a direct response to my comment, of course, but progress is being made.

8-)

73,
Gene
W4SZ

685. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 17:19:28 UTC
From: Dave <noone@nowhere.com>
Message-ID: <AyNhj.12$6F6.7@trndny09>
Source record: 29601

roger chimed in with:

>I hope you agree that the transmission line you are pulsing has no standing
>waves. If not, then the pulse must be a treveling wave. If it is a
>traveling wave, the impedance of the wave will be the impedance of the
>transmission line, except where the two pulses cross paths. At the
>crossing point, the impedance will jump to infinity, Z = v/i = v/zero =
>infinity.

argh, another misconception!.. the impedance of a transmission line doesn't change! and the impedance seen by a single traveling wave never changes either. the measured ratio of voltage to current at a point on the line can change as a result of the superposition of traveling waves. but again, that is just a result of cheap instrumentation that can't resolve the component waves.

686. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 18:05:44 UTC
From: richardharrison@webtv.net
Message-ID: <1507-4787AFF8-2@storefull-3252.bay.webtv.net>
Source record: 29602

Roy, W7EL wrote:
"A Bruene wattmeter circuit measures "forward power" and "reverse power" just fine simply by measuring the voltage at a single point on the line."

So does the Bird Thruline Wattmeter., and it has been doing so for about half a century.

It uses the fact that reflection reverses the phase between voltage and current on a 50-ohm coaxial line. That means forward waves can be separated from reflected (reverse) waves. Bird designs its measuring elements to extract a line voltage sample that causes the exact same meter deflection as does a line current sample.

From a wave traveling in one direction the samples add. From the wave traveling in the opposite direction, the samples exactly cancel in the meter. Voila! a directional coupler.

It was A14QJ who wrote:
"The components of the superposition wave no longer exist by themselves;----".

My reply was:
"The components are not cancelled. Were that so, the Bird Thruline Wattmeter could not function and the standing wave would be independent of the forward and reflected waves. Instead it is only a manifestation of interference."

I don`t have a Bruene wattmeter, but I believe it functions like a Bird but uses transformers to couple to the transmission line.

Best regards, Richard Harrison, KB5WZI

687. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 18:44:19 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <61efo3tde4b3csev9fn6dsbpahs87hsjbp@4ax.com>
Source record: 29603

On Fri, 11 Jan 2008 08:15:09 -0800, Roger Sparks <rsparks@elltel.net>
wrote:

>They do stop in the sense that power is not delived through the center point.

Hi Roger,

I'm not sure if this is original to you, or one of those conceits that
is being passed around; but how, short of tagging energy (power?), can
you tell its origin? In other words, delivery by return, or
completion of the path needs to be separable by some information about
the origin that to this point has been missing from the discussion.

If energy can be tagged with a return address, what is that tag?

73's
Richard Clark, KB7QHC

688. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 18:54:48 UTC
From: richardharrison@webtv.net
Message-ID: <25885-4787BB78-51@storefull-3257.bay.webtv.net>
Source record: 29604

Gene Fuller wrote:
"You know exactly what capacitors are for, and it isn`t to control transmission line reflections from open ends of the line."

When you open a circuit at an instant when current is flowing, the transient created can be large. Natural phenomena also create injurious spikes on a power line. Capacitors absorb transient current reducing and delaying a voltage rise which gives overvoltage protection a chance to operate.

Lightly loaded induction motors cause power factor to lag, demanding additional current. Capacitors to correct large amounts of lagging current often take the form of over-excited unloaded induction machines (rotory capacitors) which produce an offsetting leading power factor.

Power loss in power lines is proportional to the square of the current, whatever the cause, so power factor correction aims at to reduce current in the line.

Best regards, Richard Harrison, Kb5WZI

689. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 19:12:22 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm8fl6$37v$1@news.service.uci.edu>
Source record: 29606

Cecil Moore wrote:

> On Jan 10, 9:23 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>
>>A standing wave is an amplitude vs position envelope.
>
>
> Sorry, that is a false statement.

No, in the most general sense, it is a precisely accurate statement.

> Please reference "Fields and Waves
> in Communication Electronics" by Ramo, Whinnery, and Van Duzer, page
> 343.

Ah. Apparently the only book you know of that contains the
description of a standing wave.

> The equation for the standing wave voltage is: Ez = Efor*e^j(wt-
> Bz) + Eref*e^j(wt+Bz)

You must belong to the Standing Wave Equation of the Week Club. Nice
letter choices. :-)

> The equation for a standing wave *envelope* does not contain an
> (omega*t) term.

That right. As I said, it is a function of amplitude vs postion.

> The equation for the *standing wave* indeed does
> obviously contain (omega*t) terms since the equation for a standing
> wave is the sum of the two component traveling waves each containing
> an (omega*t) term.

And when Ramo and Whinnery, for example, plots standing wave current
on a vertical radiator, for example, why do you suppose it looks like
an amplitude vs. position curve?

> If the (omega*t) term is omitted it is an envelope equation, not a
> wave equation.

Ah. So according to Cecil, we have a new definition for a wave which
now stipulates that it must only be expressed as a function of time.

If you only knew how ridiculous you sound.

ac6xg

690. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 19:19:34 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080111111934.e9526a80.rsparks@elltel.net>
Source record: 29605

On Fri, 11 Jan 2008 17:19:28 GMT
"Dave" <noone@nowhere.com> wrote:

> roger chimed in with:
>
> >I hope you agree that the transmission line you are pulsing has no standing
> >waves. If not, then the pulse must be a treveling wave. If it is a
> >traveling wave, the impedance of the wave will be the impedance of the
> >transmission line, except where the two pulses cross paths. At the
> >crossing point, the impedance will jump to infinity, Z = v/i = v/zero =
> >infinity.
>
>
> argh, another misconception!.. the impedance of a transmission line doesn't
> change! and the impedance seen by a single traveling wave never changes
> either. the measured ratio of voltage to current at a point on the line can
> change as a result of the superposition of traveling waves. but again, that
> is just a result of cheap instrumentation that can't resolve the component
> waves.
>
>
Good point. It would have been much better to say something like :"At the
crossing point, the MEASURED impedance will jump to infinity (Z = v/i = v/zero =
infinity) but we have no indication that the impedance of either the wire or the individual
pulse changes in any way.".

73, Roger, W7WKB

691. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 19:45:10 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080111114510.bf8859ad.rsparks@elltel.net>
Source record: 29607

On Fri, 11 Jan 2008 10:44:19 -0800
Richard Clark <kb7qhc@comcast.net> wrote:

> On Fri, 11 Jan 2008 08:15:09 -0800, Roger Sparks <rsparks@elltel.net>
> wrote:
>
> >They do stop in the sense that power is not delived through the center point.
>
> Hi Roger,
>
> I'm not sure if this is original to you, or one of those conceits that
> is being passed around; but how, short of tagging energy (power?), can
> you tell its origin? In other words, delivery by return, or
> completion of the path needs to be separable by some information about
> the origin that to this point has been missing from the discussion.
>
> If energy can be tagged with a return address, what is that tag?
>
> 73's
> Richard Clark, KB7QHC

Current is the tag, and the address is "past" and "future". Measurement is always "present", but we like to make predictions about what will happen in the future, and trace what has happened in the past. With the electromagnetic equations, we are quite good at making those extrapolations from present measurements.

At the crossing point, we can not measure current, so the power equation of P = V * I fails. There is no power at this point that we can measure. We can measure instantaneous voltage but don't know which equation to use to determine energy, U = (CV^2)/2 or SumU = Sum((V^2)/r). Only if we make many measurements over time can we learn the shape of the voltage over time, and thereby deduce which equation to use.

73, Roger, W7WKB

At the crossing poiont

692. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 19:59:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <61ifo3drvtj7qiccum7j7ul5ckouttgq5m@4ax.com>
Source record: 29608

On Fri, 11 Jan 2008 11:45:10 -0800, Roger Sparks <rsparks@elltel.net>
wrote:

>Current is the tag
...
>At the crossing point, we can not measure current,

Hi Roger,

Hence the information as to the source of energy that arrives at its
final destination is completely lost.

Barring this tracking, then, there is no way to prove effects due to
the "crossing point."

So, why does this discussion proceed without hope of any meaningful
proof? Certainly, given more than 400, 500, 1000 postings there must
be some other tagging mechanism that you are unaware of, or has been
withheld from comment. Did we miss that announcement?

73's
Richard Clark, KB7QHC

693. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 20:04:37 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080111120437.5cbf38d1.rsparks@elltel.net>
Source record: 29609

On Fri, 11 Jan 2008 08:44:01 -0800 (PST)
art <aunwin@insightbb.com> wrote:

> Roger you are conversing with old men most of which oppose change.
> Having been taught some fifty years ago they want to protect those
> teachings the originators of which are all dead.
> Thus regardless of what has happened and discovered or intruded upon
> by inquiring minds they wish to stay in the past.In the past, statics
> was viewed as a subset of electro-dynamics and the old timers want it
> to stay that way. By starting with Gauss and adding a time varient I
> added a visual to Maxwell that was missing from his equations because
> Gauss was not the leading
> contributor to the time varient theme. It is this that the old timers
> are resisting because it brings away the thought that statics is just
> a subset. Thus you see that there is inherrent resistance to the
> mathematics that supplies a visual to Mawellian equations. It took
> Richard several months to accept the legitimacy of the mathematics
> involved in the steps I took. As yet nobody else has admitted to the
> legitamacy of the mathematics. Thus protecting the notion of static
> being just a subset. This manoever has placed ham radio into a
> quagmire from which they cannot extricate themselves and thus advance
> to analyse the intricacies of propagation.
> Who would have believed that ham radio would take to task of a Doctor
> working at MIT on space reseach for NASA for faulty use of mathematics
> to prove the relavence of statics?
> Can science really be held up while old men are still living?
> Art Unwin KB9MZ...XG

Hi Art,

Like you, I would like to find a better way of doing things, especially some easier math for the electromagnetic equations. Until we find that better way, we must use what we have.

What we have is very, very good, because it has brought us TV, computers, the Internet, space travel, and much more. What ever we find that could be "better", must also contain the knowledge we have today, but perhaps can explain todays knowledge easier or more completely.

I try to learn from the old men because the sum of their knowledge is far greater than my own can ever be. Having said that, I also recognize that the knowledge of each man is limited by his own talent, experience, and human frailty, so a judgement must be made as to wisdom and accuracy.

I really admire the willingness of all participants to contribute to discussions. The hard part is knowing how to fit each new tibit of knowledge into my own personal knowledge base.

73, Roger, W7WKB

694. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 20:23:39 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080111122339.b7ac63ae.rsparks@elltel.net>
Source record: 29610

On Fri, 11 Jan 2008 11:59:24 -0800
Richard Clark <kb7qhc@comcast.net> wrote:

> So, why does this discussion proceed without hope of any meaningful
> proof? Certainly, given more than 400, 500, 1000 postings there must
> be some other tagging mechanism that you are unaware of, or has been
> withheld from comment. Did we miss that announcement?
>
> 73's
> Richard Clark, KB7QHC

The writtings of many of us still have "hope". Many postings reflect a curiosity that has not been satisfied. Is there a tagging mechanism that I did not mention? If so, please articulate it.

73, Roger, W7WKB

695. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 20:27:34 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <128e84d4-774a-4b13-8d9a-de1a8f515232@x69g2000hsx.googlegroups.com>
Source record: 29611

On Jan 11, 12:10 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> What do you recommend as the definitive reference on "the nature of
> photons and photonic waves"?

I personally like "Optics" by Hecht and his idea that standing waves
maybe shouldn't be called waves at all. EM waves move energy and
conserve momentum. Standing waves don't.
--
73, Cecil, w5dxp.com

696. Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 20:51:59 UTC
From: art <aunwin@insightbb.com>
Message-ID: <7ccfb7b3-5df6-4a5c-bcad-d250d45fc191@i3g2000hsf.googlegroups.com>
Source record: 29612

The absolute confusion eminated by Americans regarding 'Standing" and "travelling" cannot be used as a absolute condemnation of American education.Freedom of speech is a basic right, the downside of which it is that it reveals the speakers level of education.However, the confusion alluded to is primarily that of old ,unemployed or retired people. In all of these cases a resume can be expanded way beyond that knoweledge level when the resume is overseen by an employer but with the excuse of advancing age and poor recall of memory the resume can be expanded to reflect the perceived expertise that the owner feels that he has attained by using a transmitter. If a employer were to review the resumes of these self esteamed applicants they can be excused in their efforts to find suitable applicants overseas. But this newsgroup is the world of old people, so one must constantly remind themseves that this world is not representitive of the new generation who may well be able to accept change but also posses a level of inquisitivenes.
True, the quest for offshore employees by the present day employer may well reflect that the old also represent the young which if accepted, point to a nation in decline where advances in science can be purchased and its inhabitants can be ignored. Brings back memories of Japan and the Yagi antenna. Only after the war did it recognise the value of home built advances ala the antenna invention,while other nations pounced on science as a mechanism to achieve a better life for their own natives. It is noble to supply education to all that pursue such, but when educators dumb down the education for personal monetory reasons they trade a country for momentary rewards.
What goes around comes around the same way as did perceived empires of old.
Best regards
Art Unwin KB9MZ

697. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 20:58:17 UTC
From: Mike Lucas <w5chr@bellsouth.net>
Message-ID: <ELQhj.50361$vt2.50198@bignews8.bellsouth.net>
Source record: 29613

art wrote
> Thanks for the reply Cecil which has opened my eyes regarding the
> trend of your thoughts.
> Try to change your thinking to the following.

big snip

> At no time is there anything moving forward thus this reflection of
> yours cannot occur.
> I think we can end out interchange at this point
> Very best regards
> Art Unwin KB9MZ....xg(uk)

Now this is gonna be a hoot, watching Art and Cecil exchange
technical repartees.

Mike W5CHR

698. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 20:58:22 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <d0c9ecac-5817-4284-9b5c-6adfec3e3194@i7g2000prf.googlegroups.com>
Source record: 29614

On Jan 11, 2:12 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> Cecil Moore wrote:
> > On Jan 10, 9:23 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> >>A standing wave is an amplitude vs position envelope.

A standing wave has an associated envelope but the envelope is *NOT*
the wave itself.
It's like saying the body of a car is the car itself but you have
forgotten the thing that makes the car move - the motor.

> > Sorry, that is a false statement.
>
> No, in the most general sense, it is a precisely accurate statement.

The equation for a standing wave contains an omega*t term. The
equation for standing waves that does not contain an omega*t term is
the equation for the envelope. Quoting the following reference, page
32: "For problems in which we shall be concerned throughout with
sinusoidal quantities, it is not necessary to write the factor e^jwt
explicitly each time, since it will always be understood that all
terms are multiplied by this factor;"

> > Please reference "Fields and Waves
> > in Communication Electronics" by Ramo, Whinnery, and Van Duzer, page
> > 343.
>
> Ah. Apparently the only book you know of that contains the
> description of a standing wave.

No, just the only book I brought on my trip.

> > The equation for the standing wave voltage is: Ez = Efor*e^j(wt-
> > Bz) + Eref*e^j(wt+Bz)
>
> You must belong to the Standing Wave Equation of the Week Club. Nice
> letter choices. :-)

Ramo and Whinnery use E+ and E- but that looks too much like addition
and subtraction when using ASCII characters.

> Ah. So according to Cecil, we have a new definition for a wave which
> now stipulates that it must only be expressed as a function of time.

Nothing new. The actual standing wave equation is a function of time.
Dropping the time term turns it into an envelope equation. An envelope
is a wave envelope, not a wave. You need to learn to be a little more
precise with the language you choose to use. Looks like you have

forgotten that e^jwt is implied. You need to be a little more precise
with your wording.
--
73, Cecil, w5dxp.com

699. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 21:04:23 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm8m9e$9ot$1@news.service.uci.edu>
Source record: 29615

Cecil Moore wrote:
> On Jan 11, 2:12 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>
>>Cecil Moore wrote:
>>
>>>On Jan 10, 9:23 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>>>
>>>>A standing wave is an amplitude vs position envelope.
>
>
> A standing wave has an associated envelope but the envelope is *NOT*
> the wave itself.

No, it's plot of the equation - just like any other plot one might
make of it. It simply a plot of amplitude vs position at a fixed time.

Jeez, Cecil. You really do need a life, man.

By the way, you forgot to give the Poynting vector for a modulation
envelope. <:o() (it's a clown) :-)

regards, ac6xg

700. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 21:35:38 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <81nfo3lr9ooo5sev2ajoq8c4p2n386t6v2@4ax.com>
Source record: 29616

On Fri, 11 Jan 2008 12:23:39 -0800, Roger Sparks <rsparks@elltel.net>
wrote:

>The writtings of many of us still have "hope".

Hi Roger,

Ah, yes. Hope without proof is called faith. There are testimonials,
and there are witnesses to miracles - however, those, too, seem to be
far and few between.

Faith in "what" seems to be an even greater mystery, and a strange
basis for belief.

Another conceit I've seen ripple through the threads - I don't think
you offered it either, but authorship is vague - is that this "what"
may be waves bouncing.

Hope in waves bouncing (for which only faith supports this where proof
is absent) may solve the mystery of "what," but like Russian Dolls
nested one inside another, certainly this faith is ever spiraling out
toward some even greater mystery in beliefs.

To put it in religious terms: "So What?"

Is this the road to redemption?

Is it like the discovery of the mirror? Did the discoverer (inventor
if you will seeing as the mirror might be currently in the process of
patenting) attain a new insight? a new perspective?

Even there, our using (measuring with) a mirror gives us a means to
tag information through parallax. Is this thread missing something as
simple as parallax to tag currents as to their origin? It would seem
after 800 contributions that this contribution (parallax) would have
resolved the thread and brought closure to allow everyone to transcend
obstacles on that road to redemption.

Is anyone actually pursuing the goal of finding and expressing the
parallax problem (or revealing any tagging); or are they simply
content to have hope and wait for the end of days milling about the
edges of the purgatory of Babel?

73's
Richard Clark, KB7QHC

701. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 21:45:36 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <681e9ecc-e332-41ba-8f5e-44a9f4a85f0f@q39g2000hsf.googlegroups.com>
Source record: 29617

On Jan 11, 8:12 am, "Dave" <no...@nowhere.com> wrote:
> "Keith Dysart" <Keith.Dys...@gmail.com> wrote in message
>
> news:99d22e20-5160-488f-8b8a-7a5d3e384ed4@k39g2000hsf.googlegroups.com...
>
> > Thanks for offering the two capacitor/one capacitor view of the middle
> > of the line. It took a bit of time to decide whether the commingling
> > of the charge in the single capacitor at the middle of the line would
> > solve my dilemma.
>
> > So I considered this one capacitor in the exact center of a perfect
> > transmission line. It is the perfect capacitor, absolutely
> > symmetrical. So as the exactly equal currents flow into it on
> > the exactly symmetrical leads, the charge is perfectly balanced
> > so that the charge coming from each side exactly occupies its
> > side of the conductor. As the two flows of charge flow over
> > the perfectly symmetrical plates, they meet in the exact
> > center, and flow no more. I conclude that a surface can
> > be found exactly in the center of this capacitor across
> > which no charge flows. Thus (un)happily returning me exactly
> > to where I was before; there is a line across which no
> > charge, and hence no energy, flows.
>
> absolutely correct. no charge flows through the insulator of a capacitor.

This was not the line I meant. My line was perpendicular to the
plates.
Current does not cross this line because it arrives equally from both
sides.

> [snip]
>
> >>   2. I don't understand the mechanism which causes waves to bounce.
>
> > I take this to imply that you are not happy with the simple "like
> > charge
> > repels"?
>
> waves do not bounce.

What about charge?

> waves superimpose on each other, but the original
> waves that meet in a homogenious, linear medium DO NOT INTERACT in any way.
> they each proceed happily on their way without any change. it is only due

> to the limited capability of your measurement instruments to measure the
> superimposed field that results that causes the confusion. if you could
> easily separate out the forward and reflected waves it would become
> intuitively obvious... however the poor instruments (swr meters and other
> 'power' meters) that have caused the confusion and resulted in the misnomer
> 'standing wave'. It is of course not a 'wave', nor does it 'stand'... it is
> just the result of superposition of 2 waves traveling in opposite
> directions.

Or is it the "standing wave" which is real and it just happens that
it can also be described as the sum of two waves going in opposite
directions? But the wave going in one direction can be described
as the sum of a number of waves going in that direction? (Especially\
when there are multiple reflections!) How many waves in each
direction?
When do we stop?

I respectfully submit that it is only the resultant that is real.
The rest are merely alternate descriptions (though often useful).

> > So the (poorly developped) "charge bouncing" explanation
> > seems like a way out, but I certainly would appreciate
> > other explanations for consideration.
>
> you don't need a 'way out' you need to go back to basics and learn the
> proper explanation.

I am still waiting for one. How DO waves transport energy across
a point in the line for which the power is always zero? The classical
explanations being offerred leave this question unaddressed.

> >> A large part of the argument seems to revolve around a single point in a
> >> perfect transmission line, where the current is exactly zero. This is an
> >> infinitesimal point on a perfect line, so some anomalous things might be
> >> expected to happen there.
>
> but the current, or voltage, is only zero because of the superimposed
> oppositely traveling waves. it is only your poor measurement instrument
> that only responds to the superimposed waves that causes the confusion.

When I get a better instrument which can observe these superimposed
waves,
how many will it tell me exist on a line that is not matched at either
end?

...Keith

702. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 21:59:47 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f74f06cb-0f88-480a-a21b-d1bab218ba94@q39g2000hsf.googlegroups.com>
Source record: 29618

On Jan 11, 11:15 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Thu, 10 Jan 2008 18:52:28 -0800 (PST)Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> snip.....
>
>
>
> > I would really appreciate seeing some other possible explanations.
>
> > One other one which I have seen and am not confortable with is the
> > explanation that energy in the waves pass through the point in
> > each direction and sum to zero. But this is indistinguishable from
> > superposing power which most agree is inappropriate. As well, this
> > explanation means that P(t) is not equal to V(t) times I(t),
> > something that I am quite reluctant to agree with.
>
> > The other explanation seen is that the voltage waves or the
> > current waves travel down the line superpose, yielding a total
> > voltage and current function at each point on the line which
> > can be used to compute the power. With this explanation, P(t)
> > is definitely equal to V(t) time I(t), which I do appreciate.
> > The weakness of this explanation is that it seems to deny
> > that the wave moves energy. And yet before the pulses collide
> > it is easy to observe the energy moving in the line, and if
> > a pulse was not coming in the other direction, there would
> > be no dispute that the energy travelled to the end of the
> > line and was absorbed in the load. Yet when the pulses
> > collide, no energy crosses the middle of the line. Yet
> > energy can be observed travelling in the line before
> > and after the pulses collide.
>
> > So...
>
> > I can give up on pulses (or waves) moving energy. I am not
> > happy doing that.
> > I can give up on P(t) = V(t) * I(t). I am not happy doing
> > that either.
>
> > So the (poorly developped) "charge bouncing" explanation
> > seems like a way out, but I certainly would appreciate
> > other explanations for consideration.
>
> Hi Keith,
>

> I think you are putting too much emphasis on the measurement of energy in the pulse, or maybe not enought, depending upon how you are making and using the measurements.
>
> I hope you agree that the transmission line you are pulsing has no standing waves.

"Standing waves" seem to more be a consequence of sinusoidal
excitation than pulse.
So I expect no "standing waves".

I don't even like using the words "traveling wave" to describe the
pulse situation
since "traveling wave" also seems to bring a lot of baggage.

> If not, then the pulse must be a treveling wave. If it is a traveling wave, the impedance of the wave will be the impedance of the transmission line, except where the two pulses cross paths. At the crossing point, the impedance will jump to infinity, Z = v/i = v/zero = infinity.

I do not recommend computing this ratio and calling it impedance. I
find it leads
to difficulties. Better just to think of the V and I independantly.

> How about the energy/power levels? Except at the center, as the pulse passes, current and voltage can be measured, so power is being delivered from one section of the line to a second section more distant from the source. The energy delivered by the power equation can be measured by U = (v^2)/r = (i^2)*r where r is the Zo if the transmission line.

More accurately P(t) = V(t) * I(t). it happens that for the pulses in
question,
except when colliding, that V and I of the pulses observed on the line
are related
by Z0 so by substitution, the expressions above can be derived. But
sometimes it is
better to stick with the more basic expression P=VI.

> Where the two pulses cross, the energy level must be the sum of the two energy levels, which would be 2U = 2*(v^2)/r (assuming two pulses of equal voltage). As you have pointed out, power would not flow at the point of wave first meeting, spreading from the meeting point back towards the two sources a distance equal to the square pulse width. Energy is present however, measured as U = (v^2)/r.
>
> The transmission line can be considered as a lineal capacitor, so U = (CV^2)/2, where C is the capacitance per unit length. If the waves "bounce", and occupy physical space for a period of time, they should comingle, stop, and fill the capacitor during that time. If so,
>
> 2U = C*V'^2
>   = 2*(V^2)/r where v is the voltage of a single pulse and V' = 1,414*v = voltage observed at point of crossing.

But the voltage at the crossing is 2V. A puzzle? When the pulse is
"travelling",
there is energy in the capacitance and in the inductance of the line.
When the

current stops, the energy in the inductance is added to the energy in
the
capacitance, thus the voltage reaches 2V.

> At a disconinuity, we find a doubling of the voltages, not an increase of 1.414. This leads me to believe that the crossing pulses never stop in a physical sense. They do stop in the sense that power is not delived through the center point.

...Keith

703. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 22:03:10 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <e0be2d2a-d8a4-4c83-ac3c-83ed61ea4601@f10g2000hsf.googlegroups.com>
Source record: 29619

On Jan 11, 1:44 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Fri, 11 Jan 2008 08:15:09 -0800, Roger Sparks <rspa...@elltel.net>
> wrote:
>
> >They do stop in the sense that power is not delived through the center point.
>
> Hi Roger,
>
> I'm not sure if this is original to you, or one of those conceits that
> is being passed around; but how, short of tagging energy (power?), can
> you tell its origin? In other words, delivery by return, or
> completion of the path needs to be separable by some information about
> the origin that to this point has been missing from the discussion.
>
> If energy can be tagged with a return address, what is that tag?

I suggest that since the current at the middle of the line
is always 0, the power is always 0 and therefore no energy
crosses the middle. While tracking mixed energy is difficult,
when no energy crosses a boundary it seems easy to keep the
energy on each side of the boundary separate.

...Keith

704. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 22:11:55 UTC
From: Dave <noone@nowhere.com>
Message-ID: <LQRhj.241$sA6.195@trndny08>
Source record: 29620

"Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
news:681e9ecc-e332-41ba-8f5e-44a9f4a85f0f@q39g2000hsf.googlegroups.com...
>>
>> absolutely correct. no charge flows through the insulator of a capacitor.
>
>This was not the line I meant. My line was perpendicular to the
>plates. Current does not cross this line because it arrives equally from
>both
>sides.

huh?? no charge passes from one plate of a capacitor to the other. but current does in the form of displacement current. if you are trying to look at the microscopic field and charge distributions during a transient in a capacitor you are way beyond anything i ever studied, or would want to study.

>> waves do not bounce.
>
>What about charge?

charge is being moved by the fields of the wave, and it moves very little in the wire as has been shown in the past. when equal and opposite waves arrived at a point where the current cancels the charges superimpose to result in a zero field so there is no motion, hence no current at that point. as the waves pass each other the fields no longer cancel so the electrons on the other side of the cancelation point start to move again in the opposite directions. if you want to call that a bounce knock yourself out, but it will lead to a rather limited view that is only helpful in certain circumstances where exact cancelation occurs.

>Or is it the "standing wave" which is real and it just happens that
>it can also be described as the sum of two waves going in opposite
>directions? But the wave going in one direction can be described
>as the sum of a number of waves going in that direction? (Especially\
>when there are multiple reflections!) How many waves in each
>direction?
>When do we stop?

>I respectfully submit that it is only the resultant that is real.
>The rest are merely alternate descriptions (though often useful).

then enjoy your fantasy. the forward and reverse wave components are easily separated and observed anywhere on the line. its just that most amateur grade equipment doesn't bother because it is sufficient for 99.44% of us to only measure your 'real' standing wave to properly adjust our antennas and radios.

705. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 22:25:01 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qkqfo356i5qgidf4me60usqncvl4c1lsh0@4ax.com>
Source record: 29622

On Fri, 11 Jan 2008 14:03:10 -0800 (PST), Keith Dysart
<Keith.Dysart@gmail.com> wrote:

>On Jan 11, 1:44ï¿½pm, Richard Clark <kb7...@comcast.net> wrote:
>> On Fri, 11 Jan 2008 08:15:09 -0800, Roger Sparks <rspa...@elltel.net>
>> wrote:
>>
>> >They do stop in the sense that power is not delived through the center point.
>>
>> Hi Roger,
>>
>> I'm not sure if this is original to you, or one of those conceits that
>> is being passed around; but how, short of tagging energy (power?), can
>> you tell its origin? ï¿½In other words, delivery by return, or
>> completion of the path needs to be separable by some information about
>> the origin that to this point has been missing from the discussion.
>>
>> If energy can be tagged with a return address, what is that tag?
>
>I suggest that since the current at the middle of the line
>is always 0, the power is always 0 and therefore no energy
>crosses the middle. While tracking mixed energy is difficult,
>when no energy crosses a boundary it seems easy to keep the
>energy on each side of the boundary separate.

Hi Keith,

If you cannot identify the source, then you cannot proclaim a
separation.

The best term for this is "the enigma effect." I hate to turn this
loose on the world because I know many here will pick it up and run to
their perceived goal for a touch-down.

Before anyone tackles me for a touchback, I'm going to pass this off
and watch the quarterbacks wrestle with religion in the huddle.

73's
Richard Clark, KB7QHC

706. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 22:26:12 UTC
From: art <aunwin@insightbb.com>
Message-ID: <391aeb24-69e4-4344-8868-b0db952c94fe@q39g2000hsf.googlegroups.com>
Source record: 29621

On 11 Jan, 14:03, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> On Jan 11, 1:44 pm, Richard Clark <kb7...@comcast.net> wrote:
>
> > On Fri, 11 Jan 2008 08:15:09 -0800, Roger Sparks <rspa...@elltel.net>
> > wrote:
>
> > >They do stop in the sense that power is not delived through the center point.
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> > Hi Roger,
>
> > I'm not sure if this is original to you, or one of those conceits that
> > is being passed around; but how, short of tagging energy (power?), can
> > you tell its origin? In other words, delivery by return, or
> > completion of the path needs to be separable by some information about
> > the origin that to this point has been missing from the discussion.
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> is always 0, the power is always 0 and therefore no energy
> crosses the middle. While tracking mixed energy is difficult,
> when no energy crosses a boundary it seems easy to keep the
> energy on each side of the boundary separate.
>
> ...Keith

Keith,
Richard has not entered the actual discussion nor has he shown any
indication
he understands what is going on. All he is doing is intimating he
knows all the answers but he is not going to reveal them. Why? He has
no choice if later he wants to state "I knew that all the time". In
the mean time he is taunting people with off subject topics and then
deigns not to provide technical content. He is very good at arousing
people to respond to him in a defensive manner as you can now
personally point out, usually by asking questions without any effort
to support the discussion.His degree is in english which is why he is
practicing on this newsgroup
Have a great week end
Art

707. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 23:38:20 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <20f8a3dd-351a-4dcc-bedb-2e294e74f93f@f47g2000hsd.googlegroups.com>
Source record: 29623

On Jan 11, 12:06 pm, Gene Fuller <W4SZzzz...@att.net> wrote:

> For a plane wave the E and H fields are
> perpendicular for either traveling waves or standing waves. For a
> coaxial cable operating in the normal TEM mode, the E field is radial
> and the H field is circular around the center conductor. Again, the E
> field and H field are always perpendicular. Unless one or both of the
> fields are exactly zero, the Poynting vector will be nonzero. It will
> have a magnitude and direction.

True for traveling waves. ABSOLUTELY *FALSE* FOR STANDING WAVES. Those false concepts are the source of your (and others) confusion.You should have paid attention to my postings of those two very different equations.

The E and H fields are 90 degrees apart for traveling waves. The cross product of ExH is the power density in watts/unit-area, i.e. the Poynting vector. For standing waves, the E and H fields are either in phase or 180 degrees out of phase. The cross product of ExH for standing waves is *ALWAYS* equal to zero, i.e. the Poynting vector for pure standing waves is always equal to zero. Please alleviate your ignorance on this subject and get back to us. There is ZERO real power in a pure standing wave. The Poynting vector for a standing wave is *ALWAYS* zero contrary to what you falsely assert above.

Stating the same thing in voltage and current terms, for a traveling wave, the voltage and current are either in phase for forward waves or 180 degrees out of phase for reflected waves. Either way, the real power in the traveling wave is V*I watts.

For a standing wave, the voltage and current are 90 degrees out of phase. The real power in the standing wave is ZERO! P = V*I*cos(90) = 0

--
73, Cecil, w5dxp.com

708. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 23:42:07 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <2e0c374e-d761-4cce-9e72-6c0cdd991301@j78g2000hsd.googlegroups.com>
Source record: 29624

On Jan 11, 4:04 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> Cecil Moore wrote:
> > A standing wave has an associated envelope but the envelope is *NOT*
> > the wave itself.
>
> No, it's plot of the equation - just like any other plot one might
> make of it. It simply a plot of amplitude vs position at a fixed time.

I'm glad you finally agree.
--
73, Cecil, w5dxp.com

709. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-11 23:56:02 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <43b14b09-2a6a-45bd-8f46-23e988ad447f@k39g2000hsf.googlegroups.com>
Source record: 29625

On Jan 11, 5:03 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> I suggest that since the current at the middle of the line
> is always 0, the power is always 0 and therefore no energy
> crosses the middle. While tracking mixed energy is difficult,
> when no energy crosses a boundary it seems easy to keep the
> energy on each side of the boundary separate.

Of course, what you say is only true for net energy. If we have a
forward Poynting vector of 100 watts and a reflected Poynting vector
of 100 watts, no net energy is flowing at any point.
--
73, Cecil, w5dxp.com

710. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 00:04:43 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fm90v0kem1@news.service.uci.edu>
Source record: 29626

Richard Clark wrote:

> On Fri, 11 Jan 2008 14:03:10 -0800 (PST), Keith Dysart
> <Keith.Dysart@gmail.com> wrote:
>
>
>>On Jan 11, 1:44 pm, Richard Clark <kb7...@comcast.net> wrote:
>>
>>>On Fri, 11 Jan 2008 08:15:09 -0800, Roger Sparks <rspa...@elltel.net>
>>>wrote:
>>>
>>>
>>>>They do stop in the sense that power is not delived through the center point.
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>>>Hi Roger,
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>>>I'm not sure if this is original to you, or one of those conceits that
>>>is being passed around; but how, short of tagging energy (power?), can
>>>you tell its origin? In other words, delivery by return, or
>>>completion of the path needs to be separable by some information about
>>>the origin that to this point has been missing from the discussion.
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>>>If energy can be tagged with a return address, what is that tag?
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>>I suggest that since the current at the middle of the line
>>is always 0, the power is always 0 and therefore no energy
>>crosses the middle. While tracking mixed energy is difficult,
>>when no energy crosses a boundary it seems easy to keep the
>>energy on each side of the boundary separate.
>
>
> Hi Keith,
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> If you cannot identify the source, then you cannot proclaim a
> separation.
>
> The best term for this is "the enigma effect." I hate to turn this
> loose on the world because I know many here will pick it up and run to
> their perceived goal for a touch-down.
>
> Before anyone tackles me for a touchback, I'm going to pass this off
> and watch the quarterbacks wrestle with religion in the huddle.
>
> 73's

> Richard Clark, KB7QHC

To single out a particular spot as the site of a lack of energy movement along an equipotential system in which there is no tranfer of energy anyway seems to me to be an arbitrary convenience.

Maxwell explained how electromagentic waves 'bounce' if they encounter matter, and I haven't seen any evidence that it was an incomplete description.

ac6xg

711. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 00:30:08 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080111163008.c4a104c3.rsparks@elltel.net>
Source record: 29627

On Fri, 11 Jan 2008 13:59:47 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 11, 11:15 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Thu, 10 Jan 2008 18:52:28 -0800 (PST)Keith Dysart <Keith.Dys...@gmail.com> wrote:
> >
> > snip.....
> >
> >
> >
> > > I would really appreciate seeing some other possible explanations.
> >
> > > One other one which I have seen and am not confortable with is the
> > > explanation that energy in the waves pass through the point in
> > > each direction and sum to zero. But this is indistinguishable from
> > > superposing power which most agree is inappropriate. As well, this
> > > explanation means that P(t) is not equal to V(t) times I(t),
> > > something that I am quite reluctant to agree with.
> >
> > > The other explanation seen is that the voltage waves or the
> > > current waves travel down the line superpose, yielding a total
> > > voltage and current function at each point on the line which
> > > can be used to compute the power. With this explanation, P(t)
> > > is definitely equal to V(t) time I(t), which I do appreciate.
> > > The weakness of this explanation is that it seems to deny
> > > that the wave moves energy. And yet before the pulses collide
> > > it is easy to observe the energy moving in the line, and if
> > > a pulse was not coming in the other direction, there would
> > > be no dispute that the energy travelled to the end of the
> > > line and was absorbed in the load. Yet when the pulses
> > > collide, no energy crosses the middle of the line. Yet
> > > energy can be observed travelling in the line before
> > > and after the pulses collide.
> >
> > > So...
> >
> > > I can give up on pulses (or waves) moving energy. I am not
> > > happy doing that.
> > > I can give up on P(t) = V(t) * I(t). I am not happy doing
> > > that either.
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> > > So the (poorly developped) "charge bouncing" explanation
> > > seems like a way out, but I certainly would appreciate
> > > other explanations for consideration.

> >
> > Hi Keith,
> >
> > I think you are putting too much emphasis on the measurement of energy in the pulse, or maybe not enought, depending upon how you are making and using the measurements.
> >
> > I hope you agree that the transmission line you are pulsing has no standing waves.
>
> "Standing waves" seem to more be a consequence of sinusoidal
> excitation than pulse.
> So I expect no "standing waves".
>
> I don't even like using the words "traveling wave" to describe the
> pulse situation
> since "traveling wave" also seems to bring a lot of baggage.
>
> > If not, then the pulse must be a treveling wave. If it is a traveling wave, the impedance of the wave will be the impedance of the transmission line, except where the two pulses cross paths. At the crossing point, the impedance will jump to infinity, Z = v/i = v/zero = infinity.
>
> I do not recommend computing this ratio and calling it impedance. I
> find it leads
> to difficulties. Better just to think of the V and I independantly.
>
> > How about the energy/power levels? Except at the center, as the pulse passes, current and voltage can be measured, so power is being delivered from one section of the line to a second section more distant from the source. The energy delivered by the power equation can be measured by U = (v^2)/r = (i^2)*r where r is the Zo if the transmission line.
>
> More accurately P(t) = V(t) * I(t). it happens that for the pulses in
> question,
> except when colliding, that V and I of the pulses observed on the line
> are related
> by Z0 so by substitution, the expressions above can be derived. But
> sometimes it is
> better to stick with the more basic expression P=VI.
>
> > Where the two pulses cross, the energy level must be the sum of the two energy levels, which would be 2U = 2*(v^2)/r (assuming two pulses of equal voltage). As you have pointed out, power would not flow at the point of wave first meeting, spreading from the meeting point back towards the two sources a distance equal to the square pulse width. Energy is present however, measured as U = (v^2)/r.
> >
> > The transmission line can be considered as a lineal capacitor, so U = (CV^2)/2, where C is the capacitance per unit length. If the waves "bounce", and occupy physical space for a period of time, they should comingle, stop, and fill the capacitor during that time. If so,
> >
> > 2U = C*V'^2
> >   = 2*(V^2)/r where v is the voltage of a single pulse and V' = 1,414*v = voltage

observed at point of crossing.
>
> But the voltage at the crossing is 2V. A puzzle? When the pulse is
> "travelling",
> there is energy in the capacitance and in the inductance of the line.
> When the
> current stops, the energy in the inductance is added to the energy in
> the
> capacitance, thus the voltage reaches 2V.

Which is correct? P = (v^2)/r = (i^2)r or P = (v^2)/r + (i^2)r

If P = (v^2)/r = (i^2)r is correct, what is the precondition that MUST be true?
Answer: The i and v measurements must be across a pure resistance, without reactance.

The traveling wave is considered to have a pure resistive impedance.

This going by measurements makes things hard! Too bad we can't see and feel the wave with our own eyes and hands!

>
> > At a disconinuity, we find a doubling of the voltages, not an increase of 1.414. This leads me to believe that the crossing pulses never stop in a physical sense. They do stop in the sense that power is not delived through the center point.
>
> ...Keith

73, Roger, W7WKB

712. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 01:27:31 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <7IUhj.415182$kj1.14758@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29628

Cecil Moore wrote:
> On Jan 11, 12:06 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>
>> For a plane wave the E and H fields are
>> perpendicular for either traveling waves or standing waves. For a
>> coaxial cable operating in the normal TEM mode, the E field is radial
>> and the H field is circular around the center conductor. Again, the E
>> field and H field are always perpendicular. Unless one or both of the
>> fields are exactly zero, the Poynting vector will be nonzero. It will
>> have a magnitude and direction.
>
> True for traveling waves. ABSOLUTELY *FALSE* FOR STANDING WAVES. Those
> false concepts are the source of your (and others) confusion.You
> should have paid attention to my postings of those two very different
> equations.
>
> The E and H fields are 90 degrees apart for traveling waves. The cross
> product of ExH is the power density in watts/unit-area, i.e. the
> Poynting vector. For standing waves, the E and H fields are either in
> phase or 180 degrees out of phase. The cross product of ExH for
> standing waves is *ALWAYS* equal to zero, i.e. the Poynting vector for
> pure standing waves is always equal to zero. Please alleviate your
> ignorance on this subject and get back to us. There is ZERO real power
> in a pure standing wave. The Poynting vector for a standing wave is
> *ALWAYS* zero contrary to what you falsely assert above.
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> Stating the same thing in voltage and current terms, for a traveling
> wave, the voltage and current are either in phase for forward waves or
> 180 degrees out of phase for reflected waves. Either way, the real
> power in the traveling wave is V*I watts.
>
> For a standing wave, the voltage and current are 90 degrees out of
> phase. The real power in the standing wave is ZERO! P = V*I*cos(90) =
> 0
> --
> 73, Cecil, w5dxp.com
>

Cecil,

That is utter nonsense. Back to school for you. You are confusing phase, vector direction, phasors, and most everything else. What a mess!

Everything I said above is exactly correct.

73,
Gene
W4SZ

713. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 01:32:02 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <mMUhj.126918$MJ6.65470@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29629

Cecil Moore wrote:
> On Jan 11, 12:10 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>> What do you recommend as the definitive reference on "the nature of
>> photons and photonic waves"?
>
> I personally like "Optics" by Hecht and his idea that standing waves
> maybe shouldn't be called waves at all. EM waves move energy and
> conserve momentum. Standing waves don't.
> --
> 73, Cecil, w5dxp.com

That was a joke. I doubt that Hecht even uses the exact term "photonic wave". For fun, try a Google on "photonic wave". Most of the entries are really weird stuff.

Wave-particle duality means that light and other electromagnetic phenomena can be described in terms of waves or in terms of photons. There is no need to use both descriptions at the same time. The laws of physics are complete for either.

73,
Gene
W4SZ

714. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 02:49:20 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a04432ca-62e3-45ec-9452-1701452c1407@k39g2000hsf.googlegroups.com>
Source record: 29630

On Jan 11, 7:30 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Fri, 11 Jan 2008 13:59:47 -0800 (PST)
>
>
>
>
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
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> > > Hi Keith,
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> > capacitance, thus the voltage reaches 2V.
>
> Which is correct? P = (v^2)/r = (i^2)r   or   P = (v^2)/r + (i^2)r

P(t) = V(t) * I(t)
by substitution from V = I * R
P(t) = V(t) * V(t) / R
and
P(t) = I(t) * I(t) * R

But recall that power is the flow of energy per unit time.

The energy present in any section of line is the energy
present in the electric field of the capacitance plus
the energy present in the magnetic field of the inductance.

So from your expressions above
U = (CV^2)/2 + (LI^2)/2

> If P = (v^2)/r = (i^2)r is correct, what is the precondition that MUST be true?
> Answer: The i and v measurements must be across a pure resistance, without reactance.

This is why it is often better just to use the original
equation:
P(t) = V(t) * I(t)
for it is always true and requires no preconditions.

> The traveling wave is considered to have a pure resistive impedance.
>
> This going by measurements makes things hard! Too bad we can't see and feel the wave with our own eyes and hands!
>
>
>
> > > At a disconinuity, we find a doubling of the voltages, not an increase of 1.414.
 This leads me to believe that the crossing pulses never stop in a physical sense. They do stop in the sense that power is not delived through the center point.
>
> > ...Keith
>

> 73, Roger, W7WKB- Hide quoted text -

...Keith

715. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 02:51:07 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <966da6b3-eff8-4982-b04a-8b602903b7ce@v29g2000hsf.googlegroups.com>
Source record: 29631

On Jan 11, 5:25 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Fri, 11 Jan 2008 14:03:10 -0800 (PST), Keith Dysart
>
>
>
>
>
> <Keith.Dys...@gmail.com> wrote:
> >On Jan 11, 1:44 pm, Richard Clark <kb7...@comcast.net> wrote:
> >> On Fri, 11 Jan 2008 08:15:09 -0800, Roger Sparks <rspa...@elltel.net>
> >> wrote:
>
> >> >They do stop in the sense that power is not delived through the center point.
>
> >> Hi Roger,
>
> >> I'm not sure if this is original to you, or one of those conceits that
> >> is being passed around; but how, short of tagging energy (power?), can
> >> you tell its origin? In other words, delivery by return, or
> >> completion of the path needs to be separable by some information about
> >> the origin that to this point has been missing from the discussion.
>
> >> If energy can be tagged with a return address, what is that tag?
>
> >I suggest that since the current at the middle of the line
> >is always 0, the power is always 0 and therefore no energy
> >crosses the middle. While tracking mixed energy is difficult,
> >when no energy crosses a boundary it seems easy to keep the
> >energy on each side of the boundary separate.
>
> Hi Keith,
>
> If you cannot identify the source, then you cannot proclaim a
> separation.

That is hardly difficult. If no energy every crosses
the middle of the line, then the energy on the left half
of the line originated with the source on the left side
and ditto for the right.

...Keith

716. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 02:51:41 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <f7163390-7eae-4e67-a0e9-57725c767116@v29g2000hsf.googlegroups.com>
Source record: 29632

On Jan 11, 8:32 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> Wave-particle duality means that light and other electromagnetic
> phenomena can be described in terms of waves or in terms of photons.
> There is no need to use both descriptions at the same time. The laws of
> physics are complete for either.

Actually, what you don't seem to realize is that exactly the same laws
apply to both at the same time and all those laws are perfectly
consistent. Photons cannot stand still. Therefore, standing waves are
not photonic, i.e. they are not EM waves. That you assert the standing
wave E-field and H-field are 90 degrees apart is insanity (in addition
to being completely false).
--
73, Cecil, w5dxp.com

717. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 03:06:45 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <p4bgo39ir7aptmugmuu463ofucjmlpvt69@4ax.com>
Source record: 29634

On Fri, 11 Jan 2008 18:51:07 -0800 (PST), Keith Dysart
<Keith.Dysart@gmail.com> wrote:

>> If you cannot identify the source, then you cannot proclaim a
>> separation.
>
>That is hardly difficult. If no energy every crosses
>the middle of the line,

Hi Keith,

If indeed.

The difficulty is you've already allowed that the energy is not
tagged, so its source is unknown at the load. So "if" fails through
this immutable correlation. The separation is not demonstrated.

73's
Richard Clark, KB7QHC

718. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 03:07:47 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <95e179d0-2b61-4594-ad7b-fbc784d72f3f@k2g2000hse.googlegroups.com>
Source record: 29633

On Jan 11, 6:56 pm, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 11, 5:03 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> > I suggest that since the current at the middle of the line
> > is always 0, the power is always 0 and therefore no energy
> > crosses the middle. While tracking mixed energy is difficult,
> > when no energy crosses a boundary it seems easy to keep the
> > energy on each side of the boundary separate.
>
> Of course, what you say is only true for net energy. If we have a
> forward Poynting vector of 100 watts and a reflected Poynting vector
> of 100 watts, no net energy is flowing at any point.

You don't need Poynting vectors to realize that when
the instantaneous power is always 0, no energy is flowing.
And when the instantaneous power is always 0, it is
unnecessary to integrate and average to compute the
net energy flow, because no energy is flowing at all.

And if by your response you really do mean that energy
can be flowing when the instantaneous power is always 0,
please be direct and say so.

But then you will have to come up with a new definition
of instantaneous power for it can not be that it is
the rate of energy transfer if energy is flowing when
the instantaneous power is zero.

...Keith

719. Loran C Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 05:29:18 UTC
From: William Longyard <longyard@ix.netcom.com>
Message-ID: <13ogk11g32vau5d@corp.supernews.com>
Source record: 29635

I got a Shakespeare Loran C antenna for pennies, but don't know if I can use it for another application. I'd like to use it for CB, VHF (marine), or 2 meter. Any thoughts?

Thanks,
Bill L.

720. Re: Loran C Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 05:50:45 UTC
From: Michael <micoder@sbcglobal.net>
Message-ID: <VyYhj.309644$ZO3.92936@fe02.news.easynews.com>
Source record: 29636

That antenna was designed to operate at about 100 khz. I doubt that you would find it useful for about anything as it is. If you could get it apart with wrecking it. You might put in a vertical dipole to use it for 2 meters or marine vhf.

William Longyard wrote:
> I got a Shakespeare Loran C antenna for pennies, but don't know if I can use
> it for another application. I'd like to use it for CB, VHF (marine), or 2
> meter. Any thoughts?
>
> Thanks,
> Bill L.
>
>

721. Re: Loran C Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 07:00:14 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <j1pgo39coih6fvafg5tkjl6gvj49dd9d7b@4ax.com>
Source record: 29637

On Sat, 12 Jan 2008 00:29:18 -0500, "William Longyard"
<longyard@ix.netcom.com> wrote:

>I got a Shakespeare Loran C antenna for pennies, but don't know if I can use
>it for another application. I'd like to use it for CB, VHF (marine), or 2
>meter. Any thoughts?

Hi Bill,

The last antenna that I had used for that purpose was 30+ years ago,
and it could suitably be used for CB/10M perhaps lower, and perhaps
higher to 6M. It was nothing more complex than what it appears to be:
a 3 to 4 meter tall whip worked against a metal superstructure. You
will, of course, need to match to it.

73's
Richard Clark, KB7QHC

722. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 07:08:07 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080111230807.00230d83.rsparks@elltel.net>
Source record: 29638

On Fri, 11 Jan 2008 18:49:20 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 11, 7:30 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > On Fri, 11 Jan 2008 13:59:47 -0800 (PST)
> >
> >
> >
> >
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Jan 11, 11:15 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > On Thu, 10 Jan 2008 18:52:28 -0800 (PST)Keith Dysart <Keith.Dys...@gmail.com>
wrote:
> >
> > > > snip.....
> >
> > > > > I would really appreciate seeing some other possible explanations.
> >
> > > > > One other one which I have seen and am not confortable with is the
> > > > > explanation that energy in the waves pass through the point in
> > > > > each direction and sum to zero. But this is indistinguishable from
> > > > > superposing power which most agree is inappropriate. As well, this
> > > > > explanation means that P(t) is not equal to V(t) times I(t),
> > > > > something that I am quite reluctant to agree with.
> >
> > > > > The other explanation seen is that the voltage waves or the
> > > > > current waves travel down the line superpose, yielding a total
> > > > > voltage and current function at each point on the line which
> > > > > can be used to compute the power. With this explanation, P(t)
> > > > > is definitely equal to V(t) time I(t), which I do appreciate.
> > > > > The weakness of this explanation is that it seems to deny
> > > > > that the wave moves energy. And yet before the pulses collide
> > > > > it is easy to observe the energy moving in the line, and if
> > > > > a pulse was not coming in the other direction, there would
> > > > > be no dispute that the energy travelled to the end of the
> > > > > line and was absorbed in the load. Yet when the pulses
> > > > > collide, no energy crosses the middle of the line. Yet
> > > > > energy can be observed travelling in the line before
> > > > > and after the pulses collide.
> >
> > > > > So...
> >
> > > > > I can give up on pulses (or waves) moving energy. I am not

> > > > > happy doing that.
> > > > > I can give up on P(t) = V(t) * I(t). I am not happy doing
> > > > > that either.
> >
> > > > > So the (poorly developped) "charge bouncing" explanation
> > > > > seems like a way out, but I certainly would appreciate
> > > > > other explanations for consideration.
> >
> > > > Hi Keith,
> >
> > > > I think you are putting too much emphasis on the measurement of energy in the pulse, or maybe not enought, depending upon how you are making and using the measurements.

> >
> > > > I hope you agree that the transmission line you are pulsing has no standing waves.

> >
> > > "Standing waves" seem to more be a consequence of sinusoidal
> > > excitation than pulse.
> > > So I expect no "standing waves".
> >
> > > I don't even like using the words "traveling wave" to describe the
> > > pulse situation
> > > since "traveling wave" also seems to bring a lot of baggage.
> >
> > > > If not, then the pulse must be a treveling wave. If it is a traveling wave, the impedance of the wave will be the impedance of the transmission line, except where the two pulses cross paths. At the crossing point, the impedance will jump to infinity, Z = v/i = v/zero = infinity.
> >
> > > I do not recommend computing this ratio and calling it impedance. I
> > > find it leads
> > > to difficulties. Better just to think of the V and I independantly.
> >
> > > > How about the energy/power levels? Except at the center, as the pulse passes, current and voltage can be measured, so power is being delivered from one section of the line to a second section more distant from the source. The energy delivered by the power equation can be measured by U = (v^2)/r = (i^2)*r where r is the Zo if the transmission line.
> >
> > > More accurately P(t) = V(t) * I(t). it happens that for the pulses in
> > > question,
> > > except when colliding, that V and I of the pulses observed on the line
> > > are related
> > > by Z0 so by substitution, the expressions above can be derived. But
> > > sometimes it is
> > > better to stick with the more basic expression P=VI.
> >
> > > > Where the two pulses cross, the energy level must be the sum of the two energy levels, which would be 2U = 2*(v^2)/r (assuming two pulses of equal voltage). As you have

pointed out, power would not flow at the point of wave first meeting, spreading from the meeting point back towards the two sources a distance equal to the square pulse width. Energy is present however, measured as U = (v^2)/r.
> >
> > > > The transmission line can be considered as a lineal capacitor, so U = (CV^2)/2, where C is the capacitance per unit length. If the waves "bounce", and occupy physical space for a period of time, they should comingle, stop, and fill the capacitor during that time. If so,
> >
> > > > 2U = C*V'^2
> > > >   = 2*(V^2)/r where v is the voltage of a single pulse and V' = 1,414*v = voltage observed at point of crossing.
> >
> > > But the voltage at the crossing is 2V. A puzzle? When the pulse is
> > > "travelling",
> > > there is energy in the capacitance and in the inductance of the line.
> > > When the
> > > current stops, the energy in the inductance is added to the energy in
> > > the
> > > capacitance, thus the voltage reaches 2V.
> >
> > Which is correct? P = (v^2)/r = (i^2)r   or   P = (v^2)/r + (i^2)r
>
> P(t) = V(t) * I(t)
> by substitution from V = I * R
> P(t) = V(t) * V(t) / R
> and
> P(t) = I(t) * I(t) * R

Correct.
>
> But recall that power is the flow of energy per unit time.
>
> The energy present in any section of line is the energy
> present in the electric field of the capacitance plus
> the energy present in the magnetic field of the inductance.
>
When the capacitance is in phase with the magnetic field, both are measured to peak at the same time. This "resistive" condition is found in a transmission line when there are no standing waves. Under resistive conditions, the electric field and inductive field merge into one electromagnetic field that carries only one energy. The identical charges carry both electric and magnetic fields, with the fields in a ratio defined as impedance. Each field is a separate way of looking at the same energy.

> So from your expressions above
> U = (CV^2)/2 + (LI^2)/2

You may have been reading about traveling waves. They offer an explaination for how magnetic and electric fields may get out of phase. When the two fields are out of phase, the U = (CV^2)/2 + (LI^2)/2 calculation will ALWAYS sum to more energy than can be found in the resistive wave. This occurs because more energy actually is resident on the line with reflections, due to waves traveling in two directions. The reflection effectively doubles

the length of the transmission line available for energy storage.

>
> > If P = (v^2)/r = (i^2)r is correct, what is the precondition that MUST be true?
> > Answer: The i and v measurements must be across a pure resistance, without reactance.
>
> This is why it is often better just to use the original
> equation:
> P(t) = V(t) * I(t)
> for it is always true and requires no preconditions.

I learned long ago that it DOES have a precondition. The power measured will only be resistive if measured across a pure resistance. If the measurement is across resistance plus reactance, then reactive power is also measured so P(t) = V(t) * I(t) becomes the sum of an unknown mix of two or more waves.

>
> > The traveling wave is considered to have a pure resistive impedance.
> >
> > This going by measurements makes things hard! Too bad we can't see and feel the wave with our own eyes and hands!
> >
> >
> >
> > > At a disconinuity, we find a doubling of the voltages, not an increase of 1.414. This leads me to believe that the crossing pulses never stop in a physical sense. They do stop in the sense that power is not delived through the center point.
> >
> > > ...Keith
> >
> > 73, Roger, W7WKB- Hide quoted text -
>
> ...Keith

73, Roger, W7WKB

723. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 11:49:18 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <0045c6dd-8753-4e13-aa92-cc5582ae3f43@j20g2000hsi.googlegroups.com>
Source record: 29639

On Jan 11, 10:06 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Fri, 11 Jan 2008 18:51:07 -0800 (PST), Keith Dysart
>
> <Keith.Dys...@gmail.com> wrote:
> >> If you cannot identify the source, then you cannot proclaim a
> >> separation.
>
> >That is hardly difficult. If no energy every crosses
> >the middle of the line,
>
> Hi Keith,
>
> If indeed.
>
> The difficulty is you've already allowed that the energy is not
> tagged, so its source is unknown at the load. So "if" fails through
> this immutable correlation. The separation is not demonstrated.

Take two flashlights.
I claim that the energy for the light produced by each
originates in the battery in each flashlight.
Is your claim otherwise?

Connect the negative terminals of the batteries together.
I claim that the energy for the light produced by each
still originates in the battery in each flashlight.
Is your claim otherwise?

Connect the positive terminals of the batteries together
through an ammeter. For the purposes of this experiment,
the batteries have exactly the same voltage so the ammeter
indicates that no current ever flows between the batteries.
I claim that the energy for the light produced by each
still originates in the battery in each flashlight.
Is your claim otherwise?

...Keith

724. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 12:32:35 UTC
From: Dave <noone@nowhere.com>
Message-ID: <Dr2ij.1669$ib7.761@trndny04>
Source record: 29640

GO GUYS GO!

over 700 messages in this thread now, it would probalby be over 1000 already
if it hadn't had some contributions sucked away by the 'standing morphing
power ranger waves and other stupid stuff' thread!

725. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 13:10:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b9e90223-2287-43b9-854e-eeffeef8d5d3@i7g2000prf.googlegroups.com>
Source record: 29641

On Jan 12, 2:08 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Fri, 11 Jan 2008 18:49:20 -0800 (PST)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Jan 11, 7:30 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Fri, 11 Jan 2008 13:59:47 -0800 (PST)
>
> > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > On Jan 11, 11:15 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > > On Thu, 10 Jan 2008 18:52:28 -0800 (PST)Keith Dysart <Keith.Dys...@gmail.com>
wrote:
> > P(t) = V(t) * I(t)
> > by substitution from V = I * R
> > P(t) = V(t) * V(t) / R
> > and
> > P(t) = I(t) * I(t) * R
>
> Correct.
>
> > But recall that power is the flow of energy per unit time.
>
> > The energy present in any section of line is the energy
> > present in the electric field of the capacitance plus
> > the energy present in the magnetic field of the inductance.
>
> When the capacitance is in phase with the magnetic field, both are measured to peak at
the same time. This "resistive" condition is found in a transmission line when there are
no standing waves. Under resistive conditions, the electric field and inductive field
merge into one electromagnetic field that carries only one energy. The identical charges
carry both electric and magnetic fields, with the fields in a ratio defined as impedance.
Each field is a separate way of looking at the same energy.

I am not quite sure what you are attempting to say here and
whether you are disagreeing with my assertion that the total
energy in a section of line is equal to the sum of the energy
present in the capacitance and the energy present in the
inductance.

> > So from your expressions above
> > U = (CV^2)/2 + (LI^2)/2
>
> You may have been reading about traveling waves. They offer an explaination for how
magnetic and electric fields may get out of phase. When the two fields are out of phase,
the U = (CV^2)/2 + (LI^2)/2 calculation will ALWAYS sum to more energy than can be found in
the resistive wave. This occurs because more energy actually is resident on the line with

reflections, due to waves traveling in two directions. The reflection effectively doubles the length of the transmission line available for energy storage.

This seems like a complicated way to think about things. So
complicated that I will
not comment on correctness.

> > > If P = (v^2)/r = (i^2)r is correct, what is the precondition that MUST be true?
> > > Answer: The i and v measurements must be across a pure resistance, without reactance.
>
> > This is why it is often better just to use the original
> > equation:
> > P(t) = V(t) * I(t)
> > for it is always true and requires no preconditions.
>
> I learned long ago that it DOES have a precondition. The power measured will only be resistive if measured across a pure resistance. If the measurement is across resistance plus reactance, then reactive power is also measured so P(t) = V(t) * I(t) becomes the sum of an unknown mix of two or more waves.

This too seems like a complicated way to think about things.

P(t) = V(t) * I(t) is simple, and always holds. One does not need to
consider
the wave content in any way. Or impedances. Measure the instaneous
voltage and
the instanteous current; multiplying will always yield the
instantaneous power.
Integrating instantaneous power will always yield the net energy
transfer over
the interval of integration.

...Keith

726. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 14:10:38 UTC
From: ltdoc@yahoo.com
Message-ID: <2b44ccd2-39b2-4ce8-b463-cc9ebd8241f4@k39g2000hsf.googlegroups.com>
Source record: 29642

Art,
Face it, you are getting old too. I only know of one way of not
getting any older, not presenting the normal characteristics of
getting old(er). Dress it up anyway you want, that fact still holds
true, I don't care if you wear "baggies" or not. If you're gonna wear
them baggies just remember that them boxers are required too. Only
alternative is an 8" piece of duck-tape applied vertically and
centrally, posteriorly. Otherwise, you just show your ass like in
that last post. Unless you present the 'other side' of the
conversation you seem to be having, it just ain't gonna make much
sense.
- 'Doc

727. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 15:09:44 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <4788d733$0$4983$4c368faf@roadrunner.com>
Source record: 29643

It must upset you something fierce then to know that the founders of the major Ivy league schools and some of the most wealthy and influential people today all have a common trait, they do not hold a collage diploma.

In answer to your condescending posts that I have ignored to this point I reply "do something". This is not meant to be combative, but an observation of fact. Some people lose sight of what a education is, a tool. They simply marvel at the tool without putting it to good use.

If your ideas are superior to the current art, why not put them to good use to the betterment of mankind? This will make you much more sought after than a bitter old man taking jabs at passers by.

I look forward to a useful application of your ideas.

Regards,

Chris

728. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 16:03:33 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <8d324f5d-1f35-4bd4-9267-d9f84c662e28@v29g2000hsf.googlegroups.com>
Source record: 29644

On Jan 12, 2:08 am, Roger Sparks <rspa...@elltel.net> wrote:
> I learned long ago that it DOES have a precondition. The power measured will only be resistive if measured across a pure resistance. If the measurement is across resistance plus reactance, then reactive power is also measured so P(t) = V(t) * I(t) becomes the sum of an unknown mix of two or more waves.

In power engineering, the power can consist of two components, active
power, V*I*cos(A) = watts, and reactive power, V*I*sin(A) = VARS.
These terms are defined in The IEEE Dictionary. P=V*I results in
Volt*Amperes, part active and part reactive if the voltage and current
are not in phase.
--
73, Cecil, w5dxp.com

729. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 16:13:18 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <4957acc1-6930-4627-953e-ee185aba9114@f47g2000hsd.googlegroups.com>
Source record: 29645

```
On Jan 12, 8:10 am, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> P(t) = V(t) * I(t) is simple, and always holds.

But one must remember the units of that result is Volt*Amps, not
watts.
--
73, Cecil, w5dxp.com
```

730. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 16:54:29 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <0e1f5055-a2fb-4fc6-9dfa-70e39ca426d0@v46g2000hsv.googlegroups.com>
Source record: 29646

On Jan 11, 8:27 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> Everything I said above is exactly correct.

Sorry Gene, almost everything you said about standing waves is false and some simple math will prove it. Please stop acting like a spoiled brat long enough to understand the following facts of physics.

Assume the forward wave and reflected wave have the same magnitude. At one point on the line:

The forward voltage is 100v at 0 deg and the forward current is 1 amp at 0 degrees.

The reflected voltage is 100v at 90 degrees and the reflected current is 1 amp at 270 degrees. Perform the simple phasor addition to find the magnitude and phase of the standing wave at that point.

The standing wave voltage is 141v at 45 deg and the standing wave current is 1.414 amps at -45 deg. The standing wave voltage and current are *always* 90 degrees apart which means the standing wave E-field and H-field are necessarily either zero or 180 degrees apart.

141*1.414*cos(90) = zero watts = ExH = E*H*sin(A) = standing-wave Poynting vector

Therefore, the angle A between the standing wave E-field and H-field is either zero or 180 degrees. That doesn't meet the definition of a TEM wave. Therefore, standing waves are *NOT* TEM waves and Hecht was right about that notion.

Until you (and others) hit the books and correct your false concepts, you are going to continue to exhibit your considerable ignorance of this subject, your alleged education notwithstanding.

I believe that, in the long run, the technical truth will will out over all the ignorance, obfuscation, and ad hominem attacks.
--
73, Cecil, w5dxp.com

731. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 17:04:53 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <p4sho35f2saasecmvdctgso0ck6sl07aje@4ax.com>
Source record: 29647

On Sat, 12 Jan 2008 03:49:18 -0800 (PST), Keith Dysart
<Keith.Dysart@gmail.com> wrote:

>Take two flashlights.
>I claim that the energy for the light produced by each
>originates in the battery in each flashlight.
>Is your claim otherwise?
>
>Connect the negative terminals of the batteries together.
>I claim that the energy for the light produced by each
>still originates in the battery in each flashlight.
>Is your claim otherwise?
>
>Connect the positive terminals of the batteries together
>through an ammeter. For the purposes of this experiment,
>the batteries have exactly the same voltage so the ammeter
>indicates that no current ever flows between the batteries.
>I claim that the energy for the light produced by each
>still originates in the battery in each flashlight.
>Is your claim otherwise?

Hi Keith,

You have admitted that energy dissipated in the loads cannot be
identified to its source and you have used the above devices previous
to that statement. Your admission dismisses their applicability.
Separability is not demonstrated.

73's
Richard Clark, KB7QHC

732. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 17:06:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <frsho3h3veejvo9cv75v64fnq6lgp2muun@4ax.com>
Source record: 29498

On Sat, 12 Jan 2008 12:32:35 GMT, "Dave" <noone@nowhere.com> wrote:

>over 700 messages in this thread now, it would probalby be over 1000 already
>if it hadn't had some contributions sucked away by the 'standing morphing

Chip,

This is not a terribly different posting from your own complaint.

73's
Richard Clark, KB7QHC

733. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 18:17:57 UTC
From: Jimmie <Geefender@carolina.rr.com>
Message-ID: <47890454$0$5154$4c368faf@roadrunner.com>
Source record: 29499
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

numeric wrote:
> "John, N9JG" <john@Xremove.MeYgotwals.com> wrote in message
> news:9xphj.41449$G23.11374@newsreading01.news.tds.net...
>> May not be directly antenna related, but ...
>> http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode_tech
>>
>>
>
> See, anything is possible with a Swiss Army Knife ;-)
>
>
And a spot welder.

734. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 18:22:38 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <10592d1a-c8d6-4b21-a72d-7f4bc84e1af2@f47g2000hsd.googlegroups.com>
Source record: 29500

On Jan 12, 11:13 am, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 12, 8:10 am, Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> > P(t) = V(t) * I(t) is simple, and always holds.
>
> But one must remember the units of that result is Volt*Amps, not
> watts.

You really should put a bit of effort into understanding
the different expressions for power.

P(t) = V(t) * I(t)

is saying that the function which describes power with
respect to time, P(t), is the product of the function
describing voltage with respect to time, V(t), and the
function describing current with respect to time, I(t).

As corollary, the power at an instant of time is equal
to the voltage at that instant times the current at
that instant.

And, of course the unit watts is the same as the units
volts times amperes. Just do the substitution.

V = J/C
A = C/s

V A = (J/C) x (C/s)
= J/s
= W

You are confused with the common use in power
engineering where VA is used to mean Vrms*Irms.
Whether VA is equal to watts depends on the
phase relationship of the voltage and current.

When the voltage and current are not in phase, then
the expression
Pavg = Vrms * Irms * cos(A)
can be used to derive the average power.

This is a special case of P(t) = V(t) * I(t).
It is applicable when V(t) is a sinusoid of
a single frequency, and I(t) is related to V(t)
using the expression V(t) = Z * I(t).

Pavg = Vrms * Irms * cos(A)
is completely derived from P(t) = V(t) * I(t)
by appropriately substituting for V(t) and I(t)
and then averaging P(t) over an appropriate
interval (typically one cycle).

Bottom line:
P(t) = V(t) * I(t)
is always correct.

The other variations only work when
applied under the appropriate conditions.

...Keith

735. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 18:24:41 UTC
From: Wayne <mygarbagecan@verizon.net>
Message-ID: <JB7ij.7882$W73.2315@trnddc04>
Source record: 29501
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

"Jimmie" <Geefender@carolina.rr.com> wrote in message
news:47890454$0$5154$4c368faf@roadrunner.com...
> numeric wrote:
>> "John, N9JG" <john@Xremove.MeYgotwals.com> wrote in message
>> news:9xphj.41449$G23.11374@newsreading01.news.tds.net...
>>> May not be directly antenna related, but ...
>>> http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode_tech
>>>
>>>
>>
>> See, anything is possible with a Swiss Army Knife ;-)
>>
>>
> And a spot welder.

And plenty of time on your hands.

736. Re: Loran C Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 18:43:57 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-EA355A.09451712012008@netnews.worldnet.att.net>
Source record: 29502

In article <VyYhj.309644$ZO3.92936@fe02.news.easynews.com>,
Michael <micoder@sbcglobal.net> wrote:

> That antenna was designed to operate at about 100 khz. I doubt that you
> would find it useful for about anything as it is. If you could get it
> apart with wrecking it. You might put in a vertical dipole to use it for
> 2 meters or marine vhf.
>

IF the Loran Antenna has a Screw-in Whip that mounts to an Antenna
Coupler/Amp, and the whip is about 108" long, THEN the whip is a standard
CB Style 108" whip, commonly used for Loran reception, and is generic,
like ALL other 108" whip antennas. The thing that makes a 100 Khz
antenna for Loran-C is the Antenna Coupler, that the whip Screws into,
which has a 100 Khz Preamp, and filter built in.

--
Bruce in alaska
add <path> after <fast> to reply

737. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 19:05:11 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <cdd083ea-b7dc-4cd3-8473-ebf386764986@m77g2000hsc.googlegroups.com>
Source record: 29503

On Jan 12, 1:22 pm, Keith Dysart wrote:
> P(t) = V(t) * I(t)
> As corollary, the power at an instant of time is equal
> to the voltage at that instant times the current at
> that instant.

You obviously mean the *real* instantaneous voltage times the *real*
instantaneous current. You should say that to avoid confusion.

Seems you need to add 'Re' to that equation to remove the obvious
ambiguity. P(t) = Re[V(t)]*Re[I(t)]

From "Fields and Waves", by Ramo & Whinnery:

W(t) = {Re[Vm*e^j(wt+A1)]}{Re[Im*e^j(wt+A2)]}
--
73, Cecil, w5dxp.com

738. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 19:22:49 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47891389$0$24090$4c368faf@roadrunner.com>
Source record: 29504

"Cecil Moore" <w5dxp@hotmail.com> wrote in message
news:0e1f5055-a2fb-4fc6-9dfa-70e39ca426d0@v46g2000hsv.googlegroups.com...
> On Jan 11, 8:27 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>> Everything I said above is exactly correct.
>
> Sorry Gene, almost everything you said about standing waves is false
> and some simple math will prove it. Please stop acting like a spoiled
> brat long enough to understand the following facts of physics.
>
> Assume the forward wave and reflected wave have the same magnitude. At
> one point on the line:
>
> The forward voltage is 100v at 0 deg and the forward current is 1 amp
> at 0 degrees.
>
> The reflected voltage is 100v at 90 degrees and the reflected current
> is 1 amp at 270 degrees. Perform the simple phasor addition to find
> the magnitude and phase of the standing wave at that point.
>
> The standing wave voltage is 141v at 45 deg and the standing wave
> current is 1.414 amps at -45 deg. The standing wave voltage and
> current are *always* 90 degrees apart which means the standing wave E-
> field and H-field are necessarily either zero or 180 degrees apart.
>
> 141*1.414*cos(90) = zero watts = ExH = E*H*sin(A) = standing-wave
> Poynting vector
>
> Therefore, the angle A between the standing wave E-field and H-field
> is either zero or 180 degrees. That doesn't meet the definition of a
> TEM wave. Therefore, standing waves are *NOT* TEM waves and Hecht was
> right about that notion.
>
> Until you (and others) hit the books and correct your false concepts,
> you are going to continue to exhibit your considerable ignorance of
> this subject, your alleged education notwithstanding.
>
> I believe that, in the long run, the technical truth will will out
> over all the ignorance, obfuscation, and ad hominem attacks.

This is very well-stated. There is no real power dissipated by the "standing
wave" envelope.

AI4QJ

739. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 19:25:35 UTC
From: art <aunwin@insightbb.com>
Message-ID: <43fae583-3fe4-4915-a275-b712f65d55aa@x69g2000hsx.googlegroups.com>
Source record: 29505

On 12 Jan, 07:09, Christopher Cox
<chrisTOPHER...@coboxincORORATED.com> wrote:
> It must upset you something fierce then to know that the founders of the
> major Ivy league schools and some of the most wealthy and influential
> people today all have a common trait, they do not hold a collage diploma.
>
> In answer to your condescending posts that I have ignored to this point
> I reply "do something". This is not meant to be combative, but an
> observation of fact. Some people lose sight of what a education is, a
> tool. They simply marvel at the tool without putting it to good use.
>
> If your ideas are superior to the current art, why not put them to good
> use to the betterment of mankind? This will make you much more sought
> after than a bitter old man taking jabs at passers by.
>
> I look forward to a useful application of your ideas.
>
> Regards,
>
> Chris
Gentlemen and Radio hams

I had no idea that standing and travelling waves was reserved for post doctorial studies in America, where offshore it is considered as an early part of the education curriculum. There are also physicists, consultants, sailors,naval instructors, NASA Reps cb ers and lecturers on this group argueing vehemently over the subject as if it is the cusp of modern day research. Each discipline having the benefit of being educated in such in a manner suitable for the class content. Considering the heated debate on mathematics on its misuse by a doctor working on space research at MIT I really should not be that surprised. It would appear that there is not a true foreign professor around to consult or to request some teachings from so this debate of several years could have closure. Reminds me of the 'O' ring debate in America where it was discovered for the first time in the western hemisphere that butile O rings had a low tensile strength, this found over some one's dead body. We desperately need more Indian techs to settle over here to help us out, and possibly one to join the group, instead of marvelling on the side lines at the goings on regarding the pursuit of knoweledge about radiation.
We have more than 500 permanent Indian and Asian technicians in my town hired by State Farm in a desperate effort to upgrade their computor comprehension and Bill Gates is also crying desperately for employees from offshore venues. Our hospitals would just rot if were

were not aided by the educated from the emerging countries who are leap frogging us in many ways. Caterpillar went to Northern England to staff their metal pattern shops. As for the rest they generated the 'Rust Belt' regions by sticking with what they had. Surely we can find just one that can inform the group about standing and travelling waves! Gentlemen and radio hams, you can join the group without leaving your countries to show of your education on this newsgroup. They need help over here.....desperately.
Art

740. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 20:19:51 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <47891fe4$0$30673$4c368faf@roadrunner.com>
Source record: 29506

Excellent,

By your statements, putting forth such elementary ideas should not be much of a task. Looking forward to it.

Chris

741. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 20:25:40 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <343cc852-6c59-4359-adc5-1a94c2786cd9@z17g2000hsg.googlegroups.com>
Source record: 29507

On Jan 12, 2:05 pm, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 12, 1:22 pm, Keith Dysart wrote:
>
> > P(t) = V(t) * I(t)
> > As corollary, the power at an instant of time is equal
> > to the voltage at that instant times the current at
> > that instant.
>
> You obviously mean the *real* instantaneous voltage times the *real*
> instantaneous current. You should say that to avoid confusion.
>
> Seems you need to add 'Re' to that equation to remove the obvious
> ambiguity. P(t) = Re[V(t)]*Re[I(t)]
>
> From "Fields and Waves", by Ramo & Whinnery:
>
> W(t) = {Re[Vm*e^j(wt+A1)]}{Re[Im*e^j(wt+A2)]}
> --
> 73, Cecil, w5dxp.com

Good recovery.

But, of course, V(t) and I(t) are general functions
of time. In particular, the discusion was regarding
pulses.

Only when one constrains oneself to sinusoids and
chooses to use the complex exponential notation
is it necessary to use Re[].

But it was a good recovery.

...Keith

742. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 20:48:49 UTC
From: art <aunwin@insightbb.com>
Message-ID: <c5cb3002-c1a9-4353-a12a-3c240e0d071c@k2g2000hse.googlegroups.com>
Source record: 29508

On 12 Jan, 12:19, Christopher Cox
<chrisTOPHER...@coboxincORORATED.com> wrote:
> Excellent,
>
> By your statements, putting forth such elementary ideas should not be
> much of a task. Looking forward to it.
>
> Chris

Chris,
I am often reminded that as a mechanical engineer
which puts me lower than a sailor I should
stay out of electrical matters so on this one I am holding
back as my questions on the subject were answered to my
satisfaction. On the other hand Clark is asking lots of questions
as if he is the adjudicator of what is right and what is wrong.
Also Roy, who states reguarly that he is a antenna consultant no less
is having trouble as are the other instant experts. So Chris as a
newby on the newsgroup you are in excellent position to supply the
correct answers that all are so desparately looking for,
tho if you are an electrical engineer I have little hope for closure.
Art

743. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 21:01:00 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47892a8e$0$31791$4c368faf@roadrunner.com>
Source record: 29509

"art" <aunwin@insightbb.com> wrote in message
news:43fae583-3fe4-4915-a275-b712f65d55aa@x69g2000hsx.googlegroups.com...

> Gentlemen and Radio hams

Comment #1: When you say radio hams remember that in the US the "ham" is neither professional nor an occupation. In fact, it is considered bad form for you to be discussing and attempting to gain information to enhance your commercial 'invention' if indeed you are applying for a commercial patent on your idea. You should define a clear separation between your amateur and commercial activities and this is something that frankly has been bothering me.

>
> I had no idea that standing and travelling waves was reserved for post
> doctorial studies in America, where offshore it is considered as an
> early part of the education curriculum.

Whomever said it was not taught here as an early part of the curriculum? I honestly think that you have an improper understanding of the standing wave and its equations.

> There are also physicists,
> consultants, sailors,naval instructors, NASA Reps cb ers and lecturers
> on this group argueing vehemently over the subject as if it is the
> cusp of modern day research.

Not really. We are discussing it as it relates to amateur radio antennas (that actually work). We are correcting each other as to how its measurements affect, for example, the phase delay in a coil of a bug-catcher antenna. We are far too low on the technical food to emulate you and relate to such grandiose ideas as solving the unified field theory or trying to explain the economics of global outsourcing where Bill Gates and others can hire 10 times the "engineers" at 1/2 the cost. Bill will get plenty of US technical labor at that point in time when americans are forced to accept the reality that they must accept pauper wages or do not work at all. This has NOTHING to do about differences in education. In fact, you will see many Indian students at your beloved MIT who are forced to repatriate to hteir home countries (although for me, I happen to find that going "home" in Wisconsin is a nice thing, not a bad thing) after receiving their diplomas. Bill Gates and IBM simply want them back and they will willingly return, given the chance at a green card or H1B visa, since receiving 30K per year in the US is far better than reciving 4K per year in India.

This has othing to do with a "hobby" or a "radio service" intended for use by "amateurs" who are paid nothing at all.

> Each discipline having the benefit of
> being educated in such in a manner suitable for the class content.
> Considering the heated debate on mathematics on its misuse by a doctor
> working on space research at MIT I really should not be that
> surprised. It would appear that there is not a true foreign professor
> around to consult or to request some teachings from so this debate of
> several years could have closure. Reminds me of the 'O' ring debate in
> America where it was discovered for the first time in the western
> hemisphere that butile O rings had a low tensile strength, this found
> over some one's dead body. We desperately need more Indian techs to
> settle over here to help us out, and possibly one to join the group,
> instead of marvelling on the side lines at the goings on regarding the
> pursuit of knoweledge about radiation.

Upon reading this, my first question was 'what do O rings designed by American or Indian engineers have to do with ham radio?', Suddenly I realized that it involved the levitation of diagmagnetc O ring material where perhaps current might travel through the center ;-) Perhaps you could contact NASA, as a professional activity, and set them straight as to what to do. Just give them a clue; then they can hire their 30K/year Indian engineers to complete the solution.

> We have more than 500 permanent Indian and Asian technicians in my
> town hired by State Farm in a desperate effort to

....save millions of dollars in engineering labor/burden costs and improve the bottom line, forcing other companies to do the same to remain competitive.

> Our hospitals would just rot if were
> were not aided by the educated from the emerging countries who are

...applying methods and principles provided by US universties so emerging 3rd world countries can provide labor at 1/10 the cost of EU and US professionals in the same field.

> Caterpillar went to Northern England to
> staff their metal pattern shops.

...at approximate 60% of the cost of hiring American workers. I know the drill. I used to work for IBM who went to Ireland and Scotland to do the same thing.

> As for the rest they generated the
> 'Rust Belt' regions by

....having to compete with Japanese steel companies who forced them out of business by dumping subsidized steel products on American shores without any possibility of fair competition.

> just one that can inform the group about standing and travelling
> waves!

Frankly I believe that order would be too tall for you. I really don't think you understand the equations but any mechancial engineer would have been

taught this phenomenon early in his curriculum. What happened? Did you forget? Has it been too many years? Did nature in her cruelty decide to file that information so far back in your memory banks that there is no hope for a simple recovery of said information?

> Gentlemen and radio hams, you can join the group without
> leaving your countries to show of your education on this newsgroup.
> They need help over here.....desperately.

Thus ends my participation in this troll thread.

AI4QJ

744. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 21:18:41 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <c96e9d3e-0e4d-43a3-a8fd-eccbd2161649@c4g2000hsg.googlegroups.com>
Source record: 29510

On Jan 12, 3:25 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> Only when one constrains oneself to sinusoids and
> chooses to use the complex exponential notation
> is it necessary to use Re[].

I think that's a false statement. Do you have any proof? Why would the
imaginary part of a pulse produce any power?
--
73, Cecil, w5dxp.com

745. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 21:24:08 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <f71269df-9ef5-42e2-afc7-af9673d68abf@f47g2000hsd.googlegroups.com>
Source record: 29511

```
On Jan 12, 3:25 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> But, of course, V(t) and I(t) are general functions
> of time. In particular, the discusion was regarding
> pulses.

Pulses can be analyzed as Fourier sinusoidal functions with multiple
frequencies. Point is that you could have saved a month of grief on
this newsgroup if you had initially said your power equation applied
only to real voltage and real current. If you had done that, nobody
would have argued with you.
--
73, Cecil, w5dxp.com
```

746. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 22:34:16 UTC
From: clifto <clifto@gmail.com>
Message-ID: <8srn55-g6i.ln1@remote.clifto.com>
Source record: 29512
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

```
Jimmie wrote:
> numeric wrote:
>> "John, N9JG" <john@Xremove.MeYgotwals.com> wrote in message
>> news:9xphj.41449$G23.11374@newsreading01.news.tds.net...
>>> May not be directly antenna related, but ...
>>> http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode_tech
>>
>> See, anything is possible with a Swiss Army Knife ;-)
>>
> And a spot welder.

And duct tape. Or duck tape. Or Duck (TM) Tape.

--
If John McCain gets the 2008 Republican Presidential nomination,
my vote for President will be a write-in for Jiang Zemin.
```

747. Re: Loran C Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-12 23:19:52 UTC
From: William Longyard <longyard@ix.netcom.com>
Message-ID: <13oiioar3hsn457@corp.supernews.com>
Source record: 29513

Thanks to all for these helpful answers. The antenna looks like an 8" fiberglass CB antenna with the screw-in ferrule at the bottom. There is no direct connection to for a coax cable, nor was anything else included, just the fiberglass whip.

Bill Longyard

"Bruce in alaska" <fast@btpost.net> wrote in message news:fast-EA355A.09451712012008@netnews.worldnet.att.net...
> In article <VyYhj.309644$ZO3.92936@fe02.news.easynews.com>,
> Michael <micoder@sbcglobal.net> wrote:
>
>> That antenna was designed to operate at about 100 khz. I doubt that you
>> would find it useful for about anything as it is. If you could get it
>> apart with wrecking it. You might put in a vertical dipole to use it for
>> 2 meters or marine vhf.
>>
>
> IF the Loran Antenna has a Screw-in Whip that mounts to an Antenna
> Coupler/Amp, and the whip is about 108" long, THEN the whip is a standard
> CB Style 108" whip, commonly used for Loran reception, and is generic,
> like ALL other 108" whip antennas. The thing that makes a 100 Khz
> antenna for Loran-C is the Antenna Coupler, that the whip Screws into,
> which has a 100 Khz Preamp, and filter built in.
>
> --
> Bruce in alaska
> add <path> after <fast> to reply

748. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 00:49:17 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmbn6hleo1@news.albasani.net>
Source record: 29514

art wrote:
> [interesting, inciting stuff--as usual]
> Art

I think what goes on in a resonant cavity is far from boring, or, even absolutely known ...

However, such be as it may. Damn brits are probably psychic!

Regards,
JS

749. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 01:04:29 UTC
From: art <aunwin@insightbb.com>
Message-ID: <7d42aef5-f2a4-4770-8e61-9d56af984a22@f47g2000hsd.googlegroups.com>
Source record: 29515

On 12 Jan, 13:01, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:43fae583-3fe4-4915-a275-b712f65d55aa@x69g2000hsx.googlegroups.com...
>
> > Gentlemen and Radio hams
>
> Comment #1: When you say radio hams remember that in the US the "ham" is
> neither professional nor an occupation. In fact, it is considered bad form
> for you to be discussing and attempting to gain information to enhance your
> commercial 'invention' if indeed you are applying for a commercial patent on
> your idea. You should define a clear separation between your amateur and
> commercial activities and this is something that frankly has been bothering
> me.
>
>
>
> > I had no idea that standing and travelling waves was reserved for post
> > doctorial studies in America, where offshore it is considered as an
> > early part of the education curriculum.
>
> Whomever said it was not taught here as an early part of the curriculum? I
> honestly think that you have an improper understanding of the standing wave
> and its equations.
>
> > There are also physicists,
> > consultants, sailors,naval instructors, NASA Reps cb ers and lecturers
> > on this group argueing vehemently over the subject as if it is the
> > cusp of modern day research.
>
> Not really. We are discussing it as it relates to amateur radio antennas
> (that actually work). We are correcting each other as to how its
> measurements affect, for example, the phase delay in a coil of a bug-catcher
> antenna. We are far too low on the technical food to emulate you and relate
> to such grandiose ideas as solving the unified field theory or trying to
> explain the economics of global outsourcing where Bill Gates and others can
> hire 10 times the "engineers" at 1/2 the cost. Bill will get plenty of US
> technical labor at that point in time when americans are forced to accept
> the reality that they must accept pauper wages or do not work at all. This
> has NOTHING to do about differences in education. In fact, you will see many
> Indian students at your beloved MIT who are forced to repatriate to hteir
> home countries (although for me, I happen to find that going "home" in
> Wisconsin is a nice thing, not a bad thing) after receiving their diplomas.
> Bill Gates and IBM simply want them back and they will willingly return,

> given the chance at a green card or H1B visa, since receiving 30K per year
> in the US is far better than reciving 4K per year in India.
>
> This has othing to do with a "hobby" or a "radio service" intended for use
> by "amateurs" who are paid nothing at all.
>
> > Each discipline having the benefit of
> > being educated in such in a manner suitable for the class content.
> > Considering the heated debate on mathematics on its misuse by a doctor
> > working on space research at MIT I really should not be that
> > surprised. It would appear that there is not a true foreign professor
> > around to consult or to request some teachings from so this debate of
> > several years could have closure. Reminds me of the 'O' ring debate in
> > America where it was discovered for the first time in the western
> > hemisphere that butile O rings had a low tensile strength, this found
> > over some one's dead body. We desperately need more Indian techs to
> > settle over here to help us out, and possibly one to join the group,
> > instead of marvelling on the side lines at the goings on regarding the
> > pursuit of knoweledge about radiation.
>
> Upon reading this, my first question was 'what do O rings designed by
> American or Indian engineers have to do with ham radio?', Suddenly I
> realized that it involved the levitation of diagmagnetc O ring material
> where perhaps current might travel through the center ;-) Perhaps you could
> contact NASA, as a professional activity, and set them straight as to what
> to do. Just give them a clue; then they can hire their 30K/year Indian
> engineers to complete the solution.
>
> > We have more than 500 permanent Indian and Asian technicians in my
> > town hired by State Farm in a desperate effort to
>
> ....save millions of dollars in engineering labor/burden costs and improve
> the bottom line, forcing other companies to do the same to remain
> competitive.
>
> > Our hospitals would just rot if were
> > were not aided by the educated from the emerging countries who are
>
> ...applying methods and principles provided by US universties so emerging
> 3rd world countries can provide labor at 1/10 the cost of EU and US
> professionals in the same field.
>
> > Caterpillar went to Northern England to
> > staff their metal pattern shops.
>
> ...at approximate 60% of the cost of hiring American workers. I know the
> drill. I used to work for IBM who went to Ireland and Scotland to do the
> same thing.
>
> > As for the rest they generated the

> > 'Rust Belt' regions by
>
> ....having to compete with Japanese steel companies who forced them out of
> business by dumping subsidized steel products on American shores without any
> possibility of fair competition.
>
> > just one that can inform the group about standing and travelling
> > waves!
>
> Frankly I believe that order would be too tall for you. I really don't think
> you understand the equations but any mechancial engineer would have been
> taught this phenomenon early in his curriculum. What happened? Did you
> forget? Has it been too many years? Did nature in her cruelty decide to file
> that information so far back in your memory banks that there is no hope for
> a simple recovery of said information?
>
> > Gentlemen and radio hams, you can join the group without
> > leaving your countries to show of your education on this newsgroup.
> > They need help over here.....desperately.
>
> Thus ends my participation in this troll thread.
>
> AI4QJ

I am just a member of the WORLD wide web who has been viewing this
discussions of many thousands maybe tens of thousands of postings over
more than a decade. I am not sure if it is all a case of hitting Cecil
or that you cannot compete with his knoweledge. As for me I have also
been attacked for more than a dozen years because it is felt that my
ideas are all baloney. I share every thing I do with respect to ham
radio. I write up patents as a record of my work. How can I possibly
make money on my ideas when every body derides them as baloney without
providing a basis?
State Farm states that the talent is just not out there when the
subject comes up.
GE many years ago decided to get into the literal money side of
business and cut back on manufacturing e.t.c.Loads of engineers laid
off. About 80 at my plant went out the door leaving only six of us
engineers left.
If State Farm is correct then our teaching institutions are taking
money from students on the guise that a golden pot awaits. They
quickly find they have debts and nowhere to go.
As for hams on this newsgroup they costantly remind me of their former
employment to give credability to their statements when trying to down
size me.If you feel I am taking improper advantage of ham radio on a
commercial scale then talk to the FCC and also mention Roy by the way.
My ideas on waves may be way off but I am not really interested in
talking about them and probably have nothing to offer. When all of
this group challenged a well educated person on the validity of adding
a time varient to Gaussian law so it equates to Maxwells laws I was

shocked. That this group would fall over themselves denying the validity of the math expressed
changed me immensily as does this savaging of the question of standing waves.You don't have to make excuses to me why the standing wave can't be resolved as with the mathematics supplied from that member of MIT, This is viewed WORLD WIDE and those viewers are not stupid.
I know that my new antenna aproach is correct. You know that all that is new will be rejected.
So when it becomes recognised and sort for by offshore companies should I refuse them as an american when science outside of the academic circle is berated? I have shared everything and I mean everything, about by work with radio hams in the hope of bettering the hobby. To reject is their choice especially when you intimate that it doesn't work without reason. When this group requested a computor set up so a member could check it out on his own program. Yes, the data proved my work but what the hell, this group wanted to fight! Well I am still here even tho my country rejects the science supplied. So you can get back to your waves thread and continue to tell all of them where you are correct while everybody else is wrong. As David intimated the subject is good for quite a while yet, at least while Cecil is still alive. But unlike Cecil who lets insults slide by I think it is well past time to send some insults back
which those who insult consider shocking. I am very pleased that you have decided not to pursue this thread because the actions of the group speaks for themselves to the World
Changes need to be made in America, but without acceptance from american employers and the complacence of the population the future looks dire.As for me I have made my pile and feel good
Art,

750. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 01:45:18 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <6e28f1c6-0076-463b-9cd7-6d4b1776a207@s8g2000prg.googlegroups.com>
Source record: 29516

On Jan 12, 4:24 pm, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 12, 3:25 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> > But, of course, V(t) and I(t) are general functions
> > of time. In particular, the discusion was regarding
> > pulses.
>
> Pulses can be analyzed as Fourier sinusoidal functions with multiple
> frequencies. Point is that you could have saved a month of grief on
> this newsgroup if you had initially said your power equation applied
> only to real voltage and real current. If you had done that, nobody
> would have argued with you.

An earlier post suggested that you "had got it", but these
last two posts leave me wondering.

P(t) = V(t) * I(t)
where V(t) and I(t) are functions describing the actual
measureable voltage and current at a point on the line.

Examples of V(t) would be
V(t) = 10
V(t) = A cos(wt + a)

These functions all yield real results since the voltage
measureable at a point on the line is a real function
of time.

When the latter example is written in complex exponential
form it becomes
V(t) = Re[A*e^j(wt+a)]

Re[] is not there because there is some imaginary part
to be ignored, but because this is how one writes the
function for V(t) in this notation.

Thus Re[V(t)] is non-sensical since the Re[] is already
in the expression describing the function.

My apologies for not detecting this subtle bit of
misleading thinking when I wrote my earlier reply.

...Keith

751. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 02:19:40 UTC
From: art <aunwin@insightbb.com>
Message-ID: <8c3011dc-1365-421f-a2c7-8645419571c1@c4g2000hsg.googlegroups.com>
Source record: 29517

On 12 Jan, 16:49, John Smith <assemblywiz...@gmail.com> wrote:
> art wrote:
> > [interesting, inciting stuff--as usual]
> > Art
>
> I think what goes on in a resonant cavity is far from boring, or, even
> absolutely known ...
>
> However, such be as it may. Damn brits are probably psychic!
>
> Regards,
> JS

No John you are not a typical sample of this group. I have been on it
for over a decade
as have the two Richards and Roy. During that time we had a lot of
experts on hand that supplied info to the rest of us. But one by one
they all left because of personal attacks as the latest newcomers will
find to their cost. But I and Cecil and a couple of others are
standing our ground despite the reputation of this group. We are
interested in ham radio and ideas and do not subscribe to the idea
that all is known and if disputed must be crushed.
I have a small 160 metre antenna on top of my tower that is in
equilibrium,resonant and without the need for a ground. It is viewable
by anybody especially those with small gardens that are excluded from
that band. Why on earth would three guys try to suppress that fact?
What is it in there that they have a desire to supress? Would a full
size antenna small enough for a mobile without external loads or
ground requirements to get on 160 metres a real threat to ham radio?
John, you made Vincents antenna for yourself to obtain the facts. It
is not perfect but it is something new.You know Vincent was and is
under attack. The antenna
may not be perfect but some thing is new so hams ditch the baby with
the purifying water.
Regards
Art

752. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 02:42:37 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <478979b7$0$10935$4c368faf@roadrunner.com>
Source record: 29518

Me, nah, I hold little or no knowledge on the subject of antenna's. I have lurked here for a very long time and have posted on occasion. I have a few pet projects on topic, an OCF with a vertical radiator and I am toying with a phase fed pair of quads.

What prompted me to post was the tone of yours. I do not hold any great education, but know some very notable and brilliant people. I do O.k. for myself and have found that actions produce better results than words. Just thought that piece of wisdom applied here.

Regards,

Chris

753. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 03:23:03 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <4789832e$0$10978$4c368faf@roadrunner.com>
Source record: 29519

>
> Chris,
> I am often reminded that as a mechanical engineer
> which puts me lower than a sailor I should
> stay out of electrical matters so on this one I am holding
> back as my questions on the subject were answered to my
> satisfaction. On the other hand Clark is asking lots of questions
> as if he is the adjudicator of what is right and what is wrong.
> Also Roy, who states reguarly that he is a antenna consultant no less
> is having trouble as are the other instant experts. So Chris as a
> newby on the newsgroup you are in excellent position to supply the
> correct answers that all are so desparately looking for,
> tho if you are an electrical engineer I have little hope for closure.
> Art

Me, nah, I hold little or no knowledge on the subject of antenna's. I have lurked here for a very long time and have posted on occasion. I have a few pet projects on topic, an OCF with a vertical radiator and I am toying with a phase fed pair of quads.

What prompted me to post was the tone of yours. I do not hold any great education, but know some very notable and brilliant people. I do O.k. for myself and have found that actions produce better results than words. Just thought that piece of wisdom applied here.

Regards,

Chris

754. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 03:38:08 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A23E6A0F567Emcoslocomcastnet@216.196.97.136>
Source record: 29520

"AI4QJ" <nospam@yahoo.com> wrote in
news:4786a9a9$0$5134$4c368faf@roadrunner.com:

>
> "Michael Coslo" <mjc5@psu.edu> wrote in message
> news:fm5ajf$fi4$1@f04n12.cac.psu.edu...
>>
>> And there are some sanctimonius people out there who are educated
>> orders of magnitude beyond their intelligence,
>
> Gosh, I apologize. I did not realize I was communicating with someone
> of such a greater IQ than I. Can you tell me your MENSA number or
> perhaps where you recived your PhdD?
>
> ready to throw out veiled
>> insults at the drop of a hat.......
>>
>> Fortunately no one like that is in this conversation, eh?
>
> Well, there was the one person who started this exchange with a very
> sarcastic comment. I'm not sure who it was but this mystery person
> said:
>
> "Oh darnit! Here I went and built several antennas designed with
> Eznec, and they have worked just like the program said they would.
>
> I guess I'll have to take the remaining ones down, since I was
> only
> supposed to discuss them, not actually make and use them. Thanks for
> the correction!"
>
> Unexpected and unnecessary sarcasm pointed in my direction tends to
> make me appear sanctimonious and to respond in kind.

That was me. Forgive the sarcasm. Sometimes that doesn't come
across well in posting.

I'll be straightforward.

Your comment about Eznec as you quoted...

> The NEC program is just a computer model, for discussion purposes only.

End qoute

That statement is absolutely wrong.

I have designed antennas using the program. I have studied the presumed properties of these antennas. I have put these antennas together.

Upon testing and use of these antennas, they have worked in a manner consistent with the way the program predicted that they would.

- Mike -

755. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 04:15:02 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47899047$0$4959$4c368faf@roadrunner.com>
Source record: 29521

"Christopher Cox" <chrisTOPHERcOX@coboxincORORATED.com> wrote in message
news:478979b7$0$10935$4c368faf@roadrunner.com...
> Me, nah, I hold little or no knowledge on the subject of antenna's. I have
> lurked here for a very long time and have posted on occasion. I have a few
> pet projects on topic, an OCF with a vertical radiator and I am toying
> with a phase fed pair of quads.
>
> What prompted me to post was the tone of yours. I do not hold any great
> education, but know some very notable and brilliant people. I do O.k. for
> myself and have found that actions produce better results than words. Just
> thought that piece of wisdom applied here.

Once you understand the difference between standing waves, (which has no real power itself but which stores the reactive VA power into that power which is is eventually dissipated in "radiation resitance" dissipating into free space as radiation power), and traveling waves, which do have real power that is also disspated into that same type of radiation power through the radiation resistance, an interesting question becomes "what is the nature of this so-called radiation resistance which dissipates the power of a forward wave or the stored power in a standing wave?". We feed power into the antenna as electric current and then it exits the antenna as radiation. Maxwell's equations (in spite of what art theorizes) says that the power has been converted to an EM wave. So, electric current, which is not an EM wave consisting of photons and propagating into space, is converted into a different form of radiation energy that IS an EM and does consist of phtons and waves. When this conversion occurs and energy is transmitted into free space, we attempt to quantify this net loss to our generator with familiar terms, i.e. current or voltage dissipated into "radiation resistance". However, we all know there is no actual physical component known as a radiation resistor. Conceptualizing how this power conversion works goes back to maxwell: "why" is there a time varying EM magnetic and electric field (external waves and photons) generated by the flow of current? Well, it could be described as nature's tendency to maintain equilibrium. If a change is made to a conductor by putting a current through it, nature "objects" and fights back by setting up an EM wave that tends to cancel out the incoming current pulse. But no matter what, I will always easily have enough energy in my forcing function (current or voltage) to overcome nature's objection and send a net outflow of energy occuring as radiation theoretically equal to what I inputted.

Art's unusual theories apparently have something to do with this same conversion of electric currents on the antenna to the radiated energy that propagates through space. Art believes he has made discoveries that augment the maxwell equations and solved the nystery as to how this power is converted from amps to radiation. He essentially takes advantage of the fact

that scientists and hobbyists (at least on THIS board) have not done a good job conceptualizing what actually happens during the process of converting electric current from a generator to a radiated wave into free space. Our rather feeble invention of the radiation "resistor" helps us in the design of our antennas but it is not conceptually correct; a resistor is obviously dissipated as heat, not radiation (other than infrared heat). So how, physically does amps/volts in a conductor dissipates as radiation? That is a good question. And Art will give you a very UNacceptable answer to that question. No, the current particles do not fall out of the ends of the antenna and get levitated as galactic particles; this is the sort of thing, frankly, that you might hear from children. However, Arthur has been very persistent and I believe that over time persistance CAN overcome handicaps in both inteligence and education, at least on rare occaisions so I have tried to cooperate with Mr. Art up to now. That is, until I read into the poor attitude and tone of his posings on this thread "Education". Indeed, he attacks even people such as myself who have attempted to encourage him. Now I see him for what he is...a simple crank of no relevance to the the scientific community out of his own choosing. He has no "small' 160m antenna on his tower (so he is a fibber), he doesn't know the difference between a standing wave and a traveling wave, is not familair with present models and their difficulties. If point zero is at the beginning, Mr. art is at -7 and he refuses to learn any tools that he needs to advance. I too would like a better conceptualization of why/what and how maxwells EM fields work and how the power conversion physically occurs on an antenna but for now I am stuck, along with everyone else, using the radiation resistance model. For all of its conceptual drawbacks, it works just fine mathematically. One key to better understanding (my opinion only) may be in more recent exotic physics models such as dark matter interactions with EM fields but that is way beyond any understanding I have at this point; that is why I previously took an interest in art's theory but which eventually went nowhere (too bad). I don't criticize him for that; he just needs to sharpen his tools a bit and take a completely different path if he is to succeed (but I predict he will not). Levitation of galactic particles in my opinion is not the path to success.

AI4QJ

756. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 04:23:27 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <01137867-e3af-40a5-8596-8bc2f6472a2b@j78g2000hsd.googlegroups.com>
Source record: 29522

On Jan 12, 8:45 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> P(t) = V(t) * I(t)
> where V(t) and I(t) are functions describing the actual
> measureable voltage and current at a point on the line.

Apparently, the measurable *instantaneous* voltage and current. We could have avoided a lot of wasted time if you had stated those conditions a month ago. None of my references contain that equation.

> Re[] is not there because there is some imaginary part
> to be ignored, but because this is how one writes the
> function for V(t) in this notation.

Where is it? You have never explained your assumptions before now. Please provide a reference.
--
73, Cecil, w5dxp.com

757. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 04:24:16 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47899271$0$4946$4c368faf@roadrunner.com>
Source record: 29523

"Mike Coslo" <mcoslo@youknow.comcast.net> wrote in message
news:Xns9A23E6A0F567Emcoslocomcastnet@216.196.97.136...
> "AI4QJ" <nospam@yahoo.com> wrote in
> news:4786a9a9$0$5134$4c368faf@roadrunner.com:
>
>>
>> "Michael Coslo" <mjc5@psu.edu> wrote in message
>> news:fm5ajf$fi4$1@f04n12.cac.psu.edu...
>>>
>>> And there are some sanctimonius people out there who are educated
>>> orders of magnitude beyond their intelligence,
>>
>> Gosh, I apologize. I did not realize I was communicating with someone
>> of such a greater IQ than I. Can you tell me your MENSA number or
>> perhaps where you recived your PhdD?
>>
>> ready to throw out veiled
>>> insults at the drop of a hat.......
>>>
>>> Fortunately no one like that is in this conversation, eh?
>>
>> Well, there was the one person who started this exchange with a very
>> sarcastic comment. I'm not sure who it was but this mystery person
>> said:
>>
>> "Oh darnit! Here I went and built several antennas designed with
>> Eznec, and they have worked just like the program said they would.
>>
>> I guess I'll have to take the remaining ones down, since I was
>> only
>> supposed to discuss them, not actually make and use them. Thanks for
>> the correction!"
>>
>> Unexpected and unnecessary sarcasm pointed in my direction tends to
>> make me appear sanctimonious and to respond in kind.
>
>
> That was me. Forgive the sarcasm. Sometimes that doesn't come
> across well in posting.
>
> I'll be straightforward.
>
> Your comment about Eznec as you quoted...
>

>
>> The NEC program is just a computer model, for discussion purposes only.
>
> End qoute
>
> That statement is absolutely wrong.
>
> I have designed antennas using the program. I have studied the presumed
> properties of these antennas. I have put these antennas together.
>
> Upon testing and use of these antennas, they have worked in a manner
> consistent with the way the program predicted that they would.
>
> - Mike -

Thanks Mike, such information makes me interested in trying it out and sorry on my part too for any miscommunication and statements about 11m. I am from a generation where computer models had many limitations but I am now convinced that EZNEC has probably long overcome the weaknesses of the past. I should not make assumptions without trying it out first; most likely my initial statements are wrong but I doubt I mislead any of the regular participants on this ng. As for the newbies, you would be better off assuming that my off handed intial comments criticizing EZNEC were WRONG. Sorry about that.

AI4QJ

758. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 04:43:34 UTC
From: art <aunwin@insightbb.com>
Message-ID: <a2216221-278b-425b-b668-1495d19e16f2@f47g2000hsd.googlegroups.com>
Source record: 29524

On 9 Jan, 22:25, Roy Lewallen <w...@eznec.com> wrote:
> After reading this, I understand why you find Art's material interesting.
>
snip>
> Roy Lewallen, W7EL
>

You just cannot stop the sarcasm coming out against posters can you?
What did you gain on this gotcha?
Art

759. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 05:16:58 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47899ecb$0$4954$4c368faf@roadrunner.com>
Source record: 29525

"art" <aunwin@insightbb.com> wrote in message
news:a2216221-278b-425b-b668-1495d19e16f2@f47g2000hsd.googlegroups.com...
> On 9 Jan, 22:25, Roy Lewallen <w...@eznec.com> wrote:
>> After reading this, I understand why you find Art's material interesting.
>>
> snip>
>> Roy Lewallen, W7EL
>>
>
> You just cannot stop the sarcasm coming out against posters can you?
> What did you gain on this gotcha?

I did not take this as sarcasm.

760. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 05:28:49 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com>
Source record: 29526

On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:

>He has no "small' 160m antenna on his tower (so he is a fibber)

That's one hell of a statement, I assume you can back it up?

Derek

761. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 05:50:56 UTC
From: art <aunwin@insightbb.com>
Message-ID: <8678500e-48f7-4ac8-b391-36ce85722544@q39g2000hsf.googlegroups.com>
Source record: 29527

On 12 Jan, 20:15, "AI4QJ" <nos...@yahoo.com> wrote:
> "Christopher Cox" <chrisTOPHER...@coboxincORORATED.com> wrote in message
>
> news:478979b7$0$10935$4c368faf@roadrunner.com...
>
> > Me, nah, I hold little or no knowledge on the subject of antenna's. I have
> > lurked here for a very long time and have posted on occasion. I have a few
> > pet projects on topic, an OCF with a vertical radiator and I am toying
> > with a phase fed pair of quads.
>
> > What prompted me to post was the tone of yours. I do not hold any great
> > education, but know some very notable and brilliant people. I do O.k. for
> > myself and have found that actions produce better results than words. Just
> > thought that piece of wisdom applied here.
>
> Once you understand the difference between standing waves, (which has no
> real power itself but which stores the reactive VA power into that power
> which is is eventually dissipated in "radiation resitance" dissipating into
> free space as radiation power), and traveling waves, which do have real
> power that is also disspated into that same type of radiation power through
> the radiation resistance, an interesting question becomes "what is the
> nature of this so-called radiation resistance which dissipates the power of
> a forward wave or the stored power in a standing wave?". We feed power into
> the antenna as electric current and then it exits the antenna as radiation.
> Maxwell's equations (in spite of what art theorizes) says that the power has
> been converted to an EM wave. So, electric current, which is not an EM wave
> consisting of photons and propagating into space, is converted into a
> different form of radiation energy that IS an EM and does consist of phtons
> and waves. When this conversion occurs and energy is transmitted into free
> space, we attempt to quantify this net loss to our generator with familiar
> terms, i.e. current or voltage dissipated into "radiation resistance".
> However, we all know there is no actual physical component known as a
> radiation resistor. Conceptualizing how this power conversion works goes
> back to maxwell: "why" is there a time varying EM magnetic and electric
> field (external waves and photons) generated by the flow of current? Well,
> it could be described as nature's tendency to maintain equilibrium. If a
> change is made to a conductor by putting a current through it, nature
> "objects" and fights back by setting up an EM wave that tends to cancel out
> the incoming current pulse. But no matter what, I will always easily have
> enough energy in my forcing function (current or voltage) to overcome
> nature's objection and send a net outflow of energy occuring as radiation
> theoretically equal to what I inputted.
>
> Art's unusual theories apparently have something to do with this same

> conversion of electric currents on the antenna to the radiated energy that
> propagates through space. Art believes he has made discoveries that augment
> the maxwell equations and solved the nystery as to how this power is
> converted from amps to radiation. He essentially takes advantage of the fact
> that scientists and hobbyists (at least on THIS board) have not done a good
> job conceptualizing what actually happens during the process of converting
> electric current from a generator to a radiated wave into free space. Our
> rather feeble invention of the radiation "resistor" helps us in the design
> of our antennas but it is not conceptually correct; a resistor is obviously
> dissipated as heat, not radiation (other than infrared heat). So how,
> physically does amps/volts in a conductor dissipates as radiation? That is a
> good question. And Art will give you a very UNacceptable answer to that
> question. No, the current particles do not fall out of the ends of the
> antenna and get levitated as galactic particles; this is the sort of thing,
> frankly, that you might hear from children. However, Arthur has been very
> persistent and I believe that over time persistance CAN overcome handicaps
> in both inteligence and education, at least on rare occaisions so I have
> tried to cooperate with Mr. Art up to now. That is, until I read into the
> poor attitude and tone of his posings on this thread "Education". Indeed, he
> attacks even people such as myself who have attempted to encourage him. Now
> I see him for what he is...a simple crank of no relevance to the the
> scientific community out of his own choosing. He has no "small' 160m antenna
> on his tower (so he is a fibber),

I interupt your post at this point only since you are expressing your
views as in free speech
but to be a fibber, a lier in other words is a deliberate untruth. At
the moment I do not have the smallest antenna for 160M on my tower
since the radiator is around 18 foot long and tipped at an angle to
reflect what the computer states. I suppose I will have to make one
that will fit into a 1 foot cubed carton to satisfy the term small. We
have plenty of hams in this community plus repeaters so you can come
yourself or ask a surragate to inspect on your behalf. It is a fold
over tower so close examination is possible and I have all the
necessary equipment to measure impedance or what have you. I also have
on hand a loop style antenna for 20 M made on a hoola hoop, so I could
convert that to 160M. On top of thatJohn has just rigged up Vincent's
antenna that every body decries.
If he were willing I could describe modifications for the same antenna
constructed for a smaller size plus without the need for ground to
avoid the comments applied to Vincents antenna . I have never met John
but I believe him to be honest
So I will supply him the details if he wants them and he can report
results to you without pre inspection from myself. On the other hand I
can build a small 160 M antenna and send it to hime by post office
mail which he can play, with and report upon.
Disagreement and suppression is one thing but a lier I am not! Either
way I will now make a 160M small antenna incase it becomes desired.
Yes I am very hurt by this barb and will work hard in full filling my
side of what I have discussed. It may finish up a bit bigger than a

foot since I have no idea how small it can be made but it will be
small for shipping via the post office.It will be made of#22 wire so
that it can also be tested for heat resistance, the bain of the EH
antenna as well as Vincent's and many others. I haven't tested for
that but see no problems as #22 should be able to handle normal use
Art Unwin KB9MZ

to him he doesn't know the difference between a
> standing wave and a traveling wave, is not familair with present models and
> their difficulties. If point zero is at the beginning, Mr. art is at -7 and
> he refuses to learn any tools that he needs to advance. I too would like a
> better conceptualization of why/what and how maxwells EM fields work and how
> the power conversion physically occurs on an antenna but for now I am stuck,
> along with everyone else, using the radiation resistance model. For all of
> its conceptual drawbacks, it works just fine mathematically. One key to
> better understanding (my opinion only) may be in more recent exotic physics
> models such as dark matter interactions with EM fields but that is way
> beyond any understanding I have at this point; that is why I previously took
> an interest in art's theory but which eventually went nowhere (too bad). I
> don't criticize him for that; he just needs to sharpen his tools a bit and
> take a completely different path if he is to succeed (but I predict he will
> not). Levitation of galactic particles in my opinion is not the path to
> success.
>
> AI4QJ

762. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 05:55:31 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4789a7d4$0$4947$4c368faf@roadrunner.com>
Source record: 29528

"Derek" <blueyhi5s@yahoo.com.au> wrote in message
news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
> On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>
>
>>He has no "small' 160m antenna on his tower (so he is a fibber)
>
>
> That's one hell of a statement, I assume you can back it up?

Hi Derek,

Actually, having a small 160m antenna is the "one hell of a statement".

That being the case, the burden is on art to back it up in the positive.

He will not.

Nobody can prove a negative; it is up to art prove the positive.

Sorry but your assumption cannot possibly be correct since it is impossible
to prove a negative.

AI4QJ

763. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 07:02:56 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <AIiij.2068$7d1.1599@news01.roc.ny>
Source record: 29529

art wrote:

> At
> the moment I do not have the smallest antenna for 160M on my tower
> since the radiator is around 18 foot long and tipped at an angle to
> reflect what the computer states. I suppose I will have to make one
> that will fit into a 1 foot cubed carton to satisfy the term small.

That's great, Art. How's it working out for you? Did you work J5C over the past couple of nights? Did you snag G3JMJ's loud signal this evening?

I can load my 6m beam on 160m, but it doesn't work well at all. I use a slightly long inverted L with a series vacuum variable and nearly 6,000 feet of buried radials. There's a three inch short, tapped coil to ground at the feed point in order to match the antenna to the RG-213 I feed it with. The antenna isn't small and it isn't elegant.

I'm willing to listen to your ideas about how I can equal the signal from that inverted L by using a much smaller antenna. Why don't you post information on such a creation?

Dave K8MN

764. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 07:36:08 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <a4a35f44-a87e-4308-8000-d16839eda3a0@x69g2000hsx.googlegroups.com>
Source record: 29530

On Jan 13, 2:55 pm, "AI4QJ" <nos...@yahoo.com> wrote:
> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
>
> > On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>
> >>He has no "small' 160m antenna on his tower (so he is a fibber)
>
> > That's one hell of a statement, I assume you can back it up?
>
> Hi Derek,
>
> Actually, having a small 160m antenna is the "one hell of a statement".
>
> That being the case, the burden is on art to back it up in the positive.
>
> He will not.
>
> Nobody can prove a negative; it is up to art prove the positive.
>
> Sorry but your assumption cannot possibly be correct since it is impossible
> to prove a negative.
>
> AI4QJ

You made a positive statement, You called Art a "liar" that is a
big difference from saying you disagree with Art's claim that he can
build a small 160m antenna, if you can't back your statement up Art
deserves an apology.

Derek

765. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 12:58:09 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <0390bde1-0a0e-4c54-803b-063c173f75af@j78g2000hsd.googlegroups.com>
Source record: 29531

On Jan 12, 11:23 pm, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 12, 8:45 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> > P(t) = V(t) * I(t)
> > where V(t) and I(t) are functions describing the actual
> > measureable voltage and current at a point on the line.
>
> Apparently, the measurable *instantaneous* voltage and current. We
> could have avoided a lot of wasted time if you had stated those
> conditions a month ago. None of my references contain that equation.

I am curious. What other interpretation than 'voltage as a
function of time' did you have for "V(t)"?

And, of course, when you plug any particular time into a
function describing xxxx as a function of time, you get
the value of xxxx at that time; the instantaneous value
of xxxx.

Or is there another possible interpretation?

...Keith

766. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 13:54:58 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <d9e540db-e286-44ba-bccf-e20a6e84bcd4@f10g2000hsf.googlegroups.com>
Source record: 29532

On Jan 13, 7:58 am, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> I am curious. What other interpretation than 'voltage as a
> function of time' did you have for "V(t)"?

Strange question. My interpretation is not the "other interpretation".
My interpretation is the (apparently) standard one from "Fields and
Waves", by Ramo&Whinnery - begin quote:

V(t) = Re[Vm*e^jwt]

Because of the inconvenience of this notation, it is usually not
written explicitly but is understood. - end quote

When you used the term, "V(t)", I understood it to represent the
Ramo&Whinnery definition applying to exponential notation. Your
interpretation is the one that differs from that definition. What
other interpretation than the Ramo&Whinnery equation do *YOU* have for
V(t)?

> Or is there another possible interpretation?

Apparently there is and you can prove it by providing a reference that
extends V(t) in the Ramo&Whinnery definition above to something other
than exponential notation. I am not doubting your word, just (pretty
please) asking again for a reference that agrees with your statement
that V(t) is used for something else.

If "V(t)" is commonly used outside of the Ramo&Whinnery definition
above, I apologize for being confused by the notation being used.
--
73, Cecil, w5dxp.com

767. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 14:31:39 UTC
From: art <aunwin@insightbb.com>
Message-ID: <40b6f1a6-891f-4fee-81be-9ac0e5192cef@1g2000hsl.googlegroups.com>
Source record: 29533

On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
> art wrote:
> > At
> > the moment I do not have the smallest antenna for 160M on my tower
> > since the radiator is around 18 foot long and tipped at an angle to
> > reflect what the computer states. I suppose I will have to make one
> > that will fit into a 1 foot cubed carton to satisfy the term small.
>
> That's great, Art. How's it working out for you? Did you work J5C over
> the past couple of nights? Did you snag G3JMJ's loud signal this evening?
>
> I can load my 6m beam on 160m, but it doesn't work well at all. I use a
> slightly long inverted L with a series vacuum variable and nearly 6,000
> feet of buried radials. There's a three inch short, tapped coil to
> ground at the feed point in order to match the antenna to the RG-213 I
> feed it with. The antenna isn't small and it isn't elegant.
>
> I'm willing to listen to your ideas about how I can equal the signal
> from that inverted L by using a much smaller antenna. Why don't you
> post information on such a creation?
>
> Dave K8MN

Re Antennas and sharing. Checkout E ham forum
Art

768. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 15:17:28 UTC
From: amdx <amdx@knology.net>
Message-ID: <8e5f8$478a2aa4$45013935$20824@KNOLOGY.NET>
Source record: 29534
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

>>>
>>> See, anything is possible with a Swiss Army Knife ;-)
>>>
>> And a spot welder.
>
> And duct tape. Or duck tape. Or Duck (TM) Tape.

> If John McCain gets the 2008 Republican >Presidential nomination, my
> vote for President will be >a write-in for Jiang Zemin.

Why would you want a communist leader, don't you think the government baby
sits us enough already?
Or, are you looking for that -free- healthcare?
Inquiring minds want to know,
Mike

769. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 16:42:07 UTC
From: clifto <clifto@gmail.com>
Message-ID: <0krp55-pj5.ln1@remote.clifto.com>
Source record: 29535
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

amdx wrote:
>> If John McCain gets the 2008 Republican >Presidential nomination, my
>> vote for President will be >a write-in for Jiang Zemin.
>
> Why would you want a communist leader, don't you think the government baby
> sits us enough already?

I figure if the ballot choice is between two socialists, I'll vote for a REAL
socialist.

--
If John McCain gets the 2008 Republican Presidential nomination,
my vote for President will be a write-in for Jiang Zemin.

770. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 17:02:05 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478a440e$0$5151$4c368faf@roadrunner.com>
Source record: 29536

"Derek" <blueyhi5s@yahoo.com.au> wrote in message
news:a4a35f44-a87e-4308-8000-d16839eda3a0@x69g2000hsx.googlegroups.com...
> On Jan 13, 2:55 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>> "Derek" <blueyh...@yahoo.com.au> wrote in message
>>
>> news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
>>
>> > On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>>
>> >>He has no "small' 160m antenna on his tower (so he is a fibber)
>>
>> > That's one hell of a statement, I assume you can back it up?
>>
>> Hi Derek,
>>
>> Actually, having a small 160m antenna is the "one hell of a statement".
>>
>> That being the case, the burden is on art to back it up in the positive.
>>
>> He will not.
>>
>> Nobody can prove a negative; it is up to art prove the positive.
>>
>> Sorry but your assumption cannot possibly be correct since it is
>> impossible
>> to prove a negative.
>>
>> AI4QJ
>
>
> You made a positive statement, You called Art a "liar"

I absolutely did not! Show my a quote where I used thre word liar. I called
him a fibber. Big difference. A fibber might actually have something like a
160m antenna, true, but as for 'small' that would be his exagerration based
on his literary license with words. He later said it was 16 feet in length.
That is not "small". With a large loading coil I could build a 16 foot very
inefficient 160m antenna but it would be a fib to say it was 'small' without
also stating the length. The term 'liar' is your own term that you made up.
apparently.

that is a
> big difference from saying you disagree with Art's claim that he can
> build a small 160m antenna, if you can't back your statement up Art
> deserves an apology.

Sure, IF I has used the term liar but that statement is in itself a lie.

771. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 17:02:17 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <d92df2a7-13ac-4142-b187-6e0621c1b597@d4g2000prg.googlegroups.com>
Source record: 29537

On Jan 13, 8:54 am, Cecil Moore <w5...@hotmail.com> wrote:
> If "V(t)" is commonly used outside of the Ramo&Whinnery definition
> above, I apologize for being confused by the notation being used.

Apology accepted. As a cautionary note....
It is unwise to take the notation used in one text and blindly
substitute into another, especially when the text is deriving
for a specific case.

The IEEE dictionary (see 'instantaneous power') starts with
p = ei
and then goes on to derive the special case for sinusoids.

Desoer and Kuh, "Basic Circuit Theory", start with
p(t) = v(t)i(t)
then derive the special case for sinusoids by substituting
v(t) = Vm * cos(wt+a) = Re[Vm * e^ja * e^jwt] {taking some liberties
to make it ascii}
Note that Re[] is only needed when using the exponential form
and not the trigonometric form.

And, from your post, it appears that Ramo and Whinnery start with
W(t) = V(t) I(t)
and do the derivation for the special case of sinusoids by
substituting
V(t) = Re[Vm*e^j(wt+A1)]

These are all equivalent derivations using different notations.

A key point is that they all start with "instanteous power
being equal to instantaneous voltage times instantaneous current"
as the general case and derive the special case by appropriate
substitution.

And a second key point is that Re[] is not needed in the general
expression for power, (choose the form you like)
p = ei
p(t) = v(t) i(t)
P(t) = V(t) I(t)
, because it is already in the expressions for voltage and current
when the exponential form is used.

...Keith

772. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 17:04:12 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmdgaf$7cm$1@news.albasani.net>
Source record: 29538
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

amdx wrote:

>> ...
> Why would you want a communist leader, don't you think the government baby
> sits us enough already?
> Or, are you looking for that -free- healthcare?
> Inquiring minds want to know,
> Mike

I think 50%+ of my earnings go to gov't. I don't think "government
would be BUYING me anything"--we would be purchasing it for ourselves.

Gasoline tax, property tax, transportation tax, booze tax, tobacco tax,
federal excise--phone tax, cell phone tax, etc., etc.

Reader Digest used to do an article once a year which showed how long a
person must work just to pay his her taxes--last I seen (years ago) it
was past April headed for June; anyone read that article lately?

The government is "of the people, by the people and for the people", if
you find anything different--there are already dark forces in the
government which need removed ... while communism is certainly something
we need fear--we should first correct the current clear and present
danger ...

Regards,
JS

773. Re: FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 17:42:59 UTC
From: 998cc <hrd998cc@yahooo.com>
Message-ID: <J4sij.7341$lo5.242@newssvr19.news.prodigy.net>
Source record: 29539

Gentlemen, can we please switch from channel 14 protocol and get it back to
75 meters?

73
Russ

>
> And you can't get anyone else to respond to your notices except from
> someone like you describe above? Both you and Cecil seem to jump for
> the TNT Suicide vest every time so you can hug me with more passion.
>
> XOXOXOX
>
> 73's
> Richard Clark, KB7QHC

I am looking for educated discussion not handwaving. I know you are
incapable of providing anything of a related matter as does the rest
of the newsgroup.Go back underground wearing your fish net tights for
your jollies

774. Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 18:22:37 UTC
From: 998cc <hrd998cc@yahooo.com>
Message-ID: <eGsij.39188$Pv2.33543@newssvr23.news.prodigy.net>
Source record: 29540

This newsgroup is the source of some of the best and knowledgeable answers I have found on the net.

Unfortunately, it now seems to suffer the same malignant plague as many others--disagreements decaying into personal insults.

There have been disagreements over radio/antenna theory for over a century, but look at what progress has been made in spite of the differing opinions! If we base all of our current knowledge on what is written in a book, then we are at a stalemate and RF progress is doomed. Remember that the Earth was flat for millenia! Yes, let's disagree--it's healthy as long as it is done with respect.

So what path do you do you all REALLY want to follow? Loops, Yagis and feedlines or Heraldo, Maury and Jerry Springer? (Rhetorical question)

73 to all.

Russ
W6OHM

775. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 18:24:20 UTC
From: art <aunwin@insightbb.com>
Message-ID: <6d6d1678-0e08-400e-821b-192b64593951@f10g2000hsf.googlegroups.com>
Source record: 29541

On 13 Jan, 09:02, "AI4QJ" <nos...@yahoo.com> wrote:
> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> news:a4a35f44-a87e-4308-8000-d16839eda3a0@x69g2000hsx.googlegroups.com...
>
>
>
>
>
> > On Jan 13, 2:55 pm, "AI4QJ" <nos...@yahoo.com> wrote:
> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
> >
> >>news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
> >
> >> > On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
> >
> >> >>He has no "small' 160m antenna on his tower (so he is a fibber)
> >
> >> > That's one hell of a statement, I assume you can back it up?
> >
> >> Hi Derek,
> >
> >> Actually, having a small 160m antenna is the "one hell of a statement".
> >
> >> That being the case, the burden is on art to back it up in the positive.
> >
> >> He will not.
> >
> >> Nobody can prove a negative; it is up to art prove the positive.
> >
> >> Sorry but your assumption cannot possibly be correct since it is
> >> impossible
> >> to prove a negative.
> >
> >> AI4QJ
> >
> > >   You made a positive statement, You called Art a "liar"
> >
> > I absolutely did not! Show my a quote where I used thre word liar. I called
> > him a fibber. Big difference. A fibber might actually have something like a
> > 160m antenna, true, but as for 'small' that would be his exagerration based
> > on his literary license with words. He later said it was 16 feet in length.
> > That is not "small". With a large loading coil I could build a 16 foot very
> > inefficient 160m antenna but it would be a fib to say it was 'small' without

> also stating the length. The term 'liar' is your own term that you made up.
> apparently.
>
> that is a
>
> > big difference from saying you disagree with Art's claim that he can
> > build a small 160m antenna, if you can't back your statement up Art
> > deserves an apology.
>
> Sure, IF I has used the term liar but that statement is in itself a lie.- Hide quoted
text -
>
> - Show quoted text -

If a efficient antenna is less than 20 feet long without any loading
and without a ground plane or matching systemsis not considered
"small" for 160 metres then pray tell me what is considered "small"
and I will take mine down and replace it with a smaller one.
In the mean time, I will accept that I am a liar, because my
definition of "small" does not meet your personal requirements
and all that's new on antennas must be rejected by slander
if necessary. As a newby you sure lined up quickly with the habits
of the founders of this group!

776. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 18:39:16 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmdlsmhkd1@news.albasani.net>
Source record: 29542

998cc wrote:
> This newsgroup is the source of some of the best and knowledgeable answers I
> have found on the net.
>
> Unfortunately, it now seems to suffer the same malignant plague as many
> others--disagreements decaying into personal insults.
>
> There have been disagreements over radio/antenna theory for over a century,
> but look at what progress has been made in spite of the differing opinions!
> If we base all of our current knowledge on what is written in a book, then
> we are at a stalemate and RF progress is doomed. Remember that the Earth
> was flat for millenia! Yes, let's disagree--it's healthy as long as it is
> done with respect.
>
> So what path do you do you all REALLY want to follow? Loops, Yagis and
> feedlines or Heraldo, Maury and Jerry Springer? (Rhetorical question)
>
>
> 73 to all.
>
> Russ
> W6OHM

Good wakeup call ... thanks.

Regards,
JS

777. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 19:06:32 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478a6138$0$22571$4c368faf@roadrunner.com>
Source record: 29543

"art" <aunwin@insightbb.com> wrote in message
news:6d6d1678-0e08-400e-821b-192b64593951@f10g2000hsf.googlegroups.com...

> I will accept that I am a liar

Thank you.

The above atatement requires no additional comment.

AI4QJ

778. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 19:42:53 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnfokqdt.2u0e.bit-bucket@shell.config.com>
Source record: 29544

On Sun, 13 Jan 2008 10:22:37 -0800, 998cc wrote:
> This newsgroup is the source of some of the best and knowledgeable
> answers I have found on the net.

s/is/has been/

> Unfortunately, it now seems to suffer the same malignant plague as
> many others--disagreements decaying into personal insults.

sigh... All too true.

I find my filters are now killing 70-90% of all new postings and
followups.

I fear some - if not many - of the folks that were "... the source of
some of the best and knowledgeable answers ..." may have abandoned this ng.

Notice how fast this thread degenerates into name-calling and
cute-only-in-the-posters-own-mind one-liner insults....

Jonesy
--
Marvin L Jones | jonz | W3DHJ | linux
38.24N 104.55W | @ config.com | Jonesy | OS/2
*** Killfiling google posts: <http://jonz.net/ng.htm>

779. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 19:52:15 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <qsqko3p8r4ia9sshn6ushr8ue7sj89696j@4ax.com>
Source record: 29545

On Sun, 13 Jan 2008 10:22:37 -0800, "998cc" <hrd998cc@yahooo.com>
wrote:

>This newsgroup is the source of some of the best and knowledgeable answers I
>have found on the net.
>
>Unfortunately, it now seems to suffer the same malignant plague as many
>others--disagreements decaying into personal insults.
>
>There have been disagreements over radio/antenna theory for over a century,
>but look at what progress has been made in spite of the differing opinions!
>If we base all of our current knowledge on what is written in a book, then
>we are at a stalemate and RF progress is doomed. Remember that the Earth
>was flat for millenia! Yes, let's disagree--it's healthy as long as it is
>done with respect.
>
>So what path do you do you all REALLY want to follow? Loops, Yagis and
>feedlines or Heraldo, Maury and Jerry Springer? (Rhetorical question)
>
>
>73 to all.
>
>Russ
>W6OHM
>
I think the noise level in the group will diminish in the group as the
Sunspot activity increases...

John Ferrell W8CCW
"Life is easier if you learn to
plow around the stumps"

780. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 20:06:16 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478a6f38$0$22609$4c368faf@roadrunner.com>
Source record: 29546

"art" <aunwin@insightbb.com> wrote in message
news:8678500e-48f7-4ac8-b391-36ce85722544@q39g2000hsf.googlegroups.com...
On 12 Jan, 20:15, "AI4QJ" <nos...@yahoo.com> wrote:
> "Christopher Cox" <chrisTOPHER...@coboxincORORATED.com> wrote in message
>
> news:478979b7$0$10935$4c368faf@roadrunner.com...
>
> > Me, nah, I hold little or no knowledge on the subject of antenna's. I
> > have
> > lurked here for a very long time and have posted on occasion. I have a
> > few
> > pet projects on topic, an OCF with a vertical radiator and I am toying
> > with a phase fed pair of quads.
>
> > What prompted me to post was the tone of yours. I do not hold any great
> > education, but know some very notable and brilliant people. I do O.k.
> > for
> > myself and have found that actions produce better results than words.
> > Just
> > thought that piece of wisdom applied here.
>
> Once you understand the difference between standing waves, (which has no
> real power itself but which stores the reactive VA power into that power
> which is is eventually dissipated in "radiation resitance" dissipating
> into
> free space as radiation power), and traveling waves, which do have real
> power that is also disspated into that same type of radiation power
> through
> the radiation resistance, an interesting question becomes "what is the
> nature of this so-called radiation resistance which dissipates the power
> of
> a forward wave or the stored power in a standing wave?". We feed power
> into
> the antenna as electric current and then it exits the antenna as
> radiation.
> Maxwell's equations (in spite of what art theorizes) says that the power
> has
> been converted to an EM wave. So, electric current, which is not an EM
> wave
> consisting of photons and propagating into space, is converted into a
> different form of radiation energy that IS an EM and does consist of
> phtons
> and waves. When this conversion occurs and energy is transmitted into free
> space, we attempt to quantify this net loss to our generator with familiar

> terms, i.e. current or voltage dissipated into "radiation resistance".
> However, we all know there is no actual physical component known as a
> radiation resistor. Conceptualizing how this power conversion works goes
> back to maxwell: "why" is there a time varying EM magnetic and electric
> field (external waves and photons) generated by the flow of current? Well,
> it could be described as nature's tendency to maintain equilibrium. If a
> change is made to a conductor by putting a current through it, nature
> "objects" and fights back by setting up an EM wave that tends to cancel
> out
> the incoming current pulse. But no matter what, I will always easily have
> enough energy in my forcing function (current or voltage) to overcome
> nature's objection and send a net outflow of energy occuring as radiation
> theoretically equal to what I inputted.
>
> Art's unusual theories apparently have something to do with this same
> conversion of electric currents on the antenna to the radiated energy that
> propagates through space. Art believes he has made discoveries that
> augment
> the maxwell equations and solved the nystery as to how this power is
> converted from amps to radiation. He essentially takes advantage of the
> fact
> that scientists and hobbyists (at least on THIS board) have not done a
> good
> job conceptualizing what actually happens during the process of converting
> electric current from a generator to a radiated wave into free space. Our
> rather feeble invention of the radiation "resistor" helps us in the design
> of our antennas but it is not conceptually correct; a resistor is
> obviously
> dissipated as heat, not radiation (other than infrared heat). So how,
> physically does amps/volts in a conductor dissipates as radiation? That is
> a
> good question. And Art will give you a very UNacceptable answer to that
> question. No, the current particles do not fall out of the ends of the
> antenna and get levitated as galactic particles; this is the sort of
> thing,
> frankly, that you might hear from children. However, Arthur has been very
> persistent and I believe that over time persistance CAN overcome handicaps
> in both inteligence and education, at least on rare occaisions so I have
> tried to cooperate with Mr. Art up to now. That is, until I read into the
> poor attitude and tone of his posings on this thread "Education". Indeed,
> he
> attacks even people such as myself who have attempted to encourage him.
> Now
> I see him for what he is...a simple crank of no relevance to the the
> scientific community out of his own choosing. He has no "small' 160m
> antenna
> on his tower (so he is a fibber),

"I interupt your post at this point only since you are expressing your
views as in free speech

[...] I do not have the smallest antenna for 160M on my tower
since the radiator is around 18 foot long and tipped at an angle to
reflect what the computer states."

I don't have to inspect this "small" 20 footer if I can ask a few questions.

Length is 18 feet. What is the diameter?

What is the

781. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 20:33:41 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478a75a5$0$22643$4c368faf@roadrunner.com>
Source record: 29547

"art" <aunwin@insightbb.com> wrote in message
news:40b6f1a6-891f-4fee-81be-9ac0e5192cef@1g2000hsl.googlegroups.com...
On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
> art wrote:
> > At
> > the moment I do not have the smallest antenna for 160M on my tower
> > since the radiator is around 18 foot long and tipped at an angle to
> > reflect what the computer states. I suppose I will have to make one
> > that will fit into a 1 foot cubed carton to satisfy the term small.
>
> That's great, Art. How's it working out for you? Did you work J5C over
> the past couple of nights? Did you snag G3JMJ's loud signal this evening?
>
> I can load my 6m beam on 160m, but it doesn't work well at all. I use a
> slightly long inverted L with a series vacuum variable and nearly 6,000
> feet of buried radials. There's a three inch short, tapped coil to
> ground at the feed point in order to match the antenna to the RG-213 I
> feed it with. The antenna isn't small and it isn't elegant.
>
> I'm willing to listen to your ideas about how I can equal the signal
> from that inverted L by using a much smaller antenna. Why don't you
> post information on such a creation?
>
> Dave K8MN

"Re Antennas and sharing. Checkout E ham forum
Art"

OK, I went to e ham forum and found 1732 pages of articles. It does not allow me to filter on art, unwin or diamagnetic. Could you help us out a little? This is like trying to literally find a needle in a haystack.

AI4QJ

782. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 21:41:02 UTC
From: KC8QJP <kc8qjp@lycos.com>
Message-ID: <fme0hn$n0t$1@registered.motzarella.org>
Source record: 29548

"AI4QJ" <nospam@yahoo.com> wrote in message
news:478a75a5$0$22643$4c368faf@roadrunner.com...
>
> "art" <aunwin@insightbb.com> wrote in message
> news:40b6f1a6-891f-4fee-81be-9ac0e5192cef@1g2000hsl.googlegroups.com...
> On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>> art wrote:
>> > At
>> > the moment I do not have the smallest antenna for 160M on my tower
>> > since the radiator is around 18 foot long and tipped at an angle to
>> > reflect what the computer states. I suppose I will have to make one
>> > that will fit into a 1 foot cubed carton to satisfy the term small.
>>
>> That's great, Art. How's it working out for you? Did you work J5C over
>> the past couple of nights? Did you snag G3JMJ's loud signal this evening?
>>
>> I can load my 6m beam on 160m, but it doesn't work well at all. I use a
>> slightly long inverted L with a series vacuum variable and nearly 6,000
>> feet of buried radials. There's a three inch short, tapped coil to
>> ground at the feed point in order to match the antenna to the RG-213 I
>> feed it with. The antenna isn't small and it isn't elegant.
>>
>> I'm willing to listen to your ideas about how I can equal the signal
>> from that inverted L by using a much smaller antenna. Why don't you
>> post information on such a creation?
>>
>> Dave K8MN
>
> "Re Antennas and sharing. Checkout E ham forum
> Art"
>
> OK, I went to e ham forum and found 1732 pages of articles. It does not
> allow me to filter on art, unwin or diamagnetic. Could you help us out a
> little? This is like trying to literally find a needle in a haystack.
>
> AI4QJ
>
Or Dougs tiny Adair.

783. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 21:45:36 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <3b122292-226c-4c64-842a-7526b2deb3f6@e6g2000prf.googlegroups.com>
Source record: 29549

On Jan 13, 12:02 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> It is unwise to take the notation used in one text ...

Unfortunately, I only brought one book with me. Ramo&Whinnery don't
discuss non sinusoidal signals. Even their square waves are analyzed
as a Fourier series whose total voltage is f(t), not V(t).
--
73, Cecil, w5dxp.com

784. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 22:03:57 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <1ceba8a8-c995-41ee-966d-2896600eed8b@e6g2000prf.googlegroups.com>
Source record: 29550

On Jan 14, 2:02 am, "AI4QJ" <nos...@yahoo.com> wrote:
> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> news:a4a35f44-a87e-4308-8000-d16839eda3a0@x69g2000hsx.googlegroups.com...
>
>
>
> > On Jan 13, 2:55 pm, "AI4QJ" <nos...@yahoo.com> wrote:
> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> >>news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
>
> >> > On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>

>
> > You made a positive statement, You called Art a "liar"
>
> I absolutely did not! Show my a quote where I used thre word liar. I called
> him a fibber. Big difference.

semantics

Derek

785. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 22:36:16 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478a9279$0$10968$4c368faf@roadrunner.com>
Source record: 29551

"Derek" <blueyhi5s@yahoo.com.au> wrote in message
news:1ceba8a8-c995-41ee-966d-2896600eed8b@e6g2000prf.googlegroups.com...
> On Jan 14, 2:02 am, "AI4QJ" <nos...@yahoo.com> wrote:
>> "Derek" <blueyh...@yahoo.com.au> wrote in message
>>
>> news:a4a35f44-a87e-4308-8000-d16839eda3a0@x69g2000hsx.googlegroups.com...
>>
>>
>>
>> > On Jan 13, 2:55 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>> >>
>> >> >>news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
>> >>
>> >> >> > On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>> >>
>> >
>> >>
>> >> > You made a positive statement, You called Art a "liar"
>> >>
>> >> I absolutely did not! Show my a quote where I used thre word liar. I
>> >> called
>> >> him a fibber. Big difference.
>> >
>> >
>> >
> semantics

Yes, it's semantics, that's precisely why you are getting confused. "Derek"
blueyh...@yahoo.com.au (or whomever you are).

Do you have a call sign or something else that shows us who you are? I'm
sure you're not hiding your personhood intentionally, "Derek".

786. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-13 23:03:48 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <16ddf046-c1cf-421f-8cf0-cbdd9934ead8@e4g2000hsg.googlegroups.com>
Source record: 29552

On Jan 14, 7:36 am, "AI4QJ" <nos...@yahoo.com> wrote:
> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> news:1ceba8a8-c995-41ee-966d-2896600eed8b@e6g2000prf.googlegroups.com...
>
>
>
> > On Jan 14, 2:02 am, "AI4QJ" <nos...@yahoo.com> wrote:
> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> >>news:a4a35f44-a87e-4308-8000-d16839eda3a0@x69g2000hsx.googlegroups.com...
>
> >> > On Jan 13, 2:55 pm, "AI4QJ" <nos...@yahoo.com> wrote:
> >> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> >> >>news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
>
> >> >> > On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>
> >> > You made a positive statement, You called Art a "liar"
>
> >> I absolutely did not! Show my a quote where I used thre word liar. I
> >> called
> >> him a fibber. Big difference.
>
> > semantics
>
> Yes, it's semantics, that's precisely why you are getting confused. "Derek"
> blueyh...@yahoo.com.au (or whomever you are).
>
> Do you have a call sign or something else that shows us who you are? I'm
> sure you're not hiding your personhood intentionally, "Derek".

I am a retiree like many on this group living in Perth Australia,
who after many years of following this group has a great belief that
Art can do as he claims.
I am also a great believer in fair play, and calling someone a
fibber (liar) on open message without proof is not fair play in my
book.

Derek

787. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 00:06:59 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478aa7a6$0$18461$4c368faf@roadrunner.com>
Source record: 29553

"Derek" <blueyhi5s@yahoo.com.au> wrote in message
news:16ddf046-c1cf-421f-8cf0-cbdd9934ead8@e4g2000hsg.googlegroups.com...
> On Jan 14, 7:36 am, "AI4QJ" <nos...@yahoo.com> wrote:
>> "Derek" <blueyh...@yahoo.com.au> wrote in message
>>
>> news:1ceba8a8-c995-41ee-966d-2896600eed8b@e6g2000prf.googlegroups.com...
>>
>>
>>
>> > On Jan 14, 2:02 am, "AI4QJ" <nos...@yahoo.com> wrote:
>> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>>
>> >>news:a4a35f44-a87e-4308-8000-d16839eda3a0@x69g2000hsx.googlegroups.com...
>>
>> >> > On Jan 13, 2:55 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>> >> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>>
>> >> >>news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
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>> >> >> > On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
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>> >> > You made a positive statement, You called Art a "liar"
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>> >> I absolutely did not! Show my a quote where I used thre word liar. I
>> >> called
>> >> him a fibber. Big difference.
>>
>> > semantics
>>
>> Yes, it's semantics, that's precisely why you are getting confused.
>> "Derek"
>> blueyh...@yahoo.com.au (or whomever you are).
>>
>> Do you have a call sign or something else that shows us who you are? I'm
>> sure you're not hiding your personhood intentionally, "Derek".
>
>
> I am a retiree like many on this group living in Perth Australia,
> who after many years of following this group has a great belief that
> Art can do as he claims.
> I am also a great believer in fair play, and calling someone a
> fibber (liar) on open message without proof is not fair play in my
> book.

You may have a great faith in art but not quite enough to say so publically, do you? It is easy to be an art unwin groupie (no...NOT so easy for most), taking an insane position under the cloak of anonymity. For that reason, I really think you have reservations. If you really believed in antennas that shot particles out the ends, you would say so in the open! I googled your userid and I see that you exclusively post only on rraa and only as a cheerleader for arts theories on rraa. I have not seen one post of your's that had any technical content. Fibber? You saw he defined is "small" antenna at 18 feet; that's not small; anybody could load a stinger that long with a coil and transmit at 160m so you're damn right it was a "fib". See ya Derek, knowing that you have nothing technical to offer and that I don't need to be bothered all the time by the unwin groupie cheerleader; plonk.

788. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 01:00:06 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <4cc81167-7890-49c5-953b-bb265f812bcc@s8g2000prg.googlegroups.com>
Source record: 29554

On Jan 13, 9:31 am, art <aun...@insightbb.com> wrote:
> On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>
>
>
> > art wrote:
> > > At
> > > the moment I do not have the smallest antenna for 160M on my tower
> > > since the radiator is around 18 foot long and tipped at an angle to
> > > reflect what the computer states. I suppose I will have to make one
> > > that will fit into a 1 foot cubed carton to satisfy the term small.
>
> > That's great, Art. How's it working out for you? Did you work J5C over
> > the past couple of nights? Did you snag G3JMJ's loud signal this evening?
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> > I can load my 6m beam on 160m, but it doesn't work well at all. I use a
> > slightly long inverted L with a series vacuum variable and nearly 6,000
> > feet of buried radials. There's a three inch short, tapped coil to
> > ground at the feed point in order to match the antenna to the RG-213 I
> > feed it with. The antenna isn't small and it isn't elegant.
>
> > I'm willing to listen to your ideas about how I can equal the signal
> > from that inverted L by using a much smaller antenna. Why don't you
> > post information on such a creation?
>
> > Dave K8MN
>
> Re Antennas and sharing. Checkout E ham forum
> Art

Arthur don't be so silly. As a fellow over-the-edge old fart
mechanical engineer you've obviously missed some some fundamentals.

Back in the day the IEEE and the ASME came to an agreement: They
wouldn't fiddle with Mohr's Circles if we didn't fiddle with
electromagnetic wave mechanics. You're in violation Arthur so so knock
it off.

How many countries do you have confirmed on 160?

Brian w3rv

789. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 01:31:35 UTC
From: art <aunwin@insightbb.com>
Message-ID: <00351bca-d559-4923-a0fa-517cde17f7a7@q77g2000hsh.googlegroups.com>
Source record: 29555

On 13 Jan, 12:33, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:40b6f1a6-891f-4fee-81be-9ac0e5192cef@1g2000hsl.googlegroups.com...
> On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
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>
>
> > art wrote:
> > > At
> > > the moment I do not have the smallest antenna for 160M on my tower
> > > since the radiator is around 18 foot long and tipped at an angle to
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> > > that will fit into a 1 foot cubed carton to satisfy the term small.
>
> > That's great, Art. How's it working out for you? Did you work J5C over
> > the past couple of nights? Did you snag G3JMJ's loud signal this evening?
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> > I can load my 6m beam on 160m, but it doesn't work well at all. I use a
> > slightly long inverted L with a series vacuum variable and nearly 6,000
> > feet of buried radials. There's a three inch short, tapped coil to
> > ground at the feed point in order to match the antenna to the RG-213 I
> > feed it with. The antenna isn't small and it isn't elegant.
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> > post information on such a creation?
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> > Dave K8MN
>
> "Re Antennas and sharing. Checkout E ham forum
> Art"
>
> OK, I went to e ham forum and found 1732 pages of articles. It does not
> allow me to filter on art, unwin or diamagnetic. Could you help us out a
> little? This is like trying to literally find a needle in a haystack.
>
> AI4QJ- Hide quoted text -
>
> - Show quoted text -

They are rated the top two threads at the present time (yesterday)
I can't remember the titles or every thing that was written but as the
top articles of interest I don't think you can consider it as looking
for a needle.
Art

790. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 01:34:22 UTC
From: art <aunwin@insightbb.com>
Message-ID: <8007cd26-ec82-43ae-8dde-7cf5ae851cf0@k2g2000hse.googlegroups.com>
Source record: 29556

```
On 13 Jan, 17:00, Brian Kelly <ke...@dvol.com> wrote:
> On Jan 13, 9:31 am, art <aun...@insightbb.com> wrote:
>
>
>
>
>
> > On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>
> > > art wrote:
> > > > At
> > > > the moment I do not have the smallest antenna for 160M on my tower
> > > > since the radiator is around 18 foot long and tipped at an angle to
> > > > reflect what the computer states. I suppose I will have to make one
> > > > that will fit into a 1 foot cubed carton to satisfy the term small.
>
> > > That's great, Art.  How's it working out for you?  Did you work J5C over
> > > the past couple of nights?  Did you snag G3JMJ's loud signal this evening?
>
> > > I can load my 6m beam on 160m, but it doesn't work well at all.  I use a
> > > slightly long inverted L with a series vacuum variable and nearly 6,000
> > > feet of buried radials.  There's a three inch short, tapped coil to
> > > ground at the feed point in order to match the antenna to the RG-213 I
> > > feed it with.  The antenna isn't small and it isn't elegant.
>
> > > I'm willing to listen to your ideas about how I can equal the signal
> > > from that inverted L by using a much smaller antenna.  Why don't you
> > > post information on such a creation?
>
> > > Dave K8MN
>
> > Re Antennas and sharing. Checkout E ham forum
> > Art
>
> Arthur don't be so silly. As a fellow over-the-edge old fart
> mechanical engineer you've obviously missed some some fundamentals.
>
> Back in the day the IEEE and the ASME came to an agreement: They
> wouldn't fiddle with Mohr's Circles if we didn't fiddle with
> electromagnetic wave mechanics. You're in violation Arthur so so knock
> it off.
>
> How many countries do you have confirmed on 160?
>
```

> Brian w3rv- Hide quoted text -
>
> - Show quoted text -

As I have stated before I am not active anymore
Art

791. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 01:36:37 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <a3b6f290-33dc-432d-bff7-5a13bc87fb25@l1g2000hsa.googlegroups.com>
Source record: 29557

On Jan 14, 9:06 am, "AI4QJ" <nos...@yahoo.com> wrote:
> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> news:16ddf046-c1cf-421f-8cf0-cbdd9934ead8@e4g2000hsg.googlegroups.com...
>
>
>
> > On Jan 14, 7:36 am, "AI4QJ" <nos...@yahoo.com> wrote:
> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> >>news:1ceba8a8-c995-41ee-966d-2896600eed8b@e6g2000prf.googlegroups.com...
>
> >> > On Jan 14, 2:02 am, "AI4QJ" <nos...@yahoo.com> wrote:
> >> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> >> >>news:a4a35f44-a87e-4308-8000-d16839eda3a0@x69g2000hsx.googlegroups.com...
>
> >> >> > On Jan 13, 2:55 pm, "AI4QJ" <nos...@yahoo.com> wrote:
> >> >> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> >> >> >>news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
>
> >> >> >> > On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>
> >> >> > You made a positive statement, You called Art a "liar"
>
> >> >> I absolutely did not! Show my a quote where I used thre word liar. I
> >> >> called
> >> >> him a fibber. Big difference.
>
> >> > semantics
>
> >> Yes, it's semantics, that's precisely why you are getting confused.
> >> "Derek"
> >> blueyh...@yahoo.com.au (or whomever you are).
>
> >> Do you have a call sign or something else that shows us who you are? I'm
> >> sure you're not hiding your personhood intentionally, "Derek".
>
> > I am a retiree like many on this group living in Perth Australia,
> > who after many years of following this group has a great belief that
> > Art can do as he claims.
> > I am also a great believer in fair play, and calling someone a
> > fibber (liar) on open message without proof is not fair play in my

> > book.
>
> You may have a great faith in art but not quite enough to say so publically,
> do you? It is easy to be an art unwin groupie (no...NOT so easy for most),
> taking an insane position under the cloak of anonymity. For that reason, I
> really think you have reservations. If you really believed in antennas that
> shot particles out the ends, you would say so in the open! I googled your
> userid and I see that you exclusively post only on rraa and only as a
> cheerleader for arts theories on rraa. I have not seen one post of your's
> that had any technical content. Fibber? You saw he defined is "small"
> antenna at 18 feet; that's not small; anybody could load a stinger that long
> with a coil and transmit at 160m so you're damn right it was a "fib". See
> ya Derek, knowing that you have nothing technical to offer and that I don't
> need to be bothered all the time by the unwin groupie cheerleader; plonk.

You say I am taking an insane position. You also say I have
reservations.
You know my name is Derek and that I live in Australia.
Art states he has an antenna for 160m on the top of his tower,I have
not seen it neither have you.
Over the years Art has stated many facts about this antenna.It is in
equilibrium without loading which also means it does not require a
ground plane ie direct connection to the feed line.
I also assume that impedance is termed as an acceptable level with a
suitable SWR so it can be driven,If it is on top of the tower with no
other support "most" would consider that small for 160m.
Now you can call him a liar, and I believe that he is not.!
So..... I am willing to raise the money for a wager based on the
above where you may place other conditions in this quest to determine
if Art is a liar or not.
You can also choose the judge, and who holds the money since I am
in Australia.
If we come to an agreement on terms I am willing to put down up to
$5000US.

All of the above is subject to Arts agreement for access to his
antenna
of course.

Derek

792. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 02:15:23 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <6d51f982-7aa6-43d3-a109-b4cf5330c7c5@e25g2000prg.googlegroups.com>
Source record: 29558

On Jan 13, 8:34 pm, art <aun...@insightbb.com> wrote:
> On 13 Jan, 17:00, Brian Kelly <ke...@dvol.com> wrote:
>
>
>
> > On Jan 13, 9:31 am, art <aun...@insightbb.com> wrote:
>
> > > On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>
> > > > art wrote:
> > > > > At
> > > > > the moment I do not have the smallest antenna for 160M on my tower
> > > > > since the radiator is around 18 foot long and tipped at an angle to
> > > > > reflect what the computer states. I suppose I will have to make one
> > > > > that will fit into a 1 foot cubed carton to satisfy the term small.
>
> > > > That's great, Art. How's it working out for you? Did you work J5C over
> > > > the past couple of nights? Did you snag G3JMJ's loud signal this evening?
>
> > > > I can load my 6m beam on 160m, but it doesn't work well at all. I use a
> > > > slightly long inverted L with a series vacuum variable and nearly 6,000
> > > > feet of buried radials. There's a three inch short, tapped coil to
> > > > ground at the feed point in order to match the antenna to the RG-213 I
> > > > feed it with. The antenna isn't small and it isn't elegant.
>
> > > > I'm willing to listen to your ideas about how I can equal the signal
> > > > from that inverted L by using a much smaller antenna. Why don't you
> > > > post information on such a creation?
>
> > > > Dave K8MN
>
> > > Re Antennas and sharing. Checkout E ham forum
> > > Art
>
> > Arthur don't be so silly. As a fellow over-the-edge old fart
> > mechanical engineer you've obviously missed some some fundamentals.
>
> > Back in the day the IEEE and the ASME came to an agreement: They
> > wouldn't fiddle with Mohr's Circles if we didn't fiddle with
> > electromagnetic wave mechanics. You're in violation Arthur so so knock
> > it off.
>
> > How many countries do you have confirmed on 160?
>

> > Brian w3rv- Hide quoted text -
>
> > - Show quoted text -
>
> As I have stated before I am not active anymore

Not hardly. You pounced on my post within minutes. Strikes me as
rather "active" eh?

So I'll rephrase the question: How many countries did you work on 160
when you "were active"?

> Art

Brian dit-dit beep-beep w3rv . . .

793. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 02:18:18 UTC
From: art <aunwin@insightbb.com>
Message-ID: <5440985d-624c-47bf-8615-f466495624d4@t1g2000pra.googlegroups.com>
Source record: 29559

On 13 Jan, 17:00, Brian Kelly <ke...@dvol.com> wrote:
> On Jan 13, 9:31 am, art <aun...@insightbb.com> wrote:
>
>
>
>
>
> > On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>
> > > art wrote:
> > > > At
> > > > the moment I do not have the smallest antenna for 160M on my tower
> > > > since the radiator is around 18 foot long and tipped at an angle to
> > > > reflect what the computer states. I suppose I will have to make one
> > > > that will fit into a 1 foot cubed carton to satisfy the term small.
>
> > > That's great, Art. How's it working out for you? Did you work J5C over
> > > the past couple of nights? Did you snag G3JMJ's loud signal this evening?
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> > > I can load my 6m beam on 160m, but it doesn't work well at all. I use a
> > > slightly long inverted L with a series vacuum variable and nearly 6,000
> > > feet of buried radials. There's a three inch short, tapped coil to
> > > ground at the feed point in order to match the antenna to the RG-213 I
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> > > I'm willing to listen to your ideas about how I can equal the signal
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>
> > > Dave K8MN
>
> > Re Antennas and sharing. Checkout E ham forum
> > Art
>
> Arthur don't be so silly. As a fellow over-the-edge old fart
> mechanical engineer you've obviously missed some some fundamentals.
>
> Back in the day the IEEE and the ASME came to an agreement: They
> wouldn't fiddle with Mohr's Circles if we didn't fiddle with
> electromagnetic wave mechanics. You're in violation Arthur so so knock
> it off.
>
> How many countries do you have confirmed on 160?
>

> Brian w3rv- Hide quoted text -
>
> - Show quoted text -

I am not in violation in my opinion. My theory may not be "exactly" correct
as I have no way of looking at particles. But if you Google every little bit, line by line it has enough agreed tangibles that it can be taken as serious. You yourself know that I have been sharing the details for a very, very long time. I also have shared everything and described everything, nothing has been hidden and all explained several times
Nobody has faulted anything one little bit! Pretty much all has been the
slandering of me. I really do not understand that if this is a newsgroup on antennas
why those knoweledgable in the state of the art instead of getting angry with me doesn't debate it point by point where an error provides a stop to the debate.
Ofcourse 'error' means so many different things with this group I don't see a long thread.
I certainly do not have the patience to post thousands of times as Cecil is able so I should easily be forces to go away as others have done. Well, if you try very hard that I cannot take anymore. When you have received an education one must always take advantage of it by pursuit of the truth regardless of the regimen. I cannot see why I should be expelled from intruding into physics by those you insist that all is known about antennas otherwise you are a heritic.
Art

794. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 02:39:15 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <f4d3f82a-1807-4aaa-a310-33c1c521b6b4@p69g2000hsa.googlegroups.com>
Source record: 29560

```
On Jan 13, 9:18 pm, art <aun...@insightbb.com> wrote:
> On 13 Jan, 17:00, Brian Kelly <ke...@dvol.com> wrote:
>
>
>
> > On Jan 13, 9:31 am, art <aun...@insightbb.com> wrote:
>
> > > On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>
> > > > art wrote:
> > > > > At
> > > > > the moment I do not have the smallest antenna for 160M on my tower
> > > > > since the radiator is around 18 foot long and tipped at an angle to
> > > > > reflect what the computer states. I suppose I will have to make one
> > > > > that will fit into a 1 foot cubed carton to satisfy the term small.
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> > > > That's great, Art. How's it working out for you? Did you work J5C over
> > > > the past couple of nights? Did you snag G3JMJ's loud signal this evening?
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> > > > I can load my 6m beam on 160m, but it doesn't work well at all. I use a
> > > > slightly long inverted L with a series vacuum variable and nearly 6,000
> > > > feet of buried radials. There's a three inch short, tapped coil to
> > > > ground at the feed point in order to match the antenna to the RG-213 I
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> > > > I'm willing to listen to your ideas about how I can equal the signal
> > > > from that inverted L by using a much smaller antenna. Why don't you
> > > > post information on such a creation?
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> > > > Dave K8MN
>
> > > Re Antennas and sharing. Checkout E ham forum
> > > Art
>
> > Arthur don't be so silly. As a fellow over-the-edge old fart
> > mechanical engineer you've obviously missed some some fundamentals.
>
> > Back in the day the IEEE and the ASME came to an agreement: They
> > wouldn't fiddle with Mohr's Circles if we didn't fiddle with
> > electromagnetic wave mechanics. You're in violation Arthur so so knock
> > it off.
>
> > How many countries do you have confirmed on 160?
>
```

> > Brian w3rv- Hide quoted text -
>
> > - Show quoted text -
>
> I am not in violation in my opinion. My theory may not be "exactly"
> correct
> as I have no way of looking at particles. But if you Google every
> little bit, line by line it has enough agreed tangibles that it can
> be taken as serious. You yourself know that I have been sharing the
> details for a very, very long time. I also have shared everything
> and described everything, nothing has been hidden and all explained
> several times
> Nobody has faulted anything one little bit! Pretty much all has been
> the
> slandering of me. I really do not understand that if this is a
> newsgroup on antennas
> why those knoweledgable in the state of the art instead of getting
> angry with me doesn't debate it point by point where an error provides
> a stop to the debate.
> Ofcourse 'error' means so many different things with this group I
> don't see a long thread.
> I certainly do not have the patience to post thousands of times as
> Cecil is able so I should easily be forces to go away as others have

A few years back I worked Cecil on 7.037 and he had

> done. Well, if you try very hard that I cannot take anymore. When you
> have received an education one must always take advantage of it by
> pursuit of the truth regardless of the regimen. I cannot see why I
> should be expelled from intruding into physics by those you insist
> that all is known about antennas otherwise you are a heritic.
> Art

795. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 02:45:23 UTC
From: art <aunwin@insightbb.com>
Message-ID: <45f82239-1431-4356-826c-e00bc5f343eb@i29g2000prf.googlegroups.com>
Source record: 29561

```
On 13 Jan, 18:15, Brian Kelly <ke...@dvol.com> wrote:
> On Jan 13, 8:34 pm, art <aun...@insightbb.com> wrote:
>
>
>
>
>
> > On 13 Jan, 17:00, Brian Kelly <ke...@dvol.com> wrote:
>
> > > On Jan 13, 9:31 am, art <aun...@insightbb.com> wrote:
>
> > > > On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>
> > > > > art wrote:
> > > > > > At
> > > > > > the moment I do not have the smallest antenna for 160M on my tower
> > > > > > since the radiator is around 18 foot long and tipped at an angle to
> > > > > > reflect what the computer states. I suppose I will have to make one
> > > > > > that will fit into a 1 foot cubed carton to satisfy the term small.
>
> > > > > That's great, Art.  How's it working out for you?  Did you work J5C over
> > > > > the past couple of nights?  Did you snag G3JMJ's loud signal this evening?
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> > > > > I can load my 6m beam on 160m, but it doesn't work well at all.  I use a
> > > > > slightly long inverted L with a series vacuum variable and nearly 6,000
> > > > > feet of buried radials.  There's a three inch short, tapped coil to
> > > > > ground at the feed point in order to match the antenna to the RG-213 I
> > > > > feed it with.  The antenna isn't small and it isn't elegant.
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> > > > > I'm willing to listen to your ideas about how I can equal the signal
> > > > > from that inverted L by using a much smaller antenna.  Why don't you
> > > > > post information on such a creation?
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> > > > > Dave K8MN
>
> > > > Re Antennas and sharing. Checkout E ham forum
> > > > Art
>
> > > Arthur don't be so silly. As a fellow over-the-edge old fart
> > > mechanical engineer you've obviously missed some some fundamentals.
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> > > Back in the day the IEEE and the ASME came to an agreement: They
> > > wouldn't fiddle with Mohr's Circles if we didn't fiddle with
> > > electromagnetic wave mechanics. You're in violation Arthur so so knock
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> > > it off.
>
> > > How many countries do you have confirmed on 160?
>
> > > Brian w3rv- Hide quoted text -
>
> > > - Show quoted text -
>
> > As I have stated before I am not active anymore
>
> Not hardly. You pounced on my post within minutes. Strikes me as
> rather "active" eh?
>
> So I'll rephrase the question: How many countries did you work on 160
> when you "were active"?
>
> > Art
>
> Brian dit-dit beep-beep w3rv . . .- Hide quoted text -
>
> - Show quoted text -

I have never made a list of countries worked. Never had reason to do
it
I have only entered one "competition" when I was challenged to compete
in being 1 of the three
of the 9th group to have a contact with some station. I was never
given any warning of the when and where but I can say the noise was
horrendous. Why people subject themselves to that I do not know. On
the other side I generally use ham radio to keep in touch with my
friends in the UK which now I do by phone.Why all these questions? Is
another assault in the offing
from a college lecturer?
Art

796. Re: Standing morphing to travelling waves. was r.r.a.a Laugh Riot!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 02:54:28 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A24DF3A9D577mcoslocomcastnet@216.196.97.136>
Source record: 29562

"AI4QJ" <nospam@yahoo.com> wrote in
news:47899271$0$4946$4c368faf@roadrunner.com:
> Thanks Mike, such information makes me interested in trying it out and
> sorry on my part too for any miscommunication and statements about
> 11m. I am from a generation where computer models had many limitations
> but I am now convinced that EZNEC has probably long overcome the
> weaknesses of the past.

I think you'll like it. There are some things that it won't do, but I
think that on the whole, it is pretty capable.

It took me from absolutely clueless to neophyte pretty quickly. I
can't keep up when the gurus here start badgering each other, but I can
put something up, and have some understanding about what I'm doing.

- 73 de Mike N3LI -

797. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 02:57:11 UTC
From: art <aunwin@insightbb.com>
Message-ID: <637c8c3f-fbc0-4cdb-9c2f-9b75a29803f2@k2g2000hse.googlegroups.com>
Source record: 29563

```
On 13 Jan, 17:36, Derek <blueyh...@yahoo.com.au> wrote:
> On Jan 14, 9:06 am, "AI4QJ" <nos...@yahoo.com> wrote:
>
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>
>
>
> > "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> >news:16ddf046-c1cf-421f-8cf0-cbdd9934ead8@e4g2000hsg.googlegroups.com...
>
> > > On Jan 14, 7:36 am, "AI4QJ" <nos...@yahoo.com> wrote:
> > >> "Derek" <blueyh...@yahoo.com.au> wrote in message
>
> > >>news:1ceba8a8-c995-41ee-966d-2896600eed8b@e6g2000prf.googlegroups.com...
>
> > >> > On Jan 14, 2:02 am, "AI4QJ" <nos...@yahoo.com> wrote:
> > >> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
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> > >> >>news:a4a35f44-a87e-4308-8000-d16839eda3a0@x69g2000hsx.googlegroups.com...
>
> > >> >> > On Jan 13, 2:55 pm, "AI4QJ" <nos...@yahoo.com> wrote:
> > >> >> >> "Derek" <blueyh...@yahoo.com.au> wrote in message
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> > >> >> >>news:0604c90c-4a2b-4900-b86d-1fb232164ea0@q77g2000hsh.googlegroups.com...
>
> > >> >> >> > On Jan 13, 1:15 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>
> > >> >> >      You made a positive statement, You called Art a "liar"
>
> > >> >> I absolutely did not! Show my a quote where I used thre word liar. I
> > >> >> called
> > >> >> him a fibber. Big difference.
>
> > >> >           semantics
>
> > >> Yes, it's semantics, that's precisely why you are getting confused.
> > >> "Derek"
> > >> blueyh...@yahoo.com.au (or whomever you are).
>
> > >> Do you have a call sign or something else that shows us who you are? I'm
> > >> sure you're not hiding your personhood  intentionally, "Derek".
>
> > >   I am a retiree like many on this group living in Perth Australia,
```

> > > who after many years of following this group has a great belief that
> > > Art can do as he claims.
> > >   I am also a great believer in fair play, and calling someone a
> > > fibber (liar) on open message without proof is not fair play in my
> > > book.
>
> > You may have a great faith in art but not quite enough to say so publically,
> > do you? It is easy to be an art unwin groupie (no...NOT so easy for most),
> > taking an insane position under the cloak of anonymity. For that reason, I
> > really think you have reservations. If you really believed in antennas that
> > shot particles out the ends, you would say so in the open! I googled your
> > userid and I see that you exclusively post only on rraa and only as a
> > cheerleader for arts theories on rraa. I have not seen one post of your's
> > that had any technical content. Fibber? You saw he defined is "small"
> > antenna at 18 feet; that's not small; anybody could load a stinger that long
> > with a coil and transmit at 160m so you're damn right it was a "fib". See
> > ya Derek, knowing that you have nothing technical to offer and that I don't
> > need to be bothered all the time by the unwin groupie cheerleader; plonk.
>
> You say I am taking an insane position. You also say I have
> reservations.
>   You know my name is Derek and that I live in Australia.
>   Art states he has an antenna for 160m on the top of his tower,I have
> not seen it neither have you.
> Over the years Art has stated many facts about this antenna.It is in
> equilibrium without loading which also means it does not require a
> ground plane ie direct connection to the feed line.
> I also assume that impedance is termed as an acceptable level with a
> suitable SWR so it can be driven,If it is on top of the tower with no
> other support "most" would consider that small for 160m.
>   Now you can call him a liar, and I believe that he is not.!
>   So..... I am willing to raise the money for a wager based on the
> above where you may place other conditions in this quest to determine
> if Art is a liar or not.
>   You can also choose the judge, and who holds the money since I am
> in Australia.
>   If we come to an agreement on terms I am willing to put down up to
> $5000US.
>
>   All of the above is subject to Arts agreement for access to his
> antenna
> of course.
>
> Derek- Hide quoted text -
>
> - Show quoted text -

People can wager on a beetle race as far as I am concerned. But if I
am to be involved
I cannot gamble. BUT.....

I am willing to pay a sizable entrance fee where the loser has to give
his fee to charity!
Let's roll
Art

798. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 03:00:53 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <f1ca8b70-0c5c-4037-a398-f234fd38a973@m34g2000hsf.googlegroups.com>
Source record: 29564

On Jan 13, 9:39 pm, Brian Kelly <ke...@dvol.com> wrote:
> On Jan 13, 9:18 pm, art <aun...@insightbb.com> wrote:
>
>
>
> > On 13 Jan, 17:00, Brian Kelly <ke...@dvol.com> wrote:
>
> > > On Jan 13, 9:31 am, art <aun...@insightbb.com> wrote:
>
> > > > On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>
> > > > > art wrote:
> > > > > > At
> > > > > > the moment I do not have the smallest antenna for 160M on my tower
> > > > > > since the radiator is around 18 foot long and tipped at an angle to
> > > > > > reflect what the computer states. I suppose I will have to make one
> > > > > > that will fit into a 1 foot cubed carton to satisfy the term small.
>
> > > > > That's great, Art. How's it working out for you? Did you work J5C over
> > > > > the past couple of nights? Did you snag G3JMJ's loud signal this evening?
>
> > > > > I can load my 6m beam on 160m, but it doesn't work well at all. I use a
> > > > > slightly long inverted L with a series vacuum variable and nearly 6,000
> > > > > feet of buried radials. There's a three inch short, tapped coil to
> > > > > ground at the feed point in order to match the antenna to the RG-213 I
> > > > > feed it with. The antenna isn't small and it isn't elegant.
>
> > > > > I'm willing to listen to your ideas about how I can equal the signal
> > > > > from that inverted L by using a much smaller antenna. Why don't you
> > > > > post information on such a creation?
>
> > > > > Dave K8MN
>
> > > > Re Antennas and sharing. Checkout E ham forum
> > > > Art
>
> > > Arthur don't be so silly. As a fellow over-the-edge old fart
> > > mechanical engineer you've obviously missed some some fundamentals.
>
> > > Back in the day the IEEE and the ASME came to an agreement: They
> > > wouldn't fiddle with Mohr's Circles if we didn't fiddle with
> > > electromagnetic wave mechanics. You're in violation Arthur so so knock
> > > it off.
>

> > > How many countries do you have confirmed on 160?
>
> > > Brian w3rv- Hide quoted text -
>
> > > - Show quoted text -
>
> > I am not in violation in my opinion. My theory may not be "exactly"
> > correct
> > as I have no way of looking at particles. But if you Google every
> > little bit, line by line it has enough agreed tangibles that it can
> > be taken as serious. You yourself know that I have been sharing the
> > details for a very, very long time. I also have shared everything
> > and described everything, nothing has been hidden and all explained
> > several times
> > Nobody has faulted anything one little bit! Pretty much all has been
> > the
> > slandering of me. I really do not understand that if this is a
> > newsgroup on antennas
> > why those knoweledgable in the state of the art instead of getting
> > angry with me doesn't debate it point by point where an error provides
> > a stop to the debate.
> > Ofcourse 'error' means so many different things with this group I
> > don't see a long thread.
> > I certainly do not have the patience to post thousands of times as
> > Cecil is able so I should easily be forces to go away as others have

. . . A few years back I worked Cecil on 7.037 and he had a quite
respectable signal here which leads me to have some significant
respect for his abilities as an antenna injuneer.

> > done. Well, if you try very hard that I cannot take anymore. When you
> > have received an education one must always take advantage of it by
> > pursuit of the truth regardless of the regimen. I cannot see why I
> > should be expelled from intruding into physics by those you insist
> > that all is known about antennas otherwise you are a heritic.

Next time you see your doctor ask him about Lithium.

> > Art

w3rv

799. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 03:04:20 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A24E0E6DF119mcoslocomcastnet@216.196.97.136>
Source record: 29565

"AI4QJ" <nospam@yahoo.com> wrote in
news:47899047$0$4959$4c368faf@roadrunner.com:

> Once you understand the difference between standing waves, (which has
> no real power itself but which stores the reactive VA power into that
> power which is is eventually dissipated in "radiation resitance"
> dissipating into free space as radiation power), and traveling waves,
> which do have real power that is also disspated into that same type of
> radiation power through the radiation resistance, an interesting
> question becomes "what is the nature of this so-called radiation
> resistance which dissipates the power of a forward wave or the stored
> power in a standing wave?". We feed power into the antenna as electric
> current and then it exits the antenna as radiation. Maxwell's
> equations (in spite of what art theorizes) says that the power has
> been converted to an EM wave. So, electric current, which is not an EM
> wave consisting of photons and propagating into space, is converted
> into a different form of radiation energy that IS an EM and does
> consist of phtons and waves. When this conversion occurs and energy is
> transmitted into free space, we attempt to quantify this net loss to
> our generator with familiar terms, i.e. current or voltage dissipated
> into "radiation resistance". However, we all know there is no actual
> physical component known as a radiation resistor. Conceptualizing how
> this power conversion works goes back to maxwell: "why" is there a
> time varying EM magnetic and electric field (external waves and
> photons) generated by the flow of current? Well, it could be described
> as nature's tendency to maintain equilibrium. If a change is made to a
> conductor by putting a current through it, nature "objects" and fights
> back by setting up an EM wave that tends to cancel out the incoming
> current pulse. But no matter what, I will always easily have enough
> energy in my forcing function (current or voltage) to overcome
> nature's objection and send a net outflow of energy occuring as
> radiation theoretically equal to what I inputted.

Well put, Daniel. One of the biggest difficulties I have with Art's
theories is that I can't get my head wrapped around them. I know he
unfortunately has a few physical challenges that make his postings a
little difficult to go through at times, so I re-read them often to see
if I can glean something out of them.

But whereas I have great difficulty with some folks posts. I understand
everything you wrote.

- 73 de Mike N3LI -

800. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 03:11:56 UTC
From: nm5k@wt.net
Message-ID: <9f2cd860-02ea-4e85-94b8-122ad8020996@t1g2000pra.googlegroups.com>
Source record: 29566

On Jan 13, 8:18 pm, art <aun...@insightbb.com> wrote:

> Nobody has faulted anything one little bit!

I can fault almost everything that spews out of your keyboard,
but I don't have the heart to constantly shred the delusions of a
whiny old fart.
And I'm basically a dumb ass uneducated redneck.
Doesn't that bother you, being you are so superior to us
meager amateurs?

As one example, your spew of needing a full wavelength radiator
in order to be one with the force... What a crock of dung...
I can whip you more with my little stick if you decide that you
like it..
Pick one of your goofball theories and expound to your hearts
delight.
I bet this uneducated dumbass can rip it to shreds with only a
small amount of pondering needed.
Try me, if you don't believe it. I suspect you will be chicken
though.
MK

801. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 03:13:11 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A24E266EC2B5mcoslocomcastnet@216.196.97.136>
Source record: 29567

Derek <blueyhi5s@yahoo.com.au> wrote in
news:16ddf046-c1cf-421f-8cf0-cbdd9934ead8@e4g2000hsg.googlegroups.com:

> I am a retiree like many on this group living in Perth Australia,
> who after many years of following this group has a great belief that
> Art can do as he claims.

On what do you base that belief? Many of us have asked Art for some input on building one of his antennas, and we don't get anything. Heck, I'd even enjoy a picture, or a visit to the QTH to see something being used. But we get nothing. I'm not a fan of faith based engineering.

- 73 d eMike N3LI -

802. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 03:31:36 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <8f72df9b-9eb9-45fd-bf82-2614c725960b@s13g2000prd.googlegroups.com>
Source record: 29568

On Jan 14, 12:13 pm, Mike Coslo <mco...@youknow.comcast.net> wrote:
> Derek <blueyh...@yahoo.com.au> wrote
innews:16ddf046-c1cf-421f-8cf0-cbdd9934ead8@e4g2000hsg.googlegroups.com:
>
> > I am a retiree like many on this group living in Perth Australia,
> > who after many years of following this group has a great belief that
> > Art can do as he claims.
>
> On what do you base that belief? Many of us have asked Art for some input
> on building one of his antennas, and we don't get anything. Heck, I'd even
> enjoy a picture, or a visit to the QTH to see something being used. But we
> get nothing. I'm not a fan of faith based engineering.
>
> - 73 d eMike N3LI -

I have put my money where my mouth is.

Derek

803. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 03:33:22 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A24E5D2F25CFmcoslocomcastnet@216.196.97.136>
Source record: 29569
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

John Smith <assemblywizard@gmail.com> wrote in
news:fmdgaf$7cm$1@news.albasani.net:

> amdx wrote:
>
> >> ...
>> Why would you want a communist leader, don't you think the
>> government baby
>> sits us enough already?
>> Or, are you looking for that -free- healthcare?
>> Inquiring minds want to know,
>> Mike
>
> I think 50%+ of my earnings go to gov't. I don't think "government
> would be BUYING me anything"--we would be purchasing it for ourselves.
>
> Gasoline tax, property tax, transportation tax, booze tax, tobacco
> tax, federal excise--phone tax, cell phone tax, etc., etc.
>
> Reader Digest used to do an article once a year which showed how long
> a person must work just to pay his her taxes--last I seen (years ago)
> it was past April headed for June; anyone read that article lately?
>
> The government is "of the people, by the people and for the people",
> if you find anything different--there are already dark forces in the
> government which need removed ... while communism is certainly
> something we need fear--we should first correct the current clear and
> present danger ...

How on earth did this thread morph to this stuff?

804. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 03:38:27 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A24E6AF449A6mcoslocomcastnet@216.196.97.136>
Source record: 29570

Derek <blueyhi5s@yahoo.com.au> wrote in
news:8f72df9b-9eb9-45fd-bf82-2614c725960b@s13g2000prd.googlegroups.com:

>> On what do you base that belief? Many of us have asked Art for some
>> input on building one of his antennas, and we don't get anything.
>> Heck, I'd even enjoy a picture, or a visit to the QTH to see
>> something being used. But we get nothing. I'm not a fan of faith
>> based engineering.
>>
>> - 73 de Mike N3LI -
>
>
> I have put my money where my mouth is.

Derek - placing of wagers is not an argument. I haven't partipated in
calling Art anything. It isn't a difficult thing to get a picture of this
antenna, I would even offer to post it on line.

It's simple really. Extraordinary claims require extraordinary proof.
show us the antennas, let us build them and test them. Let us compare them
to other antennas.

- 73 de Mike N3LI -

805. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 03:51:55 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <9b443be4-6e0d-446b-9c87-279271794e52@j20g2000hsi.googlegroups.com>
Source record: 29571

On Jan 14, 12:38 pm, Mike Coslo <mco...@youknow.comcast.net> wrote:
> Derek <blueyh...@yahoo.com.au> wrote
innews:8f72df9b-9eb9-45fd-bf82-2614c725960b@s13g2000prd.googlegroups.com:
>
> >> On what do you base that belief? Many of us have asked Art for some
> >> input on building one of his antennas, and we don't get anything.
> >> Heck, I'd even enjoy a picture, or a visit to the QTH to see
> >> something being used. But we get nothing. I'm not a fan of faith
> >> based engineering.
>
> >> - 73 de Mike N3LI -
>
> > I have put my money where my mouth is.
>
> Derek - placing of wagers is not an argument. I haven't partipated in
> calling Art anything.
>
> - 73 de Mike N3LI -

I did not intend to infer that you had, I just pointed out I was ready
to back my words

Derek

806. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 04:05:32 UTC
From: art <aunwin@insightbb.com>
Message-ID: <c7bfd1a7-aaa7-44de-bc01-821168b0f385@v29g2000hsf.googlegroups.com>
Source record: 29572

On 13 Jan, 19:11, n...@wt.net wrote:
> On Jan 13, 8:18 pm, art <aun...@insightbb.com> wrote:
>
> > Nobody has faulted anything one little bit!
>
> I can fault almost everything that spews out of your keyboard,
> but I don't have the heart to constantly shred the delusions of a
> whiny old fart.
> And I'm basically a dumb ass uneducated redneck.
> Doesn't that bother you, being you are so superior to us
> meager amateurs?
>
> As one example, your spew of needing a full wavelength radiator
> in order to be one with the force... What a crock of dung...
> I can whip you more with my little stick if you decide that you
> like it..
> Pick one of your goofball theories and expound to your hearts
> delight.

I bet

Well I hope you make it a sizable wager and join others that might
want to
do same. You can a lot of money to buy all the antennas that you want.
Art

h.
> MK

807. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 04:20:54 UTC
From: nm5k@wt.net
Message-ID: <fd855f51-c1c2-418e-8462-30739e99510e@t1g2000pra.googlegroups.com>
Source record: 29573

On Jan 13, 10:05 pm, art <aun...@insightbb.com> wrote:

>
> Well I hope you make it a sizable wager and join others that might
> want to
> do same. You can a lot of money to buy all the antennas that you want.
> Art
>
> h.
>
> > MK

I make all my antennas. I don't have to buy them.
Also, where do you get the idea that gambling comes
into play here?
I don't live in Vegas, and 8 liners are illegal here.
When I hear of gaussian jibber jabber, I think of this..
http://home.comcast.net/~nm5k/gauss.jpg
In fact, I'm starting to wonder if you are not related
to this gentleman. Small size means nothing if
most of the power turns to heat. This even applies
to aliens.
MK

808. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 04:55:22 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <_WBij.35822$ID6.4577@newssvr27.news.prodigy.net>
Source record: 29574
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

```
Mike Coslo wrote:
> John Smith <assemblywizard@gmail.com> wrote in
> news:fmdgaf$7cm$1@news.albasani.net:
>
>> amdx wrote:
>>
>>>> ...
>>> Why would you want a communist leader, don't you think the
>>> government baby
>>> sits us enough already?
>>> Or, are you looking for that -free- healthcare?
>>> Inquiring minds want to know,
>>> Mike
>> I think 50%+ of my earnings go to gov't. I don't think "government
>> would be BUYING me anything"--we would be purchasing it for ourselves.
>>
>> Gasoline tax, property tax, transportation tax, booze tax, tobacco
>> tax, federal excise--phone tax, cell phone tax, etc., etc.
>>
>> Reader Digest used to do an article once a year which showed how long
>> a person must work just to pay his her taxes--last I seen (years ago)
>> it was past April headed for June; anyone read that article lately?
>>
>> The government is "of the people, by the people and for the people",
>> if you find anything different--there are already dark forces in the
>> government which need removed ... while communism is certainly
>> something we need fear--we should first correct the current clear and
>> present danger ...
>
>
> How on earth did this thread morph to this stuff?

All it takes is just one poster wearing a tinfoil hat for something
like this to get started.
73,
Tom Donaly, KA6RUH
```

809. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 05:07:13 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478aee06$0$30704$4c368faf@roadrunner.com>
Source record: 29575

"art" <aunwin@insightbb.com> wrote in message
news:637c8c3f-fbc0-4cdb-9c2f-9b75a29803f2@k2g2000hse.googlegroups.com...
> - Show quoted text -

"People can wager on a beetle race as far as I am concerned. But if I
am to be involved
I cannot gamble. BUT.....
I am willing to pay a sizable entrance fee where the loser has to give
his fee to charity!
Let's roll"

Let's not. I'm not a gambling man either. I will say that a credible theory
that was repeatable would not require a Las Vegas style wager to demonstrate
the odds of its success.

Once again, what is the diameter of your 18 foot 160m antenna?

810. Re: How to make a triode

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 05:09:14 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmeqpruso1@news.albasani.net>
Source record: 29576
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Mike Coslo wrote:

> ...
> How on earth did this thread morph to this stuff?

The fool I responded to was very confused--just happens I guess--a few words to set a lost sole back on a steady course is hardly too much to ask ...

He thought a government had legally replaced that established by the constitution and if "that government" stole your money long enough it became theirs.

Imagine! <ROFLOL>

JS

811. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 05:09:51 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <z8Cij.1997$Sa1.1086@news02.roc.ny>
Source record: 29577

art wrote:
> On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>> art wrote:
>>> At
>>> the moment I do not have the smallest antenna for 160M on my tower
>>> since the radiator is around 18 foot long and tipped at an angle to
>>> reflect what the computer states. I suppose I will have to make one
>>> that will fit into a 1 foot cubed carton to satisfy the term small.
>> That's great, Art. How's it working out for you? Did you work J5C over
>> the past couple of nights? Did you snag G3JMJ's loud signal this evening?
>>
>> I can load my 6m beam on 160m, but it doesn't work well at all. I use a
>> slightly long inverted L with a series vacuum variable and nearly 6,000
>> feet of buried radials. There's a three inch short, tapped coil to
>> ground at the feed point in order to match the antenna to the RG-213 I
>> feed it with. The antenna isn't small and it isn't elegant.
>>
>> I'm willing to listen to your ideas about how I can equal the signal
>> from that inverted L by using a much smaller antenna. Why don't you
>> post information on such a creation?

> Re Antennas and sharing. Checkout E ham forum

I know what others have said, Art. I asked if you'd share your ideas.
You have often dealt in non-specifics. I'd like to see how you think a
small antenna can be made to equal the performance of the full-sized
inverted L.

Dave K8MN

812. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 05:17:44 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478af079$0$30690$4c368faf@roadrunner.com>
Source record: 29578

"art" <aunwin@insightbb.com> wrote in message
news:00351bca-d559-4923-a0fa-517cde17f7a7@q77g2000hsh.googlegroups.com...
> On 13 Jan, 12:33, "AI4QJ" <nos...@yahoo.com> wrote:
>> "art" <aun...@insightbb.com> wrote in message
>>
>> news:40b6f1a6-891f-4fee-81be-9ac0e5192cef@1g2000hsl.googlegroups.com...
>> On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
>>
>>
>>
>>
>>
>> > art wrote:
>> > > At
>> > > the moment I do not have the smallest antenna for 160M on my tower
>> > > since the radiator is around 18 foot long and tipped at an angle to
>> > > reflect what the computer states. I suppose I will have to make one
>> > > that will fit into a 1 foot cubed carton to satisfy the term small.
>>
>> > That's great, Art. How's it working out for you? Did you work J5C over
>> > the past couple of nights? Did you snag G3JMJ's loud signal this
>> > evening?
>>
>> > I can load my 6m beam on 160m, but it doesn't work well at all. I use a
>> > slightly long inverted L with a series vacuum variable and nearly 6,000
>> > feet of buried radials. There's a three inch short, tapped coil to
>> > ground at the feed point in order to match the antenna to the RG-213 I
>> > feed it with. The antenna isn't small and it isn't elegant.
>>
>> > I'm willing to listen to your ideas about how I can equal the signal
>> > from that inverted L by using a much smaller antenna. Why don't you
>> > post information on such a creation?
>>
>> > Dave K8MN
>>
>> "Re Antennas and sharing. Checkout E ham forum
>> Art"
>>
>> OK, I went to e ham forum and found 1732 pages of articles. It does not
>> allow me to filter on art, unwin or diamagnetic. Could you help us out a
>> little? This is like trying to literally find a needle in a haystack.
>>
>> AI4QJ- Hide quoted text -
>>

>> - Show quoted text -
>
> They are rated the top two threads at the present time (yesterday)
> I can't remember the titles or every thing that was written but as the
> top articles of interest I don't think you can consider it as looking
> for a needle.
> Art

Nothing there. Not in the top 10 hottest or top 10 most recently active.
Must be a lot of constantly changing 'hottest' and 'recently active' forums
between yesterday and today. Guess I missed out.

813. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 05:38:35 UTC
From: art <aunwin@insightbb.com>
Message-ID: <04433c19-7176-45cd-ab57-45a8059b0270@v29g2000hsf.googlegroups.com>
Source record: 29579

On 13 Jan, 21:07, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:637c8c3f-fbc0-4cdb-9c2f-9b75a29803f2@k2g2000hse.googlegroups.com...
>
> > - Show quoted text -
>
> "People can wager on a beetle race as far as I am concerned. But if I
> am to be involved
> I cannot gamble. BUT.....
> I am willing to pay a sizable entrance fee where the loser has to give
> his fee to charity!
> Let's roll"
>
> Let's not. I'm not a gambling man either. I will say that a credible theory
> that was repeatable would not require a Las Vegas style wager to demonstrate
> the odds of its success.
>
> Once again, what is the diameter of your 18 foot 160m antenna?

It was not to to demonstrate the odds of success from what I
read.Since he was backing that I was stating the truth it becomes
obvious that I also will come up with a amount of money which would go
to charity. I sir, am stating the truth
and will make a much smaller one if you make that one of the
conditions applied, or modify the existing one to meet same.
I suspect that others may be willing to join you from what I read.
Art

814. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 05:47:14 UTC
From: art <aunwin@insightbb.com>
Message-ID: <3361e44e-8e58-4a54-9b5d-c89153bce61c@q39g2000hsf.googlegroups.com>
Source record: 29580

On 13 Jan, 21:17, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:00351bca-d559-4923-a0fa-517cde17f7a7@q77g2000hsh.googlegroups.com...
>
>
>
>
>
> > On 13 Jan, 12:33, "AI4QJ" <nos...@yahoo.com> wrote:
> >> "art" <aun...@insightbb.com> wrote in message
> >
> >>news:40b6f1a6-891f-4fee-81be-9ac0e5192cef@1g2000hsl.googlegroups.com...
> >> On 12 Jan, 23:02, Dave Heil <k...@frontiernet.net> wrote:
> >
> >> > art wrote:
> >> > > At
> >> > > the moment I do not have the smallest antenna for 160M on my tower
> >> > > since the radiator is around 18 foot long and tipped at an angle to
> >> > > reflect what the computer states. I suppose I will have to make one
> >> > > that will fit into a 1 foot cubed carton to satisfy the term small.
> >
> >> > That's great, Art. How's it working out for you? Did you work J5C over
> >> > the past couple of nights? Did you snag G3JMJ's loud signal this
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> >
> >> > I can load my 6m beam on 160m, but it doesn't work well at all. I use a
> >> > slightly long inverted L with a series vacuum variable and nearly 6,000
> >> > feet of buried radials. There's a three inch short, tapped coil to
> >> > ground at the feed point in order to match the antenna to the RG-213 I
> >> > feed it with. The antenna isn't small and it isn't elegant.
> >
> >> > I'm willing to listen to your ideas about how I can equal the signal
> >> > from that inverted L by using a much smaller antenna. Why don't you
> >> > post information on such a creation?
> >
> >> > Dave K8MN
> >
> >> "Re Antennas and sharing. Checkout E ham forum
> >> Art"
> >
> >> OK, I went to e ham forum and found 1732 pages of articles. It does not
> >> allow me to filter on art, unwin or diamagnetic. Could you help us out a
> >> little? This is like trying to literally find a needle in a haystack.

>
> >> AI4QJ- Hide quoted text -
>
> >> - Show quoted text -
>
> > They are rated the top two threads at the present time (yesterday)
> > I can't remember the titles or every thing that was written but as the
> > top articles of interest I don't think you can consider it as looking
> > for a needle.
> > Art
>
> Nothing there. Not in the top 10 hottest or top 10 most recently active.
> Must be a lot of constantly changing 'hottest' and 'recently active' forums
> between yesterday and today. Guess I missed out.- Hide quoted text -
>
> - Show quoted text -

No.
The two hottest is what I was pointing to when I responded to the
other person. One is called 'How radiation is created' or something
like that. The other is the assistance I gave on a "homebrew antenna".
The first thread is what I initiated with the call sign KB9MZ. Both
still remain at the top of the hottest list and probably will still be
for the next couple of days. After which they may well stay on that
list anyway.
Art

815. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 06:21:22 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478aff64$0$30684$4c368faf@roadrunner.com>
Source record: 29581

"art" <aunwin@insightbb.com> wrote in message
news:04433c19-7176-45cd-ab57-45a8059b0270@v29g2000hsf.googlegroups.com...
On 13 Jan, 21:07, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:637c8c3f-fbc0-4cdb-9c2f-9b75a29803f2@k2g2000hse.googlegroups.com...
>
> > - Show quoted text -
>
> "People can wager on a beetle race as far as I am concerned. But if I
> am to be involved
> I cannot gamble. BUT.....
> I am willing to pay a sizable entrance fee where the loser has to give
> his fee to charity!
> Let's roll"
>
> Let's not. I'm not a gambling man either. I will say that a credible
> theory
> that was repeatable would not require a Las Vegas style wager to
> demonstrate
> the odds of its success.
>
> Once again, what is the diameter of your 18 foot 160m antenna?

"It was not to to demonstrate the odds of success from what I
read.Since he was backing that I was stating the truth it becomes
obvious that I also will come up with a amount of money which would go
to charity. I sir, am stating the truth
and will make a much smaller one if you make that one of the
conditions applied, or modify the existing one to meet same.
I suspect that others may be willing to join you from what I read.
Art"

Let's just concentrate on the antenna you have on your tower.

What is the diameter of your 18 foot 160m antenna?

816. EARN MONEY ONLINE JOB...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 09:30:26 UTC
From: muralidaran341@gmail.com
Message-ID: <62c889d4-bd46-4ea5-8d52-c4f26684cb31@t1g2000pra.googlegroups.com>
Source record: 29582

EARN MONEY ONLINE JOB...

Hai i am Muralidharan my email is

****

http://acting images blogspot.com

****

817. folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 12:49:14 UTC
From: gsm@mendelson.com
Message-ID: <slrnfommgr.i89.gsm@cable.mendelson.com>
Source record: 29583

I have a very short space where I need to put up a temporary antenna.
It has to be rolled out during the day and rolled up and hidden at night.

20m would be a good band for me to use, and it will just about fit, so
I was thinking of a 1/4 wavelength radiator with a 1/4 wavelength
counterpoise made out of wire.

Since I have lots of 300 Ohm twinlead just sitting around, I could
make the radiator out of it. I understand that if I were to short both
ends and center feed it, it would be a standard 300 ohm folded dipole.

I think if I were to short the ends and end feed it, it would be a
eaquivalent to a wide(er) 1/4 wavelength end fed antenna and still
need a counterpoise.

What would happen if I were to end feed it as if it were two seperate
wires, either with a balun or without? Would it work? What is this called?

Thanks in advance,

Geoff.

--
Geoffrey S. Mendelson, Jerusalem, Israel gsm@mendelson.com N3OWJ/4X1GM
IL Voice: (07)-7424-1667 U.S. Voice: 1-215-821-1838
Visit my 'blog at http://geoffstechno.livejournal.com/

818. Airport Tower Comms, and My Receiving Antenna Orientation ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 13:47:31 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <y4adnTN2uMlz-hbanZ2dnUVZ_oCvnZ2d@comcast.com>
Source record: 29584

Hello,

Not an antenna expert, so thought I'd post my questions here, for all you theorists.
Would appreciate any thoughts on the following, as it really confuses me.

Have a new handheld scanner; GRE 500 model.
Has a rubber duckie for its antenna, which is pretty typical for these kind of scanners, of course.

Tried listening to an airport control tower (118.5 MHz AM), about 5 miles from the house.

Here's what I found playing around.

When the unit is held normally, that is with the antenna vertical, the airport comms from the tower were really poor.
Lots of static and noise.

But, much better when held horizontally.
a. Any idea why ?

I would have thought that their antennas would be polarized vertically to communicate with planes.

b. any idea how their tower antennas are likely polarized (if at all) ?

c. and this one really confuses me.

The best reception, by far, is if I point the antenna vertically, but DOWNWARD ! Big difference from vertically up.

Wouldn't vertically up, and vertically down be identical and symmetrically the same re polarization, reception, etc. ?

Thanks,
Bob

819. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 13:49:10 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fmfp8n$11hc$1@f04n12.cac.psu.edu>
Source record: 29585

Christopher Cox wrote:
> It must upset you something fierce then to know that the founders of the
> major Ivy league schools and some of the most wealthy and influential
> people today all have a common trait, they do not hold a collage diploma.

As I have always said to my more highly educated colleagues:

"You either have to have a degree or be good at what you do to get a job
here."

They nod, agree, and to a person completely miss the double entendre'.

-73 de Mike N3LI -

820. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 14:25:02 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A25600E0A097jxp16psuedu@128.118.141.40>
Source record: 29586

gsm@mendelson.com (Geoffrey S. Mendelson) wrote in
news:slrnfommgr.i89.gsm@cable.mendelson.com:

> I have a very short space where I need to put up a temporary antenna.
> It has to be rolled out during the day and rolled up and hidden at
> night.
>
> 20m would be a good band for me to use, and it will just about fit, so
> I was thinking of a 1/4 wavelength radiator with a 1/4 wavelength
> counterpoise made out of wire.
>
> Since I have lots of 300 Ohm twinlead just sitting around, I could
> make the radiator out of it. I understand that if I were to short both
> ends and center feed it, it would be a standard 300 ohm folded dipole.
>
> I think if I were to short the ends and end feed it, it would be a
> eaquivalent to a wide(er) 1/4 wavelength end fed antenna and still
> need a counterpoise.
>
> What would happen if I were to end feed it as if it were two seperate
> wires, either with a balun or without? Would it work? What is this
> called?
>
> Thanks in advance,
>
> Geoff.
>
>
>

If I understand what you are suggesting it would be a shorted transmission line, not an antenna. I would look at an end feed half wave antenna, like a zep or the ones from PAR electronics. I've homebrewed them myself and they do work.

John Passaneau

821. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:04:27 UTC
From: richardharrison@webtv.net
Message-ID: <1506-478B79FB-397@storefull-3252.bay.webtv.net>
Source record: 29588

Geoff Mendelson wrote:
"I think if I were to short both ends and center feed it, it would be an equivalent to a wid(er) 1/4 wavelength end fed antenna and will still need a counterpoise."

No counterpoise needed. Its called a "folded quarter wave dipole". Its first resonance is due to its 1/2-wave circumference. Its input resistance is not 300 ohms but 600 ohms. Its gain is 0,5 dB less than the 1/2-wave dipole. This information is from "TV and Other Receiving Antennas" by Arnold B. Bailey.

You might want to feed it with 450 ohm ladder line.

Best regards, Richard H. Harrison. KB5WZI

822. Re: Airport Tower Comms, and My Receiving Antenna Orientation ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:11:56 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <12f1073f-4ca7-4712-931e-30eeea20cb51@t1g2000pra.googlegroups.com>
Source record: 29587

On 14 ene, 14:47, "Robert11" <rgs...@notme.com> wrote:
> Hello,
>
> Not an antenna expert, so thought I'd post my questions here, for all you
> theorists.
> Would appreciate any thoughts on the following, as it really confuses me.
>
> Have a new handheld scanner; GRE 500 model.
> Has a rubber duckie for its antenna, which is pretty typical for these kind
> of scanners, of course.
>
> Tried listening to an airport control tower (118.5 MHz AM), about 5 miles
> from the house.
>
> Here's what I found playing around.
>
> When the unit is held normally, that is with the antenna vertical, the
> airport comms from the tower were really poor.
> Lots of static and noise.
>
> But, much better when held horizontally.
> a. Any idea why ?
>
> I would have thought that their antennas would be polarized vertically
> to communicate with planes.
>
> b. any idea how their tower antennas are likely polarized (if at all) ?
>
> c. and this one really confuses me.
>
> The best reception, by far, is if I point the antenna vertically, but
> DOWNWARD ! Big difference from vertically up.
>
> Wouldn't vertically up, and vertically down be identical and symmetrically
> the same re polarization, reception, etc. ?
>
> Thanks,
> Bob

Hello Rob,

Did you do the tests indoor, or very close to objects?

As far as I know, VHF AIR comms are vertically polarized (ground
station).

Due to reflection and refraction, polarization may change and the field will no longer be uniform. So the strength and polarization varies with position of the antenna. This is also valid for various sources of interference.

Your rubber duckie will be part of the antenna; your hand, arm and body will be the rest of it. Your hand serves as ground / opposite pole for the antenna. Probably you will find more spots where you have better reception (or even no reception).

I live about 16nm SE of EHAM (Schiphol Amsterdam, Netherlands), flat terrain profile, very thick full wave dipole, 30 ft height above average terrain. Signals from ground control are strong; signals from airplanes at airport are reasonable. I use a 3 pole preselector to attenuate broadcast signals. When you are going to use a larger antenna, you may get intermodulation problems also.

Best regards,

Wim
PA3DJS
www.tetech.nl

823. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:28:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0mvmo3tn1evpjr8krsmp7sgnp0nusp3ckv@4ax.com>
Source record: 29590

On Mon, 14 Jan 2008 12:49:14 +0000 (UTC), gsm@mendelson.com (Geoffrey S. Mendelson) wrote:

>20m would be a good band for me to use, and it will just about fit, so
>I was thinking of a 1/4 wavelength radiator with a 1/4 wavelength
>counterpoise made out of wire.

Hi Geoff,

I presume by this you mean you have enough, total length, to create a halfwave dipole for 20M in the conventional sense.

>Since I have lots of 300 Ohm twinlead just sitting around, I could
>make the radiator out of it. I understand that if I were to short both
>ends and center feed it, it would be a standard 300 ohm folded dipole.

To some degree, but that will bring nothing to your advantage.

>I think if I were to short the ends and end feed it, it would be a
>eaquivalent to a wide(er) 1/4 wavelength end fed antenna and still
>need a counterpoise.

Yes, and it brings into doubt my presumption above. It would inform us all if you gave us the dimensions of your available space.

>What would happen if I were to end feed it as if it were two seperate
>wires, either with a balun or without? Would it work? What is this called?

An aircooled resistor.

73's
Richard Clark, KB7QHC

824. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:29:09 UTC
From: gsm@mendelson.com
Message-ID: <slrnfomvro.k62.gsm@cable.mendelson.com>
Source record: 29589

Richard Harrison wrote:
> No counterpoise needed. Its called a "folded quarter wave dipole". Its
> first resonance is due to its 1/2-wave circumference. Its input
> resistance is not 300 ohms but 600 ohms. Its gain is 0,5 dB less than
> the 1/2-wave dipole. This information is from "TV and Other Receiving
> Antennas" by Arnold B. Bailey.
>
> You might want to feed it with 450 ohm ladder line.

Ok, thanks.

Geoff.

--
Geoffrey S. Mendelson, Jerusalem, Israel gsm@mendelson.com N3OWJ/4X1GM
IL Voice: (07)-7424-1667 U.S. Voice: 1-215-821-1838
Visit my 'blog at http://geoffstechno.livejournal.com/

825. Re: Airport Tower Comms, and My Receiving Antenna Orientation ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:33:05 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <kd-dnd8S9IszHRbanZ2dnUVZ_qiinZ2d@comcast.com>
Source record: 29591

Hi,

Thanks for reply.

Tests were done indoors.
Various locations; similar results.

Best regards,
Bob

"Wimpie" <wimtel@tetech.nl> wrote in message
news:12f1073f-4ca7-4712-931e-30eeea20cb51@t1g2000pra.googlegroups.com...
> On 14 ene, 14:47, "Robert11" <rgs...@notme.com> wrote:
>> Hello,
>>
>> Not an antenna expert, so thought I'd post my questions here, for all you
>> theorists.
>> Would appreciate any thoughts on the following, as it really confuses me.
>>
>> Have a new handheld scanner; GRE 500 model.
>> Has a rubber duckie for its antenna, which is pretty typical for these
>> kind
>> of scanners, of course.
>>
>> Tried listening to an airport control tower (118.5 MHz AM), about 5
>> miles
>> from the house.
>>
>> Here's what I found playing around.
>>
>> When the unit is held normally, that is with the antenna vertical, the
>> airport comms from the tower were really poor.
>> Lots of static and noise.
>>
>> But, much better when held horizontally.
>> a. Any idea why ?
>>
>> I would have thought that their antennas would be polarized vertically
>> to communicate with planes.
>>
>> b. any idea how their tower antennas are likely polarized (if at all) ?
>>
>> c. and this one really confuses me.
>>

>> The best reception, by far, is if I point the antenna vertically, but
>> DOWNWARD ! Big difference from vertically up.
>>
>> Wouldn't vertically up, and vertically down be identical and
>> symmetrically
>> the same re polarization, reception, etc. ?
>>
>> Thanks,
>> Bob
>
> Hello Rob,
>
> Did you do the tests indoor, or very close to objects?
>
> As far as I know, VHF AIR comms are vertically polarized (ground
> station).
>
> Due to reflection and refraction, polarization may change and the
> field will no longer be uniform. So the strength and polarization
> varies with position of the antenna. This is also valid for various
> sources of interference.
>
> Your rubber duckie will be part of the antenna; your hand, arm and
> body will be the rest of it. Your hand serves as ground / opposite
> pole for the antenna. Probably you will find more spots where you have
> better reception (or even no reception).
>
> I live about 16nm SE of EHAM (Schiphol Amsterdam, Netherlands), flat
> terrain profile, very thick full wave dipole, 30 ft height above
> average terrain. Signals from ground control are strong; signals from
> airplanes at airport are reasonable. I use a 3 pole preselector to
> attenuate broadcast signals. When you are going to use a larger
> antenna, you may get intermodulation problems also.
>
> Best regards,
>
> Wim
> PA3DJS
> www.tetech.nl

826. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:37:37 UTC
From: richardharrison@webtv.net
Message-ID: <23029-478B81C1-498@storefull-3258.bay.webtv.net>
Source record: 29592

Art wrote:
"I had no idea that standing and travelling waves was reserved for post doctorial studies in America,---."

It isn`t. Just as elsewhere, electromagnetism and wave motion are covered in freshman physics. Anything needed beyond simple algebra is covered in the physics course itself. It includes the relationship of classical physics to modern physics, emphasizing conservation laws, concepts of waves, fields, and particles.

Best regards, Richard Harrison, KB5WZI

827. tax freedom day

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:40:40 UTC
From: The Shadow <Cranston@CobaltClub.com>
Message-ID: <ZnLij.390$GS1.343@newsfe11.phx>
Source record: 29593
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

```
>> Reader Digest used to do an article once a year which showed how long
>> a person must work just to pay his her taxes--last I seen (years ago)
>> it was past April headed for June; anyone read that article lately?
>>
http://www.taxfoundation.org/press/show/22300.html

Lamont
```

828. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:49:10 UTC
From: gsm@mendelson.com
Message-ID: <slrnfon10v.kcm.gsm@cable.mendelson.com>
Source record: 29594

Richard Clark wrote:
> I presume by this you mean you have enough, total length, to create a
> halfwave dipole for 20M in the conventional sense.

No, I don't. I have exactly 25 feet. This needs to include any insulaters
of support ropes at the ends, if I use them.

> Yes, and it brings into doubt my presumption above. It would inform
> us all if you gave us the dimensions of your available space.
>
>>What would happen if I were to end feed it as if it were two seperate
>>wires, either with a balun or without? Would it work? What is this called?
>
> An aircooled resistor.

Oh, thanks.

Geoff.

--
Geoffrey S. Mendelson, Jerusalem, Israel gsm@mendelson.com N3OWJ/4X1GM
IL Voice: (07)-7424-1667 U.S. Voice: 1-215-821-1838
Visit my 'blog at http://geoffstechno.livejournal.com/

829. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:53:21 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <RzLij.429462$kj1.348291@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29595

Cecil Moore wrote:
> On Jan 11, 8:27 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>> Everything I said above is exactly correct.
>
> Sorry Gene, almost everything you said about standing waves is false
> and some simple math will prove it. Please stop acting like a spoiled
> brat long enough to understand the following facts of physics.

[Usual nonsense snipped]

>
> I believe that, in the long run, the technical truth will will out
> over all the ignorance, obfuscation, and ad hominem attacks.
> --
> 73, Cecil, w5dxp.com

Cecil,

That is certainly an interesting characterization. Is your position that anyone who disagrees with you must be a spoiled brat? And who provided the ad hominem attack in this thread?

You are of course able to believe anything you wish. However, all of your handwaving explanations about reflections and phase shifts and phasors will not be found in ordinary discussions about the Poynting vector. Your "simple math" proves nothing at all, not even close. It is not reasonable to substitute current and voltage for E-field and H-field when considering the Poynting vector. The vector nature of the fields is essential to properly determine the cross product. Go take a look at the actual field configurations for a TEM wave, which includes standing waves, and report back to us.

Everything I said in my previous post is exactly correct.

73,
Gene
W4SZ

830. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 15:59:07 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <fFLij.134206$MJ6.22403@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29596

Cecil Moore wrote:
> On Jan 11, 8:32 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>> Wave-particle duality means that light and other electromagnetic
>> phenomena can be described in terms of waves or in terms of photons.
>> There is no need to use both descriptions at the same time. The laws of
>> physics are complete for either.
>
> Actually, what you don't seem to realize is that exactly the same laws
> apply to both at the same time and all those laws are perfectly
> consistent. Photons cannot stand still. Therefore, standing waves are
> not photonic, i.e. they are not EM waves. That you assert the standing
> wave E-field and H-field are 90 degrees apart is insanity (in addition
> to being completely false).
> --
> 73, Cecil, w5dxp.com

Cecil,

You keep ignoring the "sloshing" explanation. Actually, you did not totally ignore it; you did indeed criticize the choice of the descriptive word "sloshing".

The standing wave envelope may be stationary, but the fields are not. There is no conflict with your photonic requirements.

Since this discussion about fields and waves seems to annoy some of the "good buddy" crowd around here, I will quit now and let you win by default.

73,
Gene
W4SZ

831. Re: tax freedom day

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 16:11:37 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <fmg1jp$j16$1@theodyn.ncf.ca>
Source record: 29597
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

"The Shadow" (Cranston@CobaltClub.com) writes:
>
>>> Reader Digest used to do an article once a year which showed how long
>>> a person must work just to pay his her taxes--last I seen (years ago)
>>> it was past April headed for June; anyone read that article lately?
>>>
> http://www.taxfoundation.org/press/show/22300.html
>
> Lamont

If you really cared about the newsgroups, bozo, you wouldn't be posting
off topic junk to them.

This is no better than when you posted about dog food to rec.radio.shortwave,
and then turned around and changed your user name so we'd think you
were someone else.

Just because idiots abuse the newsgroups is not a reason for other idiots
to follow.

You didn't need to add anything to this thread, and keep it off topic.

You certainly didn't need to change the subject header so it looks
like you are starting another thread, a completely off topic thread to boot.

YOu could also consider that some idiot cross-posted this thread in the
first place, which is always a good reason for off-topic junk to start
up, and by adding to that mess, you just continue it all. Usually, if it's
cross-posted, you shouldn't reply (since virtually no cross-posting serves
a purpose, it is indeed the mark of someone too lazy to find the appropraite
place to post).

Finally, the only way you could be dazzled by the idea of someone making
tubes at home is because you lack depth beyond your ability to post links.
YOu saw it posted somewhere else, I don't for a minute believe you found
it through hard work on your own behalf, and like other people decided
it was "too good" to not post in yet another newsgroup, just like others
before you posted to other newsgroups where you found it.

Come up with something original, like the exact date of that 1964 article
in QST (or perhaps it was CW) where there was an article about an Argentinian
who made tubes at home. Because then you'd prove this isn't a sudden and
new thing, despite the internet wrapptings, and you'd actually add something
to the discussion, beyond an ability to use search engines.

Or spend some time in a used book store, finding and then buying the books that might be relevant to the discussion, and then start making the tubes yourself.

Michael VE2BVW

832. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 16:30:52 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <na2no39p2vkjqqjqmpb76ad95bm49gkrts@4ax.com>
Source record: 29448

On Mon, 14 Jan 2008 15:49:10 +0000 (UTC), gsm@mendelson.com (Geoffrey
S. Mendelson) wrote:

>Richard Clark wrote:
>> I presume by this you mean you have enough, total length, to create a
>> halfwave dipole for 20M in the conventional sense.
>
>No, I don't. I have exactly 25 feet. This needs to include any insulaters
>of support ropes at the ends, if I use them.

Hi Geoff,

Put up 3 to 5 sections of twinlead (with the wires shorted at both
ends) on each side, fanned out at the far ends across 3 to 5 feet
(looks like a bowtie). Feed at the apex of each triangular half, that
meet in the middle. Choke the cable feed.

2:1 SWR bandwidth should be at least 1 MHz wide.

73's
Richard Clark, KB7QHC

833. Re: Airport Tower Comms, and My Receiving Antenna Orientation ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 17:01:51 UTC
From: Harry - SM0VPO <oeieio@hotmail.com>
Message-ID: <3AMij.2786$R_4.2088@newsb.telia.net>
Source record: 29449

> When the unit is held normally, that is with the antenna vertical, the
> airport comms from the tower were really poor.
> Lots of static and noise.
>
> But, much better when held horizontally.
> a. Any idea why ?

There are 10001 resons, but airfield communications ARE vertically polarised. They tend to use discone antennas for VHF and the "biconical monopole" for UHF. However, they are designed to broadcast to aircraft, which do not sit so close to the ground and so far away. There is likely to be an array of different antenna at the control tower and/or transmitter site, all of which could slightly affect that which you are receiving.

The "rubber duck" antenna is NOT a 1/4-wave antenna at all. It is in fact a 3/4-wave antenna all coilled up, which gives a radiation pattern a little close to the fictitious "isotropic" antenna. People playing with rubber duck antennas on handheld gear rarely hold the things vertical, so the 3/4-wave gives a more uniform radiation in all directions - especially slightly up and down: more like a cylinder with a hole down the middle, than a donut. Another point is that the impedance of the 3/4-wave is more constant when your hands and head are close to the thing, but that is irrelevant for your application.

Buildings tend to use metal structures, fittings, and wiring, all of which affect the passage of radio signals through them, especially at VHF. I have succesfully use existing mains conduit in the ceiling of a rented appartment as an antenna, by mutual coupling of feed and resonant "current breaks".

Reflections from other buildings can also interract with the signal you receive. You may think that you predominantly receive the main direct path, but you would be surprised how often you are receiving reflections from other sources. Most GSM and all later generation of cellular phone base stations use polarisation diversity. That is one array of antennas 45-degrees to the left, and another array leaning to the right. All this is necessary because reflections and movements change polarisation.

Q1: Are you sure that the antenna is vertically polarised?
To be vertically polarised then the end bit should be higher than the bottom bit, and pointing at the sky. (Suoopid suggestion, I know, but you never know :-)

Q2: Is the signal very strong? If weak then it could be arriving from any source. If you building is shielding your then you may be relying upon reflections from the bus park, aluminized billboard, power pylon, or the neighbours TV antenna, for reception.

If you really want to receive these stations then use a simple antenna outside, in a controlled environment, without any unknown influences. Such an antenna need not be very complicated, in fact it could be built in a few minutes using a bit of wire and a broom handle.

This link even does all the simple antenna calculations for you, for any frequency you want.
http://web.telia.com/~u85920178/antennas/vpole0.htm

If you want to receive a specific band with decent sensitivity (weak signas) then this link will give you some idea.
http://web.telia.com/~u85920178/antennas/6dbvhf0.htm

If you think that you have a weak signal, then see why at:
http://web.telia.com/~u85920178/data/pathlos.htm

834. Re: tax freedom day

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 17:10:40 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmg52o$o1o$1@news.albasani.net>
Source record: 29450
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Michael Black wrote:

> [...]
> Michael VE2BVW
>

For California, you work until May 7 to pay your taxes:

http://www.taxfoundation.org/UserFiles/Image/Tax-Freedom-Day/2007/figure5large4.jpg

JS

835. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 17:10:53 UTC
From: Harry - SM0VPO <oeieio@hotmail.com>
Message-ID: <xIMij.2787$R_4.2111@newsb.telia.net>
Source record: 29451

> 20m would be a good band for me to use, and it will just about fit, so
> I was thinking of a 1/4 wavelength radiator with a 1/4 wavelength

You can easily make antennas that are hidden. For example, get some of that aluminium tape they used on windows, then use it to make a loop on a large window. The alarm tapes also have contact pads that you can use to make contacts with them to feed the antenna. Such an antenna will work well for transmitting and receiving. You can change the direction by opening the window.

You could fasten the antenna to a packinmg crate lid, or even use the metal band around the crate, as I did. Hang it on the wall and put a dartboard on the other side. When finished just turn it over, or even leave it permamently hidden behind the dartboard. Put a lamp over the board to excuse the cable. http://web.telia.com/~u85920178/antennas/crate.htm

You could fix the aluminum tape to a carpet, then roll it up when finished.

Do you have the capability of adding a new plastic drainpipe? Looks good from outside, but can hide an antenna inside ;-)

If you are having trouble with neighbours, then make a wooden antenna using brush-handles, or even a fishing pole. Let the neighbours see it and make a fool of themselves when they accuse you of disturbance to the TV sets. Then you can use the real antenna another day without fear. ;-)

836. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 17:13:18 UTC
From: Harry - SM0VPO <oeieio@hotmail.com>
Message-ID: <OKMij.2788$R_4.1736@newsb.telia.net>
Source record: 29452

> This newsgroup is the source of some of the best and knowledgeable answers
> I have found on the net.
>
> Unfortunately, it now seems to suffer the same malignant plague as many
> others--disagreements decaying into personal insults.

The trouble with having a "heckler" out there responding with megga-sarcasm and ridicule is that one feels duty bound to respond. DONT. Let stupic and non-constructive postings go unanswered, otherwise the escalate.

837. Solar cycle and radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 17:24:07 UTC
From: art <aunwin@insightbb.com>
Message-ID: <1299670f-4d6e-46dc-8741-5bbaf27c5ad3@q39g2000hsf.googlegroups.com>
Source record: 29453

The sun like earth has its own magnetic field.
However unlike earth the poles on the sun have a cycle of 22 years
where its magnetic pole turns around in a complete circle!
So every 11 years the poles change places and the magnetic
field gets stronger and then weaker.
This magnetic field somewhat inhibits the release of solar dust
that finds it way to earth. On the reverse side when the poles
turn the magnetic field weakens and the dust arriving into the earths
atmoshere increases a lot. This dust by the way is many times smaller
than the diameter of a human hair but when the system becomes
dense with these particles they look like a cloud as they reflect
light.
The Milky Way that one sees in the sky is a sample of such.
So it should be seen that dust arrival from the sun coincides with
radiation activities on earth. This dust is seen as inactive
particles
that mimic a decayed electron which atoms will reject from their orbit
any additional electrons which if accepted would destroy the
equilibrium
of which the atom is a part. Fortunately some materials will accept
the presence of these particals but only in a rest position and not
as part of the
atomic make up of the material. These materials are called
diamagnetic.
They do have electrical properties but do not retain magnetic
properties.
They can produce a magnetic field as a result of current flow which
happens
to be very weak as well as the magnetic lines created being at right
angles
to the axis of current flow. This very weak field can creat a
rejective field to
like materials where because of the proximity effect wwhich can give
what appears
to be a negative gravity effect on like particles. This effect has
been shown
to be effective on frogs no less but in general because of its weak
field its rejection
of solar inate particles is not visible to the eye. So it turns out
that when
earth suffers a increase in solar dust from the sun's solar position
it coinsides with
what ham radio refers to as a suitable DX period for
propagation.together

with a weakening of the magnetic field of the sun itself, because of the cyclic
rotation of it's magnetic poles.
The weakening of the magnetic field of the sun can be seen in action when
a eclipse occures where the rotational momement of pendulums, that occurs
with the reciprocative backwards and forwards movement, takes on a sudden
change in velocity because of the suns reduced gravitational affect on earth
that disturbes our equilibrium. This disturbance calms down as the sun
reveals itself such that equilibrium on earth is returned.
So that is what we can expect to be happening the next time we get on our
transmitters so we may talk to the World
Art Unwin KB9MZ...XG

838. To Harry From OP: Re: Airport Tower Comms, and My Receiving Antenna Orientation ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 18:44:18 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <yamdnQHIo83hMBbanZ2dnUVZ_tSknZ2d@comcast.com>
Source record: 29454

Hi Harry,

Great explanations. Thank you.

I will try to build your suggested antenna first chance I get. Will let you know how it works out.
BTW: is this what's (also) called a "J Pole" ?

Should it be pointed in any specific manner toward the source of what you are trying to receive ?
e.g.: should a plane formed from the short & long lengths be pointed to the source ?

Q1: I have no idea how it's constructed, but what I describe as vertical, the "tube" of the antenna is true up-down vertical.

Q2: Signal is "fairly" strong; it's only the noise that makes it hard to listen to when held vertically in the normal manner. Much better horizontally, and vertically downward, like I mentioned.

All my listening is indoors; perhaps as you mentioned this accounts for the S/N being better horizontally and vertically downward due to reflections, etc. ?

Thanks again; appreciate your time and advice very much,

Bob

"Harry - SM0VPO" <oeieio@hotmail.com> wrote in message news:3AMij.2786$R_4.2088@newsb.telia.net...
>> When the unit is held normally, that is with the antenna vertical, the
>> airport comms from the tower were really poor.
>> Lots of static and noise.
>>
>> But, much better when held horizontally.
>> a. Any idea why ?
>
> There are 10001 resons, but airfield communications ARE vertically
> polarised. They tend to use discone antennas for VHF and the "biconical
> monopole" for UHF. However, they are designed to broadcast to aircraft,
> which do not sit so close to the ground and so far away. There is likely
> to be an array of different antenna at the control tower and/or
> transmitter site, all of which could slightly affect that which you are
> receiving.
>

> The "rubber duck" antenna is NOT a 1/4-wave antenna at all. It is in fact
> a 3/4-wave antenna all coilled up, which gives a radiation pattern a
> little close to the fictitious "isotropic" antenna. People playing with
> rubber duck antennas on handheld gear rarely hold the things vertical, so
> the 3/4-wave gives a more uniform radiation in all directions - especially
> slightly up and down: more like a cylinder with a hole down the middle,
> than a donut. Another point is that the impedance of the 3/4-wave is more
> constant when your hands and head are close to the thing, but that is
> irrelevant for your application.
>
> Buildings tend to use metal structures, fittings, and wiring, all of which
> affect the passage of radio signals through them, especially at VHF. I
> have succesfully use existing mains conduit in the ceiling of a rented
> appartment as an antenna, by mutual coupling of feed and resonant "current
> breaks".
>
> Reflections from other buildings can also interract with the signal you
> receive. You may think that you predominantly receive the main direct
> path, but you would be surprised how often you are receiving reflections
> from other sources. Most GSM and all later generation of cellular phone
> base stations use polarisation diversity. That is one array of antennas
> 45-degrees to the left, and another array leaning to the right. All this
> is necessary because reflections and movements change polarisation.
>
> Q1: Are you sure that the antenna is vertically polarised?
> To be vertically polarised then the end bit should be higher than the
> bottom bit, and pointing at the sky. (Suoopid suggestion, I know, but you
> never know :-)
>
> Q2: Is the signal very strong? If weak then it could be arriving from any
> source. If you building is shielding your then you may be relying upon
> reflections from the bus park, aluminized billboard, power pylon, or the
> neighbours TV antenna, for reception.
>
> If you really want to receive these stations then use a simple antenna
> outside, in a controlled environment, without any unknown influences. Such
> an antenna need not be very complicated, in fact it could be built in a
> few minutes using a bit of wire and a broom handle.
>
> This link even does all the simple antenna calculations for you, for any
> frequency you want.
> http://web.telia.com/~u85920178/antennas/vpole0.htm
>
> If you want to receive a specific band with decent sensitivity (weak
> signas) then this link will give you some idea.
> http://web.telia.com/~u85920178/antennas/6dbvhf0.htm
>
> If you think that you have a weak signal, then see why at:
> http://web.telia.com/~u85920178/data/pathlos.htm
>

>

839. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 19:37:13 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <083c8023-0d04-49ce-94d8-37100207e0de@i12g2000prf.googlegroups.com>
Source record: 29455

On Jan 14, 10:59 am, Gene Fuller <W4SZzzz...@att.net> wrote:
> You keep ignoring the "sloshing" explanation. Actually, you did not
> totally ignore it; you did indeed criticize the choice of the
> descriptive word "sloshing".

Look up the word "slosh" in the dictionary, Gene. It is impossible for
EM energy to "slosh". While you are at it, you might as well assert
that photons smell bad.

EM (photonic) waves do NOT change direction unless a change in medium
is encountered. "Sloshing" requires a change in direction in the
complete absence of a medium change. It is a very ignorant, impossible
concept.

> The standing wave envelope may be stationary, but the fields are not.

There is no net energy movement in the kx direction as evidenced by
the equation: cos(kx)*cos(wt). All the energy movement is between the
E-field and H-field at any fixed point along the wire.

> There is no conflict with your photonic requirements.

Of course there is and I proved it with math. If you want to prove me
wrong, prove my math wrong. Good luck on that one.

> Since this discussion about fields and waves seems to annoy some of the
> "good buddy" crowd around here, I will quit now and let you win by default.

Translation: I have discovered my error. The standing-wave E-field and
H-field really are either 0 or 180 degrees apart. Drawing those fields
on paper and superposing them proves it.
--
73, Cecil, w5dxp.com

840. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 20:07:41 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <0b00152d-afef-415d-bf47-49ab43dcb689@u10g2000prn.googlegroups.com>
Source record: 29456

On Jan 14, 10:53 am, Gene Fuller <W4SZzzz...@att.net> wrote:
> Is your position that
> anyone who disagrees with you must be a spoiled brat?

The day you decided that you already know everything there is to know
is the day you started getting more and more ignorant and started
acting like a spoiled brat. Instead of screaming in anger that I am
wrong, I challenge you to produce the math that proves me wrong.

> It is
> not reasonable to substitute current and voltage for E-field and H-field
> when considering the Poynting vector.

Please prove that strange assertion. Is the voltage not proportional
to the E-field? Is the current not proportional to the H-field? For
traveling waves, is not Z0 = V/I and proportional to E/H?

> Go take a look at the
> actual field configurations for a TEM wave, which includes standing
> waves, and report back to us.

That's what I did already, Gene. You should take your own advice. It's
a little harder to visualize than voltage and current but follows
exactly the same concepts plus the right hand rule. Let's take two
equal coherent TEM plane waves forming standing waves in free space as
described by Hecht in "Optics". At one point the forward wave E-field
is at 135 degrees which puts the H-field at -135 degrees. The
reflected wave E-field is at 45 degrees which puts the H-field at -45
degrees.

Efor at 135 deg + Eref at 45 deg = |Efor|+|Eref| at 90 degrees

Hfor at -135 deg + Href at -45 deg = |Hfor|+|Href| at - 90 degrees

For standing waves, the H-field is 180 degrees offset from the E-
field. The power in the standing wave is ExH = E*H*sin(180) = ZERO.
Your assertion that the E-field and H-field are 90 degrees apart for
standing waves is simply FALSE! Please prove fact of physics that for
yourself.

Standing waves do not meet the requirements for an EM wave! Hecht was
right about that.

Feel free to do something besides wave your hands, mount ad hominem
attacks, and engage in obfuscation.
--
73, Cecil, w5dxp.com

c

841. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 20:09:15 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmgipaivd1@news.service.uci.edu>
Source record: 29459

Cecil Moore wrote:
> On Jan 11, 4:04 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>
>>Cecil Moore wrote:
>>
>>>A standing wave has an associated envelope but the envelope is *NOT*
>>>the wave itself.
>>
>>No, it's plot of the equation - just like any other plot one might
>>make of it. It simply a plot of amplitude vs position at a fixed time.
>
>
> I'm glad you finally agree.

I'm glad you finally understand.

73, ac6xg

842. Re: To Harry From OP: Re: Airport Tower Comms, and My Receiving Antenna Orientation ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 20:23:30 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <478bc4c0$0$5155$4c368faf@roadrunner.com>
Source record: 29457

"Robert11" <rgsros@notme.com> wrote in message
news:yamdnQHIo83hMBbanZ2dnUVZ_tSknZ2d@comcast.com...
> Hi Harry,
>
> Great explanations. Thank you.
>
> I will try to build your suggested antenna first chance I get. Will let
> you
> know how it works out.
> BTW: is this what's (also) called a "J Pole" ?
>
> Should it be pointed in any specific manner toward the source of what you
> are trying to receive ?
> e.g.: should a plane formed from the short & long lengths be pointed to
> the
> source ?
>
> Q1: I have no idea how it's constructed, but what I describe as vertical,
> the "tube" of the antenna is true up-down vertical.
>
> Q2: Signal is "fairly" strong; it's only the noise that makes it hard to
> listen to when held vertically in the normal manner. Much better
> horizontally, and vertically downward, like I mentioned.
>
> All my listening is indoors; perhaps as you mentioned this accounts for
> the S/N being better horizontally and vertically downward due to
> reflections, etc. ?
>
> Thanks again; appreciate your time and advice very much,
>
> Bob
>
> -------------------------------------
> "Harry - SM0VPO" <oeieio@hotmail.com> wrote in message
> news:3AMij.2786$R_4.2088@newsb.telia.net...
>>> When the unit is held normally, that is with the antenna vertical, the
>>> airport comms from the tower were really poor.
>>> Lots of static and noise.
>>>
>>> But, much better when held horizontally.
>>> a. Any idea why ?
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>> There are 10001 resons, but airfield communications ARE vertically

>> polarised. They tend to use discone antennas for VHF and the "biconical
>> monopole" for UHF. However, they are designed to broadcast to aircraft,
>> which do not sit so close to the ground and so far away. There is likely
>> to be an array of different antenna at the control tower and/or
>> transmitter site, all of which could slightly affect that which you are
>> receiving.
>>
>> The "rubber duck" antenna is NOT a 1/4-wave antenna at all. It is in fact
>> a 3/4-wave antenna all coilled up, which gives a radiation pattern a
>> little close to the fictitious "isotropic" antenna. People playing with
>> rubber duck antennas on handheld gear rarely hold the things vertical, so
>> the 3/4-wave gives a more uniform radiation in all directions -
>> especially
>> slightly up and down: more like a cylinder with a hole down the middle,
>> than a donut. Another point is that the impedance of the 3/4-wave is more
>> constant when your hands and head are close to the thing, but that is
>> irrelevant for your application.
>>
>> Buildings tend to use metal structures, fittings, and wiring, all of
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>> affect the passage of radio signals through them, especially at VHF. I
>> have succesfully use existing mains conduit in the ceiling of a rented
>> appartment as an antenna, by mutual coupling of feed and resonant
>> "current
>> breaks".
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>> Reflections from other buildings can also interract with the signal you
>> receive. You may think that you predominantly receive the main direct
>> path, but you would be surprised how often you are receiving reflections
>> from other sources. Most GSM and all later generation of cellular phone
>> base stations use polarisation diversity. That is one array of antennas
>> 45-degrees to the left, and another array leaning to the right. All this
>> is necessary because reflections and movements change polarisation.
>>
>> Q1: Are you sure that the antenna is vertically polarised?
>> To be vertically polarised then the end bit should be higher than the
>> bottom bit, and pointing at the sky. (Suoopid suggestion, I know, but you
>> never know :-)
>>
>> Q2: Is the signal very strong? If weak then it could be arriving from any
>> source. If you building is shielding your then you may be relying upon
>> reflections from the bus park, aluminized billboard, power pylon, or the
>> neighbours TV antenna, for reception.
>>
>> If you really want to receive these stations then use a simple antenna
>> outside, in a controlled environment, without any unknown influences.
>> Such
>> an antenna need not be very complicated, in fact it could be built in a
>> few minutes using a bit of wire and a broom handle.
>>

>> This link even does all the simple antenna calculations for you, for any
>> frequency you want.
>> http://web.telia.com/~u85920178/antennas/vpole0.htm
>>
>> If you want to receive a specific band with decent sensitivity (weak
>> signas) then this link will give you some idea.
>> http://web.telia.com/~u85920178/antennas/6dbvhf0.htm
>>
>> If you think that you have a weak signal, then see why at:
>> http://web.telia.com/~u85920178/data/pathlos.htm
>>
>>
>
>
>
Air or Ground UHF and VHF antennas are typically center fed vertical
dipoles. The radiator is a fairly thick piece of Aluminum tubing to make it
broadbanded. The coax runs up thru the bottom section and it connects to
both halves of the antenna in the middle. The antenna is housed in a
styrofoam filled fiberglass tube. The coax connecting the feedpoint of the
antenna to the connector at the base of the antenna has several ferrite
beads on it used for decoupling. Disc-cone antennas used to be popular for
the UHF frequencies but have pretty much seen their day.

Jimmie

843. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 20:40:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <949c669e-7357-4edf-81b4-b38ddaa97512@i12g2000prf.googlegroups.com>
Source record: 29458

On Jan 14, 2:37 pm, Cecil Moore <w5...@hotmail.com> wrote:
> It is impossible for EM energy to "slosh".
[gratuitous insult snipped]
> EM (photonic) waves do NOT change direction unless a change in medium
> is encountered. "Sloshing" requires a change in direction in the
> complete absence of a medium change.
[gratuitous insult snipped]
> There is no net energy movement in the kx direction as evidenced by
> the equation: cos(kx)*cos(wt). All the energy movement is between the
> E-field and H-field at any fixed point along the wire.

As you say, the energy moves between the E-field and the H-field,
but the locations of maximum energy along the line for each of these
fields is different, so the energy changes position on the line with
each cycle. The energy at any point on the line is not constant.

E-field energy will peak at the voltage maximums.
H-field energy will peak at the current maximums.
These are at different places (90 degrees apart).
So energy does move within the line, though no energy crosses a point
where the voltage or current is always 0.

http://www.eznec.com/misc/rraa/TLVis1.exe Demo #2 is a simulation that
helps visualize this change in the location of the energy.

...Keith

844. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 21:20:32 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <478bd21e$0$5190$4c368faf@roadrunner.com>
Source record: 29460

"Harry - SM0VPO" <oeieio@hotmail.com> wrote in message
news:OKMij.2788$R_4.1736@newsb.telia.net...
>> This newsgroup is the source of some of the best and knowledgeable
>> answers I have found on the net.
>>
>> Unfortunately, it now seems to suffer the same malignant plague as many
>> others--disagreements decaying into personal insults.
>
> The trouble with having a "heckler" out there responding with
> megga-sarcasm and ridicule is that one feels duty bound to respond. DONT.
> Let stupic and non-constructive postings go unanswered, otherwise the
> escalate.
>

Just sounds like the usual bunch of guys BSing to me.

I will never forget the time I had a boss who tried to enforce civilness.

Jimmie

845. Re: To Harry From OP: Re: Airport Tower Comms, and My Receiving Antenna Orientation ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 21:22:21 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <3afca9a4-45e5-444f-9e11-77b1f9bbe557@f47g2000hsd.googlegroups.com>
Source record: 29461

Hello Bob,

On 14 ene, 19:44, "Robert11" <rgs...@notme.com> wrote:
> Hi Harry,
>
> Great explanations. Thank you.
>
> I will try to build your suggested antenna first chance I get. Will let you
> know how it works out.
> BTW: is this what's (also) called a "J Pole" ?
>
> Should it be pointed in any specific manner toward the source of what you
> are trying to receive ?
> e.g.: should a plane formed from the short & long lengths be pointed to the
> source ?
>
> Q1: I have no idea how it's constructed, but what I describe as vertical,
> the "tube" of the antenna is true up-down vertical.
>
> Q2: Signal is "fairly" strong; it's only the noise that makes it hard to
> listen to when held vertically in the normal manner. Much better
> horizontally, and vertically downward, like I mentioned.

Are you sure that it is noise, is there some speech or music in the
"noise"? It could be an intermodulation product or just overload to
your receiver from a local FM broadcast station. See what happens
when you listen outside. when it is interference from your own
domestic equipment, the level should drop when outside your house.
Many so called "wide band receivers" give problems when used with a
good outdoor antenna.

Wim
PA3DJS
www.tetech.nl

[rest deleted]

846. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 21:22:34 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmgn6bnhq1@news.service.uci.edu>
Source record: 29463

Cecil Moore wrote:

> Standing waves do not meet the requirements for an EM wave!

Here's a perfect example of what you're saying:

http://id.mind.net/~zona/mstm/physics/waves/standingWaves/standingWaves1/StandingWaves

A standing wave, yet presumably not an electromagnetic wave! ;-)

ac6xg

847. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 22:15:12 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <5fd5eb5c-3267-4193-ad2e-571414349ca2@e10g2000prf.googlegroups.com>
Source record: 29462

On Jan 14, 8:49 am, Michael Coslo <m...@psu.edu> wrote:
> Christopher Cox wrote:
> > It must upset you something fierce then to know that the founders of the
> > major Ivy league schools and some of the most wealthy and influential
> > people today all have a common trait, they do not hold a collage diploma.
>
> As I have always said to my more highly educated colleagues:
>
> "You either have to have a degree or be good at what you do to get a job
> here."
>
> They nod, agree, and to a person completely miss the double entendre'.
>
> -73 de Mike N3LI -

You better watch it Michael or The Moderator is gonna GETCHA boy!

Hee!

848. Zmatch tuning unit inductance values.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 22:22:04 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <478be086$1@clear.net.nz>
Source record: 29464

Hi! I've been wanting to upgrade my old Zmatch ATU which is 30 years old
for a while but although I've come across several designs, both one and
2 coils I cannot find the actual inductance values required.
I seem to remember an article in a magazine some years ago that had them
but I haven't been able to locate it so far.
I have some very nice Silver plated coil stock that I would like to use
but as I have determined for myself the value of the coil is critical as
the network doesn't like the tuning position for any 2 bands to coincide.
Failing the use of an air cored coil I might try a Toroid, but The coil
stock is in my hands right now. Any help greatly appreciated!
Regards Cliff Wright ZL1BDA ex G3NIA

849. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 22:32:10 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <LpRij.27$XM.6@nlpi068.nbdc.sbc.com>
Source record: 29465

Jimmie D wrote:
> "Harry - SM0VPO" <oeieio@hotmail.com> wrote in message
> news:OKMij.2788$R_4.1736@newsb.telia.net...
>>> This newsgroup is the source of some of the best and knowledgeable
>>> answers I have found on the net.
>>>
>>> Unfortunately, it now seems to suffer the same malignant plague as many
>>> others--disagreements decaying into personal insults.
>> The trouble with having a "heckler" out there responding with
>> megga-sarcasm and ridicule is that one feels duty bound to respond. DONT.
>> Let stupic and non-constructive postings go unanswered, otherwise the
>> escalate.
>>
>
> Just sounds like the usual bunch of guys BSing to me.
>
> I will never forget the time I had a boss who tried to enforce civilness.
>
> Jimmie
>
>

Do you mean "civility?"
73,
Tom Donaly, KA6RUH

850. Re: Solar cycle and radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 22:51:46 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <478be780$0$5181$4c368faf@roadrunner.com>
Source record: 29466

"art" <aunwin@insightbb.com> wrote in message
news:1299670f-4d6e-46dc-8741-5bbaf27c5ad3@q39g2000hsf.googlegroups.com...
> The sun like earth has its own magnetic field.
> However unlike earth the poles on the sun have a cycle of 22 years
> where its magnetic pole turns around in a complete circle!
> So every 11 years the poles change places and the magnetic
> field gets stronger and then weaker.
> This magnetic field somewhat inhibits the release of solar dust
> that finds it way to earth. On the reverse side when the poles
> turn the magnetic field weakens and the dust arriving into the earths
> atmoshere increases a lot. This dust by the way is many times smaller
> than the diameter of a human hair but when the system becomes
> dense with these particles they look like a cloud as they reflect
> light.
> The Milky Way that one sees in the sky is a sample of such.
> So it should be seen that dust arrival from the sun coincides with
> radiation activities on earth. This dust is seen as inactive
> particles
> that mimic a decayed electron which atoms will reject from their orbit
> any additional electrons which if accepted would destroy the
> equilibrium
> of which the atom is a part. Fortunately some materials will accept
> the presence of these particals but only in a rest position and not
> as part of the
> atomic make up of the material. These materials are called
> diamagnetic.
> They do have electrical properties but do not retain magnetic
> properties.
> They can produce a magnetic field as a result of current flow which
> happens
> to be very weak as well as the magnetic lines created being at right
> angles
> to the axis of current flow. This very weak field can creat a
> rejective field to
> like materials where because of the proximity effect wwhich can give
> what appears
> to be a negative gravity effect on like particles. This effect has
> been shown
> to be effective on frogs no less but in general because of its weak
> field its rejection
> of solar inate particles is not visible to the eye. So it turns out
> that when
> earth suffers a increase in solar dust from the sun's solar position
> it coinsides with

> what ham radio refers to as a suitable DX period for
> propagation.together
> with a weakening of the magnetic field of the sun itself, because of
> the cyclic
> rotation of it's magnetic poles.
> The weakening of the magnetic field of the sun can be seen in action
> when
> a eclipse occures where the rotational momement of pendulums, that
> occurs
> with the reciprocative backwards and forwards movement, takes on a
> sudden
> change in velocity because of the suns reduced gravitational affect on
> earth
> that disturbes our equilibrium. This disturbance calms down as the
> sun
> reveals itself such that equilibrium on earth is returned.
> So that is what we can expect to be happening the next time we get on
> our
> transmitters so we may talk to the World
> Art Unwin KB9MZ...XG

Uh oh, too much oxycodone, this is beginning to make sense.

Jimmie

851. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 23:09:01 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmgq2k$4kj$1@news.albasani.net>
Source record: 29467

Jim Kelley wrote:

> ...
> http://id.mind.net/~zona/mstm/physics/waves/standingWaves/standingWaves1/StandingWaves
>
>
> A standing wave, yet presumably not an electromagnetic wave! ;-)
>
> ac6xg

That page is coming up "Not Found." on my browser; Is there an error in the URL? I am asking because, too often, my browser is giving me this error on URLs' posted by people ... I can't find any reason for it.

Thanks in advance,
warmest regards,
JS

852. Re: Zmatch tuning unit inductance values.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 23:33:44 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <7f8e59bb-89a4-45c8-a3d5-46fbf55383ac@y5g2000hsf.googlegroups.com>
Source record: 29468

On Jan 14, 2:22 pm, cliff wright <c.c.wri...@paradise.net.nz> wrote:
> Hi! I've been wanting to upgrade my old Zmatch ATU which is 30 years old
> for a while but although I've come across several designs, both one and
> 2 coils I cannot find the actual inductance values required.
> I seem to remember an article in a magazine some years ago that had them
> but I haven't been able to locate it so far.
> I have some very nice Silver plated coil stock that I would like to use
> but as I have determined for myself the value of the coil is critical as
> the network doesn't like the tuning position for any 2 bands to coincide.
> Failing the use of an air cored coil I might try a Toroid, but The coil
> stock is in my hands right now. Any help greatly appreciated!
> Regards Cliff Wright ZL1BDA ex G3NIA

Hi, Cliff.
Are you sure about the age? I think I got mine about 1970 and it was
used then! I used it for years running about 100 watts and a dipole
fed with ladder line. Now it's just resting in the loft.

What are you wanting to upgrade? The capacitors won't take the voltage
of much higher power.

Can you measure the minimum and maximum capacitance? If so, and you
already know the frequency range, then you can compute the inductance
or read it off a chart. I am at work, so can't look at the manual.

Paul, KD7HB

853. Re: Education

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-14 23:35:29 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478bf1c1$0$5125$4c368faf@roadrunner.com>
Source record: 29469

"Michael Coslo" <mjc5@psu.edu> wrote in message
news:fmfp8n$11hc$1@f04n12.cac.psu.edu...
> Christopher Cox wrote:
>> It must upset you something fierce then to know that the founders of the
>> major Ivy league schools and some of the most wealthy and influential
>> people today all have a common trait, they do not hold a collage diploma.
>
>
> As I have always said to my more highly educated colleagues:
>
> "You either have to have a degree or be good at what you do to get a job
> here."
>
> They nod, agree, and to a person completely miss the double entendre'.

In my experience this is really true, in many cases. Although I have a degree, I am retired from one position, still working in another (for a few years perhaps) and I am *not* encouraging my college bound son not to get a degree in engineering. It is not often that a BSEE or BSME ends up in a job that satisfactorily utilizes the knowledge he/she is taught. In Asia, to which these degree'd (and non-degree'd) jobs are moving anyhow, they are educated at schools in China that do not (and could not) meet degree accreditation by US standards, yet they are sufficient for computer design "engineer" positions. Where I have seen a degree education make a difference is in the field of analog design for medical applications but even there, once in a whiile you would find a whiz with no degree and design circles around the degree'd engineer. Some people seem to just have it, some don't. I want my son to go into bio-med (or maybe just "med") and stay away from this godforsaken field that the BSEE is overqualified for the (digital design) and overpopulated, for the number of jobs available. However, it does help enhance a fine hobby when you retire!

854. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 00:19:27 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080114161927.32527e17.rsparks@elltel.net>
Source record: 29470

On Mon, 14 Jan 2008 12:40:39 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

snip.............
> As you say, the energy moves between the E-field and the H-field,
> but the locations of maximum energy along the line for each of these
> fields is different, so the energy changes position on the line with
> each cycle. The energy at any point on the line is not constant.
>
> E-field energy will peak at the voltage maximums.
> H-field energy will peak at the current maximums.
> These are at different places (90 degrees apart).
> So energy does move within the line, though no energy crosses a point
> where the voltage or current is always 0.

I can understand no energy crossing a zero current point, but how do you justify no energy crossing a zero voltage point when current IS observed? Current is defined as movement of charges, and charges have energy by definition (how can they be charges without energy?).

Another point, the current is observed to change directions during the cycles, polarity also changes on each side of the zero voltage point. Where might the polarized energy come from if it does not cross the zero voltage point?

I can kinda see how like charges could repell so that waves of like polarity might "bounce" but I can't see how waves of opposite polarity might "bounce". If waves of opposite polarity "bounced", why would the polarity change during the cycle on each side of the "bounce" point?

To me, it is much more rewarding to work with traveling waves that pass through one another, interacting to create standing waves.

Would it help your visualization process to observe that when two waves of SAME POLARITY but traveling in opposite directions cross, the currents accompaning the waves are moving in opposite directions both before and after crossing? When two waves of OPPOSITE POLARITY but traveling in opposite directions cross, the currents are moving in the same direction both before and after crossing.

If we were talking about water, water behind a dam is like voltage, with the height of the water the potential energy, measured in head (feet), or PSI if measured at the bottom of the dam. A pipe to the bottom of the dam will squirt water at a high velocity but no head or PSI. The potential energy of the water behind the dam has been converted to kinetic energy measued in velocity of a moving mass. The moving water can be stopped, and if carefully done, the static head reached by stopping the water will nearly reach the original water level behind the dam. It would reach the same level if it were not for friction losses. Electrical current is something like that moving water.

>
> http://www.eznec.com/misc/rraa/TLVis1.exe Demo #2 is a simulation that
> helps visualize this change in the location of the energy.
>
> ...Keith

73, Roger, W7WKB

855. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 01:10:49 UTC
From: jimkelleyamps@gmail.com
Message-ID: <d9fc050c-b8e4-4a4b-a81d-c955ccf41979@x69g2000hsx.googlegroups.com>
Source record: 29471

Jim Kelley wrote:
> Cecil Moore wrote:
>
> > Standing waves do not meet the requirements for an EM wave!
>
> Here's a perfect example of what you're saying:
>
> http://id.mind.net/~zona/mstm/physics/waves/standingWaves/standingWaves1/StandingWaves
>
> A standing wave, yet presumably not an electromagnetic wave! ;-)
>
> ac6xg

Sorry. Truncated URL. There's more. The correct URL is:

http://id.mind.net/~zona/mstm/physics/waves/standingWaves/standingWaves1/StandingWaves1.html

jk

856. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 03:07:12 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <ArVij.135521$MJ6.62444@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29472

Cecil Moore wrote:
> On Jan 14, 10:53 am, Gene Fuller <W4SZzzz...@att.net> wrote:
>> Is your position that
>> anyone who disagrees with you must be a spoiled brat?
>
> The day you decided that you already know everything there is to know
> is the day you started getting more and more ignorant and started
> acting like a spoiled brat. Instead of screaming in anger that I am
> wrong, I challenge you to produce the math that proves me wrong.
>
>> It is
>> not reasonable to substitute current and voltage for E-field and H-field
>> when considering the Poynting vector.
>
> Please prove that strange assertion. Is the voltage not proportional
> to the E-field? Is the current not proportional to the H-field? For
> traveling waves, is not Z0 = V/I and proportional to E/H?
>
>> Go take a look at the
>> actual field configurations for a TEM wave, which includes standing
>> waves, and report back to us.
>
> That's what I did already, Gene. You should take your own advice. It's
> a little harder to visualize than voltage and current but follows
> exactly the same concepts plus the right hand rule. Let's take two
> equal coherent TEM plane waves forming standing waves in free space as
> described by Hecht in "Optics". At one point the forward wave E-field
> is at 135 degrees which puts the H-field at -135 degrees. The
> reflected wave E-field is at 45 degrees which puts the H-field at -45
> degrees.
>
> Efor at 135 deg + Eref at 45 deg = |Efor|+|Eref| at 90 degrees
>
> Hfor at -135 deg + Href at -45 deg = |Hfor|+|Href| at - 90 degrees
>
> For standing waves, the H-field is 180 degrees offset from the E-
> field. The power in the standing wave is ExH = E*H*sin(180) = ZERO.
> Your assertion that the E-field and H-field are 90 degrees apart for
> standing waves is simply FALSE! Please prove fact of physics that for
> yourself.
>
> Standing waves do not meet the requirements for an EM wave! Hecht was
> right about that.
>

> Feel free to do something besides wave your hands, mount ad hominem
> attacks, and engage in obfuscation.
> --
> 73, Cecil, w5dxp.com
>
>
>
> c

Cecil,

Enjoy your superiority! When you finally figure out that phasor angles (such as those used above) have no connection with the vector directions considered in the Poynting analysis then you will have found even more wisdom.

73,
Gene
W4SZ

857. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 03:42:19 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <239d1547-9f47-46a7-baf3-79a6d10635f2@k39g2000hsf.googlegroups.com>
Source record: 29473

On Jan 14, 3:40 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> So energy does move within the line, though no energy crosses a point
> where the voltage or current is always 0.

Zero *NET* energy moves in a standing wave pattern whether it be at a node or anywhere else. Forward energy and reflected energy moves across a node and everywhere else because there are no reflections in a homogeneous medium.

Please site a reference that says that reflections are possible in a homogeneous medium. Until you do that, you are preaching religion, not science.
--
73, Cecil, w5dxp.com

858. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 03:47:31 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <2faa4753-a15e-451f-9f24-398de2b404d7@e23g2000prf.googlegroups.com>
Source record: 29474

On Jan 14, 3:09 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> Cecil Moore wrote:
> > I'm glad you finally agree.
>
> I'm glad you finally understand.

I've always known that a graph drawn with a pencil on a piece of paper
is not an EM standing wave but, for awhile, you seem to have forgotten
that simple fact. The envelope is also not the wave.
--
73, Cecil, w5dxp.com

859. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 03:50:58 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <4bc396ad-19df-4dd3-94e7-96c3d435428f@p69g2000hsa.googlegroups.com>
Source record: 29475

On Jan 14, 4:22 pm, Jim Kelley <jwkel...@uci.edu> wrote:
> A standing wave, yet presumably not an electromagnetic wave! ;-)

EM waves necessarily travel at the speed of light in a medium. Does a
standing wave travel at the speed of light? If your answer is 'yes',
where does it go? If your answer is 'no', it is not an EM wave.
--
73, Cecil, w5dxp.com

860. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 03:53:50 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <d6bd6e04-e443-40c6-9f50-7d073d09cb2d@q39g2000hsf.googlegroups.com>
Source record: 29476

On Jan 14, 8:10 pm, jimkelleya...@gmail.com wrote:
> Jim Kelley wrote:
> Sorry. Truncated URL. There's more. The correct URL is:
> http://id.mind.net/~zona/mstm/physics/waves/standingWaves/standingWav...

Sorry, it didn't change and is truncated again. Maybe you should just
use two lines?
--
73, Cecil, w5dxp.com

861. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 04:04:21 UTC
From: Cecil Moore <w5dxp@hotmail.com>
Message-ID: <4b79264d-9e9d-47ec-81b0-f93ad7be4b75@1g2000hsl.googlegroups.com>
Source record: 29477

On Jan 14, 10:07 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> Enjoy your superiority! When you finally figure out that phasor angles
> (such as those used above) have no connection with the vector directions
> considered in the Poynting analysis then you will have found even more
> wisdom.

I challenged you to post the math, Gene, and you are apparently afraid
to do so. I'll bet you $100 that I am right and can prove it. I showed
that two plane waves in free space form standing waves with the total
E-field either 0 or 180 degrees apart from the H-field, contrary to
what you asserted. Please prove me wrong. If you cannot, please send
me $100.

If you would put aside your delusions of grandeur and simply sketch
those fields on a piece of paper, you would see for yourself that I am
right. When I get back home, I'll knock out a 3D graphic that will
leave no doubt.
--
73, Cecil. w5dxp.com

862. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 04:27:31 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <TCWij.432407$kj1.48010@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29478

Cecil Moore wrote:
> On Jan 14, 10:07 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>> Enjoy your superiority! When you finally figure out that phasor angles
>> (such as those used above) have no connection with the vector directions
>> considered in the Poynting analysis then you will have found even more
>> wisdom.
>
> I challenged you to post the math, Gene, and you are apparently afraid
> to do so. I'll bet you $100 that I am right and can prove it. I showed
> that two plane waves in free space form standing waves with the total
> E-field either 0 or 180 degrees apart from the H-field, contrary to
> what you asserted. Please prove me wrong. If you cannot, please send
> me $100.
>
> If you would put aside your delusions of grandeur and simply sketch
> those fields on a piece of paper, you would see for yourself that I am
> right. When I get back home, I'll knock out a 3D graphic that will
> leave no doubt.
> --
> 73, Cecil. w5dxp.com
>

Cecil,

This is truly bizarre. The E-field and the H-field are always at right angles to each other in the plane wave case. They are also perpendicular to the propagation direction. The same is true for the TEM mode in a coaxial waveguide, which is the usual case discussed on RRAA. There is no 0 or 180 degree involvement. I don't know what you are so confused about, but you really need to rethink what you are saying.

There is no need to sketch or calculate anything. A diagram showing the relationship of the E-field vector and the H-field vector is in every E&M and optics book I have ever seen. I presume that Hecht has the same diagram.

73,
Gene
W4SZ

863. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 05:50:24 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478c49a0$0$18425$4c368faf@roadrunner.com>
Source record: 29479

"Cecil Moore" <w5dxp@hotmail.com> wrote in message
news:4bc396ad-19df-4dd3-94e7-96c3d435428f@p69g2000hsa.googlegroups.com...
> On Jan 14, 4:22 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>> A standing wave, yet presumably not an electromagnetic wave! ;-)
>
> EM waves necessarily travel at the speed of light in a medium. Does a
> standing wave travel at the speed of light? If your answer is 'yes',
> where does it go? If your answer is 'no', it is not an EM wave.
> --
> 73, Cecil, w5dxp.com

EM waves vibrate "up and down" at a frequency (say 4 MHz). The wavelength (say 80m) multipled by the frequency is the speed of light. But it goes nowhere.

The *stored energy* in the standing wave eventually encounters what we call "radiation resistance" which is nothing more than the tendency of nature to counteract current flow in the antenna. Nature opposes this current flow (this opposition gives rise to radiation "resistance") by creating TEM waves by maxwell's laws, which are released as the energy of radiation. Those travel at the speed of light. If the antenna had no contact with free space, and there were no ohmic losses, the standing wave would exist forever simply as stored/potential/reactive energy performing no work. The antenna in free space causes the stored energy in the standing wave to convert to TEM's that perform work due to nature attempting to create equal and opposing currents to the standing wave current by creating TEM radiating fields that form the opposing currents. (Lentz's law)

864. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 06:08:22 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmhiku$7gf$1@news.albasani.net>
Source record: 29480

Gene Fuller wrote:

> ...
> There is no need to sketch or calculate anything. A diagram showing the
> relationship of the E-field vector and the H-field vector is in every
> E&M and optics book I have ever seen. I presume that Hecht has the same
> diagram.
>
> 73,
> Gene
> W4SZ

Gesus, e fields/h fields at right angles to each other? These are
things which make our graphs make "sense" to us--as far as being "real",
gawd--who knows?

IDIOTS ALL!

Regards,
JS

865. Re: Zmatch tuning unit inductance values.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 07:20:33 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <9GLCmnDB7FjHFA5z@ifwtech.co.uk>
Source record: 29482

cliff wright wrote:
>Hi! I've been wanting to upgrade my old Zmatch ATU which is 30 years
>old for a while but although I've come across several designs, both one
>and 2 coils I cannot find the actual inductance values required.
>I seem to remember an article in a magazine some years ago that had them
>but I haven't been able to locate it so far.
>I have some very nice Silver plated coil stock that I would like to use
>but as I have determined for myself the value of the coil is critical
>as the network doesn't like the tuning position for any 2 bands to
>coincide.
>Failing the use of an air cored coil I might try a Toroid, but The coil
>stock is in my hands right now. Any help greatly appreciated!
>Regards Cliff Wright ZL1BDA ex G3NIA

See VK5BR's website:
http://users.tpg.com.au/ldbutler/SingleCoilZMatch.htm

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

866. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 07:24:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13oontletghv8c8@corp.supernews.com>
Source record: 29481

Keith Dysart wrote:
>
> You don't need Poynting vectors to realize that when
> the instantaneous power is always 0, no energy is flowing.
> And when the instantaneous power is always 0, it is
> unnecessary to integrate and average to compute the
> net energy flow, because no energy is flowing at all.
>
> And if by your response you really do mean that energy
> can be flowing when the instantaneous power is always 0,
> please be direct and say so.
>
> But then you will have to come up with a new definition
> of instantaneous power for it can not be that it is
> the rate of energy transfer if energy is flowing when
> the instantaneous power is zero.

The little program I wrote shows that, on the line being analyzed, the energy is changing -- moving -- on both sides of a point of zero power. Energy is flowing into that point from both directions at equal rates, then flowing out at equal rates. This causes the energy at that point to increase and decrease. What zero power at a given point means is that there is no *net* energy moving in either direction past that point.

Roy Lewallen, W7EL

867. WELCOME

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 08:07:17 UTC
From: "murgavel341@gmail.com" <murgavel341@gmail.com>
Message-ID: <4bede21f-6739-4266-8d12-4da83e738aa5@q39g2000hsf.googlegroups.com>
Source record: 29483

HAI FRIENDS
WISH YOU HAPPY
PONGAL

---
http://memorysolution.blogspot.com/
---

868. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 08:59:19 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmhsle$65d$1@news.albasani.net>
Source record: 29484

Roy Lewallen wrote:
> ...
What zero power at a given point means is that
> there is no *net* energy moving in either direction past that point.
>
> Roy Lewallen, W7EL

A black hole? :-D

JS

869. Re: WELCOME

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 09:00:31 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmhsnl$65d$2@news.albasani.net>
Source record: 29485

murgavel341@gmail.com wrote:
> HAI FRIENDS
> WISH YOU HAPPY
> PONGAL
> _____
> http://memorysolution.blogspot.com/
> _____

BIG Plonk!

JS

870. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 11:03:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13op4ocbpukp3aa@corp.supernews.com>
Source record: 29486

Comments interspersed. . .

Keith Dysart wrote:
> Thanks for offering the two capacitor/one capacitor view of the middle
> of the line. It took a bit of time to decide whether the commingling
> of the charge in the single capacitor at the middle of the line would
> solve my dilemma.
>
> So I considered this one capacitor in the exact center of a perfect
> transmission line. It is the perfect capacitor, absolutely
> symmetrical. So as the exactly equal currents flow into it on
> the exactly symmetrical leads, the charge is perfectly balanced
> so that the charge coming from each side exactly occupies its
> side of the conductor. As the two flows of charge flow over
> the perfectly symmetrical plates, they meet in the exact
> center, and flow no more. I conclude that a surface can
> be found exactly in the center of this capacitor across
> which no charge flows. Thus (un)happily returning me exactly
> to where I was before; there is a line across which no
> charge, and hence no energy, flows.

I'm ok with that. To me, it's the same as splitting the capacitor into
two separate ones, each with its own charge from one direction.

> More comments below.
>
> On Jan 2, 7:38 pm, Roy Lewallen <w...@eznec.com> wrote:
>> I'm top posting this so readers won't have to scroll down to see it, but
>> so I can include the original posting completely as a reference.
>>
>> Keith, you've presented a very good and well thought out argument. But
>> I'm not willing to embrace it without a lot of further critical thought.
>> Some of the things I find disturbing are:
>>
>> 1. There are no mathematics to quantitatively describe the phenomenon.
>> 2. I don't understand the mechanism which causes waves to bounce.
>
> I take this to imply that you are not happy with the simple "like
> charge
> repels"?

That's right. Although it's a true statement, I haven't seen any
explanation of why it would cause waves to bounce off each other.

>> 3. No test has been proposed which gives measurable results that will
>> be different if this phenomenon exists than if it doesn't. (I

>> acknowledge your proposed test but don't believe it fits in this category.)
>> 4. I'm skeptical that this mechanism wouldn't cause visible
>> distortion when dissimilar waves collide. But without any describing
>> mathematics or physical basis for the phenomenon, there's no way to
>> predict what should or shouldn't occur.
>> 5. Although the argument about no energy crossing the zero-current
>> node is compelling, I don't feel that an adequate argument has been
>> given to justify the wave "bouncing" theory over all other possible
>> explanations.
>
> I would really appreciate seeing some other possible explanations.

How about this: During the initial turn-on of the system, energy does
cross the magic node. It's only in the theoretical limiting case of
steady state that the energy goes into and out of the node but doesn't
cross it. I'll argue that the limiting case can never be reached --
since this whole setup is a perfect construct to begin with. Or, if
that's not adequate by itself, what's the problem with energy being
trapped between nodes once the line is charged and steady state is reached?

> One other one which I have seen and am not confortable with is the
> explanation that energy in the waves pass through the point in
> each direction and sum to zero. But this is indistinguishable from
> superposing power which most agree is inappropriate. As well, this
> explanation means that P(t) is not equal to V(t) times I(t),
> something that I am quite reluctant to agree with.

I won't go there either.

> The other explanation seen is that the voltage waves or the
> current waves travel down the line superpose, yielding a total
> voltage and current function at each point on the line which
> can be used to compute the power.

This is done and graphically shown with the TLVis1 program demo. The
energy at each point is also calculated and shown.

> With this explanation, P(t)
> is definitely equal to V(t) time I(t), which I do appreciate.
> The weakness of this explanation is that it seems to deny
> that the wave moves energy. And yet before the pulses collide
> it is easy to observe the energy moving in the line, and if
> a pulse was not coming in the other direction, there would
> be no dispute that the energy travelled to the end of the
> line and was absorbed in the load. Yet when the pulses
> collide, no energy crosses the middle of the line. Yet
> energy can be observed travelling in the line before
> and after the pulses collide.

I think the basic problem here is assigning energy to each traveling
wave. It's taking you into exactly the same morass that Cecil constantly
finds himself in. He also concluded some time back that two waves which

collide had to reverse direction in order to conserve power, energy,
momentum, or something. Energy in the system is conserved; but nowhere
is it written that each wave has to have individually conserved energy.

> So...
>
> I can give up on pulses (or waves) moving energy. I am not
> happy doing that.

I'm afraid you might have to.

> I can give up on P(t) = V(t) * I(t). I am not happy doing
> that either.

Fortunately, that's not necessary.
>
> So the (poorly developped) "charge bouncing" explanation
> seems like a way out, but I certainly would appreciate
> other explanations for consideration.

I think you need to take a closer look at what it's getting you out
from. I believe the problem lies there.

>> None of these make an argument with your logical development, although I
>> think I might be able to do that too. But I'm very reluctant to accept a
>> view of wave interaction that's apparently contrary to established and
>> completely successful theory and one, if true, might have profound
>> effects on our understanding of how things work. So frankly I'm looking
>> hard for a flaw in your argument. And I may have found one.
>
> So I am not convinced that it any way goes against established theory.
> I have not seen established theory attempt an explanation of how the
> waves can both transport energy as well as not do so when waves of
> equal energy collide.

Perhaps that's because individual waves don't transport energy that has
>to be conserved?

>. . .

>
>> It would be instructive to see what happens as, for example, the load
>> resistance is increased toward infinity or decreased toward zero
>> arbitrarily closely, but not at the point at which it's actually there.
>> If the "bouncing" phenomenon is necessary only to explain the limiting
>> case of infinite SWR on a perfect line but no others, then an argument
>> can be made that it's not necessary at all. I suspect this is the case.
>
> The same concern that arises for pulses of equal voltage also
> occurs for pulses of different voltage. While the mid-point no
> longer has zero current, the actual current is only the difference
> of the two currents in the pulses, the charge that crosses is only
> the difference in the charge between the two pulses, and the

> power at the mid-point is exactly the power that is needed
> to move the difference in the energy of the two pulses.

Sorry, I'm having trouble following that. Voltage, current, charge, and
energy all in two sentences has too high a concept density for me to handle.

> So the challenge is not so starkly obvious as it is when the
> power at the mid-point is always 0, but P(t) = V(t) * I(t) can
> still be computed and it will not be sufficient to allow
> the energy in the two pulses to cross the mid-point (unless
> one likes superposing power, in which case it will be
> numerologically correct).

No, it'll have to be done without superposing power. Simple calculations
clearly show where the power is and where the energy is going, without
the need to superpose power or assign power or energy to individual waves.

>> I agree with your argument about two sources energized in turn, and have
>> used that argument a number of times myself to refute the notion of
>> superposing powers. Once two voltage or current waves occupy the same
>> space, the only reality is the sum. We're free to split them up into
>> traveling waves or any other combination we might dream up, with the
>> sole requirement being that the sum of all our creations equals the
>> correct total. (And the behavior of waves you're describing seemingly go
>> beyond this.)
>
> I sometimes think that this may actually be a debate about the
> conceptual view of waves. If waves consist only of voltage and
> current, then all is well, superposition works, the correct
> answers are achieved. And if the power is computed after the
> voltages and currents are arrived at, all is well.
>
> But if one conceives waves as also including energy, then it
> seems that the question 'where does the energy go' is valid
> and the common explanations do not seem to hold up well.

I think you're partially right about that. Partially, because I think
there's an underlying assumption that the power in an individual wave
has to be conserved. If you do insist on assigning energy to individual
traveling waves, I think you have to be willing to deal with the fact
that the energy can be swapped and shared among different waves, and
stored and returned as well.

Our common analytical techniques deal with E and H fields which we can
superpose. In a transmission line, these are closely associated with
voltages and currents. They add nicely to make a total with properties
we can measure and characterize, and the total can neatly be created as
the sum of individual traveling waves from turn on until steady state.
It all works very well. Two fields, voltages or currents can easily add
to zero simply by being oriented in opposite directions -- and they do,
all along a transmission line. But how are the energies they supposedly
contain going to add to zero? You'll have to construct a whole new model

if you're going to require conservation of energy of individual
traveling waves. I'm absolutely certain that after all the work of
developing a self-consistent model with all interactions quantitatively
and mathematically explained and accounted for, we'll find a testable
case where some measurable result will be different from the
conventional viewpoint. (Google "ultraviolet catastrophe".) That would
then establish the validity of the new model. But I'm just as certain
that no such mathematical model will ever be forthcoming.

>> The advantage to the non-interacting traveling wave model
>> is that it so neatly predicts transient phenomena such as TDR and run-up
>> to steady state. I spent a number of years designing TDR circuitry,
>> interfacing with customers, and on several occasions developing and
>> teaching classes on TDR techniques, without ever encountering any
>> phenomena requiring explanations beyond classical traveling wave theory.
>> So you can understand my reluctance to embrace it based on a problem
>> with energy transfer across a single infinitesimal point in an ideal line.
>
> Yes, indeed. Though any (new) explanation would have to remain
> consistent with the existing body of knowledge which works so well.

Either that, or be able to demonstrate where the existing knowledge
fails. I'm not holding my breath.

Roy Lewallen, W7EL

871. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 14:44:05 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <836f4ecd-7e81-44dd-a262-94676a02009d@q39g2000hsf.googlegroups.com>
Source record: 29487

On Jan 14, 7:19 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Mon, 14 Jan 2008 12:40:39 -0800 (PST)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> snip.....
>
> > As you say, the energy moves between the E-field and the H-field,
> > but the locations of maximum energy along the line for each of these
> > fields is different, so the energy changes position on the line with
> > each cycle. The energy at any point on the line is not constant.
>
> > E-field energy will peak at the voltage maximums.
> > H-field energy will peak at the current maximums.
> > These are at different places (90 degrees apart).
> > So energy does move within the line, though no energy crosses a point
> > where the voltage or current is always 0.
>
> I can understand no energy crossing a zero current point, but how do you justify no
energy crossing a zero voltage point when current IS observed?

Well I start with P = V * I, so whenever the current or the voltage
is zero, there is no power. Specifically, V and I are measured at
the terminals of a network and P will be the power flowing into or
out of the network.

In the case under discussion, there are two networks, one to
the left of the point on the line and one to the right and
we are measuring the power flowing between these two networks.

For an example of current without power, consider a loop of
superconductor with a current flowing in it. No voltage, no
power, but there is current.

> Current is defined as movement of charges, and charges have energy by definition (how can
they be charges without energy?).

Consider an object flying through space. No work is being done
(and therefore there is no power), but the object still has
kinetic energy.

> Another point, the current is observed to change directions during the cycles, polarity
also changes on each side of the zero voltage point. Where might the polarized energy come
from if it does not cross the zero voltage point?

A thought experiment I have found useful is to consider a simple
resonant circuit made of an ideal capacitor and inductor. Charge
the capacitor to 10 volts and then connect the inductor. A sinusoidal
voltage and current will appear in the circuit.

Just as the inductor is connected:
- all the energy is stored in the capacitor
- the voltage on the capacitor is maximum
- there is no current in the inductor
After connecting the inductor:
- energy starts to transfer to the inductor
- the voltage on the capacitor is dropping
- the current in the inductor is increasing
Some time later:
- the voltage on the capacitor is 0
- the current in the inductor is maximum
- there is no energy stored in the capacitor
- all the energy is stored in the inductor
- no energy is moving from the capacitor to
the inductor
But the inductor insists that current continue
to flow:
- the capacitor begins to charge with a negarive
voltage
- energy begins to transfer from the inductor
back to the capacitor (note the change in the
direction of energy flow)
- the voltage on the capacitor is increasing
negatively
- the current in the inductor is dropping
Sometime later:
- the current in the inductor has dropped to
zero
- the capacitor has a maximum negative voltage
- all the energy is in the capacitor
And this continues forever at the resonant
frequency of the capacitor and inductor circuit.

But no energy is moving from the capacitor to
the inductor when the voltage on the capacitor
is zero and the current in the inductor is
maximum. It is at these times that the direction
of energy flow is changing, as well as when the
voltage in the capacitor is maximum and the
current is zero.

> I can kinda see how like charges could repell so that waves of like polarity might
"bounce" but I can't see how waves of opposite polarity might "bounce". If waves of
opposite polarity "bounced", why would the polarity change during the cycle on each side of
the "bounce" point?

An excellent counter-example. I may have fallen into
the trap of looking at the examples that support the
argument rather than looking for the ones that don't.
This will take some cogitating. Maybe its the end
of the line for the "bounce hypothesis".

> To me, it is much more rewarding to work with traveling waves that pass through one another, interacting to create standing waves.

I don't object to this view, as long as the waves are
viewed as having voltages or currents but no power.

The difficulty is that some waves definitely transport
energy while others do not and I do not see a good
explanation for what turns the former into the latter,
as happens, for example, when the pulses collide.

> Would it help your visualization process to observe that when two waves of SAME POLARITY but traveling in opposite directions cross, the currents accompaning the waves are moving in opposite directions both before and after crossing? When two waves of OPPOSITE POLARITY but traveling in opposite directions cross, the currents are moving in the same direction both before and after crossing.

I do understand (at least I think I do) the methodology
for superposing the waves of voltage and current,
computing the results and deriving the power from the
result.

I just am not happy that this results in waves sometimes
transporting energy and sometimes not, without a good
explanation of the transition.

> If we were talking about water, water behind a dam is like voltage, with the height of the water the potential energy, measured in head (feet), or PSI if measured at the bottom of the dam. A pipe to the bottom of the dam will squirt water at a high velocity but no head or PSI. The potential energy of the water behind the dam has been converted to kinetic energy measued in velocity of a moving mass. The moving water can be stopped, and if carefully done, the static head reached by stopping the water will nearly reach the original water level behind the dam. It would reach the same level if it were not for friction losses. Electrical current is something like that moving water.

Agreed. I have used this analogy as an aid to understaning
though it becomes challenging at RF.

...Keith

872. Why the US airwaves are not free

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 14:55:16 UTC
From: Maverick Party <maverick_platform@yahoo.com>
Message-ID: <20c2844b-68da-48b2-8a2f-636920ca9e2a@f3g2000hsg.googlegroups.com>
Source record: 29488

The ruling democrat and republican parties proclaim that the airwaves "belong to the people." But if the people ever try to get access to any mass media that uses the airwaves, they would find these same parties tightly control them. The statement that the airwaves belong to the people is a hollow phrase that makes people feel good, as long as they never test it.

The American airwaves are almost completely dominated by large and wealthy private groups that broadcast their own opinions, not necessarily those of the people.

The democrat and republican parties want to control the airwaves for the same reason that totalitarian governments shut down any opposition media organizations. They want to censor the information that the mass of the people are allowed to know, in case the population gets too much negative information and wishes to throw the ruling parties out.

Secondly, when a political party is in power, it gets to dole out government contracts and licenses to private groups that petition it. What you don't see is that the halls of Congress and the regulatory agencies and the White House are crowded with lobbyists whose job is to distribute bribes to government officials for these privileges. In America, these bribes are promises of high-paying, do-nothing jobs like seats on Boards of Directors of corporations, and other nice jobs. Former senator Bill Bradley now sits on the board of Starbucks. These bribes are also called campaign contributions.

Now you know why the ruling parties, the democrat and republican, fought so hard to end freedom on the internet. Freedom of speech requires privacy and privacy requires anonymity. So to end freedom on the internet, these parties had to destroy any anonymity of speech you have on the internet.

Tyrannical parties, the Chinese communists and the American democrats and republicans, must be able to know who is spreading threatening political speech in any form of mass media because this threatens their control over the gravy train of government taxes and contract awards.

Since only 39% of the electorate vote in an American election, and the two parties are roughly even, this means that either party represents less than 20% of the eligible voters. But it costs nothing, only a signature to say you belong to one party or another, so the real percentage that either ruling political party in America represents is much smaller than 20%. So neither the democrats nor republicans, even

combined, represent a majority of even the electorate which is not even the the population itself.

The American ruling parties had a special problem. They had to shut down freedom of internet speech without appearing to be against free speech. They needed an excuse. They found the excuse in two ways. Terrorism and Pedophilia.

In order to take freedom and rights away from the people, a political party in power must first convince the people to give up their freedoms willingly. The democrate and republican parties used an old political trick. They had to convince the people there was a monster among them, and that they had to give up their privacy to the the ruling parties so the parties could protect them. What was this monster?

It was pedophilia. They could not do through the terrorism argument because the terrorist are really just a foreign group. The ruling parties chose pedophilia as an excuse to control the internet because pedophiles are normal people from the general population. They cannot be differentiated from the population, so they are invisible. An invisible is so much more frightening. The ruling parties made sure that their friends in the mass media like yahoo and the news agencies only broadcast stories depicting pedophiles as evil, and never allowing news stories in which pedophilia is depicted as good or neutral.

The ruling parties and other ambitious political groups, like lesbian-feminists and the christian right, were also competing with each other. Any group that could say that the invisible army of drooling pedophiles was more dangerous, and that it could protect the people even better, would gain political advantage.

Now you know how the ruling parties in the US took away the latest form of mass media that gave you freedom of speech. You also know why they did it.

If you ever make political speech that might be a threat to the ruling parties, these parties will know right where to find you and they will pick you off one by one. No will know that you are being picked off because they ruling parties will neve admit that that their reason was political speech.

Instead they will send a low-level agent around to your house when you are asleep or not at home. She will pick through your garbage and peek in your window. They will keep looking for some slight infraction or law they can charge you with. Even if the charge is thrown out of court, just fighting the case will bankrupt you and waste months of your life.

873. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 15:02:24 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <622cedc0-369a-4ecd-bf93-48b570710ad6@m34g2000hsb.googlegroups.com>
Source record: 29489

On Jan 14, 10:42 pm, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 14, 3:40 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> > So energy does move within the line, though no energy crosses a point
> > where the voltage or current is always 0.
>
> Zero *NET* energy moves in a standing wave pattern whether it be at a
> node or anywhere else. Forward energy and reflected energy moves
> across a node and everywhere else because there are no reflections in
> a homogeneous medium.

From your posts I have not been able to determine exactly what
YOU mean by "*NET* energy moving". Several possibilities come to mind:
1) the time average of the instantenous power, P(x,t), at a
particular
point on the line.
2) the difference between the time average power in the forward and
reflected waves. This would be equivalent to subtracting the
forward and reflected power indicated by a Bird wattmeter.
3) the difference between the instantaneous forward and reflected
power at a particular time and point on the line.
4) the time average of the difference between the instaneous forward
and reflected power at a point on the line.
5) something completely different?

It would be valuable if you could indicate which of the possible
definitions of "*NET* energy moving" you mean.

It would be even more illuminating if you could describe what
measurements would need to be made on a line and exactly what
calculations should be performed to compute your definition
of "*NET* energy moving".

A rigorous definition might reveal that there is actually
agreement.

...Keith

874. Circuitry of a radiator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 16:10:06 UTC
From: art <aunwin@insightbb.com>
Message-ID: <c899fbef-6574-4d0d-88cc-c318bbdb81ca@e23g2000prf.googlegroups.com>
Source record: 29490

We all know that when a generator produces alternating electricity,
it produces it with a rotational movement only. At no time does the
generater
move backwards and forwards. When describing the value of the current
we can see that the current has a constant value as the rotor of the
generator
revolves. The current appears to be going up and down in value only
because
of the vantage point taken. If we view the generator from the side we
can see that
the vector angle of the current value is a segment of a revolution .
Thus it can be seen that what appears to be a change in magnitude of
the current,
is the effect, of a segment of the generators revolution.
The line that this generator connects to is a diamagnetic material
where the
energy in the line is a direct reflection of the position of rotation
of the generator's rotor.
This diamagnetic material is recognised by a skin on its surface as in
a patenna. which
is the dielectric(pattina in antique circles) between the center of
the material
and the outside surface and thus
represents a continuous capacitive connection which leads back to the
source .
There is a closed DC circuit at any moment in time. The outside of a
diamagnetic
material is where the current is actually active and where the
amplitude changes
according to the action of the capacitance up to that point. By
rotating the amplitude
changes it represents the rotative action of the current at that point
which by its
measure of rotation represents the fraction applicable to a revolution
other wise
known as a period with reference to the frequency of rotation.
We can now see the circuit as a reflection of the current amplitude
and its phase
with respect to the segment of a period that is depicted at that point
only which
is not physically connected to the vectors portrayed at any other
point in the
circuit. Thus when considering a single revolution only of a
generator we are

seeing at all times a continual DC current generation where the
apparent
amplitude of the current only reflects a constant current and the
portion of the
reolution or period that can be considered at that point. Thus when it
appears to have
maximum amplitude it is only a representation of the completion of
half a revolution
determined by the direction of the apparent current vector.
This electrical circuit is generally known as a 'tank circuit' which
does NOT have any
TRAVELLING waves OR any waves that BOUNCE since there is no
discontinuity
in the circuit at any point in time.
One can clearly see the true action of the current by using a crt that
reflects
the phase changes applied to the constant current values generally
known as
a spectrum analyser where what is seen as the angular position of a
true dipole
that is part of the molecular structure of the material as a whole.
and where
resonance is depicted by the angle of the internal dipole at the
circuits source.

If I have made errors in spelling I apologise.
Best regards
Art Unwin .....KB9MZ.....xg(uk)

875. "Filipino Monkey" in the Gulf Region since the 1980's?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 16:33:28 UTC
From: drvanthorp <drvanthorp@yahoo.com>
Message-ID: <15030996-b75b-4fea-a526-4ed9fee4df24@c4g2000hsg.googlegroups.com>
Source record: 29491

Can anyone point me to any information about the Filipino Monkey maritime radio heckler? The guy made the news this week, and their's a lot of talk about him, and it's been claimed that he's been at it since the 80's, but everything that comes up on the web or usenet seems to be less than a week old. Could this guy really be as well known as is claimed without any documentation, or is there old information that I can't find because it's being drowned out by the new?

876. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 17:35:17 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fmiqsl$15po$1@f04n12.cac.psu.edu>
Source record: 29492

Tom Donaly wrote:
> Jimmie D wrote:
>> "Harry - SM0VPO" <oeieio@hotmail.com> wrote in message
>> news:OKMij.2788$R_4.1736@newsb.telia.net...
>>>> This newsgroup is the source of some of the best and knowledgeable
>>>> answers I have found on the net.
>>>>
>>>> Unfortunately, it now seems to suffer the same malignant plague as
>>>> many others--disagreements decaying into personal insults.
>>> The trouble with having a "heckler" out there responding with
>>> megga-sarcasm and ridicule is that one feels duty bound to respond.
>>> DONT. Let stupic and non-constructive postings go unanswered,
>>> otherwise the escalate.
>>>
>>
>> Just sounds like the usual bunch of guys BSing to me.
>>
>> I will never forget the time I had a boss who tried to enforce civilness.
>>
>> Jimmie
>>
>
> Do you mean "civility?"

Why would that be so hard to do anyhow? Employees who are not civil to
other employees "go someplace else" eventually.

Not a matter of enforcement, just a matter of slowly adjusting the
workplace. A few well placed letters in the offending employee's HR
file, and yer covered.

- 73 de Mike N3LI -

877. Re: WELCOME

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 17:36:21 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fmiqul$15po$2@f04n12.cac.psu.edu>
Source record: 29493

John Smith wrote:
> murgavel341@gmail.com wrote:
>> HAI FRIENDS
>> WISH YOU HAPPY
>> PONGAL
>> ----------
>> http://memorysolution.blogspot.com/
>> ----------
>
> BIG Plonk!

Is a PONGAL anything like a Henway?

- 73 de Mike N3LI -

878. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 17:40:35 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmir6pcvk1@news.albasani.net>
Source record: 29494

Michael Coslo wrote:

>> ...
>> Do you mean "civility?"
>
>
> Why would that be so hard to do anyhow? Employees who are not civil
> to other employees "go someplace else" eventually.
>
> Not a matter of enforcement, just a matter of slowly adjusting the
> workplace. A few well placed letters in the offending employee's HR
> file, and yer covered.
>
> - 73 de Mike N3LI -

So that is how everyone eventually gets replaced and all the positions end up filled by idiots? Darn, I missed that one 'till now.

Where is that manager? I want to lodge a complaint; All these employees have gotten together and are running the place! Let's get someone in here who knows something! <ROFLOL>

JS

879. Re: Circuitry of a radiator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 17:54:32 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fmis0o$1hk8$1@f04n12.cac.psu.edu>
Source record: 29495

art wrote:
> We all know that when a generator produces alternating electricity,
> it produces it with a rotational movement only. At no time does the
> generater move backwards and forwards.

Hate to rain on the parade, but a fully function generator can be built
using exclusivley forward and backward motion. No rotation needed.

The simplest commercial application of this is the "Faraday Flashlight,
which charges a supercapacitor by strictly linear back and forth
movement of it's generator.

Even a loudspeaker is a linear generator.

see:

http://en.wikipedia.org/wiki/Faraday_Flashlight

- 73 d eMike N3LI -

880. Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 18:09:46 UTC
From: art <aunwin@insightbb.com>
Message-ID: <ddea9cfe-5603-4a90-888e-a45a62177e15@z17g2000hsg.googlegroups.com>
Source record: 29496

All the laws of the universe are directly a reflection of the action that Newtons laws
pertain to. All Newtons laws pertain to relative movement of mass which is comprised of time, mass and relative distance to form a state of equilibrium.
We all know how mechanical laws are conneted to Newton but how is electricity essentially the same? We all know that magnetism is a reflection of the smallest dipole
relative angle at any point in time. We also know that this dipole can also turn during a period of time such that the magnetic field of force at any point in time is reflected by the angle that the dipole takes. This dipole in electrical terms is a microsom of the large mechanical forces in relative movement.
For electricity the dipole takes up an alignment that reflect the current flow at any point and place in time. Thus with a dc current all the dipoles aligne with each other with respect to the current flow in a two dimensional form. When applying an alternating current we are also really applying a DC current but with a rotational or three degrees of freedom such that at any point in time all dipole alignment reflect the torque angle at that particular point which is NOT the same as any other dipole point alignment.
Thus when current is not applied the molecular dipole arrangement fall back to the directions it had prior to the onset of current to provide a stated of equilibrium.
In the case of a DC current supplied the microscopic dipoles ALL have the same alignement and when the current ceases to be applied the dipoles still stay in alignment with each other. So in effect ,the movement of the micro dipole in electricity is exactly the same as a mechanical element where all the forces of the electrical dipoles are summated. There are difference with mechanical elements which can be determined by its mass and structural make up such as how they perform in a magnetic field. Earlier we expressed the strength of a magnetic field is measured in part by the angular position of its resident dipoles.For a true magnet formed with a ferrous material the atmosphere can permeate all of the material as it changing its composition, but in the initial state the total mass is a reflection of the number of inherrent dipoles which in summation is a measure of the potential energy contained. With a current carrying
element such as aluminum when it is exposed to the atmoshere it immediately forms a barrier to prevent the ongoing penetration of oxidtion. Thus when a current is applied
it can only affect the dipoles in the protective skin depth of the pattina and not affect the internal unoxidizes material where it can oxidize and decay as with a ferrous material.

Thus the pattina can only hold a smaller number of dipoles which
reflects a smaller potential energy for generating a magnetic field.
Thus both electrical and mechanical
formats surround the facts of potential energy and kinetic energy when
in a state of equilibrium as espoused by Newtons laws.
Have a happy day
Best regards
Art Unwin KB9MZ.......XG (uk)

881. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 18:46:02 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmiv22$4vj$1@news.service.uci.edu>
Source record: 29348

Cecil Moore wrote:
> On Jan 14, 4:22 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>
>>A standing wave, yet presumably not an electromagnetic wave! ;-)
>
>
> EM waves necessarily travel at the speed of light in a medium.

> Does a
> standing wave travel at the speed of light?

> If your answer is 'yes',
> where does it go? If your answer is 'no', it is not an EM wave.

You didn't click on the link, did you. :-)

ac6xg

882. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 18:47:45 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fmiv4hsgk1@f04n12.cac.psu.edu>
Source record: 29497

John Smith wrote:
> Michael Coslo wrote:
>
>>> ...
>>> Do you mean "civility?"
>>
>>
>> Why would that be so hard to do anyhow? Employees who are not
>> civil to other employees "go someplace else" eventually.
>>
>> Not a matter of enforcement, just a matter of slowly adjusting the
>> workplace. A few well placed letters in the offending employee's HR
>> file, and yer covered.
>>
>> - 73 de Mike N3LI -
>
> So that is how everyone eventually gets replaced and all the positions
> end up filled by idiots? Darn, I missed that one 'till now.

In this modern world, too many people mistake good manners for weakness.
I've had to demonstrate the fallacy of that on occasion.

A person without good manners isn't equipped with all the tools needed
to be highly successful. Those without manners can become successful,
but it is in spite of those poor manners, not because of it.

- 73 de Mike N3LI -

883. Re: Circuitry of a radiator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 18:52:04 UTC
From: art <aunwin@insightbb.com>
Message-ID: <866168c9-92b6-4076-95ce-b2cd98f67d5c@d4g2000prg.googlegroups.com>
Source record: 29349

On 15 Jan, 09:54, Michael Coslo <m...@psu.edu> wrote:
> art wrote:
> > We all know that when a generator produces alternating electricity,
> > it produces it with a rotational movement only. At no time does the
> > generater move backwards and forwards.
>
> Hate to rain on the parade, but a fully function generator can be built
> using exclusivley forward and backward motion. No rotation needed.
>
>   The simplest commercial application of this is the "Faraday Flashlight,
> which charges a supercapacitor by strictly linear back and forth
> movement of it's generator.
>
> Even a loudspeaker is a linear generator.
>
> see:
>
> http://en.wikipedia.org/wiki/Faraday_Flashlight
>
>   - 73 d eMike N3LI -

The bottom line is that the angular position of the inherrent dipole
at any point
reflects the amount of kinetic energy available in a magnetic fiels at
that particular point.
Whereas, at all points the angular position of the multitude of
vectors is not the same.
This being contrary to DC flow where the inherrent dipoles are aligned
in unison with two instead of three degrees of freedom as with an
alternating current. It is this subtle difference which is causing
such confusion on this newsgroup which can only be visuallised by the
newsgroup when all are assumed to have only two degrees of freedom.
Good thing is that even with what you are referring to you have
identified the three degrees of movement which others cannot get a
handle on with respect to alternating current.
Best regards
Art Unwin KB9MZ....XG

884. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 18:59:41 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmivqt$oe7$1@news.albasani.net>
Source record: 29350

Michael Coslo wrote:

> ...
> In this modern world, too many people mistake good manners for weakness.
> I've had to demonstrate the fallacy of that on occasion.
>
> A person without good manners isn't equipped with all the tools needed
> to be highly successful. Those without manners can become successful,
> but it is in spite of those poor manners, not because of it.
>
> - 73 de Mike N3LI -

Look, let me be honest here, when I walk into a place and want/need/request something--I simply want it; if I find a nice person able to fulfill that want/request--it is icing on the cake. But, just give me my request!

What I keep running into in life are places where the employees are all arranging the situation to "please" themselves (that usually means they "get rid" of qualified individuals who are a "threat" to their job position) with a great work environment and service sucks (indeed, I am now ending up with "pleasant" a-holes in India/china/Malaysia on help lines! This REALLY peeves me!)--it is a job, yanno? That is why they call it "work!"

Now if both can be accomplished, great service AND a wonderful and nurturing environment for "them"--GREAT! I can't be fooled--I KNOW THE DIFFERENCE! :-D

Regards,
JS

885. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 19:27:39 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080115112739.4b35e106.rsparks@elltel.net>
Source record: 29351

On Tue, 15 Jan 2008 06:44:05 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 14, 7:19 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > On Mon, 14 Jan 2008 12:40:39 -0800 (PST)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> >
> > snip.....
> >
> > > As you say, the energy moves between the E-field and the H-field,
> > > but the locations of maximum energy along the line for each of these
> > > fields is different, so the energy changes position on the line with
> > > each cycle. The energy at any point on the line is not constant.
> >
> > > E-field energy will peak at the voltage maximums.
> > > H-field energy will peak at the current maximums.
> > > These are at different places (90 degrees apart).
> > > So energy does move within the line, though no energy crosses a point
> > > where the voltage or current is always 0.
> >
> > I can understand no energy crossing a zero current point, but how do you justify no
energy crossing a zero voltage point when current IS observed?
>
> Well I start with P = V * I, so whenever the current or the voltage
> is zero, there is no power. Specifically, V and I are measured at
> the terminals of a network and P will be the power flowing into or
> out of the network.

I can see why you find "no power" at the zero voltage point, but does that imply that there is no energy flow and no power from every perspective? As I write, I am struggling how to clearly differentiate between "power" as "work done" and energy as "capacity to do work", and what "network" are we defining.

Let's begin with the network. Drawing from your words below, we have two networks, one to the left and one to the right of our zero voltage point. When we test voltages on either side of the zero point, we find voltage. The question now is: "Which network did we join when we measured voltage?". The answer is: "We joined the network that we measured.". When we measure exactly in the center between networks, we join neither network.

For another way of looking at the two networks, let us place our voltage probes on each side of the zero voltage point on a/the wire connecting the two networks. We will detect a voltage and a current for any of the standing wave systems we are discussing. By changing our points of reference, we find that power is applied to the zero voltage zone during the instant of time the measurement is made.

I personally define power as a state/condition where "work 'is being' done", . Power must act over time and have a physical movement component. Voltage by itself does not fulfill this definition because no movement is observed. Current is movement, voltage is only an indication of where a concentration of charges is found.

>
> In the case under discussion, there are two networks, one to
> the left of the point on the line and one to the right and
> we are measuring the power flowing between these two networks.
>
> For an example of current without power, consider a loop of
> superconductor with a current flowing in it. No voltage, no
> power, but there is current.

I agree. We could place voltage probes between any two points on the superconducting loop and not find voltage. Power is not being applied nor extracted from the superconducting loop system. I think we would all agree that energy is stored in the superconducting loop with current flowing.

>
> > Current is defined as movement of charges, and charges have energy by definition (how can they be charges without energy?).
>
> Consider an object flying through space. No work is being done
> (and therefore there is no power), but the object still has
> kinetic energy.
>
> > Another point, the current is observed to change directions during the cycles, polarity also changes on each side of the zero voltage point. Where might the polarized energy come from if it does not cross the zero voltage point?
>
> A thought experiment I have found useful is to consider a simple
> resonant circuit made of an ideal capacitor and inductor. Charge
> the capacitor to 10 volts and then connect the inductor. A sinusoidal
> voltage and current will appear in the circuit.
>
> Just as the inductor is connected:
> - all the energy is stored in the capacitor
> - the voltage on the capacitor is maximum
> - there is no current in the inductor
> After connecting the inductor:
> - energy starts to transfer to the inductor
> - the voltage on the capacitor is dropping
> - the current in the inductor is increasing
> Some time later:
> - the voltage on the capacitor is 0
> - the current in the inductor is maximum
> - there is no energy stored in the capacitor
> - all the energy is stored in the inductor
> - no energy is moving from the capacitor to
> the inductor
> But the inductor insists that current continue

> to flow:
> - the capacitor begins to charge with a negarive
> voltage
> - energy begins to transfer from the inductor
> back to the capacitor (note the change in the
> direction of energy flow)
> - the voltage on the capacitor is increasing
> negatively
> - the current in the inductor is dropping
> Sometime later:
> - the current in the inductor has dropped to
> zero
> - the capacitor has a maximum negative voltage
> - all the energy is in the capacitor
> And this continues forever at the resonant
> frequency of the capacitor and inductor circuit.
>
> But no energy is moving from the capacitor to
> the inductor when the voltage on the capacitor
> is zero and the current in the inductor is
> maximum. It is at these times that the direction
> of energy flow is changing, as well as when the
> voltage in the capacitor is maximum and the
> current is zero.

When the voltage on the capacitor is zero, the voltage on the entire system is zero, no matter our reference point. The system energy is completely contained in the moving current with a direction of energy flow completely defined. For an instant, the inductor is like a superconducting loop.

From a traveling wave standpoint, the resonant capacitor/inductor system contains a positive wave and a negative wave, equally balanced energy wise. When the capacitor is completely charged, the positive and negative waves are at the reversal/mid point of the cycle where each wave is maximally displaced from center (which is at the electrical center of the inductor). When the capacitor is completely discharged, the two waves superimpose and both reside in the inductor at identical times. The energy of both waves is completely contained in the electromagnetic field that exists outside the wires containing the two traveling waves. Do the waves exist on the wire at this instant, or have they completely desolved into a space field we observe as magnetic force? The current seems to be flowing so I would say the waves both continue to exist.

>
> > I can kinda see how like charges could repell so that waves of like polarity might "bounce" but I can't see how waves of opposite polarity might "bounce". If waves of opposite polarity "bounced", why would the polarity change during the cycle on each side of the "bounce" point?
>
> An excellent counter-example. I may have fallen into
> the trap of looking at the examples that support the
> argument rather than looking for the ones that don't.
> This will take some cogitating. Maybe its the end

> of the line for the "bounce hypothesis".
>
> > To me, it is much more rewarding to work with traveling waves that pass through one another, interacting to create standing waves.
>
> I don't object to this view, as long as the waves are
> viewed as having voltages or currents but no power.

Have you considered how energy is transfered between elements of the transmission line over time if we do not have an ongoing application of power? Doesn't one section of line apply power to the next successive section of line an instant of time later after it received applied power? We agree that a transmitter applies power at the input of a transmission line. Isn't the first section of transmission line just the power source for the second piece of line?

I think of the traveling waves as transporting power and energy through time and physical distance. The highest voltage points physically "move" (found in a new location) as time passes, as do the highest current points, and always together in phase.

>
> The difficulty is that some waves definitely transport
> energy while others do not and I do not see a good
> explanation for what turns the former into the latter,
> as happens, for example, when the pulses collide.

Some waves transport energy, and some do not! That distinction bothers me less now that I have participated in this thread for a while. For me, the traveling wave always has current and voltage in phase, and always carries power. If I can not find power, then we must have a standing wave. For me, traveling waves is all that we really have, they are primary. All other waves flow/result from the traveling waves.

Another observation that has helped me is the recognition that "waves" are just statistical groupings of repetitious events. It is very convenient to treat waves as physical objects but they are really groupings of much, much smaller events. How small is the smallest event, no one seems to know, but the highest frequencies still seem to be electromagnetic events. If the "wave" is composed of a group of much smaller events (such as movement of electrons, or smaller), then it is not so hard to accept that we might detect passage of two waves as having a different voltage and energy level from what we would expect if the voltage and energy were static.

>
> > Would it help your visualization process to observe that when two waves of SAME POLARITY but traveling in opposite directions cross, the currents accompaning the waves are moving in opposite directions both before and after crossing? When two waves of OPPOSITE POLARITY but traveling in opposite directions cross, the currents are moving in the same direction both before and after crossing.
>
> I do understand (at least I think I do) the methodology
> for superposing the waves of voltage and current,
> computing the results and deriving the power from the
> result.
>

> I just am not happy that this results in waves sometimes
> transporting energy and sometimes not, without a good
> explanation of the transition.
>
> > If we were talking about water, water behind a dam is like voltage, with the height of the water the potential energy, measured in head (feet), or PSI if measured at the bottom of the dam. A pipe to the bottom of the dam will squirt water at a high velocity but no head or PSI. The potential energy of the water behind the dam has been converted to kinetic energy measued in velocity of a moving mass. The moving water can be stopped, and if carefully done, the static head reached by stopping the water will nearly reach the original water level behind the dam. It would reach the same level if it were not for friction losses. Electrical current is something like that moving water.
>
> Agreed. I have used this analogy as an aid to understaning
> though it becomes challenging at RF.
>
> ...Keith

This discussion helps clarify things in my mind. I hope it helps you as well.

73, Roger, W7WKB

886. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 19:32:24 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmj1p4$7mg$1@news.service.uci.edu>
Source record: 29352

Cecil Moore wrote:

> I've always known that a graph drawn with a pencil on a piece of paper
> is not an EM standing wave but, for awhile, you seem to have forgotten
> that simple fact.

A plot is simply the graphical representation of an equation. Since I
was the one pointing it out to you, it seems you are the one who had
"forgotten that simple fact".

The envelope is also not the wave.

It all comes from the same equation, Cecil. If the thing which
amplitude modulates a wave cannot be called a wave, then what should
it be called?

ac6xg

887. Internal actions of a radiator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 20:03:24 UTC
From: art <aunwin@insightbb.com>
Message-ID: <8b462433-fcd0-4a41-bc9e-baebbf2a0bfa@e4g2000hsg.googlegroups.com>
Source record: 29353

A radiator is made from a myriad of capacitors and inductors
in the formof a myriad of loop circuits along the length of a
radiator.
When energy is transferred from the generator the angular direction
of the inherrent dipoles must be at the same angle with respect to
time.
Same goes for the angular position at return. This places all in a
frame
of equilibrium. It the angle is not the same there is obviously a
mismatch
which the generator cannot correct with a instantaneous change of
phase.
If the phases are different at the beginning it can be seen as out of
equilibrium
at the end also which can worsen for every pont along the radiator
circuit.
The difference in angular direction of the micro dipoles is a measure
of
the change in real current amplitude compared to the angle taken
later
at that point and that point only.
Though a radiator has a multitude of like components, with its
similarities
we can look at an individual cuircit as a representitive of the whole
which
multiplied at a later time to reflect the time of one period or
revolution.
The loop circuit is made up of a parallel circuit consisting of an
inductance
and a capacitor. Ofcourse the circuit itself consists of resistances
which
allows current to flow thru its center to generate heat. But at this
time
we can all accept the presence of resistance. Both of the components
alluded to recieves energy initially in sino soidal form and then
stores
that energy. But with both components being mirror image with each
other
they take turns in their operation of storing energy.each dependent on
the
phase of the inherrent micro dipoles. They also have the ability to
empty
out the stored energy which is in a form totally unlike the sino
soidal form

of collection. In fact the discharge is synonymous with an explosion with each
storage vessel collecting the contents of the others explosion. We must
recognise that these exchanges also lose energy which fortunately the
generator replaces continuesly to replace the energy lost ,say to resistance
heat e.t.c The change over point of collecting energy of both storage
components.is the relative phases of their individual energy content voltage
which in a tank circuit are constantly changing with respect to the phase angle
of the current such that when the phases of voltage and current is the same
it then becomes a DC current and removes itself from its container.
Thus the mechanism between the inductance and capacitance is the depository
of energy between themselves where the time varying energy, which reflects
the time constant of the energy reservior, generates an external magnetic field.
At the same time an external sino soidal current is in constant supply from the
generator to replace energy lost in the above stated interchanges and resistances.
Tomorrow we will examine how these above internal actions lead to the radiation
phenomina that allows information to be passed from a radiator to another like radiator
or receiver via propergation of potential energy.
Have a happy day
Art Unwin KB9MZ...XG(uk)
Art Unwin

888. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 21:14:14 UTC
From: art <aunwin@insightbb.com>
Message-ID: <5ad0bc4b-20a6-4133-9caf-8371d11313de@l1g2000hsa.googlegroups.com>
Source record: 29354

On 15 Jan, 11:27, Roger Sparks <rspa...@elltel.net> wrote:
> On Tue, 15 Jan 2008 06:44:05 -0800 (PST)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Jan 14, 7:19 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Mon, 14 Jan 2008 12:40:39 -0800 (PST)
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> > > snip.............
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> > > > As you say, the energy moves between the E-field and the H-field,
> > > > but the locations of maximum energy along the line for each of these
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> > > > H-field energy will peak at the current maximums.
> > > > These are at different places (90 degrees apart).
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> > > I can understand no energy crossing a zero current point, but how do you justify no energy crossing a zero voltage point when current IS observed?
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> > Well I start with P = V * I, so whenever the current or the voltage
> > is zero, there is no power. Specifically, V and I are measured at
> > the terminals of a network and P will be the power flowing into or
> > out of the network.
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> I can see why you find "no power" at the zero voltage point, but does that imply that there is no energy flow and no power from every perspective? As I write, I am struggling how to clearly differentiate between "power" as "work done" and energy as "capacity to do work", and what "network" are we defining.
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> Let's begin with the network. Drawing from your words below, we have two networks, one to the left and one to the right of our zero voltage point. When we test voltages on either side of the zero point, we find voltage. The question now is: "Which network did we join when we measured voltage?". The answer is: "We joined the network that we measured.". When we measure exactly in the center between networks, we join neither network.
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>
>
>
> > In the case under discussion, there are two networks, one to
> > the left of the point on the line and one to the right and
> > we are measuring the power flowing between these two networks.
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> > For an example of current without power, consider a loop of
> > superconductor with a current flowing in it. No voltage, no
> > power, but there is current.
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> I agree. We could place voltage probes between any two points on the superconducting loop and not find voltage. Power is not being applied nor extracted from the superconducting loop system. I think we would all agree that energy is stored in the superconducting loop with current flowing.
>
>
>
> > > Current is defined as movement of charges, and charges have energy by definition (how can they be charges without energy?).
>
> > Consider an object flying through space. No work is being done
> > (and therefore there is no power), but the object still has
> > kinetic energy.
>
> > > Another point, the current is observed to change directions during the cycles, polarity also changes on each side of the zero voltage point. Where might the polarized energy come from if it does not cross the zero voltage point?
>
> > A thought experiment I have found useful is to consider a simple
> > resonant circuit made of an ideal capacitor and inductor. Charge
> > the capacitor to 10 volts and then connect the inductor. A sinusoidal
> > voltage and current will appear in the circuit.
>
> > Just as the inductor is connected:
> > - all the energy is stored in the capacitor
> > - the voltage on the capacitor is maximum
> > - there is no current in the inductor
> > After connecting the inductor:
> > - energy starts to transfer to the inductor
> > - the voltage on the capacitor is dropping
> > - the current in the inductor is increasing
> > Some time later:
> > - the voltage on the capacitor is 0

> > - the current in the inductor is maximum
> > - there is no energy stored in the capacitor
> > - all the energy is stored in the inductor
> > - no energy is moving from the capacitor to
> >   the inductor
> > But the inductor insists that current continue
> > to flow:
> > - the capacitor begins to charge with a negarive
> >   voltage
> > - energy begins to transfer from the inductor
> >   back to the capacitor (note the change in the
> >   direction of energy flow)
> > - the voltage on the capacitor is increasing
> >   negatively
> > - the current in the inductor is dropping
> > Sometime later:
> > - the current in the inductor has dropped to
> >   zero
> > - the capacitor has a maximum negative voltage
> > - all the energy is in the capacitor
> > And this continues forever at the resonant
> > frequency of the capacitor and inductor circuit.
>
> > But no energy is moving from the capacitor to
> > the inductor when the voltage on the capacitor
> > is zero and the current in the inductor is
> > maximum. It is at these times that the direction
> > of energy flow is changing, as well as when the
> > voltage in the capacitor is maximum and the
> > current is zero.
>
> When the voltage on the capacitor is zero, the voltage on the entire system is zero, no matter our reference point. The system energy is completely contained in the moving current with a direction of energy flow completely defined. For an instant, the inductor is like a superconducting loop.
>
> From a traveling wave standpoint, the resonant capacitor/inductor system contains a positive wave and a negative wave, equally balanced energy wise. When the capacitor is completely charged, the positive and negative waves are at the reversal/mid point of the cycle where each wave is maximally displaced from center (which is at the electrical center of the inductor). When the capacitor is completely discharged, the two waves superimpose and both reside in the inductor at identical times. The energy of both waves is completely contained in the electromagnetic field that exists outside the wires containing the two traveling waves. Do the waves exist on the wire at this instant, or have they completely desolved into a space field we observe as magnetic force? The current seems to be flowing so I would say the waves both continue to exist.
>
>
>
> > > I can kinda see how like charges could repell so that waves of like polarity might

"bounce" but I can't see how waves of opposite polarity might "bounce". If waves of opposite polarity "bounced", why would the polarity change during the cycle on each side of the "bounce" point?
>
> > An excellent counter-example. I may have fallen into
> > the trap of looking at the examples that support the
> > argument rather than looking for the ones that don't.
> > This will take some cogitating. Maybe its the end
> > of the line for the "bounce hypothesis".
>
> > > To me, it is much more rewarding to work with traveling waves that pass through one another, interacting to create standing waves.
>
> > I don't object to this view, as long as the waves are
> > viewed as having voltages or currents but no power.
>
> Have you considered how energy is transfered between elements of the transmission line over time if we do not have an ongoing application of power? Doesn't one section of line apply power to the next successive section of line an instant of time later after it received applied power? We agree that a transmitter applies power at the input of a transmission line. Isn't the first section of transmission line just the power source for the second piece of line?
>
> I think of the traveling waves as transporting power and energy through time and physical distance. The highest voltage points physically "move" (found in a new location) as time passes, as do the highest current points, and always together in phase.
>
>
>
> > The difficulty is that some waves definitely transport
> > energy while others do not and I do not see a good
> > explanation for what turns the former into the latter,
> > as happens, for example, when the pulses collide.
>
> Some waves transport energy, and some do not! That distinction bothers me less now that I have participated in this thread for a while. For me, the traveling wave always has current and voltage in phase, and always carries power. If I can not find power, then we must have a standing wave. For me, traveling waves is all that we really have, they are primary. All other waves flow/result from the traveling waves.
>
> Another observation that has helped me is the recognition that "waves" are just statistical groupings of repetitious events. It is very convenient to treat waves as physical objects but they are really groupings of much, much smaller events. How small is the smallest event, no one seems to know, but the highest frequencies still seem to be electromagnetic events. If the "wave" is composed of a group of much smaller events (such as movement of electrons, or smaller), then it is not so hard to accept that we might detect passage of two waves as having a different voltage and energy level from what we would expect if the voltage and energy were static.
>
>
>

> > > Would it help your visualization process to observe that when two waves of SAME POLARITY but traveling in opposite directions cross, the currents accompaning the waves are moving in opposite directions both before and after crossing? When two waves of OPPOSITE POLARITY but traveling in opposite directions cross, the currents are moving in the same direction both before and after crossing.
>
> > I do understand (at least I think I do) the methodology
> > for superposing the waves of voltage and current,
> > computing the results and deriving the power from the
> > result.
>
> > I just am not happy that this results in waves sometimes
> > transporting energy and sometimes not, without a good
> > explanation of the transition.
>
> > > If we were talking about water, water behind a dam is like voltage, with the height of the water the potential energy, measured in head (feet), or PSI if measured at the bottom of the dam. A pipe to the bottom of the dam will squirt water at a high velocity but no head or PSI. The potential energy of the water behind the dam has been converted to kinetic energy measued in velocity of a moving mass. The moving water can be stopped, and if carefully done, the static head reached by stopping the water will nearly reach the original water level behind the dam. It would reach the same level if it were not for friction losses. Electrical current is something like that moving water.
>
> > Agreed. I have used this analogy as an aid to understaning
> > though it becomes challenging at RF.
>
> > ...Keith
>
> This discussion helps clarify things in my mind. I hope it helps you as well.
>
> 73, Roger, W7WKB

Roger you would be better to start off with first principles. Current
is by definition
a constant at all points where the imagianary vector is the angle or
phase of
a molecular dipole at the point of reference. Nothing is moving
forward. The only movement
of the molecular dipole is on of rotational movement about a static
pont of reference.
One you understand this you can then go on to magnetic fields created
by multiple
inherrant dipoles with respect to their phase angle which magnifies or
nullifies
the created magnetic field
Best regards
Art

889. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 22:11:56 UTC
From: Robert Smts <bob@rsmits.ca>
Message-ID: <16437051158c421c37fca847b45a3bec@grapevine.islandnet.com>
Source record: 29362
Cross-posted to: comp.robotics.misc,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

their generations
so few?

Because it is not the length of years, but the multitude of generations, which renders things obscure. For truth is perverted only by the change of men. And yet he puts two things, the most memorable that were ever imagined, namely, the creation and the deluge, so near that we reach from one to the other.

625. Shem, who saw Lamech, who saw Adam, saw also Jacob, who saw those who saw Moses; therefore the deluge and the creation are true. This is conclusive among certain people who understand it rightly.

626. The longevity of the patriarchs, instead of causing the loss of past history, conduced, on the contrary, to its preservation. For the reason why we are sometimes insufficiently instructed in the history of our ancestors is that we have never lived long with them, and that they are often dead before we have attained the age of reason. Now, when men lived so long, children lived long with their parents. They conversed long with them. But what else could be the subject of their talk save the history of their ancestors, since to that all history was reduced, and men did not study science or art, which now form a large part of daily conversation? We see also that in these days tribes took parti

890. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 22:18:15 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13oqc9a7ihhvh3c@corp.supernews.com>
Source record: 29355

Roger Sparks wrote:
>
> I can see why you find "no power" at the zero voltage point, but does that imply that there is no energy flow and no power from every perspective? As I write, I am struggling how to clearly differentiate between "power" as "work done" and energy as "capacity to do work", and what "network" are we defining.

Power at a particular point on the line is the rate of energy flow past that point. It does no imply that any work is done anywhere, since any energy flowing past the point can be stored. That is, in fact, exactly what happens with the open circuited line in my analyses and illustrated with TLVis1. You can see from the TLVis1 demo 4 that power is present at all times and places along the line except a few select points. No work is being done; energy is simply moving back and forth along the line and between the E and H fields.

> . . .

> I personally define power as a state/condition where "work 'is being' done", . Power must act over time and have a physical movement component. Voltage by itself does not fulfill this definition because no movement is observed. Current is movement, voltage is only an indication of where a concentration of charges is found.

Of course you're free to define anything in any way you choose. But you've chosen a definition that's different from the one accepted in all of electrical circuit analysis and all textbooks. So you can expect to have a good deal of difficulty communicating with people who are acquainted with the universally understood definition and assume that's what you mean, rather than your own personal definition. To them, power is the time rate of energy flow, dE/dt, period.

> . . .

Roy Lewallen, W7EL

891. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 23:17:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_9bjj.39871$Pv2.31257@newssvr23.news.prodigy.net>
Source record: 29356

Gene Fuller wrote:
> This is truly bizarre. The E-field and the H-field are always at right
> angles to each other in the plane wave case. They are also perpendicular
> to the propagation direction. The same is true for the TEM mode in a
> coaxial waveguide, which is the usual case discussed on RRAA. There is
> no 0 or 180 degree involvement. I don't know what you are so confused
> about, but you really need to rethink what you are saying.

What you are saying is 100% correct for plane EM traveling waves.
What you are saying is 100% incorrect for standing waves. It just
shows that Hecht was right when he said standing waves probably
don't deserve to be called waves. Maybe you should try to understand
why Hecht would say such a thing.

> There is no need to sketch or calculate anything. A diagram showing the
> relationship of the E-field vector and the H-field vector is in every
> E&M and optics book I have ever seen.

Yes, and that diagram is for a *TRAVELING WAVE*, not for a standing
wave. Please find a reference with the E-fields and H-fields diagrammed
for a standing wave and get back to us. Better yet, consider there is
a need to sketch the fields if for no other reason, just to prove me
wrong.

This is not rocket science, Gene. When the magnitude of the Poynting
vector for the forward wave equals the magnitude of the Poynting vector
for the reflected wave, the net Poynting vector is obviously zero.
Since the Poynting vector equals ExH, the only way that the standing
wave Poynting vector can be zero everywhere is for the cross product
of ExH to be zero. The cross product is E*H*sin(A) and we know that
E and H are not zero, so sin(A) must necessarily be zero. So A must
necessarily be 0 or 180 degrees. Nothing else is possible.
--
73, Cecil http://www.w5dxp.com

892. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 23:20:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <sdbjj.39872$Pv2.20169@newssvr23.news.prodigy.net>
Source record: 29357

Roy Lewallen wrote:
> What zero power at a given point means is that
> there is no *net* energy moving in either direction past that point.

Exactly! But that does not preclude the forward Poynting vector
being equal in magnitude to the reflected Poynting vector.
--
73, Cecil http://www.w5dxp.com

893. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 23:30:06 UTC
From: art <aunwin@insightbb.com>
Message-ID: <a4e5b267-efed-4667-882f-da41c7890b16@q39g2000hsf.googlegroups.com>
Source record: 29358

On 15 Jan, 10:59, John Smith <assemblywiz...@gmail.com> wrote:
> Michael Coslo wrote:
> > ...
> > In this modern world, too many people mistake good manners for weakness.
> > I've had to demonstrate the fallacy of that on occasion.
>
> > A person without good manners isn't equipped with all the tools needed
> > to be highly successful. Those without manners can become successful,
> > but it is in spite of those poor manners, not because of it.
>
> >   - 73 de Mike N3LI -
>
> Look, let me be honest here, when I walk into a place and
> want/need/request something--I simply want it; if I find a nice person
> able to fulfill that want/request--it is icing on the cake. But, just
> give me my request!
>
> What I keep running into in life are places where the employees are all
> arranging the situation to "please" themselves (that usually means they
> "get rid" of qualified individuals who are a "threat" to their job
> position) with a great work environment and service sucks (indeed, I am
> now ending up with "pleasant" a-holes in India/china/Malaysia on help
> lines! This REALLY peeves me!)--it is a job, yanno? That is why they
> call it "work!"
>
> Now if both can be accomplished, great service AND a wonderful and
> nurturing environment for "them"--GREAT! I can't be fooled--I KNOW THE
> DIFFERENCE! :-D
>
> Regards,
> JS

John ,
Companies want to cut down labor costs on the assumption they sell to
employees of other companies who apparently have the money to spend.
This disregards his own employees buying power..
Unfortunatly the workers at other companies also have had their wages
cut such that the premise
that employees can afford the products of employers is false. Thus the
manufacture of products or inventory must be adjusted to concurr with
existing buying power. But the benefits of reduced labor costs were
pocketed by the employer while the purchasing price of the product
stayed the same or went up. Because the employee is now earning less
he needs assistance to get by. The costs of this is passed on to the

supplier in the form of taxes who imediately passes the addition to
the consumer. And so it goes on until the round about comes to a halt
and its riders raid the hoard that the employer pocketed by force.
Art

894. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 23:32:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Bobjj.39875$Pv2.34876@newssvr23.news.prodigy.net>
Source record: 29359

Roy Lewallen wrote:
> I think the basic problem here is assigning energy to each traveling
> wave. It's taking you into exactly the same morass that Cecil constantly
> finds himself in. He also concluded some time back that two waves which
> collide had to reverse direction in order to conserve power, energy,
> momentum, or something. Energy in the system is conserved; but nowhere
> is it written that each wave has to have individually conserved energy.

I wish you would stop using you guru status to misquote people.
During wave cancellation, the waves do *NOT* "collide". They
cannot collide since they are traveling in the same direction.
I just read on a plane trip today where Ramo & Whinnery talk
about wave cancellation. When waves are canceled, their energy
components have to go somewhere.

I disagree with Roy's last sentence. If an EM wave exists, it's
Poynting vector is ExM. The energy in that individual wave *must*
be conserved. If that energy is not conserved, the conservation
of energy principle is violated.
--
73, Cecil http://www.w5dxp.com

895. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 23:37:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vsbjj.39877$Pv2.20424@newssvr23.news.prodigy.net>
Source record: 29360

Jim Kelley wrote:
> You didn't click on the link, did you. :-)

Yes, I did, and Firefox said it couldn't find the page.
Why do you post URLs with ... at the end?
--
73, Cecil http://www.w5dxp.com

896. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 23:39:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Zubjj.39878$Pv2.961@newssvr23.news.prodigy.net>
Source record: 29361

Jim Kelley wrote:
>
>
> Cecil Moore wrote:
>
>> I've always known that a graph drawn with a pencil on a piece of paper
>> is not an EM standing wave but, for awhile, you seem to have forgotten
>> that simple fact.
>
> A plot is simply the graphical representation of an equation.

Yet you said it was "the wave". It is not the wave. It is
simply some carbon rubbed on a piece of paper.

Jim, you requested that I be more precise and that's exactly
what I am being.
--
73, Cecil http://www.w5dxp.com

897. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 23:54:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <wIbjj.33314$4V6.29107@newssvr14.news.prodigy.net>
Source record: 29363

Keith Dysart wrote:
> It would be valuable if you could indicate which of the possible
> definitions of "*NET* energy moving" you mean.

Net energy is the difference between the average forward
energy and the average reflected energy. Please forget
instantaneous values. Instantaneous voltage and current
are obviously valuable concepts. For the context of this
discussion, seems to me instantaneous energy or power are
just diversions away from the real issues.

The real question is: Can an EM wave exist without energy?
Roy implies that it can. I challenge him to produce an
EM wave containing no energy.
--
73, Cecil http://www.w5dxp.com

898. Re: "Filipino Monkey" in the Gulf Region since the 1980's?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-15 23:58:27 UTC
From: Jerseyj <jerseyj69@comcast.net>
Message-ID: <jerseyj69-ED93B6.18582615012008@newsgroups.comcast.net>
Source record: 29364

In article
<15030996-b75b-4fea-a526-4ed9fee4df24@c4g2000hsg.googlegroups.com>,
drvanthorp <drvanthorp@yahoo.com> wrote:

> Can anyone point me to any information about the Filipino Monkey
> maritime radio heckler? The guy made the news this week, and their's a
> lot of talk about him, and it's been claimed that he's been at it
> since the 80's, but everything that comes up on the web or usenet
> seems to be less than a week old. Could this guy really be as well
> known as is claimed without any documentation, or is there old
> information that I can't find because it's being drowned out by the
> new?

Someone in my ham radio group was wondering how the heck they knew he
was a ham anyway, and not a "free bander".

899. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 00:25:41 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmjj1eokl1@news.service.uci.edu>
Source record: 29366

Cecil Moore wrote:

> It just
> shows that Hecht was right when he said standing waves probably
> don't deserve to be called waves. Maybe you should try to understand
> why Hecht would say such a thing.

I think he might have said it because he's not particularly good with
words. If anything, he probably should have said that standing waves
should just be called interference patterns.

From Websters:

wave - a shape or outline having successive curves; an undulating line
or streak or a pattern created by such lines; something that swells
and dies away

>> There is no need to sketch or calculate anything. A diagram showing
>> the relationship of the E-field vector and the H-field vector is in
>> every E&M and optics book I have ever seen.
>
>
> Yes, and that diagram is for a *TRAVELING WAVE*, not for a standing
> wave. Please find a reference with the E-fields and H-fields diagrammed
> for a standing wave and get back to us. Better yet, consider there is
> a need to sketch the fields if for no other reason, just to prove me
> wrong.

I could be wrong, but don't E-fields and H-fields from traveling waves
superpose to form net E-fields and H-fields? Wouldn't the net fields
have vectors whose direction and magnitude are determined by the
vectors which correspond to the traveling wave fields? Wouldn't the
net field generated by a radiator having these waves traveling on it
look like a standing wave? Is there any reason to consider standing
waves on an antenna other than as a simple way to analyze its
radiation pattern?

ac6xg

900. Re: Why the US airwaves are not free

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 00:26:59 UTC
From: Ken Fowler <ko6no@yahoo.com>
Message-ID: <7LCdnWrirJrK0hDanZ2dnUVZ_sCtnZ2d@comcast.com>
Source record: 29365

On 15-Jan-2008, Maverick Party <maverick_platform@yahoo.com> wrote:

> Xref: number1.nntp.dca.giganews.com rec.radio.amateur.antenna:292866
>
> The ruling democrat and republican parties proclaim that the airwaves
> "belong to the people." But if the people ever try to get access to
> a

P L O N K !

901. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 00:40:37 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmjjth$pq7$1@news.service.uci.edu>
Source record: 29368

Cecil Moore wrote:

> If an EM wave exists, it's
> Poynting vector is ExM. The energy in that individual wave *must*
> be conserved. If that energy is not conserved, the conservation
> of energy principle is violated.

When a wave is canceled, there is no wave. Therefore there can be no energy associated with that wave. If there is energy, then it must be associated with a wave that is not canceled. Same thing is true when I have candy. If it's not in my left hand, then it must be in my right hand. It's all very profound.

ac6xg

902. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 00:43:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <crcjj.69$nK5.20@nlpi069.nbdc.sbc.com>
Source record: 29367

Jim Kelley wrote:
> I think he might have said it because he's not particularly good with
> words. If anything, he probably should have said that standing waves
> should just be called interference patterns.

I'll buy that, Jim. I believe that Hecht left out the adjective,
"EM". If he meant standing waves don't deserve to be called EM waves,
I agree 100%. However, standing waves seem to meet the broad definition
of "wave".

> I could be wrong, but don't E-fields and H-fields from traveling waves
> superpose to form net E-fields and H-fields? Wouldn't the net fields
> have vectors whose direction and magnitude are determined by the vectors
> which correspond to the traveling wave fields?

Of course. Now try to convince Gene of that fact of physics. In
spite of his earlier assertions about the differences between
traveling waves and standing waves that agreed with my side of
the argument, he seems to have switched sides. (For political
reasons)?
--
73, Cecil http://www.w5dxp.com

903. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 01:19:37 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <JYcjj.437165$kj1.143281@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29369

Cecil Moore wrote:
> Jim Kelley wrote:
>> I think he might have said it because he's not particularly good with
>> words. If anything, he probably should have said that standing waves
>> should just be called interference patterns.
>
> I'll buy that, Jim. I believe that Hecht left out the adjective,
> "EM". If he meant standing waves don't deserve to be called EM waves,
> I agree 100%. However, standing waves seem to meet the broad definition
> of "wave".
>
>> I could be wrong, but don't E-fields and H-fields from traveling waves
>> superpose to form net E-fields and H-fields? Wouldn't the net fields
>> have vectors whose direction and magnitude are determined by the
>> vectors which correspond to the traveling wave fields?
>
> Of course. Now try to convince Gene of that fact of physics. In
> spite of his earlier assertions about the differences between
> traveling waves and standing waves that agreed with my side of
> the argument, he seems to have switched sides. (For political
> reasons)?

Cecil,

I have no idea why you would introduce "political reasons" into this, but no matter. My head hurts from pounding it into the brick wall, so I will give up.

It would be really amusing to see you scramble to rotate the vector axis of the magnetic field (or the E-field) as it reflects from an interface. Since the E-field and H-field are related by curl relationships as shown in the Maxwell equations, it would be interesting to see how one could have related E-fields and H-fields at "0 degrees" and "180 degrees" as you claim. As a self-proclaimed math expert I am sure you understand the properties of the curl operator.

This is very basic stuff, and it is in the standard textbooks, probably even in Hecht.

73,
Gene
W4SZ

904. Re: Why the US airwaves are not free

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 01:50:07 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmjnsengs1@news.albasani.net>
Source record: 29370

Maverick Party wrote:

[THE ABSOLUTE TRUTH]

However, you digress from antennas ... plonk ...

Regards,
JS

905. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 02:08:59 UTC
From: Robert Smts <bob@rsmits.ca>
Message-ID: <84852577002e604f85eda714a74f6bbc@grapevine.islandnet.com>
Source record: 29373
Cross-posted to: news.admin.net-abuse.usenet,comp.robotics.misc,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

That temporal goods are false, and that the true good is to be united to God. Psalm 143:15.

That their feasts are displeasing to God. Amos 5:21.

That the sacrifices of the Jews displeased God. Isaiah 66:1-3; 1:11; Jer. 6:20; David, Miserere.105 Even on the part of the good, Expectavi.106 Psalm 49:8, 9, 10, 11, 12, 13, and 14.

That He has established them only for their hardness. Micah, admirably, 6; 1 Kings 15:22; Hosea 6:6.

That the sacrifices of the Gentiles will be accepted of God, and that God will take no pleasure in the sacrifices of the Jews. Malachi 1:11.

That God will make a new covenant with the Messiah, and the old will be annulled. Jer. 31:31. Mandata non bona.107

That the old things will be forgotten. Isaiah 43:18, 19; 65:17, 10

That the Ark will no longer be remembered. Jer. 3:15, 16

That the temple should be rejected. Jer 7:12, 13, 14.

That the sacrifices should be rejected, and other pure sacrifices established. Malachi 1:11.

That the order of Aaron's priesthood should be rejected, and that of Melchizedek introduced by the Messiah. Ps. Dixit Dominus.

That this priesthood should be eternal. Ibid.

That Jerusalem should be rejected, and R

906. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 03:26:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a73b7464-a5c5-4ff1-b9d5-969a720227d1@v29g2000hsf.googlegroups.com>
Source record: 29371

On Jan 15, 6:54 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > It would be valuable if you could indicate which of the possible
> > definitions of "*NET* energy moving" you mean.
>
> Net energy is the difference between the average forward
> energy and the average reflected energy.

Okay. Option 2. This is the same as subtracting
the indications that a Bird wattmeter would provide
for the forward and reflected power.

I like this definition for NET energy transfer.

> Please forget
> instantaneous values. Instantaneous voltage and current
> are obviously valuable concepts.

Now the next question. When the instantaneous power
is always 0, is any energy transferred?

...Keith

907. Re: Circuitry of a radiator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 04:04:40 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478d8257$0$18453$4c368faf@roadrunner.com>
Source record: 29372

"art" <aunwin@insightbb.com> wrote in message
news:c899fbef-6574-4d0d-88cc-c318bbdb81ca@e23g2000prf.googlegroups.com...
> We all know that when a generator produces alternating electricity,
> it produces it with a rotational movement only. At no time does the
> generater
> move backwards and forwards. When describing the value of the current
> we can see that the current has a constant value as the rotor of the
> generator
> revolves. The current appears to be going up and down in value only
> because
> of the vantage point taken.

Actually, here is what *really* happens: Given; You have a generator. Npw consider the circular motion of the rotor of the generator. Let us choose to put 2 permanent magnets on the rotor and electromagnets on the 2 stators which are comprised of wires wound around 2 ferromagnetic cores. We begin at equilibrium with the N pole of the rotor midway between the N and S poles of the stators.Now turn the rotor in the direction of opposing magnetic fields; as the N pole of the rotor approaches the N pole of the stator, a current is produced on the terminals of the stators. At the midway position where we started, the current was minimum (0). As the two N poles become closest together, we have a maximum current (positive). Then we approach midpoint between N and S on the second stator and we have zero again (at 1/2 wave or 1/2 rotation). Then we have the closest proximity of N and S which gives us a minimum current (negative). The back to midway between N and S on stator 1 and we are back at zero and have completed one rotation/cycle/one wavelength. The constant angular velocity you speak of, omega, defines the constant frequency of the rotation (2*pi*f). The angle of the rotor. at any point in time is 2*pi*f*t. At any position, the current can be defined at Imax*sin(omega*t). That is where your theory breaks down, art. True, the rotation is a constant velocity but false, the current is not constant as the generator revolves; it depends on the relative position of the rotor and stators.

Art knows how we visualize this positioning. He knows that if we were to take a clear disk (that we can see through) and paint a red dot on the outside of the disk, then rotate the disk at a constant velocity, then turn the disk 90 degrees so you are watching the edge (taking a 90 degree vantage point), you see the red dot moving up and down at an irregular rate; from this position it is NOT a constant velocity anymore, The up and down movement represents the "y" axis of a sine wave. Now, if you can attached a pen recorder to the dot and have it contact a moving strip of paper turned another 90 degrees to the revolving circular disk, AND move the paper at a constant linear velocity, we have the "x" axis of the sine wave representative of time or "t". With proper calibration and normalization,

this sine wave traced by the pen recorder will be a depiction of the current wave form in the generator.

The wave form is a sinusoid even though the generator moves in a constant circular motion. But you can see that the current is by no means constant at all.

How does the fact that the current is demonstably a sinusoid (as well known fact, not theory), and not a straight line, affect your theory?

I would imagine it puts you back to the drawing board, way at the beginning, again, as has happened so many times before.

It reminds me of the king counting has pennies, "....on million one, one million two, one million three...crash! (the coins fall to the floor from their weight). One, two, three...". (The king WAS persistent ;-))

908. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 05:51:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <dXgjj.72$so6.66@newssvr19.news.prodigy.net>
Source record: 29374

Gene Fuller wrote:
> It would be really amusing to see you scramble to rotate the vector axis
> of the magnetic field (or the E-field) as it reflects from an interface.
> Since the E-field and H-field are related by curl relationships as shown
> in the Maxwell equations, it would be interesting to see how one could
> have related E-fields and H-fields at "0 degrees" and "180 degrees" as
> you claim. As a self-proclaimed math expert I am sure you understand the
> properties of the curl operator.
>
> This is very basic stuff, and it is in the standard textbooks, probably
> even in Hecht.

It certainly applies to EM waves but what you are missing is
that it doesn't apply to standing waves which are NOT EM waves.
Tomorrow I will list the Ramo & Whinnery characteristics of
an EM wave. Standing waves don't meet those characteristics.
--
73, Cecil http://www.w5dxp.com

909. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 05:59:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <M2hjj.73$so6.72@newssvr19.news.prodigy.net>
Source record: 29375

Keith Dysart wrote:
> Now the next question. When the instantaneous power
> is always 0, is any energy transferred?

Now for the real question. When the net instantaneous
power is 0 at a point with non zero power on each side
of that point, is any energy transferred?

The answer is - of course - equal amounts in either
direction. The sum of the two Poynting vectors is
zero.

Until you can provide a reference or example of a
reflection occurring in a homogeneous medium, you
have proven nothing except that you can fantasize.
Ramo & Whinnery imply that reflections are impossible
unless the reflection coefficient changes magnitude
which it doesn't with a constant Z0.
--
73, Cecil http://www.w5dxp.com

910. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 06:10:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <edhjj.84$so6.63@newssvr19.news.prodigy.net>
Source record: 29376

Jim Kelley wrote:
> When a wave is canceled, there is no wave.

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index.html

"... when two waves of equal amplitude and wavelength that are
180-degrees ... out of phase with each other meet, they are not
actually annihilated, ... All of the photon energy present in
these waves must somehow be recovered or redistributed in a new
direction, according to the law of energy conservation ... Instead,
upon meeting, the photons are redistributed to regions that permit
constructive interference, so the effect should be considered as
a redistribution of light waves and photon energy rather than
the spontaneous construction or destruction of light."

The canceled waves are "not annihilated" even though there is, as
you say, no wave in the direction of cancellation. The energy in
the canceled waves is "redistributed" in the opposite direction
in the transmission line as constructive interference. We hams call
that event a "reflection".
--
73, Cecil http://www.w5dxp.com

911. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 06:40:49 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080115224049.73c83a95.rsparks@elltel.net>
Source record: 29377

On Tue, 15 Jan 2008 14:18:15 -0800
Roy Lewallen <w7el@eznec.com> wrote:

> Roger Sparks wrote:
> >
> > I can see why you find "no power" at the zero voltage point, but does that imply that there is no energy flow and no power from every perspective? As I write, I am struggling how to clearly differentiate between "power" as "work done" and energy as "capacity to do work", and what "network" are we defining.
>
> Power at a particular point on the line is the rate of energy flow past
> that point. It does no imply that any work is done anywhere, since any
> energy flowing past the point can be stored. That is, in fact, exactly
> what happens with the open circuited line in my analyses and illustrated
> with TLVis1. You can see from the TLVis1 demo 4 that power is present at
> all times and places along the line except a few select points. No work
> is being done; energy is simply moving back and forth along the line and
> between the E and H fields.

Are you objecting to my link between power and work?

I can understand how we might think of a moving voltage wave (on a transmision line) somewhat like a battery that moves along a straight line. With that view, there would be no power acting on the line, no work, and there would be no evidence of current.

If a capacitor discharges, work is done on the circuit receiving the discharge. It takes work to charge a capacitor. Are you thinking that on a continuous capacitor like a transmission line the energy just "slides" along (like a train on tracks) without change of energy, like a battery moving along?

In my view, logic demands a smooth flow of power and energy from source to load. We should be able to account for both energy and power for every instant of time, over every inch of distance. I thought you were doing that in TLVis1 demo 4.

>
> > . . .
>
> > I personally define power as a state/condition where "work 'is being' done", . Power must act over time and have a physical movement component. Voltage by itself does not fulfill this definition because no movement is observed. Current is movement, voltage is only an indication of where a concentration of charges is found.
>
> Of course you're free to define anything in any way you choose. But
> you've chosen a definition that's different from the one accepted in all
> of electrical circuit analysis and all textbooks. So you can expect to
> have a good deal of difficulty communicating with people who are

> acquainted with the universally understood definition and assume that's
> what you mean, rather than your own personal definition. To them, power
> is the time rate of energy flow, dE/dt, period.

Are you again objecting to my link between power and work?

This definition sounds consistant with power flowing on the transmission line. We seem to fulfill the power definition of energy flow on a transmission line but you make the statement "No work is being done". Would you object to my example of requiring work to charge a capacitor?

>
> > . . .
>
> Roy Lewallen, W7EL

73, Roger, W7WKB

912. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 07:35:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13orctnjtei25e4@corp.supernews.com>
Source record: 29378

Roger Sparks wrote:
> On Tue, 15 Jan 2008 14:18:15 -0800
> Roy Lewallen <w7el@eznec.com> wrote:
>
>> Roger Sparks wrote:
>>> I can see why you find "no power" at the zero voltage point, but does that imply that there is no energy flow and no power from every perspective? As I write, I am struggling how to clearly differentiate between "power" as "work done" and energy as "capacity to do work", and what "network" are we defining.
>> Power at a particular point on the line is the rate of energy flow past
>> that point. It does no imply that any work is done anywhere, since any
>> energy flowing past the point can be stored. That is, in fact, exactly
>> what happens with the open circuited line in my analyses and illustrated
>> with TLVis1. You can see from the TLVis1 demo 4 that power is present at
>> all times and places along the line except a few select points. No work
>> is being done; energy is simply moving back and forth along the line and
>> between the E and H fields.
>
> Are you objecting to my link between power and work?

I have to correct my statement.

The strict definition of work is the same as energy. So moving energy is technically doing work, even if no energy is being dissipated or being put to any useful purpose. What I meant but failed to say accurately is that no net work is being done. All energy being moved is being moved back. None is being converted to heat (dissipated), mechanical energy, or other useful work.

Consider a resonant circuit or, for that matter, an open or short circuited transmission line. Energy is moved back and forth each cycle, resulting in non-zero power, but without any *net* work being done.

It's possible that by "power" you mean "average power", which is not the same as (instantaneous) power. (This is exactly the mistake I made, using "work" to mean "net work".) The average power (and net work done) is non-zero whenever the amount of energy moved in one direction during one half the cycle isn't equal to the amount moved the other way during the other half of the cycle.

> I can understand how we might think of a moving voltage wave (on a transmision line) somewhat like a battery that moves along a straight line. With that view, there would be no power acting on the line, no work, and there would be no evidence of current.

Sorry, that doesn't make sense to me. A traveling voltage wave on a transmission line is always accompanied by a current wave, and the ratio

of voltage to current is equal to the line's Z0 at every point and every
time.

> If a capacitor discharges, work is done on the circuit receiving the discharge.

That's true. No net work is necessarily done -- if it's discharged into
an inductor, the energy is simply stored in the inductor, and returned
later by the inductor doing an equal amount of work on the capacitor.

> It takes work to charge a capacitor.

Yes, in the strict instantaneous sense.

> Are you thinking that on a continuous capacitor like a transmission line the energy just "slides" along (like a train on tracks) without change of energy, like a battery moving along?

A transmission line has both distributed capacitance and inductance.
Energy moves between the two. The little program TLVis1 I created and
posted a link to shows this graphically in demo 4, with the energy
stored in the capacitance being in one color and the energy stored in
the inductance another color. You can clearly see how the energy moves
back and forth between the two each cycle.

> In my view, logic demands a smooth flow of power and energy from source to load.

Your logic is flawed. A load which contains both resistance and
reactance has energy flow in one direction during half the cycle and
energy flowing the other direction during the other half. Because of the
resistance, the two aren't equal; the difference is the energy being
dissipated each cycle. If the load is an open or short circuit, no
energy flows to the load at all. If the load is purely reactive, it
stores the energy for half the cycle and returns it during the other half.

> We should be able to account for both energy and power for every instant of time, over every inch of distance. I thought you were doing that in TLVis1 demo 4.

I am indeed. It shows exactly that. If you'll look carefully at the
graphs, you'll see that it demonstrates what I've said above.

>>> . . .
>>> I personally define power as a state/condition where "work 'is being' done", . Power must act over time and have a physical movement component. Voltage by itself does not fulfill this definition because no movement is observed. Current is movement, voltage is only an indication of where a concentration of charges is found.
>> Of course you're free to define anything in any way you choose. But
>> you've chosen a definition that's different from the one accepted in all
>> of electrical circuit analysis and all textbooks. So you can expect to
>> have a good deal of difficulty communicating with people who are
>> acquainted with the universally understood definition and assume that's
>> what you mean, rather than your own personal definition. To them, power
>> is the time rate of energy flow, dE/dt, period.
>
> Are you again objecting to my link between power and work?

I apologize for my careless use of "work". Instantaneous power is the rate of flow of energy, or work. Average power is the average rate of flow of energy or work. If the average power is non-zero, net work is being done, e.g., energy is being dissipated in a resistance or being radiated. But instantaneous power can be non-zero without this occurring.

> This definition sounds consistant with power flowing on the transmission line.

Which definition, yours or the one used by everyone else involved with electrical circuits? I maintain that power doesn't "flow". Energy flows, and power is the rate of that flow. The standard definition says nothing about power "flowing", on a transmission line or anywhere else.

> We seem to fulfill the power definition of energy flow on a transmission line but you make the statement "No work is being done".

Please correct that to be "no *net* work is being done. It was made to refer to the open-circuited line in my example. The average power everywhere is zero, as you can see from demo 4 - the power waveform oscillates equal amounts on both sides of zero. No net energy is being transferred or dissipated.

> Would you object to my example of requiring work to charge a capacitor?

I stand corrected - work is required. But the work can be returned.

Roy Lewallen, W7EL

913. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 10:58:20 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <25042272-c31b-470e-9e92-a24090969d39@u10g2000prn.googlegroups.com>
Source record: 29379

On Jan 16, 12:59 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Now the next question. When the instantaneous power
> > is always 0, is any energy transferred?
>
> Now for the real question. When the net instantaneous
> power is 0 at a point with non zero power on each side
> of that point, is any energy transferred?
>
> The answer is - of course - equal amounts in either
> direction.

So you seem to be claiming that the following two
statements can be simultaneously true:

1. Power [recall p(t)=v(t)*i(t)] is the rate at
which energy is transferred.
2. Energy can be transferred when the power is zero.

To my simple intellect, one of these statements
must be false.

...Keith

914. Re: Why the US airwaves are not free

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 12:02:39 UTC
From: Denny <k8do@mailblocks.com>
Message-ID: <9f728a0c-7251-4e18-b4e5-ffaef3ade9b6@v46g2000hsv.googlegroups.com>
Source record: 29380

On Jan 15, 8:50 pm, John Smith <assemblywiz...@gmail.com> wrote:
> Maverick Party wrote:
>
> [THE ABSOLUTE TRUTH]
>
> However, you digress from antennas ... plonk ...
>
> Regards,
> JS

And, the fact that he is able to freely publish his treatise in this
mass media disproves his own arguement...

915. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 12:40:26 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <61bb6289-1184-4890-8ce9-c1bd0615276f@m34g2000hsf.googlegroups.com>
Source record: 29381

On Jan 15, 2:24 am, Roy Lewallen <w...@eznec.com> wrote:
> Keith Dysart wrote:
>
> > You don't need Poynting vectors to realize that when
> > the instantaneous power is always 0, no energy is flowing.
> > And when the instantaneous power is always 0, it is
> > unnecessary to integrate and average to compute the
> > net energy flow, because no energy is flowing at all.
>
> > And if by your response you really do mean that energy
> > can be flowing when the instantaneous power is always 0,
> > please be direct and say so.
>
> > But then you will have to come up with a new definition
> > of instantaneous power for it can not be that it is
> > the rate of energy transfer if energy is flowing when
> > the instantaneous power is zero.
>
> The little program I wrote shows that, on the line being analyzed, the
> energy is changing -- moving -- on both sides of a point of zero power.
> Energy is flowing into that point from both directions at equal rates,
> then flowing out at equal rates. This causes the energy at that point to
> increase and decrease. What zero power at a given point means is that
> there is no *net* energy moving in either direction past that point.

"*net* energy moving" seems to be a bit of a dangerous notion.

If "*net* energy moving" is the time averaged power, then
it is zero at *every* point on the line under consideration.
And I do not mind this definition.

But at the points where the current or voltage is always
zero, it seems to me unnecessary to use the qualifier "*net*"
since the power IS always zero [from p(t)=v(t)*i(t)]. That
is, unless you are introducing another interpretation of
"*net*".

...Keith

916. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 13:33:09 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <5eb98a81-9cc5-4212-90c2-c4124cea07c0@s19g2000prg.googlegroups.com>
Source record: 29382

On Jan 15, 6:03 am, Roy Lewallen <w...@eznec.com> wrote:
> Comments interspersed. . .
>
> Keith Dysart wrote:
[snip]
> > I take this to imply that you are not happy with the simple "like
> > charge
> > repels"?
>
> That's right. Although it's a true statement, I haven't seen any
> explanation of why it would cause waves to bounce off each other.

And Roger suggested the counter-example which may mark the end of
the line for "bounce".

[snip]
> > I would really appreciate seeing some other possible explanations.
>
> How about this: During the initial turn-on of the system, energy does
> cross the magic node. It's only in the theoretical limiting case of
> steady state that the energy goes into and out of the node but doesn't
> cross it. I'll argue that the limiting case can never be reached --
> since this whole setup is a perfect construct to begin with. Or, if
> that's not adequate by itself, what's the problem with energy being
> trapped between nodes once the line is charged and steady state is reached?

I do use the view that the energy is trapped. The difficulty is: What
is the mechanism that traps the energy?

[snip]
> > With this explanation, P(t)
> > is definitely equal to V(t) time I(t), which I do appreciate.
> > The weakness of this explanation is that it seems to deny
> > that the wave moves energy. And yet before the pulses collide
> > it is easy to observe the energy moving in the line, and if
> > a pulse was not coming in the other direction, there would
> > be no dispute that the energy travelled to the end of the
> > line and was absorbed in the load. Yet when the pulses
> > collide, no energy crosses the middle of the line. Yet
> > energy can be observed travelling in the line before
> > and after the pulses collide.
>
> I think the basic problem here is assigning energy to each traveling
> wave.

I agree. And when looking at sinusoidal excitation with "standing
waves", it easy not to assign energy.

But when looking at pulses, the energy in the pulse seems to jump
out at me, and it is hard to ignore.

> It's taking you into exactly the same morass that Cecil constantly
> finds himself in.

I know. And I definitely do not want to go there.

And yet, when I look at pulses, where the energy is clearly visible,
I develop some sympathy for Cecil's position.

> He also concluded some time back that two waves which
> collide had to reverse direction in order to conserve power, energy,
> momentum, or something. Energy in the system is conserved; but nowhere
> is it written that each wave has to have individually conserved energy.

[snip]
> I think you need to take a closer look at what it's getting you out
> from. I believe the problem lies there.

Possibly.

[snip]
> > So I am not convinced that it any way goes against established theory.
> > I have not seen established theory attempt an explanation of how the
> > waves can both transport energy as well as not do so when waves of
> > equal energy collide.
>
> Perhaps that's because individual waves don't transport energy that has
> to be conserved?

Possibly, but the energy is so clearly visible in the pulses before
and
after they collide.

[snip]
> > The same concern that arises for pulses of equal voltage also
> > occurs for pulses of different voltage. While the mid-point no
> > longer has zero current, the actual current is only the difference
> > of the two currents in the pulses, the charge that crosses is only
> > the difference in the charge between the two pulses, and the
> > power at the mid-point is exactly the power that is needed
> > to move the difference in the energy of the two pulses.
>
> Sorry, I'm having trouble following that. Voltage, current, charge, and
> energy all in two sentences has too high a concept density for me to handle.

I'll try with a better description. Consider a line 4 sec long with
a matched pulse generator at each end. There is an instantaneous power
(p(t)=v(t)*i(t)) meter at the 1, 2 and 3 sec points on the line.
Call them the left, middle and right meters.
The left generator launches a 1 sec pulse of 100 volts and 2 amps (it

is
50 ohm line). This pulse is 200 W and contains 200 J.
Simultaneously the right generator launches a 1 sec pulse of 50 volts
and 1 amp (50 W and 50 J).
At 1 sec the left power meter reads 200 W for 1 sec as 200 J pass,
then at 3 sec the right power meter reads 200 W for 1 sec as 200 J
pass. It sure looks like the pulse has travelled down the line.
At 1 sec the right power meter reads -50 W for 1 sec as 50 J pass,
then at 3 sec the left power meter reads -50 W for 1 sec as 50 J
pass. It sure looks like this pulse has travelled up the line.
The total energy transfer measured by the left meter is 150 J and
by the right meter is also 150 J.
At second 2, when the pulses collide in the middle, the middle meter
reads 150 W for 1 second. So the total energy transfer at the middle
is 150 J, which is good since it agrees with the totals in the other
meters.

So the middle meter reads 150 W.
The left meter reads 200 W and later -50 W.
And the right meter reads -50 W and later 200 W.

So how does a pulse that measurably is 200 W (measured at both right
and left meters) move through a point that only measures 150 W.

Numerologically it surely does appear that one can superpose powers
since 200+(-50) is 150.

The main difference between this experiment and one with steady state
sinusoidal waves is that in the latter the component forward and
reverse waves in are derived by arithmetic from the actual conditions
on the line and it is easy to wave the issues away by saying that the
component waves have no reality. They are just intermediate results
in some arithmetic.

This waving away is much harder to do for the pulse case because
the pulses can be individually observed as actual conditions on the
line.

> > So the challenge is not so starkly obvious as it is when the
> > power at the mid-point is always 0, but P(t) = V(t) * I(t) can
> > still be computed and it will not be sufficient to allow
> > the energy in the two pulses to cross the mid-point (unless
> > one likes superposing power, in which case it will be
> > numerologically correct).
>
> No, it'll have to be done without superposing power. Simple calculations
> clearly show where the power is and where the energy is going, without
> the need to superpose power or assign power or energy to individual waves.

Yes. And I find it easy to obscure for the sinusoid case. But the
pulses
seem to make it easy to measure and not so easy to refrain from

assigning
energy and power to the pulses.

[snip]
> > But if one conceives waves as also including energy, then it
> > seems that the question 'where does the energy go' is valid
> > and the common explanations do not seem to hold up well.
>
> I think you're partially right about that. Partially, because I think
> there's an underlying assumption that the power in an individual wave
> has to be conserved. If you do insist on assigning energy to individual
> traveling waves, I think you have to be willing to deal with the fact
> that the energy can be swapped and shared among different waves, and
> stored and returned as well.

But then, what is the mechanism that swaps the power between the
pulses
and changes the direction of the energy flow?

> Our common analytical techniques deal with E and H fields which we can
> superpose. In a transmission line, these are closely associated with
> voltages and currents. They add nicely to make a total with properties
> we can measure and characterize, and the total can neatly be created as
> the sum of individual traveling waves from turn on until steady state.
> It all works very well. Two fields, voltages or currents can easily add
> to zero simply by being oriented in opposite directions -- and they do,
> all along a transmission line. But how are the energies they supposedly
> contain going to add to zero? You'll have to construct a whole new model
> if you're going to require conservation of energy of individual
> traveling waves.

I agree. And it especially will fail if instead of dealing with
the sum of the reflected waves, we try to sum the power of each
reflection
individually.

And yet, the power and energy are so visible when looking at pulses.

> I'm absolutely certain that after all the work of
> developing a self-consistent model with all interactions quantitatively
> and mathematically explained and accounted for, we'll find a testable
> case where some measurable result will be different from the
> conventional viewpoint. (Google "ultraviolet catastrophe".) That would
> then establish the validity of the new model. But I'm just as certain
> that no such mathematical model will ever be forthcoming.
>
> >> The advantage to the non-interacting traveling wave model
> >> is that it so neatly predicts transient phenomena such as TDR and run-up
> >> to steady state. I spent a number of years designing TDR circuitry,
> >> interfacing with customers, and on several occasions developing and
> >> teaching classes on TDR techniques, without ever encountering any
> >> phenomena requiring explanations beyond classical traveling wave theory.

> >> So you can understand my reluctance to embrace it based on a problem
> >> with energy transfer across a single infinitesimal point in an ideal line.
>
> > Yes, indeed. Though any (new) explanation would have to remain
> > consistent with the existing body of knowledge which works so well.
>
> Either that, or be able to demonstrate where the existing knowledge
> fails. I'm not holding my breath.

I do not expect that to happen. But how is the energy in the left
travelling
50 W pulse turned around at the middle to add to the 150 W that is let
through
to complete the 200 W right travelling pulse?

...Keith

917. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 14:08:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Ddojj.103$Rg1.102@nlpi068.nbdc.sbc.com>
Source record: 29383

Roy Lewallen wrote:
> Which definition, yours or the one used by everyone else involved with
> electrical circuits? I maintain that power doesn't "flow". Energy flows,
> and power is the rate of that flow. The standard definition says nothing
> about power "flowing", on a transmission line or anywhere else.

I agree with you. If energy is measured in joules and energy flow
is measured in joules/sec, then it seems to me that if power is
measured in watts, then "power flow" would have the dimensions of
watts/sec or joules/sec^2, which doesn't make any technical sense.

The units of the power-flow vector are watts/unit-area. That's
a value fixed in space-time and that value is not moving.

However, most of my college textbooks from the 50s refer to
"power flow" as do some folks on this newsgroup.

For instance, Ramo & Whinnery talk about an "electromagnetic
theorem concerning *flow of power*".

> A transmission line has both distributed capacitance and inductance.
> Energy moves between the two. The little program TLVis1 I created and
> posted a link to shows this graphically in demo 4, with the energy stored
> in the capacitance being in one color and the energy stored in the
> inductance another color. You can clearly see how the energy moves back
> and forth between the two each cycle.

Now it is my turn to wax technically correct. If the energy in
a standing wave is indeed flowing back and forth between an
inductance and a capacitance, then a standing wave is *NOT* an
EM wave just as the EM energy flowing in a tank circuit doesn't
meet the definition of a wave. Ramo & Whinnery list the properties
of a uniform plane wave: [begin quote]

1. Velocity of propagation, v = 1/SQRT(permeability*permittivity).
2. No electric or magnetic field in direction of propagation.
3. Electric field normal to magnetic field.
4. Value of electric field is the intrinsic impedance (ii) times
the magnetic field at each instant.
5. Direction of propagation given by direction of ExH.
6. Energy stored in electric field per unit volume at any instant
and any point is equal to energy stored in magnetic field per
unit volume at that instant and that point.
7. Instantaneous value of Poynting vector given by
E^2/ii = ii*H^2, where E and H are the instantaneous values of
total electric and magnetic field strengths. [end quote]

A standing wave doesn't satisfy any of those properties.
--
73, Cecil http://www.w5dxp.com

918. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 14:44:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <oLojj.3977$jJ5.1023@newssvr11.news.prodigy.net>
Source record: 29384

Keith Dysart wrote:
> 1. Power [recall p(t)=v(t)*i(t)] is the rate at
> which energy is transferred.

Since we are dealing with superposed waves that would
be the rate at which net energy is transferred.

> 2. Energy can be transferred when the power is zero.

> To my simple intellect, one of these statements
> must be false.

Using the rules for superposition, treat each wave
separately and superpose them for a net result.

And it certainly depends upon what definition of "transfer"
that you are using. I am using, from Webster's:

"transfer - move"

Would you please post your definition of "transfer".

The forward wave is moving energy across the zero power point.
The reflected wave is moving an equal magnitude of energy in
the other direction across the zero power point.
The Poynting vectors for the forward wave and reflected wave
are equal in magnitude and opposite in direction. There is
of course zero net power transfer and points where the
net instantaneous power equals zero.

I'm going to keep reminding you that, until you provide
a reference or example of reflections occurring within
a homogeneous medium, nothing that you have to say
about the subject is linked to reality.
--
73, Cecil http://www.w5dxp.com

919. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 14:53:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MTojj.820$EZ3.22@nlpi070.nbdc.sbc.com>
Source record: 29385

Keith Dysart wrote:
> But at the points where the current or voltage is always
> zero, it seems to me unnecessary to use the qualifier "*net*"
> since the power IS always zero [from p(t)=v(t)*i(t)]. That
> is, unless you are introducing another interpretation of
> "*net*".

A standing wave is the *net* result of the superposition of
the forward wave and the reflected wave (without which the
standing wave would not exist). Anything, including power,
calculated using standing waves is necessarily a *net* result.
Superposed voltage is a net voltage. Superposed current is
a net current.
--
73, Cecil http://www.w5dxp.com

920. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 15:00:15 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <2e0b8fa9-e15f-49b7-8be1-7e6a6f03608b@y5g2000hsf.googlegroups.com>
Source record: 29386

On Jan 15, 2:27 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Tue, 15 Jan 2008 06:44:05 -0800 (PST)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
[snip]
> > Well I start with P = V * I, so whenever the current or the voltage
> > is zero, there is no power. Specifically, V and I are measured at
> > the terminals of a network and P will be the power flowing into or
> > out of the network.
>
> I can see why you find "no power" at the zero voltage point, but does that imply that there is no energy flow and no power from every perspective? As I write, I am struggling how to clearly differentiate between "power" as "work done" and energy as "capacity to do work", and what "network" are we defining.
>
> Let's begin with the network. Drawing from your words below, we have two networks, one to the left and one to the right of our zero voltage point. When we test voltages on either side of the zero point, we find voltage. The question now is: "Which network did we join when we measured voltage?". The answer is: "We joined the network that we measured.". When we measure exactly in the center between networks, we join neither network.

That is the best way. And that way we can measure the flow between the networks.

> For another way of looking at the two networks, let us place our voltage probes on each side of the zero voltage point on a/the wire connecting the two networks. We will detect a voltage and a current for any of the standing wave systems we are discussing. By changing our points of reference, we find that power is applied to the zero voltage zone during the instant of time the measurement is made.

But if we move the probes, we have changed the amount of 'network' on either
side.

> I personally define power as a state/condition where "work 'is being' done", . Power must act over time and have a physical movement component. Voltage by itself does not fulfill this definition because no movement is observed. Current is movement, voltage is only an indication of where a concentration of charges is found.

I am not convinced about 'physical'. Consider heat, light.

> > In the case under discussion, there are two networks, one to
> > the left of the point on the line and one to the right and
> > we are measuring the power flowing between these two networks.
>
> > For an example of current without power, consider a loop of

> > superconductor with a current flowing in it. No voltage, no
> > power, but there is current.
>
> I agree. We could place voltage probes between any two points on the superconducting loop and not find voltage. Power is not being applied nor extracted from the superconducting loop system. I think we would all agree that energy is stored in the superconducting loop with current flowing.
>
> > > Current is defined as movement of charges, and charges have energy by definition (how can they be charges without energy?).
>
> > Consider an object flying through space. No work is being done
> > (and therefore there is no power), but the object still has
> > kinetic energy.
>
> > > Another point, the current is observed to change directions during the cycles, polarity also changes on each side of the zero voltage point. Where might the polarized energy come from if it does not cross the zero voltage point?
>
> > A thought experiment I have found useful is to consider a simple
> > resonant circuit made of an ideal capacitor and inductor. Charge
> > the capacitor to 10 volts and then connect the inductor. A sinusoidal
> > voltage and current will appear in the circuit.
>
> > Just as the inductor is connected:
> > - all the energy is stored in the capacitor
> > - the voltage on the capacitor is maximum
> > - there is no current in the inductor
> > After connecting the inductor:
> > - energy starts to transfer to the inductor
> > - the voltage on the capacitor is dropping
> > - the current in the inductor is increasing
> > Some time later:
> > - the voltage on the capacitor is 0
> > - the current in the inductor is maximum
> > - there is no energy stored in the capacitor
> > - all the energy is stored in the inductor
> > - no energy is moving from the capacitor to
> >   the inductor
> > But the inductor insists that current continue
> > to flow:
> > - the capacitor begins to charge with a negarive
> >   voltage
> > - energy begins to transfer from the inductor
> >   back to the capacitor (note the change in the
> >   direction of energy flow)
> > - the voltage on the capacitor is increasing
> >   negatively
> > - the current in the inductor is dropping
> > Sometime later:

> > - the current in the inductor has dropped to
> >   zero
> > - the capacitor has a maximum negative voltage
> > - all the energy is in the capacitor
> > And this continues forever at the resonant
> > frequency of the capacitor and inductor circuit.
>
> > But no energy is moving from the capacitor to
> > the inductor when the voltage on the capacitor
> > is zero and the current in the inductor is
> > maximum. It is at these times that the direction
> > of energy flow is changing, as well as when the
> > voltage in the capacitor is maximum and the
> > current is zero.
>
> When the voltage on the capacitor is zero, the voltage on the entire system is zero, no matter our reference point. The system energy is completely contained in the moving current with a direction of energy flow completely defined. For an instant, the inductor is like a superconducting loop.
>
> From a traveling wave standpoint, the resonant capacitor/inductor system contains a positive wave and a negative wave, equally balanced energy wise. When the capacitor is completely charged, the positive and negative waves are at the reversal/mid point of the cycle where each wave is maximally displaced from center (which is at the electrical center of the inductor). When the capacitor is completely discharged, the two waves superimpose and both reside in the inductor at identical times. The energy of both waves is completely contained in the electromagnetic field that exists outside the wires containing the two traveling waves. Do the waves exist on the wire at this instant, or have they completely desolved into a space field we observe as magnetic force? The current seems to be flowing so I would say the waves both continue to exist.

When using lumped elements, I do not think I would try to write a
description
in terms of waves.

> > > I can kinda see how like charges could repell so that waves of like polarity might "bounce" but I can't see how waves of opposite polarity might "bounce". If waves of opposite polarity "bounced", why would the polarity change during the cycle on each side of the "bounce" point?
>
> > An excellent counter-example. I may have fallen into
> > the trap of looking at the examples that support the
> > argument rather than looking for the ones that don't.
> > This will take some cogitating. Maybe its the end
> > of the line for the "bounce hypothesis".
>
> > > To me, it is much more rewarding to work with traveling waves that pass through one another, interacting to create standing waves.
>
> > I don't object to this view, as long as the waves are
> > viewed as having voltages or currents but no power.

>
> Have you considered how energy is transfered between elements of the transmission line over time if we do not have an ongoing application of power? Doesn't one section of line apply power to the next successive section of line an instant of time later after it received applied power? We agree that a transmitter applies power at the input of a transmission line. Isn't the first section of transmission line just the power source for the second piece of line?

Yes. And that is especially visible when the line is excited with a
pulse.

> I think of the traveling waves as transporting power and energy through time and physical distance. The highest voltage points physically "move" (found in a new location) as time passes, as do the highest current points, and always together in phase.
>
>
>
> > The difficulty is that some waves definitely transport
> > energy while others do not and I do not see a good
> > explanation for what turns the former into the latter,
> > as happens, for example, when the pulses collide.
>
> Some waves transport energy, and some do not! That distinction bothers me less now that I have participated in this thread for a while. For me, the traveling wave always has current and voltage in phase, and always carries power. If I can not find power, then we must have a standing wave. For me, traveling waves is all that we really have, they are primary. All other waves flow/result from the traveling waves.

But then do the two travelling waves that make up the standing wave
transport
energy? When no energy crosses the voltage or current zeroes?

And when there are multiple reflections, there are multiple travelling
waves
in each direction. Do each of these multiple travelling waves
independantly
transport energy?

And even a standing wave has energy moving. Just not past the voltage
and
current zeroes.

[snip]

...Keith

921. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 15:19:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9gpjj.33362$4V6.25539@newssvr14.news.prodigy.net>
Source record: 29387

Keith Dysart wrote:
> I do use the view that the energy is trapped. The difficulty is: What
> is the mechanism that traps the energy?

Photonic energy cannot be trapped in a homogeneous medium.
It is simply impossible to accomplish that feat without
any discontinuities to cause reflections.

The energy components are not trapped. There is exactly the
amount of energy in the line as required to support the
forward wave and reflected wave. The concept of trapped
energy is an illusion, an artificial shuffling of the
component energy. Modulation will reveal exactly
what is happening. I like TV ghosting examples.

Standing light waves can happen in free space. There is no
mechanism that traps the energy because there is no trapped
energy.

> And yet, when I look at pulses, where the energy is clearly visible,
> I develop some sympathy for Cecil's position.
>
>> He also concluded some time back that two waves which
>> collide had to reverse direction in order to conserve power, energy,
>> momentum, or something. Energy in the system is conserved; but nowhere
>> is it written that each wave has to have individually conserved energy.

For the record, what Roy said above is a false statement.
Canceled waves are necessarily moving in the same direction
at the same speed. It is impossible for them to collide.

Roy cannot produce even a single example where I said
colliding waves reverse direction in a homogeneous medium.

And it is certainly written that *all* energy, individual or
not, must be conserved. Not only must the energy in each
wave be conserved, the momentum in that wave must also
be conserved.

> Numerologically it surely does appear that one can superpose powers
> since 200+(-50) is 150.

Superposition requires a phase angle and power has no phase
angle so superposition cannot apply.

However, in the complete absence of interference, powers
can certainly be added. In the irradiance equation, if the

interference term is zero, the sum of two powers is simply
P1 + P2. It happens when the two waves are normal to each
other.
--
73, Cecil http://www.w5dxp.com

922. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 15:27:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Znpjj.33363$4V6.9398@newssvr14.news.prodigy.net>
Source record: 29388

Keith Dysart wrote:
> But then do the two travelling waves that make up the standing wave
> transport energy?

Does a light wave from Alpha Centauri that never encounters
anything except free space transport energy? It certainly
depends upon your definition of "transport". It has an
E-field, a B-field, and a Poynting vector but is it
"transporting" energy if it never encounters a load to
which to transfer energy?
--
73, Cecil http://www.w5dxp.com

923. Re: Internal actions of a radiator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 16:40:53 UTC
From: nm5k@wt.net
Message-ID: <44df2f35-b048-4c47-b5ee-13d8f2dad435@d4g2000prg.googlegroups.com>
Source record: 29389

On Jan 15, 2:03 pm, art <aun...@insightbb.com> wrote:
> We
> must
> recognise that these exchanges also lose energy which fortunately the
> generator replaces continuesly to replace the energy lost ,say to
> resistance
> heat e.t.c

Nope. I don't think I will recognize that.
If you have resistance in an antenna circuit, the transmitter
is not going to magically make up for this loss by applying
an extra dose. That power is lost as heat forever, never to return
again as useful to Art RF energy.
This one simple fact blows your whole expectation of full size
performance from a tiny "gaussian" radiator theory full of 00
buckshot.
There is no free lunch. Even for aliens.
MK

924. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 17:02:34 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080116090234.29f6baea.rsparks@elltel.net>
Source record: 29390

On Tue, 15 Jan 2008 23:35:16 -0800
Roy Lewallen <w7el@eznec.com> wrote:

> Roger Sparks wrote:
> > On Tue, 15 Jan 2008 14:18:15 -0800
> > Roy Lewallen <w7el@eznec.com> wrote:
> >
clip...........
>
> > In my view, logic demands a smooth flow of power and energy from source to load.
>
> Your logic is flawed. A load which contains both resistance and
> reactance has energy flow in one direction during half the cycle and
> energy flowing the other direction during the other half. Because of the
> resistance, the two aren't equal; the difference is the energy being
> dissipated each cycle. If the load is an open or short circuit, no
> energy flows to the load at all. If the load is purely reactive, it
> stores the energy for half the cycle and returns it during the other half.

My logic is sound, but perhaps my statement was too brief to convey my meaning.

By smooth flow of power and energy from source to load, I do not mean a DC like flow. Instead, I mean that we should be able to trace the time slice that contains the peak energy level of any wave. The energy in this time slice MUST follow the rules of conservation of energy so it will not disappear. The flow of power and energy that I was speaking of is the physical movement of this slice of energy followed through time.

Your mention of energy flowing "in one direction during half the cycle and
energy flowing the other direction during the other half" would be in reference to a reflection from any source. My contention is that the reflected energy comes first from a source and is traceable to that source. In the case of lumped reactance, we can still trace the peak through time while recognizing that the physical location may not move during the time the peak is within the reactive component.

A reactive element can easily return the stored energy any time after the peak has passed, not waiting until the second half of the cycle. Therefore, your emphasis on "If the load is purely reactive, it stores the energy for half the cycle and returns it during the other half." is misleading. I think you want to more simply say something to the effect of "If the load is purely reactive, it stores the energy for some period of time before returning the energy".

>
> > We should be able to account for both energy and power for every instant of time, over every inch of distance. I thought you were doing that in TLVis1 demo 4.
>
> I am indeed. It shows exactly that. If you'll look carefully at the

> graphs, you'll see that it demonstrates what I've said above.
>
clip.....
73, Roger, W7WKB

925. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 17:10:19 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <%Tqjj.440801$kj1.61696@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29391

Cecil Moore wrote:

>
> Now it is my turn to wax technically correct. If the energy in
> a standing wave is indeed flowing back and forth between an
> inductance and a capacitance, then a standing wave is *NOT* an
> EM wave just as the EM energy flowing in a tank circuit doesn't
> meet the definition of a wave. Ramo & Whinnery list the properties
> of a uniform plane wave: [begin quote]
>
> 1. Velocity of propagation, v = 1/SQRT(permeability*permittivity).
> 2. No electric or magnetic field in direction of propagation.
> 3. Electric field normal to magnetic field.
> 4. Value of electric field is the intrinsic impedance (ii) times
> the magnetic field at each instant.
> 5. Direction of propagation given by direction of ExH.
> 6. Energy stored in electric field per unit volume at any instant
> and any point is equal to energy stored in magnetic field per
> unit volume at that instant and that point.
> 7. Instantaneous value of Poynting vector given by
> E^2/ii = ii*H^2, where E and H are the instantaneous values of
> total electric and magnetic field strengths. [end quote]
>
> A standing wave doesn't satisfy any of those properties.

Cecil,

There is at least partial progress.

You have quietly dropped the embarrassing confusion between phasors and field vectors. Unfortunately, you are still suffering from a problem in understanding ordinary English language. "Properties" is not the same as "requirements". The "requirements" are simply that Maxwell's equations are obeyed.

By the way, a standing wave meets at least 5 of those 7 properties.

73,
Gene
W4SZ

926. Energy and Work

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 17:26:20 UTC
From: Chuck <nospam@nospam.at.all>
Message-ID: <bafso3130a5buafi4gghctv4j0rhk8ent9@4ax.com>
Source record: 29392

On Tue, 15 Jan 2008 23:35:16 -0800, Roy Lewallen <w7el@eznec.com>
wrote in the standing wave thread:

snip
>
>The strict definition of work is the same as energy. So moving energy is
>technically doing work, even if no energy is being dissipated or being
>put to any useful purpose.

snip

How is the word "moving" being used in this quote? Is it used as a
gerund meaning "causing to move" or as a participle describing energy
that is in motion?

I can accept that causing energy to move, as in accelerating charges
to launch an EM wave, requires work be done. And that the existence of
moving energy in an EM wave implies work was done at some previous
time.

But the mere movement of energy (say, in free space) does not seem to
involve work. If it does, is that work in addition to the work done to
launch the energy? Is the amount of work done per unit time (or
distance) constant?

It cannot be the work done by the moving-while-alternating E-field on
all the charges in the universe, since it is claimed that no energy is
being "dissipated."

Is some transformation of EM energy taking place?

TIA for any elucidation.

73,
Chuck NT3G

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http://www.newsfeeds.com The #1 Newsgroup Service in the World! 120,000+ Newsgroups
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927. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 17:30:35 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080116093035.728aed06.rsparks@elltel.net>
Source record: 29393

On Wed, 16 Jan 2008 07:00:15 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 15, 2:27 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > On Tue, 15 Jan 2008 06:44:05 -0800 (PST)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> [snip]

> > > The difficulty is that some waves definitely transport
> > > > energy while others do not and I do not see a good
> > > > explanation for what turns the former into the latter,
> > > > as happens, for example, when the pulses collide.
> > >
> > > Some waves transport energy, and some do not! That distinction bothers me less now that I have participated in this thread for a while. For me, the traveling wave always has current and voltage in phase, and always carries power. If I can not find power, then we must have a standing wave. For me, traveling waves is all that we really have, they are primary. All other waves flow/result from the traveling waves.
>
> But then do the two travelling waves that make up the standing wave
> transport
> energy? When no energy crosses the voltage or current zeroes?
>
I can see that my question of how polarity changes on either side of a zero voltage point, and my example of a measurement accross the zero voltage point, did not shake your assumption that no energy crosses the zero voltage point. Having the assumption that energy does not pass the zero voltage point strikes at the heart of the traveling wave concept. I can not see what would reflect the waves to prevent energy passage at the zero voltage point, nor can I see a way to get the results we see between reflection points, if we disallow energy passage at zero voltage points.

> And when there are multiple reflections, there are multiple travelling
> waves
> in each direction. Do each of these multiple travelling waves
> independantly
> transport energy?
Yes. They merge if they are of one frequency, so tracing of multiple traveling waves is reduced to just the last forward and reflected wave. If the waves are of different frequency, they would each be traced by frequency.
>
> And even a standing wave has energy moving. Just not past the voltage
> and
> current zeroes.

Again, I would consider the traveling wave concept defeated if energy is not allowed to pass the zero voltage point. I think that the change of polarity on each side of the zero voltage point is a convincing argument that energy does pass. A change in measurement point to measure across the voltage point is also convincing to me, that energy must pass. I would hope that those arguments convince you as well.
>
> [snip]
>
> ...Keith
73, Roger, W7WKB

928. Re: Energy and Work

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 18:17:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <h9gso35g7fi4q22n4s2eu3mfpv88qe53qf@4ax.com>
Source record: 29394

On Wed, 16 Jan 2008 12:26:20 -0500, Chuck <nospam@nospam.at.all>
wrote:

>How is the word "moving" being used in this quote? Is it used as a
>gerund meaning "causing to move" or as a participle describing energy
>that is in motion?

Hi Chuck,

Your question is as about as free of the ongoing myopic failures as
any to come down the pike.

To put it in the terms of Feynman:
"If the force, for instance, is in one direction and the object
on which the force is working is displaced in a certain
direction, then ONLY THE COMPONENT OF FORCE IN THE
DIRECTION OF THE DISPLACEMENT does any work.
[emphasis in the original]
...
"The rule is 'force times distance,' but we really mean only
the component of force in the direction of the displacement
times delta s or, equivalently, the component of displacement
in the direction force times F. It is evident that no work
whatsoever is done by a force which is at right angles
to the displacement."

I have had the benefit of especially good and rigorous instruction in
Physics, and I have long noted the religious storms that have swirled
about the topic of "conservation of ____" (fill in the prayer book
blank). I have also long noted the complete absence of any actual
complete balance which necessarily requires both forms of energy,
kinetic and potential. In fact, kinetic energy has seemed to be the
uninvited guest to any discussion - treated as some poor relation
consigned to the oblivion of consideration.

If anyone is really pursuing the topic of fields and work, then they
should at least visit the authority on the topic, Feynman, and read
his chapters wholly devoted to the topic:
13 Work and Potential Energy (A)
and
14 Work and Potential Energy (conclusion)
and specifically:
14-5 Potentials and fields

I include chapter 13 because within it, in a subordinate almost
parenthetical aside, we find (on page 13-2) Power:

"Because the concepts of kinetic energy, and energy in
general, are so important, various names have been
given to the important terms in equations such as
these [referring to material preceding the statement].
Fï¿½v is called POWER:
the force acting on an object times the velocity of the
object (vector DOT product) is the power being delivered
to the object by that force. We thus have a marvelous
theorem: THE RATE OF CHANGE OF KINETIC ENERGY
OF AN OBJECT IS EQUAL TO THE POWER EXPENDED
BY THE FORCES ACTING ON IT."
[emphasis in the original]

Feynman is not generally available, but he is certainly held by many
of those stumbling over the terms of their own invention.

73's
Richard Clark, KB7QHC

929. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 18:20:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <sliso3pk75ns2o634iik1av68omsha18q0@4ax.com>
Source record: 29395

On Wed, 16 Jan 2008 09:30:35 -0800, Roger Sparks <rsparks@elltel.net>
wrote:

>>=20
>> [snip]
>>=20
>> ...Keith
>73, Roger, W7WKB

All this embedded markup makes it exceedingly difficult to read in a
plain text reader for a plain text forum.

73's
Richard Clark, KB7QHC

930. Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 18:34:24 UTC
From: laborkei <laborkeiNOSPAM@hotmail.com>
Message-ID: <l6sjj.51910$Mu4.41373@bignews7.bellsouth.net>
Source record: 29396
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

Attention all Amateur Operators.
Please Read, and send your comments to the ARRL and Romney Website.

Wednesday 16 November 2005 @ 15:48:10 | Eastern Massachusetts ARRL Romney 'Disses' Amateur Radio In
Televised Town Meeting Posted on Wednesday16 November 2005 @ 15:48:10

Governor Mitt Romney dismissed the role of Amateur Radio operators in emergency communications
during a televised 'town meeting' program last night on WCVB's 'When Disaster Strikes: Segment Two.'
The program featured public safety and volunteer organization officials from
across Massachusetts
among its audience.

Host and moderator Natalie Jacobson asked an increasingly-agitated Governor Romney questions about
communications interoperability, and communication without commercial power.
Romney was next asked
by Jacobson, '...so does it come down to ham radio?...'

The Governor replied in a disgusted tone, 'No, we don't need to deal with ham radio operators...'

Embarrassed public safety officials later tried to put in a good word for Amateur Radio. National
Weather Service Warning Coordination Meteorologist Glenn Field was prepared to state the importance
of Amateur Radio, when Salvation Army Colonel Fred Van Brunt was called upon. Van Brunt remarked
about his organization's quest to improve its communications capabilities and how Amateur Radio has
aided his organization. 'The ham radio situation helps a great deal,' he stated.

'I have already written and submitted a letter to the Governor's Office,' wrote Eastern MA Section
Emergency Coordinator Rob Macedo, KD1CY. 'I have also written an email to Natalie Jacobson.'

ARRL Section Manager Mike Neilsen, W1MPN sent a section-wide email today to all Eastern MA ARRL
members describing the incident along with actions he and his staff were taking to mitigate the
situation.

'[Romney's] attitude about us sets an unfortunate tone within the state's executive branch,' wrote
Neilsen. 'As a former military officer, I see this as a failure in leadership. My immediate concern
is our working relationship within the [Massachusetts Emergency Management Team] environment.'
Neilsen intends to address the Governor's comments as 'an urgent matter' at a meeting on November 17
with Don Carlton from the Massachusetts Emergency Management Agency.

'I was very disturbed about what the Governor stated on the program,' wrote Ron Wood, W1PLW, the
section's Public Information Coordinator. 'It does show that more work is needed by all hams in the
section. It's a great idea to write letters explaining the good we do.' Wood
is attempting to
schedule a meeting with the Governor's office tomorrow so that EMA ARRL staffers might discuss the
matter further.

Tom Kinahan, N1CPE wrote that Governor Romney's comment has made 'a PR problem' for Kinahan in his
role as MA State RACES Officer.

'I've got a roster of over 150 Amateur Radio operators that support local communities, and those of
us that directly support the state government. There are at least double that in terms of people
that are actually out there that I don't have formal paperwork on that support Amateur Radio
emergency communications in some organized manner... The Governor has said that he 'certainly
doesn't need to rely on ham radio' -- where does that leave the RACES program now?'

'I am ashamed tonight that I am a Republican!' remarked one ham radio viewer. '[Romney] speaks in
derogatory tones about hams. He certainly shows an ignorance as to what we do and are capable of. I
suggest a grass roots campaign of local hams calling the State House and The
Governor's Office to
protest.'

--

931. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 19:47:48 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmlnf3$2s8$1@news.service.uci.edu>
Source record: 29397

Cecil Moore wrote:
> The energy in
> the canceled waves is "redistributed" in the opposite direction
> in the transmission line as constructive interference.

But as I said, there is no energy where there are no waves, so the
sentence makes no sense. There is no "energy in canceled waves".

ac6xg

932. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 20:14:26 UTC
From: Clara Peller <clara@TheGreatBeyond.net>
Message-ID: <CAtjj.38665$ID6.218@newssvr27.news.prodigy.net>
Source record: 29398
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

laborkei wrote:
> Attention all Amateur Operators.
> Please Read, and send your comments to the ARRL and Romney Website.
>
>
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> 'Disses' Amateur Radio In
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> among its audience.
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> Romney questions about
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> power.
> Romney was next asked
> by Jacobson, '...so does it come down to ham radio?...'
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> ham radio operators...'
>
> Embarrassed public safety officials later tried to put in a good word for
> Amateur Radio. National
> Weather Service Warning Coordination Meteorologist Glenn Field was prepared
> to state the importance
> of Amateur Radio, when Salvation Army Colonel Fred Van Brunt was called
> upon. Van Brunt remarked
> about his organization's quest to improve its communications capabilities
> and how Amateur Radio has
> aided his organization. 'The ham radio situation helps a great deal,' he
> stated.
>
> 'I have already written and submitted a letter to the Governor's Office,'
> wrote Eastern MA Section

> Emergency Coordinator Rob Macedo, KD1CY. 'I have also written an email to
> Natalie Jacobson.'
>
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> all Eastern MA ARRL
> members describing the incident along with actions he and his staff were
> taking to mitigate the
> situation.
>
> '[Romney's] attitude about us sets an unfortunate tone within the state's
> executive branch,' wrote
> Neilsen. 'As a former military officer, I see this as a failure in
> leadership. My immediate concern
> is our working relationship within the [Massachusetts Emergency Management
> Team] environment.'
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> a meeting on November 17
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> 'I was very disturbed about what the Governor stated on the program,' wrote
> Ron Wood, W1PLW, the
> section's Public Information Coordinator. 'It does show that more work is
> needed by all hams in the
> section. It's a great idea to write letters explaining the good we do.'
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> schedule a meeting with the Governor's office tomorrow so that EMA ARRL
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> matter further.
>
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> problem' for Kinahan in his
> role as MA State RACES Officer.
>
> 'I've got a roster of over 150 Amateur Radio operators that support local
> communities, and those of
> us that directly support the state government. There are at least double
> that in terms of people
> that are actually out there that I don't have formal paperwork on that
> support Amateur Radio
> emergency communications in some organized manner... The Governor has said
> that he 'certainly
> doesn't need to rely on ham radio' -- where does that leave the RACES
> program now?'
>
> 'I am ashamed tonight that I am a Republican!' remarked one ham radio
> viewer. '[Romney] speaks in
> derogatory tones about hams. He certainly shows an ignorance as to what we
> do and are capable of. I
> suggest a grass roots campaign of local hams calling the State House and

> The
> Governor's Office to
> protest.'

One more good reason not to vote for him...but look at the bright side: This will give him a chance to flip-flop again and say how much he likes hams. ;-)

P.S. Even though I'm not a resident of the state of Massachusetts, I wrote a letter of protest at the time. As a non-resident, you can imagine how far it got.

933. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 20:25:32 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmlp7q$6it$1@news.albasani.net>
Source record: 29399
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

Clara Peller wrote:

> ...
> One more good reason not to vote for him...but look at the bright side:
> This will give him a chance to flip-flop again and say how much he likes
> hams. ;-)
>
> P.S. Even though I'm not a resident of the state of Massachusetts, I
> wrote a letter of protest at the time. As a non-resident, you can
> imagine how far it got.

That is certainly one avenue to pursue; however, some roads lead to
better places than others.

How about a re-evaluation of us, our plans, our equip., etc. and instead
of finding fault with other--why they do not find our services
desirable, we ask the question, "What can we do to become
up-to-date-current and make our services desirable--to the point they
can't ignore us?"

But then, that stands a fat chance ...

Regards,
JS

934. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 20:48:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <z4ujj.203$uE.55@newssvr22.news.prodigy.net>
Source record: 29400

Gene Fuller wrote:
> Cecil Moore wrote:
>> 1. Velocity of propagation, v = 1/SQRT(permeability*permittivity).
>> 2. No electric or magnetic field in direction of propagation.
>> 3. Electric field normal to magnetic field.
>> 4. Value of electric field is the intrinsic impedance (ii) times
>> the magnetic field at each instant.
>> 5. Direction of propagation given by direction of ExH.
>> 6. Energy stored in electric field per unit volume at any instant
>> and any point is equal to energy stored in magnetic field per
>> unit volume at that instant and that point.
>> 7. Instantaneous value of Poynting vector given by
>> E^2/ii = ii*H^2, where E and H are the instantaneous values of
>> total electric and magnetic field strengths. [end quote]
>>
>> A standing wave doesn't satisfy any of those properties.
>
> By the way, a standing wave meets at least 5 of those 7 properties.

1. A standing wave doesn't propagate.

From "Optics", by Hecht. "[A standing wave] doesn't rotate at
all, and the resultant wave it represents doesn't progress
through space -"

2. A standing wave doesn't propagate.

3. The electric field is either 0 or 180 degrees apart from the
magnetic field. I proved that with math equations in an earlier
posting which I invited you to disprove and you declined. Hint:
see R&W quote below. The pure standing wave Poynting vector is
known to be zero. The only way for that to happen (when E and H
are both not zero) is for the E and H vectors to be mutually
parallel, i.e. 0 or 180 degrees apart.

4. The ratio of electric field to magnetic field is not constant
so it cannot be equal to the intrinsic impedance of the medium.

5. A standing wave doesn't propagate.

6. At any instant, at a point, all the energy may be stored in
either electric or magnetic field while the other is zero. At
the nodes, energy is never stored in one of the fields.

7. At a point where E=0, H will sometimes be maximum. Again,
the intrinsic impedance is not the ratio of E to H.

Sorry, 0 for 7. A standing wave is NOT a uniform plane wave.
As Hecht said, it is questionable whether a standing wave
deserves to be called a wave.

Also from Ramo & Whinnery:
"It is also instructive to consider the cases for
which there will be no power flow through the electromagnetic
field. Accepting the foregoing interpretation of the Poynting
vector, we see it will be zero when either the E-field or
H-field is zero, or when the two vectors are mutually
parallel." see item 3 above.
--
73, Cecil http://www.w5dxp.com

935. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 20:53:23 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmlrbd$6lf$1@news.service.uci.edu>
Source record: 29403

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> I think he might have said it because he's not particularly good with
>> words. If anything, he probably should have said that standing waves
>> should just be called interference patterns.
>
>
> I'll buy that, Jim. I believe that Hecht left out the adjective,
> "EM". If he meant standing waves don't deserve to be called EM waves,
> I agree 100%. However, standing waves seem to meet the broad definition
> of "wave".
>
>> I could be wrong, but don't E-fields and H-fields from traveling waves
>> superpose to form net E-fields and H-fields? Wouldn't the net fields
>> have vectors whose direction and magnitude are determined by the
>> vectors which correspond to the traveling wave fields?
>
>
> Of course. Now try to convince Gene of that fact of physics. In
> spite of his earlier assertions about the differences between
> traveling waves and standing waves that agreed with my side of
> the argument, he seems to have switched sides. (For political
> reasons)?

In the case of a radiator, the emanating energy is a result of the
superposition of fields radiated by the currents traveling on the
antenna. I could be mistaken, but it seems to me that superposition
should yield the same result by either approach. If so, then for a
single element radiator, the field pattern would appear as though a
standing wave on the antenna had created the field.

ac6xg

936. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 21:02:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ohujj.206$uE.61@newssvr22.news.prodigy.net>
Source record: 29401

Roger Sparks wrote:
> Having the assumption that energy does
> not pass the zero voltage point strikes at the heart of
> the traveling wave concept. I can not see what would
> reflect the waves to prevent energy passage at the zero
> voltage point, nor can I see a way to get the results we
> see between reflection points, if we disallow energy passage
> at zero voltage points.

The medium at the zero voltage point is homogeneous.
Nobody has produced a reference for or example of
reflections occurring in a homogeneous medium. Until
such evidence is introduced, it is probably safe to
assume that reflections in a homogeneous medium in
the real world are impossible (except in a human
mind where anything is possible).
--
73, Cecil http://www.w5dxp.com

937. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 21:06:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <olujj.207$uE.145@newssvr22.news.prodigy.net>
Source record: 29402

Richard Clark wrote:
> Roger Sparks <rsparks@elltel.net> wrote:
> All this embedded markup makes it exceedingly difficult to read in a
> plain text reader for a plain text forum.

Just instruct Agent to display in plain text.
--
73, Cecil http://www.w5dxp.com

938. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 21:12:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13osspn1kja1ed@corp.supernews.com>
Source record: 29404

Richard Harrison wrote:
> Geoff Mendelson wrote:
> "I think if I were to short both ends and center feed it, it would be an
> equivalent to a wid(er) 1/4 wavelength end fed antenna and will still
> need a counterpoise."
>
> No counterpoise needed. Its called a "folded quarter wave dipole". Its
> first resonance is due to its 1/2-wave circumference. Its input
> resistance is not 300 ohms but 600 ohms. Its gain is 0,5 dB less than
> the 1/2-wave dipole. This information is from "TV and Other Receiving
> Antennas" by Arnold B. Bailey.
>
> You might want to feed it with 450 ohm ladder line.
>
> Best regards, Richard H. Harrison. KB5WZI

In my copy of Bailey (1950), he says (p. 415) that the feedpoint resistance of this antenna at resonance is very high, its value depending on the conductor diameter and spacing. He shows one example having a resistance of 4160 ohms, and states (p. 416) that

"Thus we see that at first resonance the [quarter wavelength] folded dipole exhibits the qualities of a shunt-tuned circuit and has a terminal resistance value Ra of high magnitude. This precludes its general use where a normal transmission line is employed, unless the rods are made very thick."

Even if you did manage to reasonably match the antenna, the bandwidth would be very narrow and the loss potentially high.

Sorry, as Robert Heinlein said, TANSTAAFL - There Ain't No Such Thing As A Free Lunch.

Roy Lewallen, W7EL

939. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 21:19:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ost8022fd7l50@corp.supernews.com>
Source record: 29405

Jim Kelley wrote:
>
> In the case of a radiator, the emanating energy is a result of the
> superposition of fields radiated by the currents traveling on the
> antenna. I could be mistaken, but it seems to me that superposition
> should yield the same result by either approach. If so, then for a
> single element radiator, the field pattern would appear as though a
> standing wave on the antenna had created the field.
>
> ac6xg

The field created by any conductor is proportional to the current flowing on the conductor. You can divide this current into "forward" and "reverse" waves, or any combination of currents you want, just as long as they all add up to the total current. Assuming the conductor is immersed in a linear medium (e.g., air), you'll get exactly the same result by finding the fields from each of the individual currents you've chosen and adding them together, as you will by adding the currents first to get the total current and finding the field it creates. That's an example of the application of superposition.

Roy Lewallen, W7EL

940. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 21:30:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <clujj.63656$eY.25615@newssvr13.news.prodigy.net>
Source record: 29406

Jim Kelley wrote:
> Cecil Moore wrote:
>> The energy in
>> the canceled waves is "redistributed" in the opposite direction
>> in the transmission line as constructive interference.
>
> But as I said, there is no energy where there are no waves, so the
> sentence makes no sense. There is no "energy in canceled waves".

There existed energy in the two waves before they were canceled.
Their ExH Poynting vectors had equal magnitudes and direction.
Their phases were opposite and they canceled. Their energy
components cannot be canceled or annihilated so the energy
is redistributed in the only other direction available. Exactly
what is it about the FSU web page that you do not understand?

Concerning the reflected wave cancellation process at a non-
reflective 1/4WL thin-film coating:

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

"... when two waves of equal amplitude and wavelength that are
180-degrees ... out of phase with each other meet, they are not
actually annihilated, ... All of the photon energy present in
these waves must somehow be recovered or redistributed in a new
direction, according to the law of energy conservation ... Instead,
upon meeting, the photons are redistributed to regions that permit
constructive interference, so the effect should be considered as
a redistribution of light waves and photon energy rather than
the spontaneous construction or destruction of light."

From Ramo & Whinnery, Page 440: Waveguides - Elimination
of Reflections from Dielectric Slabs.

"For slabs of any thickness, reflections may be eliminated
by canceling the reflected wave from one slab by that from
another placed a proper distance from it."

Before wave cancellation, the two waves contained energy.
After cancellation, they ceased to exist in their original
direction of travel. Energy cannot cease to exist so it
has to go somewhere. This is not rocket science.

You have tied yourself into a Gordian Knot. If there is
no canceled wave energy to redistribute, then there were
no reflected waves to begin with and the anti-reflective

coating was completely unnecessary. Peel it off and see
what happens.
--
73, Cecil http://www.w5dxp.com

941. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 21:32:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lJujj.63657$eY.3552@newssvr13.news.prodigy.net>
Source record: 29407
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

John Smith wrote:
> But then, that stands a fat chance ...

Where is Barry Goldwater when we need him?
--
73, Cecil http://www.w5dxp.com

942. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 21:48:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <eZujj.63660$eY.63606@newssvr13.news.prodigy.net>
Source record: 29408

Jim Kelley wrote:
> In the case of a radiator, the emanating energy is a result of the
> superposition of fields radiated by the currents traveling on the
> antenna. I could be mistaken, but it seems to me that superposition
> should yield the same result by either approach. If so, then for a
> single element radiator, the field pattern would appear as though a
> standing wave on the antenna had created the field.

On a 1/2WL dipole, for instance, of the total amount of
average energy existing on the antenna, approximately
80% of that energy is in the standing wave. The other
20% is radiated as real power presumably from the traveling
waves because standing waves contain no real power. Like
impedance transformation on a transmission line with
reflections, the standing wave on the dipole is used
to transform the relatively high Z0 of the antenna wire
down to the relatively low feedpoint impedance of the
antenna. The source re-supplies the radiated power to
keep the average standing wave energy constant.

Since the standing wave energy is being used to transform
impedances, it cannot also be used for radiation purposes -
like the energy in a standing wave on a transmission line
cannot be used both to transform impedances and to heat
up a load.
--
73, Cecil http://www.w5dxp.com

943. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 22:12:16 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmm01k$bd2$1@news.service.uci.edu>
Source record: 29410

```
Cecil Moore wrote:
> Jim Kelley wrote:
>
>> Cecil Moore wrote:
>>
>>> The energy in
>>> the canceled waves is "redistributed" in the opposite direction
>>> in the transmission line as constructive interference.
>>
>>
>> But as I said, there is no energy where there are no waves, so the
>> sentence makes no sense. There is no "energy in canceled waves".
>
>
> There existed energy in the two waves before they were canceled.

I really don't want to go on ad infinitum about this, but the only
"before" would have been "before" the conditions for wave cancellation
existed.

ac6xg
```

944. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 22:18:39 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <4pvjj.208$uE.195@newssvr22.news.prodigy.net>
Source record: 29409
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

Cecil Moore wrote:
> John Smith wrote:
>> But then, that stands a fat chance ...
>
> Where is Barry Goldwater when we need him?

Right where he should be.
73,
Tom Donaly, KA6RUH

945. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 22:45:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <wOvjj.7943$pA7.3075@newssvr25.news.prodigy.net>
Source record: 29411

Jim Kelley wrote:
>
>
> Cecil Moore wrote:
>> There existed energy in the two waves before they were canceled.
>
> I really don't want to go on ad infinitum about this, but the only
> "before" would have been "before" the conditions for wave cancellation
> existed.

Wave cancellation is a continuous steady-state process.
Every instant of present time, reflected waves are in
the process of being canceled. The power density equation,

Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(A)

is a continuous steady-state process.

The s-parameter equation, b1 = s11*a1 + s12*a2, is a
continuous steady-state process. If you square both
sides of the equation you get the power density equation
above. IT IS A CONTINUOUS STEADY-STATE PROCESS that
spans the past, present, and future until the power
down transient state begins.
--
73, Cecil http://www.w5dxp.com

946. Re: Zmatch tuning unit inductance values.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 22:51:40 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <478e8a77@clear.net.nz>
Source record: 29412

Ian White GM3SEK wrote:
> cliff wright wrote:
>
>> Hi! I've been wanting to upgrade my old Zmatch ATU which is 30 years
>> old for a while but although I've come across several designs, both
>> one and 2 coils I cannot find the actual inductance values required.
>> I seem to remember an article in a magazine some years ago that had them
>> but I haven't been able to locate it so far.
>> I have some very nice Silver plated coil stock that I would like to
>> use but as I have determined for myself the value of the coil is
>> critical as the network doesn't like the tuning position for any 2
>> bands to coincide.
>> Failing the use of an air cored coil I might try a Toroid, but The
>> coil stock is in my hands right now. Any help greatly appreciated!
>> Regards Cliff Wright ZL1BDA ex G3NIA
>
>
> See VK5BR's website:
> http://users.tpg.com.au/ldbutler/SingleCoilZMatch.htm
>
>
Hi Ian. Yes I've seen that page. However I'm constrained not so much by
capacitor values and ratings as by the size of an existing box it goes
into. Now I'm retired I don't have access any more to "metal bashing"
facilities as I did and it would be much easier to use an existing box
which is 115mm high, 200mm f/b and 300mm wide.
I sold my original Z match some years ago which tuned very well and
built this one with some very nice silverplated copper tube coil stock
which I had around at the time. Unfortunately I'm not very confident
that the coils which are nearly 90 mm diam overall aren't being
excessively affected by the closeness of the metal chassis.
Fortunately I have an LCR bridge which measures down to uHenries
so I will measure up the coils again and check for resonance.
The tuning is done with a twin gang 210 pF max Tx cap from a pre WW2
TX with some of the lossy dielectric replaced and the coupling cap to
the TX is a 1950's beefy 500pF TX type well insulated from earth.
With my current G5RV I find that the tuning is VERY critical and the
matchng on 80M is with rather too low a tuning cap value.
So as you see it would be reassuring to have actual indiuctor values in
u Henries to work with so as to determine which size and type of coil
will best suit my purpose.
BTW I run about 200W max with an old Kenwood 820s at the moment.
73's Cliff Wright.

947. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 22:55:25 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmm2jbdor1@news.service.uci.edu>
Source record: 29415

Cecil Moore wrote:

>
> Since the standing wave energy is being used to transform
> impedances, it cannot also be used for radiation purposes -
> like the energy in a standing wave on a transmission line
> cannot be used both to transform impedances and to heat
> up a load.

Would you care to elaborate on the idea that "energy is being used to transform impedances"?

ac6xg

948. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 22:57:51 UTC
From: Dave <noone@nowhere.com>
Message-ID: <PZvjj.6573$rG.121@trndny02>
Source record: 29413

"Jim Kelley" <jwkelley@uci.edu> wrote in message
news:fmjjth$pq7$1@news.service.uci.edu...
>
>
> Cecil Moore wrote:
>
>> If an EM wave exists, it's
>> Poynting vector is ExM. The energy in that individual wave *must*
>> be conserved. If that energy is not conserved, the conservation
>> of energy principle is violated.
>
> When a wave is canceled, there is no wave. Therefore there can be no
> energy associated with that wave. If there is energy, then it must be
> associated with a wave that is not canceled. Same thing is true when I
> have candy. If it's not in my left hand, then it must be in my right
> hand. It's all very profound.
>

but you can neither create nor destroy energy, so it can't just be
'canceled' it has to be either converted to some other form of energy or go
somewhere else... it can't just disappear.

949. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 22:58:49 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmm2ppdqe1@news.service.uci.edu>
Source record: 29416

Cecil Moore wrote:

> Jim Kelley wrote:
>
>>
>>
>> Cecil Moore wrote:
>>
>>> There existed energy in the two waves before they were canceled.
>>
>>
>> I really don't want to go on ad infinitum about this, but the only
>> "before" would have been "before" the conditions for wave cancellation
>> existed.
>
>
> Wave cancellation is a continuous steady-state process.
> Every instant of present time, reflected waves are in
> the process of being canceled.

During which time everything "before" is exactly the same as
everything "after".

ac6xg

950. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 23:08:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ot3k71seet3c5@corp.supernews.com>
Source record: 29414

Keith Dysart wrote:
> On Jan 15, 2:24 am, Roy Lewallen <w...@eznec.com> wrote:
>> The little program I wrote shows that, on the line being analyzed, the
>> energy is changing -- moving -- on both sides of a point of zero power.
>> Energy is flowing into that point from both directions at equal rates,
>> then flowing out at equal rates. This causes the energy at that point to
>> increase and decrease. What zero power at a given point means is that
>> there is no *net* energy moving in either direction past that point.
>
> "*net* energy moving" seems to be a bit of a dangerous notion.
>
> If "*net* energy moving" is the time averaged power, then
> it is zero at *every* point on the line under consideration.
> And I do not mind this definition.

That was probably a bad choice of words on my part. By net I didn't mean an average over some period of time. I meant energy moving past a single point.

One possibility I envisioned was some energy moving past the point from left to right, and at the same time an equal amount moving at the same rate past the point from right to left, resulting in zero power at the point. However, on reflection, this couldn't happen; energy flows "downhill". But the phenomenon observed on the open circuited line does occur, where energy flows into the point from both directions equally, and out of the point to both directions equally, resulting in zero power at the point. No energy is flowing past the point, period -- the modifier "net" isn't necessary.

> But at the points where the current or voltage is always
> zero, it seems to me unnecessary to use the qualifier "*net*"
> since the power IS always zero [from p(t)=v(t)*i(t)]. That
> is, unless you are introducing another interpretation of
> "*net*".

You're right. Please consider "net" retracted.

Roy Lewallen, W7EL

951. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 23:20:20 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmm3fh$ub8$1@news.albasani.net>
Source record: 29417
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

Cecil Moore wrote:
> John Smith wrote:
>> But then, that stands a fat chance ...
>
> Where is Barry Goldwater when we need him?

Yeah, butt; Remember JFK, "Ask not what your country can do for you; Ask what you can do for your country ..." (paraphrased, of course)

Regards,
JS

952. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 23:45:43 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478e9726$0$5084$4c368faf@roadrunner.com>
Source record: 29418

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:Ddojj.103$Rg1.102@nlpi068.nbdc.sbc.com...
> Roy Lewallen wrote:
>> Which definition, yours or the one used by everyone else involved with
>> electrical circuits? I maintain that power doesn't "flow". Energy flows,
>> and power is the rate of that flow. The standard definition says nothing
>> about power "flowing", on a transmission line or anywhere else.
>
> I agree with you. If energy is measured in joules and energy flow
> is measured in joules/sec, then it seems to me that if power is
> measured in watts, then "power flow" would have the dimensions of
> watts/sec or joules/sec^2, which doesn't make any technical sense.

It would be the rate of increase of power, such as the speed at which you rotate the power knob on a transceiver or the rate of acceleration (or deceleration) of energy ;-))

>
> The units of the power-flow vector are watts/unit-area. That's
> a value fixed in space-time and that value is not moving.
>
> However, most of my college textbooks from the 50s refer to
> "power flow" as do some folks on this newsgroup.
>
> For instance, Ramo & Whinnery talk about an "electromagnetic
> theorem concerning *flow of power*".
>
>> A transmission line has both distributed capacitance and inductance.
>> Energy moves between the two. The little program TLVis1 I created and
>> posted a link to shows this graphically in demo 4, with the energy stored
>> in the capacitance being in one color and the energy stored in the
>> inductance another color. You can clearly see how the energy moves back
>> and forth between the two each cycle.
>
> Now it is my turn to wax technically correct. If the energy in
> a standing wave is indeed flowing back and forth between an
> inductance and a capacitance, then a standing wave is *NOT* an
> EM wave just as the EM energy flowing in a tank circuit doesn't
> meet the definition of a wave. Ramo & Whinnery list the properties
> of a uniform plane wave: [begin quote]
>
> 1. Velocity of propagation, v = 1/SQRT(permeability*permittivity).
> 2. No electric or magnetic field in direction of propagation.
> 3. Electric field normal to magnetic field.
> 4. Value of electric field is the intrinsic impedance (ii) times

> the magnetic field at each instant.
> 5. Direction of propagation given by direction of ExH.
> 6. Energy stored in electric field per unit volume at any instant
> and any point is equal to energy stored in magnetic field per
> unit volume at that instant and that point.
> 7. Instantaneous value of Poynting vector given by
> E^2/ii = ii*H^2, where E and H are the instantaneous values of
> total electric and magnetic field strengths. [end quote]

If the power source is disconnected from the SW in an ohmic-lossless antenna in free space, then the standing wave gradually collapses. One could think of the collapse as the gradual attenuation of the forward and reverse EM waves radiating out of the antenna as they reflect back and forth. One need not consider the standing wave anymore; one woukld better think of the individual Vfor and Vrev components as they radiate and the SW collapses to zero.

953. Re: Energy and Work

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 23:53:44 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478e9907$0$5115$4c368faf@roadrunner.com>
Source record: 29419

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:h9gso35g7fi4q22n4s2eu3mfpv88qe53qf@4ax.com...
> On Wed, 16 Jan 2008 12:26:20 -0500, Chuck <nospam@nospam.at.all>
> wrote:
>
>>How is the word "moving" being used in this quote? Is it used as a
>>gerund meaning "causing to move" or as a participle describing energy
>>that is in motion?
>
> Hi Chuck,
>
> Your question is as about as free of the ongoing myopic failures as
> any to come down the pike.
>
> To put it in the terms of Feynman:
> "If the force, for instance, is in one direction and the object
> on which the force is working is displaced in a certain
> direction, then ONLY THE COMPONENT OF FORCE IN THE
> DIRECTION OF THE DISPLACEMENT does any work.
> [emphasis in the original]
> ...
> "The rule is 'force times distance,' but we really mean only
> the component of force in the direction of the displacement
> times delta s or, equivalently, the component of displacement
> in the direction force times F. It is evident that no work
> whatsoever is done by a force which is at right angles
> to the displacement."

Hi Rich:

The force in the direction of the displacement must also overcome the normal force times the coefficient of friction. Since the normal force is at right angles to the displacement, the wording in your statement above may need some modification such as:

"... the component of force in the direction of the displacement, including normal forces at 90 degrees to the displacement which causes a frictional force, as determined by static and dynamic friction coefficients, occurring in the opposite direction of the displacement, that must be overcome".

AI4QJ

954. Loop antenna question????

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-16 23:55:12 UTC
From: WA4SZE@gmail.com
Message-ID: <95e51d2f-140b-4e6d-828f-d6dd4f43014f@j78g2000hsd.googlegroups.com>
Source record: 29420

Greetings!

I picked up 2 Alford loop antennas from a ham fest. The antenna(s) is for 112 mhz The data plate states VOR antenna 50 ohms. The antenna(s) has Three N connectors one is to feed the RF from the transmitter the other two are connected with a 31.5 inch length of RG-214 coax. (the 31.5 inch coax came with the loops)

I looked in the ARRL antenna hand book and it looks like the loop of coax is configured as a 4 to 1 step up Balun??? The ARRL hand book states that the Coax loop should be a electrical half wave of coax : The coax loop is about 5 inches short of 1/2 wave at 112 mhz

When I hook up my MFJ-269 I get the following:

Freq: 112 mhz

RS - 9

XS - 68

Impedance : 95 ohms

VSWR 14.8 ????????

both loops have about the same readings!

WHY??? They are stamped with 50 ohms ?? but they don't measure out to the data plate??
Can the length of the Balun loop have effect on the VSWR of the loops

What do the MFJ-269 readings tell you

Thanks!!!!!
Dave

955. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 00:04:44 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478e9b9b$0$5127$4c368faf@roadrunner.com>
Source record: 29421

"Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
news:25042272-c31b-470e-9e92-a24090969d39@u10g2000prn.googlegroups.com...
On Jan 16, 12:59 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Now the next question. When the instantaneous power
> > is always 0, is any energy transferred?
>
> Now for the real question. When the net instantaneous
> power is 0 at a point with non zero power on each side
> of that point, is any energy transferred?
>
> The answer is - of course - equal amounts in either
> direction.

So you seem to be claiming that the following two
statements can be simultaneously true:

1. Power [recall p(t)=v(t)*i(t)] is the rate at
which energy is transferred.
2. Energy can be transferred when the power is zero.

To my simple intellect, one of these statements
must be false.

==========

The statements need some work:

1. Power (in watts) [recall Preal = v(t)*i(t)*cos(theta)] is the rate at
which REAL energy is transferred where theta equals the phase angle between
REAL power and reactice power. Reactive/Stored/Imaginary VAR power =
Preactive = v(t)*i(t)*sin(theta).

2. Energy can be transferred when the REAL power component is zero, or, when
the REACTIVE power component is zero, but enregy CANNOT be transferred when
both the REAL and REACTIVE power components are zero.

AI4QJ

956. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 04:40:00 UTC
From: Captkumstainof20 <auntkrebes5@yahoo.com>
Message-ID: <01e8c33a-6386-4cae-aea9-0d5af0633ff9@i29g2000prf.googlegroups.com>
Source record: 29422
Cross-posted to: rec.radio.amateur.antenna, rec.radio.amateur.digital.misc, rec.radio.amateur.equipment, rec.radio.amateur.misc

Ummmmm...did you guys see the date on that "news release".

It was Nov of 2005. (2 years and 1 month ago)

Then again this seems to not be an issue with most hams.
Being several days late and $25 short is standard operating
procedure.
Heck most of the hams I hear on 75 Meters on a nightly basis
at night in 4 and 5 land still sound like their stuck in the 1940's
and 50's with all their
use of the N-word and racial tirades against Obama and Hillary and all
the other assorted
obsolete BS spewed out each evening. What else is new folks ?

957. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 04:45:58 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmmmi3$ub8$5@news.albasani.net>
Source record: 29423
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc

Captkumstainof20 wrote:
> Ummmmm...did you guys see the date on that "news release".
>
> It was Nov of 2005. (2 years and 1 month ago)
>
> Then again this seems to not be an issue with most hams.
> Being several days late and $25 short is standard operating
> procedure.
> Heck most of the hams I hear on 75 Meters on a nightly basis
> at night in 4 and 5 land still sound like their stuck in the 1940's
> and 50's with all their
> use of the N-word and racial tirades against Obama and Hillary and all
> the other assorted
> obsolete BS spewed out each evening. What else is new folks ?

What planet do you live on, I'll check it out--but, mind you, I am leery
... say, are you of a humanoid life-form? <ROFLOL>

JS

958. Re: Energy and Work

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 05:05:14 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jrnto3tfonua6ujgodjl0giueftg3tqu5k@4ax.com>
Source record: 29424

On Wed, 16 Jan 2008 18:53:44 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>the wording in your statement above may need
>some modification such as:

I think not. What this leads to is Cecilaboration that informs none
of the discussion.

This thread alone could turn into further amendments of what Feynman
authored (and all scrambling to lay intellectual claim for his Oscar).

Simple case in point, it may need some modification such as:
1. accounting for the force of viscosity;
2. accounting for the force of magnetism (ferro, para, and the rest);
3. accounting for the force of gravity;
4. accounting for the force of angular momentum;
5. accounting for the force of local tide;
6. accounting for the force of wind shear;
7. accounting for the force of advertising......

The arguments already filling the tea cup can't even raise the
temperature for a decent brew.

73's
Richard Clark, KB7QHC

959. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 05:36:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pPBjj.231$uE.86@newssvr22.news.prodigy.net>
Source record: 29425

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> Since the standing wave energy is being used to transform
>> impedances, it cannot also be used for radiation purposes -
>> like the energy in a standing wave on a transmission line
>> cannot be used both to transform impedances and to heat
>> up a load.
>
> Would you care to elaborate on the idea that "energy is being used to
> transform impedances"?

If reflections are nonexistent, no transformation takes
place, i.e. there is no SWR circle, just a point at the
center of the Smith Chart and the system is flat.

If reflections exist, then the superposition of the
forward wave and reflected wave transforms the
load impedance to some other impedance on the SWR
circle.

A 1/4WL transformer, for instance, will not transform
unless there are reflections present.
--
73, Cecil http://www.w5dxp.com

960. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 05:40:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hTBjj.232$uE.184@newssvr22.news.prodigy.net>
Source record: 29426

Roy Lewallen wrote:
> But the phenomenon observed on the open circuited line does
> occur, where energy flows into the point from both directions equally,
> and out of the point to both directions equally, resulting in zero power
> at the point. No energy is flowing past the point, period --

Either energy flows past the point or else it is reflected.
Please provide an example of reflections occurring in a
homogeneous medium.
--
73, Cecil http://www.w5dxp.com

961. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 05:47:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8_Bjj.235$uE.44@newssvr22.news.prodigy.net>
Source record: 29427

Jim Kelley wrote:
> During which time everything "before" is exactly the same as everything
> "after".

Yes, we want the reflections to be continuously canceled
in real time and for the reflected energy to be redistributed
back toward the load in real time.
--
73, Cecil http://www.w5dxp.com

962. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 07:07:13 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <F8bMsNIh6vjHFA9X@ifwtech.co.uk>
Source record: 29428

Keith Dysart wrote:
>So you seem to be claiming that the following two statements can be
>simultaneously true:
>
>1. Power [recall p(t)=v(t)*i(t)] is the rate at
> which energy is transferred.
>2. Energy can be transferred when the power is zero.
>
>To my simple intellect, one of these statements must be false.
>

The second statement is an oversimplification - it switches between two inconsistent sets of boundaries. Energy is being transferred within the system as a whole, even though the power p(t) at some individual points within the system is zero. If you look consistently at the system as a whole, there are no contradictions.

--

73 from Ian GM3SEK

963. Electrosmog antenna ehp 200

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 09:00:06 UTC
From: andrea.rossetar@libero.it
Message-ID: <23f3a80a-0e1b-4345-a812-087cb2964b87@k39g2000hsf.googlegroups.com>
Source record: 29429

Hello to everybody!

What do you think about this kind of antenna? Is there anybody here
that know that type, and the application whose it for?

Thanks

http://www.gruppompb.com/download/ehp200.pdf

964. Re: Electrosmog antenna ehp 200

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 09:07:01 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ou6lpfv387u8f@corp.supernews.com>
Source record: 29430

See "Applications" on page 2 of the referenced document.

Roy Lewallen, W7EL

andrea.rossetar@libero.it wrote:
> Hello to everybody!
>
> What do you think about this kind of antenna? Is there anybody here
> that know that type, and the application whose it for?
>
> Thanks
>
> http://www.gruppompb.com/download/ehp200.pdf

965. Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 10:54:17 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13oucpt4qftq763@corp.supernews.com>
Source record: 29431

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

I saw this 50 ohm "terminator" BNC connector at Radio Shack today and
was wondering if it could be used as an antenna dummy load? It is
designed as a computer network terminator - just a female jack without
any output connector. I believe the only question would be "Could it
stand the power output?" What if the output was just 5W? Anybody know
about this product or have used it as a dummy load?

It'd sure save the price of a "real" dummy antenna (it was priced about
$4.00 USD).

Thanks
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net
Oakland, CA (USA)
** Respond only to this newsgroup. I DO NOT respond to emails **

-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR48zz4echKqOuFEgEQJ4OwCeKdWRKG4P8cxND+FGxpF38ISyc+4AoNoU
T4vopRD2S1IPgrw9CO/dW50t
=TmNl
-----END PGP SIGNATURE-----
```

966. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 11:51:11 UTC
From: wood@itd.nrl.navy.mil
Message-ID: <wood-1701080651110001@jbw-mac.itd.nrl.navy.mil>
Source record: 29432

In article <13oucpt4qftq763@corp.supernews.com>, MGFoster <me@privacy.com>
wrote:

> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I saw this 50 ohm "terminator" BNC connector at Radio Shack today and
> was wondering if it could be used as an antenna dummy load? It is
> designed as a computer network terminator - just a female jack without
> any output connector. I believe the only question would be "Could it
> stand the power output?" What if the output was just 5W? Anybody know
> about this product or have used it as a dummy load?
>
> It'd sure save the price of a "real" dummy antenna (it was priced about
> $4.00 USD).
>
> Thanks

Hello, and I've got a whole box of these in my networking lab (from the
old 10Base2 days). A terminator certainly could be used as a dummy load
but I would probably keep the average RF power delivered it under 1 W.
Not sure how useful that would be even for a QRP setup. Sincerely, and
73s from N4GGO,

John Wood (Code 5550) e-mail: wood@itd.nrl.navy.mil
Naval Research Laboratory
4555 Overlook Avenue, SW
Washington, DC 20375-5337

967. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 13:06:44 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <1f1a0baf-ae1c-48e8-8e5f-a330233a3696@q39g2000hsf.googlegroups.com>
Source record: 29433

On Jan 17, 2:07 am, Ian White GM3SEK <gm3...@ifwtech.co.uk> wrote:
> Keith Dysart wrote:
> >So you seem to be claiming that the following two statements can be
> >simultaneously true:
>
> >1. Power [recall p(t)=v(t)*i(t)] is the rate at
> > which energy is transferred.
> >2. Energy can be transferred when the power is zero.
>
> >To my simple intellect, one of these statements must be false.
>
> The second statement is an oversimplification - it switches between two
> inconsistent sets of boundaries. Energy is being transferred within the
> system as a whole, even though the power p(t) at some individual points
> within the system is zero. If you look consistently at the system as a
> whole, there are no contradictions.

Expanding on statement 1) from above....
p(t) = v(t) * i(t)
computes the power moving between two networks
separated by the point at which v and i are
measured.

Expanding on statement 2...
Cecil's claim is that the "energy in" the
forward and reflected waves travel from end
to end on the transmission line.

Applying statement 1) to any point on an open
circuited transmission line where the current
or voltage is always 0 will yield a power that
is always 0.

Applying statement 2) to this same point yields
that energy is crossing this point.

This seems to me to be a definite contradiction
between 1) and 2) for the specific situation under
consideration.

...Keith

968. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 13:34:46 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <TuydncwYUYIFxBLanZ2dnUVZ_hynnZ2d@comcast.com>
Source record: 29434

"MGFoster" <me@privacy.com> wrote in message
news:13oucpt4qftq763@corp.supernews.com...
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I saw this 50 ohm "terminator" BNC connector at Radio Shack today and
> was wondering if it could be used as an antenna dummy load? It is
> designed as a computer network terminator - just a female jack without
> any output connector. I believe the only question would be "Could it
> stand the power output?" What if the output was just 5W? Anybody know
> about this product or have used it as a dummy load?
>
> It'd sure save the price of a "real" dummy antenna (it was priced about
> $4.00 USD).
>
> Thanks
> --
> MGFoster:::mgf00 <at> earthlink <decimal-point> net
> Oakland, CA (USA)
> ** Respond only to this newsgroup. I DO NOT respond to emails **
>
> -----BEGIN PGP SIGNATURE-----
> Version: PGP for Personal Privacy 5.0
> Charset: noconv
>
> iQA/AwUBR48zz4echKqOuFEgEQJ4OwCeKdWRKG4P8cxND+FGxpF38ISyc+4AoNoU
> T4vopRD2S1IPgrw9CO/dW50t
> =TmNl
> -----END PGP SIGNATURE-----

Almost certainly, the power rating of the terminator is either 1/8, 1/4, or
1/2 W.

Tam/WB2TT

969. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 14:45:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <VRJjj.1022$EZ3.846@nlpi070.nbdc.sbc.com>
Source record: 29435

Keith Dysart wrote:
> Expanding on statement 2...
> Cecil's claim is that the "energy in" the
> forward and reflected waves travel from end
> to end on the transmission line.

The forward wave and reflected wave each possess energy and momentum which must be conserved. Assuming the transmission line is a homogeneous medium, i.e. a constant Z0, there is nothing anywhere along the line that can possibly cause a reflection. A reflection is necessary to reverse the momentum of a wave and reflections are impossible in a homogeneous medium. By the process of elimination, there must be something wrong with statement #1.

This is easy to demonstrate on the bench using a TV signal. Even though there are points of zero power in the standing wave, ghosting will be clearly visible proving that the forward wave has made a round trip to the end of the stub and back.

The superposition principle allows us to analyze the forward wave and reflected wave separately. When we do that, it is obvious that energy is flowing both ways across that zero power node location and at all other points on the line. If the reflected wave is equal in magnitude to the forward wave, the net power is zero at every point on the line, not just at the nodes. The Poynting vector for the forward wave is equal in magnitude and opposite in direction to the Poynting vector for the reflected wave.
--
73, Cecil http://www.w5dxp.com

970. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 14:47:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ETJjj.1023$EZ3.185@nlpi070.nbdc.sbc.com>
Source record: 29436

Tam wrote:
> Almost certainly, the power rating of the terminator is either 1/8, 1/4,
> or 1/2 W.

Does Radio Shack not specify the power rating?
--
73, Cecil http://www.w5dxp.com

971. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 16:00:44 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <MYKjj.142716$MJ6.46771@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29437

Cecil Moore wrote:

>
> 3. The electric field is either 0 or 180 degrees apart from the
> magnetic field. I proved that with math equations in an earlier
> posting which I invited you to disprove and you declined. Hint:
> see R&W quote below. The pure standing wave Poynting vector is
> known to be zero. The only way for that to happen (when E and H
> are both not zero) is for the E and H vectors to be mutually
> parallel, i.e. 0 or 180 degrees apart.

Oops, I am afraid I must retract my previous congratulatory progress report. You are obviously still confusing phasors with field vectors. Until you get that terrible misconception sorted out, there is no hope for further progress.

I assume that Hecht covers the equations and such. I am sure that Born and Wolf cover this subject in detail. Check out page 277 in the 6th edition or page 308 in the 7th edition. You will quickly observe that the H-field is always perpendicular (90 degrees) to the E-field, even for standing waves. There is no "0 or 180 degrees" involved.

Is there anything else you plan to teach me about physics? There is still a whole lot I don't know. I think I may seek out another source, however.

8-)

73,
Gene
W4SZ

972. Re: Hazel Park (MI) ARC Swap January 20

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 16:49:18 UTC
From: Radio Days <rd477@yahoo.com>
Message-ID: <478f8711$0$1340$834e42db@reader.greatnowhere.com>
Source record: 29439
Cross-posted to: rec.radio.swap,rec.radio.amateur.swap,rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,rec.radio.cb

"KC8QJP" <kc8qjp@lycos.com> wrote in message
news:fmlsi4$dr9$1@registered.motzarella.org...
>
> "Tommy D" <tomdelorn10@hotmail.com> wrote in message
> news:fatno3leqln95kmp56oa9l2biv567mc7l0@4ax.com...
>> On Mon, 14 Jan 2008 17:16:16 -0500, "KC8QJP" <kc8qjp@lycos.com> wrote:
>>
>>>
>>>"Tommy D" <tomdelorn10@hotmail.com> wrote in message
>>>news:jjflo35f5lfsgt34vi2k6ac0okj1pcu9a9@4ax.com...
>>>> On Sun, 13 Jan 2008 18:17:18 -0500, "KC8QJP" <kc8qjp@lycos.com> wrote:
>>>>
>>>>>
>>>>>"afcsman" <afcsman@hotmail.com> wrote in message
>>>>>news:-tCdne14yf1rFBfanZ2dnUVZ_qzinZ2d@comcast.com...
>>>>>> The Hazel Park ARC will hold their 42nd Annual Swap on January
>>>>>> 20,2008
>>>>>> commencing 8:00 AM to 12:00 Noon.at
>>>>>> Hazel Park High School
>>>>>> 23400 Hughes
>>>>>> Hazel Park ,Michigan
>>>>>> --about 1/2 mile east of I-75 and North of 9 Mile Road.
>>>>>>
>>>>>> Admission is $5.00 at door, tables $14 (admission not included).
>>>>>>
>>>>>> Talk-in is on 146.64 Mhz with 100 Hz PL tone.
>>>>>>
>>>>>> As of 1-9-2008, there were 142 tables sold--this should be a good
>>>>>> one!
>>>>>>
>>>>>> flier: http://www.hparc.org/Swapflier2008.pdf
>>>>>>
>>>>>>
>>>>>Will there be lots of CB gear there?
>>>>>
>>>> Probably will if you set up a table.
>>>>
>>>We will be selling some in the parking lot. Screw those inflated
>>>admission
>>>charges.
>>>
>> I don't blame you. The money you save on admission could be invested
>> in a six-pack.

>>
> Shut up you stinking drunk.
>
Pot calling the kettle black there Kathy, you unwashed flatulating cum
dumpster.

http://www.newsgroups-index.com/group/alt_-ham-radio_-vhf-uhf_l83.html

973. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 16:49:45 UTC
From: art <aunwin@insightbb.com>
Message-ID: <9d4c9c38-3f7a-428c-b25b-e5cfeca690ab@f47g2000hsd.googlegroups.com>
Source record: 29438

On 9 Jan, 19:27, Cecil Moore <w5...@hotmail.com> wrote:
> On Jan 9, 3:13 pm, Jim Kelley <jwkel...@uci.edu> wrote:
>
> > On what page has Dr. Hecht written "a standing wave is a different
> > kind of electromagnetic wave"?
>
> Since I didn't say that Dr. Hecht said that, it must be a rhetorical
> question. Here's what Dr. Hecht did say: In "Schaum`s College Physics
> Outline" by Bueche & Hecht on page 214 is written: "Standing
> Waves:....These might better not be called waves at all since they do
> not transport energy and momentum." (Thanks to Richard Harrison for
> that quote.) I agree with Dr. Hecht. Standing waves should not be
> called waves at all since they do not meet the definition and
> requirements for EM waves.
>
> > I asserted that expression for the sum of traveling waves and the
> > expression for the resulting standing wave pattern are related by trig
> > identity, as per page 140 of the 28th Edition of the CRC Standard
> > Mathematical Tables Handbook.
>
> Sorry Jim, that's not what you said. You asked if I recognized the
> trig identity that (presumably) equated a standing wave to a traveling
> wave. If that was not your meaning, it is time to say exactly what
> meaning I was supposed to assume.
>
> > The 'wave' which stands is merely an amplitude envelope for the waves
> > which move.
>
> Key word there is "waves". A standing wave is NOT self sufficient - it
> requires the superposition of a forward-traveling wave and a reverse-
> traveling wave. A standing wave loses its EM wave identity in the
> process of that superposition and apparently creates an illusion
> capable of mass hysteria. To alleviate that hysteria, one has only to
> compare the equations for standing waves and traveling waves or the
> corresponding graphs of those functions to see that they are hardly
> anything alike.
> --
> 73, Cecil, w5dxp.com

Cecil'
How can one focus so long on travelling and standing waves when the
radiation portion
of the subject has not been explained? If waves is the subject it
cannot be discussed coherently if you cannot describe the mechanism of

radiation, and that subject is inexplicitely bound up with this whole discussion. All of this is pure conjecture based on what is happening behind a closed door which cannot continue until that door is opened. Only then will this discussion be revealed for what it truely is, which is all the things that could be happenning where the winner, if there is one,will be picked when the door is finally opened. Until then every thing is pure guess work.
Best regards
Art

974. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 16:54:14 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <tJWdnSrLGeWkFRLanZ2dnUVZ_r-vnZ2d@comcast.com>
Source record: 29440

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:ETJjj.1023$EZ3.185@nlpi070.nbdc.sbc.com...
> Tam wrote:
>> Almost certainly, the power rating of the terminator is either 1/8, 1/4,
>> or 1/2 W.
>
> Does Radio Shack not specify the power rating?
> --
> 73, Cecil http://www.w5dxp.com

Not in the catalog. Maybe on the bubble pack.

Tam/WB2TT

975. Re: Hazel Park (MI) ARC Swap January 20

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 17:22:59 UTC
From: Mike <kc2ftn@arrl.net>
Message-ID: <478f8ef7$0$4966$4c368faf@roadrunner.com>
Source record: 29441
Cross-posted to: rec.radio.amateur.swap,rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,rec.radio.cb

How did this thread go from rec.radio.swap and
rec.radio.amateur.boatanchors to suddenly being posted into all of these
other groups?

Radio Days wrote:
> "KC8QJP" <kc8qjp@lycos.com> wrote in message
> news:fmlsi4$dr9$1@registered.motzarella.org...
>> "Tommy D" <tomdelorn10@hotmail.com> wrote in message
>> news:fatno3leqln95kmp56oa9l2biv567mc7l0@4ax.com...
>>> On Mon, 14 Jan 2008 17:16:16 -0500, "KC8QJP" <kc8qjp@lycos.com> wrote:
>>>
>>>> "Tommy D" <tomdelorn10@hotmail.com> wrote in message
>>>> news:jjflo35f5lfsgt34vi2k6ac0okj1pcu9a9@4ax.com...
>>>>> On Sun, 13 Jan 2008 18:17:18 -0500, "KC8QJP" <kc8qjp@lycos.com> wrote:
>>>>>
>>>>>> "afcsman" <afcsman@hotmail.com> wrote in message
>>>>>> news:-tCdne14yf1rFBfanZ2dnUVZ_qzinZ2d@comcast.com...
>>>>>>> The Hazel Park ARC will hold their 42nd Annual Swap on January
>>>>>>> 20,2008
>>>>>>> commencing 8:00 AM to 12:00 Noon.at
>>>>>>> Hazel Park High School
>>>>>>> 23400 Hughes
>>>>>>> Hazel Park ,Michigan
>>>>>>> --about 1/2 mile east of I-75 and North of 9 Mile Road.
>>>>>>>
>>>>>>> Admission is $5.00 at door, tables $14 (admission not included).
>>>>>>>
>>>>>>> Talk-in is on 146.64 Mhz with 100 Hz PL tone.
>>>>>>>
>>>>>>> As of 1-9-2008, there were 142 tables sold--this should be a good
>>>>>>> one!
>>>>>>>
>>>>>>> flier: http://www.hparc.org/Swapflier2008.pdf
>>>>>>>
>>>>>>>
>>>>>> Will there be lots of CB gear there?
>>>>>>
>>>>> Probably will if you set up a table.
>>>>>
>>>> We will be selling some in the parking lot. Screw those inflated
>>>> admission
>>>> charges.
>>>>

>>> I don't blame you. The money you save on admission could be invested
>>> in a six-pack.
>>>
>> Shut up you stinking drunk.
>>
> Pot calling the kettle black there Kathy, you unwashed flatulating cum
> dumpster.
>
> http://www.newsgroups-index.com/group/alt_-ham-radio_-vhf-uhf_l83.html
>
>

976. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 17:45:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pvMjj.246$so6.149@newssvr19.news.prodigy.net>
Source record: 29442

Gene Fuller wrote:
> Oops, I am afraid I must retract my previous congratulatory progress
> report. You are obviously still confusing phasors with field vectors.
> Until you get that terrible misconception sorted out, there is no hope
> for further progress.

Let's skip your objection for the moment and let you
answer this simple technical question.

Poynting vector = ExH = E*H*sin(A)

The Poynting vector for a pure standing wave = 0.

It is always zero even when both E and H are not zero.

So here is the question for you. Assuming that neither
E nor H is equal to zero:

When E*H*sin(A) = 0 (Poynting vector)

What are the possible magnitudes of angle 'A'?

This is a simple technical question having absolutely
nothing to do with confusing phasors with field vectors.

Please provide an answer.

> I assume that Hecht covers the equations and such.

Yes he does. He also recognizes when the EH fields
incident upon a plane can be validly represented by
phasors. Apparently, Hecht also "confuses phasors
with field vectors". (SIC)
--
73, Cecil http://www.w5dxp.com

977. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 17:51:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <OAMjj.89737$Um6.5309@newssvr12.news.prodigy.net>
Source record: 29443

art wrote:
> How can one focus so long on travelling and standing waves when the
> radiation portion
> of the subject has not been explained? If waves is the subject it
> cannot be discussed coherently if you cannot describe the mechanism of
> radiation, ...

The mechanism of radiation is pretty simple from a quantum
electrodynamic standpoint. Accelerated electrons emit
photons. Some of the photons escape the antenna. The
energy lost by the escaping photons must be replaced
by the source. QED. :-)

Art, if you would replace electrons with photons in
your blast-off theory, you will be closer to the facts.
--
73, Cecil http://www.w5dxp.com

978. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 18:11:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <wTMjj.89741$Um6.52771@newssvr12.news.prodigy.net>
Source record: 29444

Gene Fuller wrote:
> Oops, I am afraid I must retract my previous congratulatory progress
> report. You are obviously still confusing phasors with field vectors.
> Until you get that terrible misconception sorted out, there is no hope
> for further progress.

Draw a plane through which a plane EM wave is passing
normal to the plane. Now please explain exactly why
the E-field and H-field cannot be represented by
phasors.

I posted this separately to keep from confusing simple
issues with complex issues. Get it? Complex issues? :-)
--
73, Cecil http://www.w5dxp.com

979. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 19:13:34 UTC
From: art <aunwin@insightbb.com>
Message-ID: <df2aa86b-60df-44cd-b384-fc487368a213@f47g2000hsd.googlegroups.com>
Source record: 29445

On 17 Jan, 09:51, Cecil Moore <nos...@w5dxp.com> wrote:
> art wrote:
> > How can one focus so long on travelling and standing waves when the
> > radiation portion
> > of the subject has not been explained? If waves is the subject it
> > cannot be discussed coherently if you cannot describe the mechanism of
> > radiation, ...
>
> The mechanism of radiation is pretty simple from a quantum
> electrodynamic standpoint. Accelerated electrons emit
> photons. Some of the photons escape the antenna. The
> energy lost by the escaping photons must be replaced
> by the source. QED. :-)
>
> Art, if you would replace electrons with photons in
> your blast-off theory, you will be closer to the facts.
> --
> 73, Cecil http://www.w5dxp.com

Thank you for your civil reply.
What I am trying to say is that this long long thread has got a life of its own that it is excluding a lot of people. If it concentrated on say, a simple parallel circuit, a very simple circuit then the absolute physics of what is being discussed would be an immense help in explaining this wave discussion.ARRL states that an antenna is a simple parallel circuit but this concentration on antenna workings is blind siding every body as well as providing a means for twisting the discussion because the makings of radiation is not known.
Why not illustrate waves in a simple parallel circuit so that observers can partake in this discussion which, if it ever comes to closure, could then be used to demonstrate their effect on radiation?
Onlookers are more than willing to partake in the discussion but presently they are on the side lines because as presented it is limited to only those whose intent is to argue without obtaining closure and their feeding habits are insatiable as you are finding out.
Best regards
Art Unwin KB9MZ......XG

980. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 19:23:13 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <BWNjj.446888$kj1.100152@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29446

Cecil Moore wrote:
> Gene Fuller wrote:
>> Oops, I am afraid I must retract my previous congratulatory progress
>> report. You are obviously still confusing phasors with field vectors.
>> Until you get that terrible misconception sorted out, there is no hope
>> for further progress.
>
> Let's skip your objection for the moment and let you
> answer this simple technical question.
>
> Poynting vector = ExH = E*H*sin(A)

Incorrect. The Poynting vector is defined as E x H*. The vector directions are critically important. It is absolutely incorrect to try to reduce to some scalar type equation. (The '*' means complex conjugate, but this detail is not always important.)

>
> The Poynting vector for a pure standing wave = 0.

Says who? Perhaps the time and space averages or "net", whatever that means, but not the local instantaneous Poynting vector.

>
> It is always zero even when both E and H are not zero.

Nonsense. It is E x H* at every point. If E or H is zero then the Poynting vector is zero. Otherwise it will not be zero.

>
> So here is the question for you. Assuming that neither
> E nor H is equal to zero:
>
> When E*H*sin(A) = 0 (Poynting vector)
>
> What are the possible magnitudes of angle 'A'?
>
> This is a simple technical question having absolutely
> nothing to do with confusing phasors with field vectors.
>
> Please provide an answer.

The answer is that you have started with incorrect equations.

>
>> I assume that Hecht covers the equations and such.
>

> Yes he does. He also recognizes when the EH fields
> incident upon a plane can be validly represented by
> phasors. Apparently, Hecht also "confuses phasors
> with field vectors". (SIC)

You have obviously misunderstood what Hecht is saying. A phasor does not carry any vector information. It is a representation of magnitude and phase angle only. That says absolutely nothing about the direction of the field vector. The phase angle is completely unrelated to the vector direction of the E-field and/or H-field.

73,
Gene
W4SZ

981. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 19:37:09 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <F7Ojj.143161$MJ6.16525@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29447

Cecil Moore wrote:
> Gene Fuller wrote:
>> Oops, I am afraid I must retract my previous congratulatory progress
>> report. You are obviously still confusing phasors with field vectors.
>> Until you get that terrible misconception sorted out, there is no hope
>> for further progress.
>
> Draw a plane through which a plane EM wave is passing
> normal to the plane. Now please explain exactly why
> the E-field and H-field cannot be represented by
> phasors.
>
> I posted this separately to keep from confusing simple
> issues with complex issues. Get it? Complex issues? :-)

Cecil,

The phasor has nothing to do with spatial direction of the field vector. It has everything to do with the amplitude and the (wt-kx) term in the wave equation. (The 'x' is simply a distance measure in the propagation direction. It does not say anything about the field vector directions, since the fields are transverse to the propagation direction.)

This is really, really basic E&M stuff. If you still disagree, then you are own your own.

73,
Gene
W4SZ

982. Re: Hazel Park (MI) ARC Swap January 20

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 20:00:45 UTC
From: budapest@hungary.net
Message-ID: <478fb382.27256500@news.motzarella.org>
Source record: 29298
Cross-posted to: rec.radio.amateur.swap,rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,rec.radio.cb

On Thu, 17 Jan 2008 12:22:59 -0500, Mike <kc2ftn@arrl.net> wrote:

> How did this thread go from rec.radio.swap and
>rec.radio.amateur.boatanchors to suddenly being posted into all of these
>other groups?
>
>
Duh . It is called cross posting.

ZOLTAN say man who have head up ass, have shitty outlook on life.

983. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 20:14:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <yGOjj.40058$Pv2.38393@newssvr23.news.prodigy.net>
Source record: 29299

art wrote:
> Why not illustrate waves in a simple parallel circuit so that
> observers can partake in this discussion which, if it ever comes to
> closure, could then be used to demonstrate their effect on radiation?

This discussion, to a large extent, is concerned with the
nature of RF waves. There are no RF waves in a simple
parallel circuit. I posted a list of characteristics
of an EM plane wave. A parallel circuit doesn't match
those characteristics.
--
73, Cecil http://www.w5dxp.com

984. Re: Hazel Park (MI) ARC Swap January 20

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 20:41:50 UTC
From: budapest@hungary.net
Message-ID: <478fbcf6.29676234@news.motzarella.org>
Source record: 29300
Cross-posted to: rec.radio.swap,rec.radio.amateur.swap,rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,rec.radio.cb

On Thu, 17 Jan 2008 11:49:18 -0500, "Radio Days" <rd477@yahoo.com>
wrote:

>
>"KC8QJP" <kc8qjp@lycos.com> wrote in message
>news:fmlsi4$dr9$1@registered.motzarella.org...
>>
>> "Tommy D" <tomdelorn10@hotmail.com> wrote in message
>> news:fatno3leqln95kmp56oa9l2biv567mc7l0@4ax.com...
>>> On Mon, 14 Jan 2008 17:16:16 -0500, "KC8QJP" <kc8qjp@lycos.com> wrote:
>>>
>>>>
>>>>"Tommy D" <tomdelorn10@hotmail.com> wrote in message
>>>>news:jjflo35f5lfsgt34vi2k6ac0okj1pcu9a9@4ax.com...
>>>>> On Sun, 13 Jan 2008 18:17:18 -0500, "KC8QJP" <kc8qjp@lycos.com> wrote:
>>>>>
>>>>>>
>>>>>>"afcsman" <afcsman@hotmail.com> wrote in message
>>>>>>news:-tCdne14yf1rFBfanZ2dnUVZ_qzinZ2d@comcast.com...
>>>>>>> The Hazel Park ARC will hold their 42nd Annual Swap on January
>>>>>>> 20,2008
>>>>>>> commencing 8:00 AM to 12:00 Noon.at
>>>>>>> Hazel Park High School
>>>>>>> 23400 Hughes
>>>>>>> Hazel Park ,Michigan
>>>>>>> --about 1/2 mile east of I-75 and North of 9 Mile Road.
>>>>>>>
>>>>>>> Admission is $5.00 at door, tables $14 (admission not included).
>>>>>>>
>>>>>>> Talk-in is on 146.64 Mhz with 100 Hz PL tone.
>>>>>>>
>>>>>>> As of 1-9-2008, there were 142 tables sold--this should be a good
>>>>>>> one!
>>>>>>>
>>>>>>> flier: http://www.hparc.org/Swapflier2008.pdf
>>>>>>>
>>>>>>>
>>>>>>>Will there be lots of CB gear there?
>>>>>>
>>>>> Probably will if you set up a table.
>>>>>
>>>>>>>We will be selling some in the parking lot. Screw those inflated
>>>>>>>admission

>>>>charges.
>>>>
>>> I don't blame you. The money you save on admission could be invested
>>> in a six-pack.
>>>
>> Shut up you stinking drunk.
>>
>Pot calling the kettle black there Kathy, you unwashed flatulating cum
>dumpster.
>
>http://www.newsgroups-index.com/group/alt_-ham-radio_-vhf-uhf_l83.html
>
>
What a pathetic bunch of toledo tossers.

http://tinyurl.com/2v6ng5

ZOLTAN say man who put face in punchbowl get punch in nose.

985. Re: Antennas or urine stream contests?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 20:43:40 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <478fbdf8$0$5109$4c368faf@roadrunner.com>
Source record: 29301

"Tom Donaly" <dtdonaly@sbcglobal.net> wrote in message
news:LpRij.27$XM.6@nlpi068.nbdc.sbc.com...
> Jimmie D wrote:
>> "Harry - SM0VPO" <oeieio@hotmail.com> wrote in message
>> news:OKMij.2788$R_4.1736@newsb.telia.net...
>>>> This newsgroup is the source of some of the best and knowledgeable
>>>> answers I have found on the net.
>>>>
>>>> Unfortunately, it now seems to suffer the same malignant plague as many
>>>> others--disagreements decaying into personal insults.
>>> The trouble with having a "heckler" out there responding with
>>> megga-sarcasm and ridicule is that one feels duty bound to respond.
>>> DONT. Let stupic and non-constructive postings go unanswered, otherwise
>>> the escalate.
>>>
>>
>> Just sounds like the usual bunch of guys BSing to me.
>>
>> I will never forget the time I had a boss who tried to enforce civilness.
>>
>> Jimmie
>
> Do you mean "civility?"
> 73,
> Tom Donaly, KA6RUH

That was her word not mine

Jimmie

986. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 21:16:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KAPjj.36500$JD.11262@newssvr21.news.prodigy.net>
Source record: 29302

Gene Fuller wrote:
> Cecil Moore wrote:
>> Poynting vector = ExH = E*H*sin(A)
>
> Incorrect. The Poynting vector is defined as E x H*. The vector
> directions are critically important.

Those who don't remember what the cross product is,
please reference:

http://en.wikipedia.org/wiki/Cross_product

Another name for the cross product is the vector product.

Quoting "Fields and Waves ..." by Ramo & Whinnery:

Poynting vector = ExH These are, of course, vectors.

Quoting "Reference Data for Radio Engineers":

ExH is called the Poynting vector. Again, vectors.

The average Poynting vector is defined as
Re(E x H*)/2 in my references.

So your "Incorrect." assertion above is proven to
be incorrect.

>> The Poynting vector for a pure standing wave = 0.
>
> Says who? Perhaps the time and space averages or "net", whatever that
> means, but not the local instantaneous Poynting vector.

Let's deal with the average Poynting vector. The real
power in the fields is equal to the magnitude of the
average Poynting vector. There is zero real power in
the standing waves. Therefore, the average Poynting
vector is zero at every point on a line containing
pure standing waves.

So, using Occam's razor, here's the same question
for you stated in a different way.

If E and H* are both non-zero, how can the following equation
be equal to zero all up and down the line as we know it is for
standing waves?

Pav = Re(E x H*)/2 = 0 where E <> 0 <> H*

>> It is always zero even when both E and H are not zero.
>
> Nonsense. It is E x H* at every point. If E or H is zero then the
> Poynting vector is zero. Otherwise it will not be zero.

True for a uniform plane wave. But I have already proved
that a standing wave is not a uniform plane wave.
Pav = Re(E x H*)/2 = zero for a standing wave. I hope
you don't question that fact of physics.

> The answer is that you have started with incorrect equations.

The answer is exactly what you have been missing. Please
solve the updated problem above.

It is obvious that if V*I*cos(A) = 0, then Re(E x H*)/2
must also be zero even when E and H* are not zero. How
do you explain that fact?
--
73, Cecil http://www.w5dxp.com

987. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 21:22:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_FPjj.314$hI1.123@nlpi061.nbdc.sbc.com>
Source record: 29303

Gene Fuller wrote:
> The phasor has nothing to do with spatial direction of the field vector.

The E-field and H-field of an EM wave can certainly
be represented as an exponential function when the
EM wave is normal to the reference plane. Think
about it. Hecht used that feature in his book.
--
73, Cecil http://www.w5dxp.com

988. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 21:30:32 UTC
From: dfinn1@nc.rr.com
Message-ID: <ecf99eb6-1526-46a5-896d-3e3e09bbad3c@21g2000hsj.googlegroups.com>
Source record: 29304

On Jan 17, 2:13 pm, art <aun...@insightbb.com> wrote:
> On 17 Jan, 09:51, Cecil Moore <nos...@w5dxp.com> wrote:
>
>
>
>
>
> > art wrote:
> > > How can one focus so long on travelling and standing waves when the
> > > radiation portion
> > > of the subject has not been explained? If waves is the subject it
> > > cannot be discussed coherently if you cannot describe the mechanism of
> > > radiation, ...
>
> > The mechanism of radiation is pretty simple from a quantum
> > electrodynamic standpoint. Accelerated electrons emit
> > photons. Some of the photons escape the antenna. The
> > energy lost by the escaping photons must be replaced
> > by the source. QED. :-)
>
> > Art, if you would replace electrons with photons in
> > your blast-off theory, you will be closer to the facts.
> > --
> > 73, Cecil http://www.w5dxp.com
>
> If it concentrated on
> say, a simple parallel circuit, a very simple circuit then the
> absolute physics of what is being discussed would be an immense help
> in explaining this wave discussion.ARRL states that an antenna is a
> simple parallel circuit

Here is my civil response: For this discussion there is little benefit
in using lumped component theory. The standing wave stores energy in
an antenna in a manner similar to energy stored in an inductor and a
capacitor in a resonant component circuit but it is not very useful to
use lumped components when explaining why a standing wave cannot be
used to measure delay in a coil, for example.

Further questions that challenge your (and the ARRL's) simplified
model:

Is the resonant circuit dependent on the capacitance and inductance of
the antenna or its length?

If your answer is "both", (which it is), why does it happen to be
both?

Why does 1/4WL of the length of the antenna just happen to be a
resonant point of the capacitance (in x _farads) and inductance (in y-
henries) of the antenna?

Why physically is that so? Nature is telling you something there.

You should understand that concept well before you get to the
radiation of particles (and they WILL be photons).

AI4QJ

but this concentration on antenna workings is
> blind siding every body as well as providing a means for twisting the
> discussion because the makings of radiation is not known.
> Why not illustrate waves in a simple parallel circuit so that
> observers can partake in this discussion which, if it ever comes to
> closure, could then be used to demonstrate their effect on radiation?
> Onlookers are more than willing to partake in the discussion but
> presently they are on the side lines because as presented it is
> limited to only those whose intent is to argue without obtaining
> closure and their feeding habits are insatiable as you are finding
> out.
> Best regards
> Art Unwin KB9MZ......XG- Hide quoted text -
>
> - Show quoted text -

989. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 22:15:22 UTC
From: "Mr. Jim" <Mr.Jim@USA.net>
Message-ID: <478fd37a$0$22615$4c368faf@roadrunner.com>
Source record: 29305
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

With getting all the politics.

Romney just lost my VOTE. I have been a ham for 35+ years and working in emergency services for over 45 years he is a looser. NO, I will not vote for McCain either, and I'm a proud VETERAN.

"laborkei" <laborkeiNOSPAM@hotmail.com> wrote in message news:I6sjj.51910$Mu4.41373@bignews7.bellsouth.net...
> Attention all Amateur Operators.
> Please Read, and send your comments to the ARRL and Romney Website.
>
>
> Wednesday 16 November 2005 @ 15:48:10 | Eastern Massachusetts ARRL Romney
> 'Disses' Amateur Radio In
> Televised Town Meeting Posted on Wednesday16 November 2005 @ 15:48:10
>
> Governor Mitt Romney dismissed the role of Amateur Radio operators in
> emergency communications
> during a televised 'town meeting' program last night on WCVB's 'When
> Disaster Strikes: Segment Two.'
> The program featured public safety and volunteer organization officials
> from
> across Massachusetts
> among its audience.
>
> Host and moderator Natalie Jacobson asked an increasingly-agitated
> Governor
> Romney questions about
> communications interoperability, and communication without commercial
> power.
> Romney was next asked
> by Jacobson, '...so does it come down to ham radio?...'
>
> The Governor replied in a disgusted tone, 'No, we don't need to deal with
> ham radio operators...'
>
> Embarrassed public safety officials later tried to put in a good word for
> Amateur Radio. National
> Weather Service Warning Coordination Meteorologist Glenn Field was
> prepared
> to state the importance
> of Amateur Radio, when Salvation Army Colonel Fred Van Brunt was called

> upon. Van Brunt remarked
> about his organization's quest to improve its communications capabilities
> and how Amateur Radio has
> aided his organization. 'The ham radio situation helps a great deal,' he
> stated.
>
> 'I have already written and submitted a letter to the Governor's Office,'
> wrote Eastern MA Section
> Emergency Coordinator Rob Macedo, KD1CY. 'I have also written an email to
> Natalie Jacobson.'
>
> ARRL Section Manager Mike Neilsen, W1MPN sent a section-wide email today
> to
> all Eastern MA ARRL
> members describing the incident along with actions he and his staff were
> taking to mitigate the
> situation.
>
> '[Romney's] attitude about us sets an unfortunate tone within the state's
> executive branch,' wrote
> Neilsen. 'As a former military officer, I see this as a failure in
> leadership. My immediate concern
> is our working relationship within the [Massachusetts Emergency
> Management
> Team] environment.'
> Neilsen intends to address the Governor's comments as 'an urgent matter'
> at
> a meeting on November 17
> with Don Carlton from the Massachusetts Emergency Management Agency.
>
> 'I was very disturbed about what the Governor stated on the program,'
> wrote
> Ron Wood, W1PLW, the
> section's Public Information Coordinator. 'It does show that more work is
> needed by all hams in the
> section. It's a great idea to write letters explaining the good we do.'
> Wood
> is attempting to
> schedule a meeting with the Governor's office tomorrow so that EMA ARRL
> staffers might discuss the
> matter further.
>
> Tom Kinahan, N1CPE wrote that Governor Romney's comment has made 'a PR
> problem' for Kinahan in his
> role as MA State RACES Officer.
>
> 'I've got a roster of over 150 Amateur Radio operators that support local
> communities, and those of
> us that directly support the state government. There are at least double
> that in terms of people

> that are actually out there that I don't have formal paperwork on that
> support Amateur Radio
> emergency communications in some organized manner... The Governor has
> said
> that he 'certainly
> doesn't need to rely on ham radio' -- where does that leave the RACES
> program now?'
>
> 'I am ashamed tonight that I am a Republican!' remarked one ham radio
> viewer. '[Romney] speaks in
> derogatory tones about hams. He certainly shows an ignorance as to what
> we
> do and are capable of. I
> suggest a grass roots campaign of local hams calling the State House and
> The
> Governor's Office to
> protest.'
>
>
> --
>
>
>

990. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 22:18:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <dvQjj.328$uE.238@newssvr22.news.prodigy.net>
Source record: 29306
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

Mr. Jim wrote:
> Romney just lost my VOTE.

I suspect any rational vote would go to Ron Paul.
--
73, Cecil http://www.w5dxp.com

991. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 22:21:41 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmokdh$38g$5@news.albasani.net>
Source record: 29307
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

Cecil Moore wrote:
> Mr. Jim wrote:
>> Romney just lost my VOTE.
>
> I suspect any rational vote would go to Ron Paul.

I suspect any rational mind would go with Ron Paul. He IS my hero,
'yanno? <LOL>

Too bad he ain't a ham.

Regards,
JS

992. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 22:28:37 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmokqh$38g$6@news.albasani.net>
Source record: 29308
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

Cecil Moore wrote:
> Mr. Jim wrote:
>> Romney just lost my VOTE.
>
> I suspect any rational vote would go to Ron Paul.

Cecil:

If you do nothing else, check out this youtube link:

http://youtube.com/watch?v=s08RJ2_o_MM

A man with a rational mind does much to restore faith in America. He speaks of the "insanity" running rampant in America ...

Better yet, use the search on the youtube page and search for all the vid clips on Ron Paul.

Regards,
JS

993. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 22:29:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <wFQjj.36502$JD.1738@newssvr21.news.prodigy.net>
Source record: 29309
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

John Smith wrote:
> I suspect any rational mind would go with Ron Paul. He IS my hero,
> 'yanno? <LOL> Too bad he ain't a ham.

It's not too late.
--
73, Cecil http://www.w5dxp.com

994. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 22:39:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <POQjj.332$uE.318@newssvr22.news.prodigy.net>
Source record: 29311
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

John Smith wrote:
> If you do nothing else, check out this youtube link:

John, you are preaching to the choir. I've been a
"Libertarian" since before the Libertarian party
was created.
--
73, Cecil http://www.w5dxp.com

995. Re: Electrosmog antenna ehp 200

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 22:39:49 UTC
From: Dave <noone@nowhere.com>
Message-ID: <VOQjj.10722$ac7.3150@trndny03>
Source record: 29310

<andrea.rossetar@libero.it> wrote in message
news:23f3a80a-0e1b-4345-a812-087cb2964b87@k39g2000hsf.googlegroups.com...
> Hello to everybody!
>
> What do you think about this kind of antenna? Is there anybody here
> that know that type, and the application whose it for?
>
> Thanks
>
> http://www.gruppompb.com/download/ehp200.pdf

well, it would either be bought by paranoid anti-electromagnetic field
idiots with more money than brains. or industrial safety engineers who have
to verify field strengths from intentional radiators are under the fcc or
other government exposure limits.

996. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 23:18:55 UTC
From: art <aunwin@insightbb.com>
Message-ID: <306cbe65-7f3b-4c21-a8a4-65ac11e558e1@m34g2000hsb.googlegroups.com>
Source record: 29312

On 17 Jan, 12:14, Cecil Moore <nos...@w5dxp.com> wrote:
> art wrote:
> > Why not illustrate waves in a simple parallel circuit so that
> > observers can partake in this discussion which, if it ever comes to
> > closure, could then be used to demonstrate their effect on radiation?
>
> This discussion, to a large extent, is concerned with the
> nature of RF waves. There are no RF waves in a simple
> parallel circuit. I posted a list of characteristics
> of an EM plane wave. A parallel circuit doesn't match
> those characteristics.
> --
> 73, Cecil http://www.w5dxp.com

Cecil
But I am not sure they understand one bit of what you are proposing!
With respect to your remark on my radiation attempts.
When this group did not understand the relevance of Gaussian equation
with those of Maxwell
I decided to dumb it down and refer only to particles. Later I was
forced to move up to electrons because of counter posting. If I was to
move now up to protons when the group does not understand electrons or
even the common parallel circuit I think I would then parallel your
situation where you refuse to dummy down to reflect the audience.
Thisd would then mean a continuum of postings that would only go
around in circles becaus of their past cessation in learning.
Best regards
Art

997. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-17 23:31:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0zRjj.36509$JD.3913@newssvr21.news.prodigy.net>
Source record: 29313

art wrote:
> I decided to dumb it down and refer only to particles. Later I was
> forced to move up to electrons because of counter posting. If I was to
> move now up to protons when the group does not understand electrons or
> even the common parallel circuit I think I would then parallel your
> situation where you refuse to dummy down to reflect the audience.

There are a host of applications that simply cannot be dummied
down to the lumped circuit level. I am unable to teach my dog
to look at the clock and tell whether it is dinnertime or not.
Is that my fault or hers? The answer is more complicated than
one might think at first glance.
--
73, Cecil http://www.w5dxp.com

998. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 00:04:22 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <478fed05$0$7172$4c368faf@roadrunner.com>
Source record: 29314
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:dvQjj.328$uE.238@newssvr22.news.prodigy.net...
> Mr. Jim wrote:
>> Romney just lost my VOTE.
>
> I suspect any rational vote would go to Ron Paul.

Absolutely.I am proud of my son who acquainted me with Ron Paul's material.
I used to be Constitution Party but in this case I am Republican...Ron Paul.

999. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 00:22:56 UTC
From: art <aunwin@insightbb.com>
Message-ID: <1af37bea-6b11-4a5e-a25f-afd83cf3c493@l1g2000hsa.googlegroups.com>
Source record: 29315

On 17 Jan, 13:30, dfi...@nc.rr.com wrote:
> On Jan 17, 2:13 pm, art <aun...@insightbb.com> wrote:
>
>
>
>
>
> > On 17 Jan, 09:51, Cecil Moore <nos...@w5dxp.com> wrote:
>
> > > art wrote:
> > > > How can one focus so long on travelling and standing waves when the
> > > > radiation portion
> > > > of the subject has not been explained? If waves is the subject it
> > > > cannot be discussed coherently if you cannot describe the mechanism of
> > > > radiation, ...
>
> > > The mechanism of radiation is pretty simple from a quantum
> > > electrodynamic standpoint. Accelerated electrons emit
> > > photons. Some of the photons escape the antenna. The
> > > energy lost by the escaping photons must be replaced
> > > by the source. QED. :-)
>
> > > Art, if you would replace electrons with photons in
> > > your blast-off theory, you will be closer to the facts.
> > > --
> > > 73, Cecil http://www.w5dxp.com
>
> > If it concentrated on
> > say, a simple parallel circuit, a very simple circuit then the
> > absolute physics of what is being discussed would be an immense help
> > in explaining this wave discussion.ARRL states that an antenna is a
> > simple parallel circuit
>
> Here is my civil response: For this discussion there is little benefit
> in using lumped component theory. The standing wave stores energy in
> an antenna in a manner similar to energy stored in an inductor and a
> capacitor in a resonant component circuit but it is not very useful to
> use lumped components when explaining why a standing wave cannot be
> used to measure delay in a coil, for example.
>
> Further questions that challenge your (and the ARRL's) simplified
> model:
>
> Is the resonant circuit dependent on the capacitance and inductance of

> the antenna or its length?
>
> If your answer is "both", (which it is), why does it happen to be
> both?
>
> Why does 1/4WL of the length of the antenna just happen to be a
> resonant point of the capacitance (in x _farads) and inductance (in y-
> henries) of the antenna?
>
> Why physically is that so? Nature is telling you something there.
>
> You should understand that concept well before you get to the
> radiation of particles (and they WILL be photons).
>
> AI4QJ
>
> but this concentration on antenna workings is
>
>
>
> > blind siding every body as well as providing a means for twisting the
> > discussion because the makings of radiation is not known.
> > Why not illustrate waves in a simple parallel circuit so that
> > observers can partake in this discussion which, if it ever comes to
> > closure, could then be used to demonstrate their effect on radiation?
> > Onlookers are more than willing to partake in the discussion but
> > presently they are on the side lines because as presented it is
> > limited to only those whose intent is to argue without obtaining
> > closure and their feeding habits are insatiable as you are finding
> > out.
> > Best regards
> > Art Unwin KB9MZ......XG- Hide quoted text -
>
> > - Show quoted text -- Hide quoted text -
>
> - Show quoted text -- Hide quoted text -
>
> - Show quoted text -

Your whole posting is just silly. First you accuse me of lieing now
you want to provoke me with stupidity. You need to upgrade to a
understanding of a tank circuit.Yes, it is used in your transmitter.
Google it and study it. Free speech is great but it also reveals your
mentality. And you are just bull shiting in the absence of knoweledge.

1000. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 00:37:23 UTC
From: art <aunwin@insightbb.com>
Message-ID: <ed319349-1202-439b-8df8-c75a97adc6f5@c4g2000hsg.googlegroups.com>
Source record: 29316

On 17 Jan, 15:31, Cecil Moore <nos...@w5dxp.com> wrote:
> art wrote:
> > I decided to dumb it down and refer only to particles. Later I was
> > forced to move up to electrons because of counter posting. If I was to
> > move now up to protons when the group does not understand electrons or
> > even the common parallel circuit I think I would then parallel your
> > situation where you refuse to dummy down to reflect the audience.
>
> There are a host of applications that simply cannot be dummied
> down to the lumped circuit level. I am unable to teach my dog
> to look at the clock and tell whether it is dinnertime or not.
> Is that my fault or hers? The answer is more complicated than
> one might think at first glance.
> --
> 73, Cecil http://www.w5dxp.com
Cecil,
I respectfully do not agree with that.I would suggest that the antenna
mechanics what I am preaching is directly applicable to complex
circuitry.If antenna theory can't
apply to such then the theory is in error.Antenna radiation came to a
halt in understanding some 50+ years ago.Since then science have tried
a lot of new sciences that even tho they do not solve the mystery of
radiation provides a whole new stream of old wives tales.And hams are
sucking every thing up without question. Nature has simple habits , it
is humans that try to make it complicated.
My best regards
Art Unwin KB9MZ...XG (uk)

1001. Re: Hazel Park (MI) ARC Swap January 20

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 00:43:00 UTC
From: Mike <kc2ftn@arrl.net>
Message-ID: <478ff61a$0$31793$4c368faf@roadrunner.com>
Source record: 29317
Cross-posted to: rec.radio.amateur.swap,rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,rec.radio.cb

You're not firing on all cylinders tonight, are you? My question, is since it wasn't originally posted in all these groups, why the last moron, felt it was necessary to suddenly cross-post his response to everyone.

Zoltan wrote:
> On Thu, 17 Jan 2008 12:22:59 -0500, Mike <kc2ftn@arrl.net> wrote:
>
>> How did this thread go from rec.radio.swap and
>> rec.radio.amateur.boatanchors to suddenly being posted into all of these
>> other groups?
>>
>>
> Duh . It is called cross posting.
>
>
>
> ZOLTAN say man who have head up ass, have shitty outlook on life.
>

1002. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 01:36:43 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <LoTjj.89800$Um6.16289@newssvr12.news.prodigy.net>
Source record: 29318
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

AI4QJ wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:dvQjj.328$uE.238@newssvr22.news.prodigy.net...
>> Mr. Jim wrote:
>>> Romney just lost my VOTE.
>> I suspect any rational vote would go to Ron Paul.
>
> Absolutely.I am proud of my son who acquainted me with Ron Paul's material.
> I used to be Constitution Party but in this case I am Republican...Ron Paul.
>
>

Yes, the Klan likes him, too.
73,
Tom Donaly, KA6RUH

1003. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 01:38:19 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <6a935804-6647-465a-9785-9a290cd3df45@e4g2000hsg.googlegroups.com>
Source record: 29319

On Jan 17, 2:54 am, MGFoster <m...@privacy.com> wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I saw this 50 ohm "terminator" BNC connector at Radio Shack today and
> was wondering if it could be used as an antenna dummy load? It is
> designed as a computer network terminator - just a female jack without
> any output connector. I believe the only question would be "Could it
> stand the power output?" What if the output was just 5W? Anybody know
> about this product or have used it as a dummy load?
>
> It'd sure save the price of a "real" dummy antenna (it was priced about
> $4.00 USD).
>
> Thanks
> --
> MGFoster:::mgf00 <at> earthlink <decimal-point> net
> Oakland, CA (USA)
> ** Respond only to this newsgroup. I DO NOT respond to emails **
>
> -----BEGIN PGP SIGNATURE-----
> Version: PGP for Personal Privacy 5.0
> Charset: noconv
>
> iQA/AwUBR48zz4echKqOuFEgEQJ4OwCeKdWRKG4P8cxND+FGxpF38ISyc+4AoNoU
> T4vopRD2S1IPgrw9CO/dW50t
> =TmNl
> -----END PGP SIGNATURE-----

As others have noted, beware of the power rating. On the other hand,
I have a dummy-load-on-BNC-jack that I made with four 200 ohm 2 watt
metal-oxide resistors (and the connector, of course). The connector
is one with a square base, four ground pins and a pin in the center,
for mounting on a PC board, like DigiKey A24512-ND. I cut the lead
completely off one end of each resistor, and trimmed the lead at the
other end of each so when folded over back against the body it reached
not quite all the way to the end with the lead cut off. The four
leads are soldered around the center pin of the connector. The
insulating covering is scraped off the resistor ends with no lead,
exposing the metal cup that contacts the resistive element. The four
ground pins are clipped off the connector, and the cups are soldered
directly to the connector ground, one in each corner. The result on
my HP8753E network analyzer (freshly calibrated and all that) shows
return loss greater than 40dB (S11 below -40dB) out to beyond 300MHz,

and greater than 20dB to about 850MHz. In other words, it is as good as my semi-precision loads out to 300MHz, and quite a bit better than a whole bunch of other 50 ohm BNC loads I have -- quite adequate for any ham work I would do out to 500MHz at least, and able to dissipate a moderate amount of power. YMMV, of course, depending on the particular metal-oxide resistors you use, and admittedly it is really helpful to have a good network analyzer around to test it on. But it should be no problem making a load that way, usable through at least VHF.

Cheers,
Tom

1004. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:25:18 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47900f1c$0$18439$4c368faf@roadrunner.com>
Source record: 29320

"art" <aunwin@insightbb.com> wrote in message
news:1af37bea-6b11-4a5e-a25f-afd83cf3c493@l1g2000hsa.googlegroups.com...

>your whole posting is just silly. First you accuse me of lieing now
>you want to provoke me with stupidity. You need to upgrade to a
>understanding of a tank circuit.Yes, it is used in your transmitter.
>Google it and study it. Free speech is great but it also reveals your
>mentality. And you are just bull shiting in the absence of knoweledge."

OK art, I notice a great improvement in your having only 3 spelling errors in 5 sentences. You are a fool. If your postings could ever be elevated to the level of mere stupidity, then it might be possible to correct your misconceptions. However, one cannot deal with true insanity by any rational approach such as that. You do not drive me to use Google; you drive me to dictionary.com so I can find the words appropriate to describe the idiocy of your ravings. However, it isn't worth the effort so I will leave you mired in your intellectual wasteland, reading your postings from time to time for the entertainment value of comic relief. For the sake of the hobby I will continue point out the fairy-tale nature of your postings lest the casual reader of this newsgroup ever get the wrong impression of what the typical ham radio operator thinks is antenna "theory".

AI4QJ

1005. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:38:04 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <giUjj.448578$kj1.65576@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29321

Cecil Moore wrote:
> Gene Fuller wrote:
>> Cecil Moore wrote:
>>> Poynting vector = ExH = E*H*sin(A)
>>
>> Incorrect. The Poynting vector is defined as E x H*. The vector
>> directions are critically important.
>
> Those who don't remember what the cross product is,
> please reference:
>
> http://en.wikipedia.org/wiki/Cross_product
>
> Another name for the cross product is the vector product.
>
> Quoting "Fields and Waves ..." by Ramo & Whinnery:
>
> Poynting vector = ExH These are, of course, vectors.
>
> Quoting "Reference Data for Radio Engineers":
>
> ExH is called the Poynting vector. Again, vectors.
>
> The average Poynting vector is defined as
> Re(E x H*)/2 in my references.
>
> So your "Incorrect." assertion above is proven to
> be incorrect.
>

I am glad to see you agree with me. However, your long exposition above
is not what you said previously, E*H*sin(A).

Therefore, your proof that my "Incorrect" assertion is incorrect is
itself incorrect.

73,
Gene
W4SZ

1006. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:40:02 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <6kUjj.448587$kj1.78963@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29322

Cecil Moore wrote:
> Gene Fuller wrote:
>> The phasor has nothing to do with spatial direction of the field vector.
>
> The E-field and H-field of an EM wave can certainly
> be represented as an exponential function when the
> EM wave is normal to the reference plane. Think
> about it. Hecht used that feature in his book.

Totally ducking the issue, as usual.

1007. Re: Internal actions of a radiator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:41:57 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <479011f4$0$18436$4c368faf@roadrunner.com>
Source record: 29323

"art" <aunwin@insightbb.com> wrote in message
news:8b462433-fcd0-4a41-bc9e-baebbf2a0bfa@e4g2000hsg.googlegroups.com...
>A radiator is made from a myriad of capacitors and inductors
> in the formof a myriad of loop circuits along the length of a
> radiator.
> When energy is transferred from the generator the angular direction
> of the inherrent dipoles must be at the same angle with respect to
> time.
> Same goes for the angular position at return. This places all in a
> frame
> of equilibrium. It the angle is not the same there is obviously a
> mismatch
> which the generator cannot correct with a instantaneous change of
> phase.
> If the phases are different at the beginning it can be seen as out of
> equilibrium
> at the end also which can worsen for every pont along the radiator
> circuit.
> The difference in angular direction of the micro dipoles is a measure
> of
> the change in real current amplitude compared to the angle taken
> later
> at that point and that point only.
> Though a radiator has a multitude of like components, with its
> similarities
> we can look at an individual cuircit as a representitive of the whole
> which
> multiplied at a later time to reflect the time of one period or
> revolution.
> The loop circuit is made up of a parallel circuit consisting of an
> inductance
> and a capacitor. Ofcourse the circuit itself consists of resistances
> which
> allows current to flow thru its center to generate heat. But at this
> time
> we can all accept the presence of resistance. Both of the components
> alluded to recieves energy initially in sino soidal form and then
> stores
> that energy. But with both components being mirror image with each
> other
> they take turns in their operation of storing energy.each dependent on
> the
> phase of the inherrent micro dipoles. They also have the ability to
> empty

> out the stored energy which is in a form totally unlike the sino
> soidal form
> of collection. In fact the discharge is synonymous with an explosion
> with each
> storage vessel collecting the contents of the others explosion. We
> must
> recognise that these exchanges also lose energy which fortunately the
> generator replaces continuesly to replace the energy lost ,say to
> resistance
> heat e.t.c The change over point of collecting energy of both storage
> components.is the relative phases of their individual energy content
> voltage
> which in a tank circuit are constantly changing with respect to the
> phase angle
> of the current such that when the phases of voltage and current is the
> same
> it then becomes a DC current and removes itself from its container.
> Thus the mechanism between the inductance and capacitance is the
> depository
> of energy between themselves where the time varying energy, which
> reflects
> the time constant of the energy reservior, generates an external
> magnetic field.
> At the same time an external sino soidal current is in constant
> supply from the
> generator to replace energy lost in the above stated interchanges and
> resistances.
> Tomorrow we will examine how these above internal actions lead to the
> radiation
> phenomina that allows information to be passed from a radiator to
> another like radiator
> or receiver via propergation of potential energy.
> Have a happy day
> Art Unwin KB9MZ...XG(uk)
> Art Unwin

The casual reader of the ng should realize that this insane posting is not representative of the technical background of ham radio operators.

1008. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:42:24 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4790120e$0$18455$4c368faf@roadrunner.com>
Source record: 29324

"art" <aunwin@insightbb.com> wrote in message
news:ddea9cfe-5603-4a90-888e-a45a62177e15@z17g2000hsg.googlegroups.com...
> All the laws of the universe are directly a reflection of the action
> that Newtons laws
> pertain to. All Newtons laws pertain to relative movement of mass
> which is comprised of time, mass and relative distance to form a state
> of equilibrium.
> We all know how mechanical laws are conneted to Newton but how is
> electricity essentially the same? We all know that magnetism is a
> reflection of the smallest dipole
> relative angle at any point in time. We also know that this dipole can
> also turn during a period of time such that the magnetic field of
> force at any point in time is reflected by the angle that the dipole
> takes. This dipole in electrical terms is a microsom of the large
> mechanical forces in relative movement.
> For electricity the dipole takes up an alignment that reflect the
> current flow at any point and place in time. Thus with a dc current
> all the dipoles aligne with each other with respect to the current
> flow in a two dimensional form. When applying an alternating current
> we are also really applying a DC current but with a rotational or
> three degrees of freedom such that at any point in time all dipole
> alignment reflect the torque angle at that particular point which is
> NOT the same as any other dipole point alignment.
> Thus when current is not applied the molecular dipole arrangement fall
> back to the directions it had prior to the onset of current to provide
> a stated of equilibrium.
> In the case of a DC current supplied the microscopic dipoles ALL have
> the same alignement and when the current ceases to be applied the
> dipoles still stay in alignment with each other. So in effect ,the
> movement of the micro dipole in electricity is exactly the same as a
> mechanical element where all the forces of the electrical dipoles are
> summated. There are difference with mechanical elements which can be
> determined by its mass and structural make up such as how they perform
> in a magnetic field. Earlier we expressed the strength of a magnetic
> field is measured in part by the angular position of its resident
> dipoles.For a true magnet formed with a ferrous material the
> atmosphere can permeate all of the material as it changing its
> composition, but in the initial state the total mass is a reflection
> of the number of inherrent dipoles which in summation is a measure of
> the potential energy contained. With a current carrying
> element such as aluminum when it is exposed to the atmoshere it
> immediately forms a barrier to prevent the ongoing penetration of
> oxidtion. Thus when a current is applied
> it can only affect the dipoles in the protective skin depth of the

> pattina and not affect the internal unoxidizes material where it can
> oxidize and decay as with a ferrous material.
> Thus the pattina can only hold a smaller number of dipoles which
> reflects a smaller potential energy for generating a magnetic field.
> Thus both electrical and mechanical
> formats surround the facts of potential energy and kinetic energy when
> in a state of equilibrium as espoused by Newtons laws.
> Have a happy day
> Best regards
> Art Unwin KB9MZ.......XG (uk)

The casual reader of the ng should realize that this insane posting is not representative of the technical background of ham radio operators.

1009. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:43:28 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4790124f$0$18446$4c368faf@roadrunner.com>
Source record: 29325

"art" <aunwin@insightbb.com> wrote in message
news:e7d00cd2-679a-427f-987e-9c15fd22a90a@j78g2000hsd.googlegroups.com...
>I just looked the above title up on Google
> Guess what! They show a graph of the magnetic wave
> in a tipped manner which is exactly what computor programs show for a
> radiator
> in equilibrium. Shades of a diamagnetic field no less, which is not
> the same as one seen when one uses non diamagnetic iron filings when
> in junior high school.
> These search engines are great since the evidence keeps piling up
> where sooner or later the dam is going to break.Remember that guy who
> came along with a NEC program that confirmed the tipped radiator. No
> body challenged the results of NEC even when it opposed existing book
> text! Why? They did not want to suggest that the books were in error
> and thus would not debate the reults given independently.
> Art

The casual reader of the ng should realize that this insane posting is not
representative of the technical background of ham radio operators.

1010. Re: FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:43:55 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4790126a$0$18433$4c368faf@roadrunner.com>
Source record: 29326

"art" <aunwin@insightbb.com> wrote in message
news:58618071-6e51-4e6a-a3f7-93e209107c52@h11g2000prf.googlegroups.com...
> Gentlemen
> Radio is about fields , waves, inductors e.t.c and diamagnetic
> materials which does not include iron.!
> So to refer to the magnetic field of iron has nothing to do with
> radio. For antennas we use diamagnetic materials which have a skin.
> None of these, when a current is passed thru them ,allows a field to
> be formed on the inside like a iron magnet ! So gentlemen, get back to
> basics and review what a field looks like under these circumstances. I
> am not going to tell you because your niche in life is to argue,
> so check things out for yourself. Think academicaly or in a
> scientific fashion instead of CB ers
> And another thing. All laws are bound to the focal point of
> equilibrium. When there is not a state of equilibrium you have varying
> waves which do not appear when equilibrium is present.
> So be specific if you are refering to a non equilibrium status since
> all laws must be modified to account for this. Otherwise, your debates
> will go on for years and years and years without closure
> Art Unwin KB9MZ......xg(uk)

The casual reader of the ng should realize that this insane posting is not
representative of the technical background of ham radio operators.

1011. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:44:00 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <QnUjj.2374$7d1.2181@news01.roc.ny>
Source record: 29327

Cecil Moore wrote:
> Mr. Jim wrote:
>> Romney just lost my VOTE.
>
> I suspect any rational vote would go to Ron Paul.

I see you're still doing your comedy routine, Cecil.

Dave K8MN

1012. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:52:49 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47901480$0$18428$4c368faf@roadrunner.com>
Source record: 29328
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

"Tom Donaly" <dtdonaly@sbcglobal.net> wrote in message
news:LoTjj.89800$Um6.16289@newssvr12.news.prodigy.net...
> AI4QJ wrote:
>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>> news:dvQjj.328$uE.238@newssvr22.news.prodigy.net...
>>> Mr. Jim wrote:
>>>> Romney just lost my VOTE.
>>> I suspect any rational vote would go to Ron Paul.
>>
>> Absolutely.I am proud of my son who acquainted me with Ron Paul's
>> material. I used to be Constitution Party but in this case I am
>> Republican...Ron Paul.
>
> Yes, the Klan likes him, too.
> 73,
> Tom Donaly, KA6RUH

Cites?

73,
Dan Finn, AI4QJ

1013. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 02:56:40 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47901564$0$4987$4c368faf@roadrunner.com>
Source record: 29329

"art" <aunwin@insightbb.com> wrote in message
news:ddea9cfe-5603-4a90-888e-a45a62177e15@z17g2000hsg.googlegroups.com...
> All the laws of the universe are directly a reflection of the action
> that Newtons laws
> pertain to. All Newtons laws pertain to relative movement of mass
> which is comprised of time, mass and relative distance to form a state
> of equilibrium.
> We all know how mechanical laws are conneted to Newton but how is
> electricity essentially the same? We all know that magnetism is a
> reflection of the smallest dipole
> relative angle at any point in time. We also know that this dipole can
> also turn during a period of time such that the magnetic field of
> force at any point in time is reflected by the angle that the dipole
> takes. This dipole in electrical terms is a microsom of the large
> mechanical forces in relative movement.
> For electricity the dipole takes up an alignment that reflect the
> current flow at any point and place in time. Thus with a dc current
> all the dipoles aligne with each other with respect to the current
> flow in a two dimensional form. When applying an alternating current
> we are also really applying a DC current but with a rotational or
> three degrees of freedom such that at any point in time all dipole
> alignment reflect the torque angle at that particular point which is
> NOT the same as any other dipole point alignment.
> Thus when current is not applied the molecular dipole arrangement fall
> back to the directions it had prior to the onset of current to provide
> a stated of equilibrium.
> In the case of a DC current supplied the microscopic dipoles ALL have
> the same alignement and when the current ceases to be applied the
> dipoles still stay in alignment with each other. So in effect ,the
> movement of the micro dipole in electricity is exactly the same as a
> mechanical element where all the forces of the electrical dipoles are
> summated. There are difference with mechanical elements which can be
> determined by its mass and structural make up such as how they perform
> in a magnetic field. Earlier we expressed the strength of a magnetic
> field is measured in part by the angular position of its resident
> dipoles.For a true magnet formed with a ferrous material the
> atmosphere can permeate all of the material as it changing its
> composition, but in the initial state the total mass is a reflection
> of the number of inherrent dipoles which in summation is a measure of
> the potential energy contained. With a current carrying
> element such as aluminum when it is exposed to the atmoshere it
> immediately forms a barrier to prevent the ongoing penetration of
> oxidtion. Thus when a current is applied
> it can only affect the dipoles in the protective skin depth of the

> pattina and not affect the internal unoxidizes material where it can
> oxidize and decay as with a ferrous material.
> Thus the pattina can only hold a smaller number of dipoles which
> reflects a smaller potential energy for generating a magnetic field.
> Thus both electrical and mechanical
> formats surround the facts of potential energy and kinetic energy when
> in a state of equilibrium as espoused by Newtons laws.
> Have a happy day
> Best regards
> Art Unwin KB9MZ.......XG (uk)

This seems to paraphrase a lyric by Taupin and John.

Jimmie

1014. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 03:13:21 UTC
From: art <aunwin@insightbb.com>
Message-ID: <c06c401f-5d3e-4967-9ef5-77fa43a32004@m34g2000hsf.googlegroups.com>
Source record: 29330

On 17 Jan, 18:25, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:1af37bea-6b11-4a5e-a25f-afd83cf3c493@l1g2000hsa.googlegroups.com...
>
> >your whole posting is just silly. First you accuse me of lieing now
> >you want to provoke me with stupidity. You need to upgrade to a
> >understanding of a tank circuit.Yes, it is used in your transmitter.
> >Google it and study it. Free speech is great but it also reveals your
> >mentality. And you are just bull shiting in the absence of knoweledge."
>
> OK art, I notice a great improvement in your having only 3 spelling errors
> in 5 sentences. You are a fool. If your postings could ever be elevated to
> the level of mere stupidity, then it might be possible to correct your
> misconceptions. However, one cannot deal with true insanity by any rational
> approach such as that. You do not drive me to use Google; you drive me to
> dictionary.com so I can find the words appropriate to describe the idiocy of
> your ravings. However, it isn't worth the effort so I will leave you mired
> in your intellectual wasteland, reading your postings from time to time for
> the entertainment value of comic relief. For the sake of the hobby I will
> continue point out the fairy-tale nature of your postings lest the casual
> reader of this newsgroup ever get the wrong impression of what the typical
> ham radio operator thinks is antenna "theory".
>
> AI4QJ

For entertainment value look for where the photon term came
from.....Quantum theory
which has not been proven. If a particle os in a magnetic field it can
take on some of the properties of that field. To be propelled requires
mass as does a mechanical vibration of a radiator. Yes mechanical laws
equate with electrical laws.The object that was repelled is a mass
with anti gravitational tendencies which allows it to have straight
line trajectory.
That straight line trajectory is of a partical that now has potential
energy received from a magnetic field. That energy becomes Kinetic
energy on impact with a receiving antenna which thus is instrumental
with a multitude of other particles in applying a mechanical force
whose reaction is supplied by the receiving radiator in the form of
vibration. When you are talking radio you are talking MHz which
translates into millions of particles or samples taken by the
receiving antenna, a lot more than your ear can accomplish. The proton
idea was thought up by Einstein in an effort to understand what
radiation is and he died without solving that puzzle.

Einstein made a tremendous amounts of errors in his life time and this is just one of them.
Ham's look for resonance has the salvation of all but this is just a ham's point of view. Like a quadratic equation there are two answers to choose from, but only one that satisfies Newtons requirement for equilibrium. Ham's choose to recognise just resonance because it is self serving for amateur operation,but science will always follow the requirement for equilibrium
just as all the masters did.So many new sciences were invented in an effort to identify radiation that were not required because the simplicity Of Gaussian law reflected the true nature of radiation.
You have called me a liar and a fool but are not willing to raise a few thousand dollars to prove that I do not have a 160M antenna on the top of my tower, that I am a fool and a liar Money is waiting for you and your backers just by y showing I do not have a 160M antenna sitting on my tower. You have some gall to call me names and then backslide when asked to prove your point.
No, I am not going to insult you, your own actions show what manner of man you are.
Art Unwin...KB9MZ....xg(uk)

1015. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 03:23:31 UTC
From: art <aunwin@insightbb.com>
Message-ID: <8b5bb299-d7fa-433e-9958-6176a6a5790e@c23g2000hsa.googlegroups.com>
Source record: 29331

On 17 Jan, 18:42, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:ddea9cfe-5603-4a90-888e-a45a62177e15@z17g2000hsg.googlegroups.com...
>
>
>
>
>
>
> > All the laws of the universe are directly a reflection of the action
> > that Newtons laws
> > pertain to. All Newtons laws pertain to relative movement of mass
> > which is comprised of time, mass and relative distance to form a state
> > of equilibrium.
> > We all know how mechanical laws are conneted to Newton but how is
> > electricity essentially the same? We all know that magnetism is a
> > reflection of the smallest dipole
> > relative angle at any point in time. We also know that this dipole can
> > also turn during a period of time such that the magnetic field of
> > force at any point in time is reflected by the angle that the dipole
> > takes. This dipole in electrical terms is a microsom of the large
> > mechanical forces in relative movement.
> > For electricity the dipole takes up an alignment that reflect the
> > current flow at any point and place in time. Thus with a dc current
> > all the dipoles aligne with each other with respect to the current
> > flow in a two dimensional form. When applying an alternating current
> > we are also really applying a DC current but with a rotational or
> > three degrees of freedom such that at any point in time all dipole
> > alignment reflect the torque angle at that particular point which is
> > NOT the same as any other dipole point alignment.
> > Thus when current is not applied the molecular dipole arrangement fall
> > back to the directions it had prior to the onset of current to provide
> > a stated of equilibrium.
> > In the case of a DC current supplied the microscopic dipoles ALL have
> > the same alignement and when the current ceases to be applied the
> > dipoles still stay in alignment with each other. So in effect ,the
> > movement of the micro dipole in electricity is exactly the same as a
> > mechanical element where all the forces of the electrical dipoles are
> > summated. There are difference with mechanical elements which can be
> > determined by its mass and structural make up such as how they perform
> > in a magnetic field. Earlier we expressed the strength of a magnetic
> > field is measured in part by the angular position of its resident
> > dipoles.For a true magnet formed with a ferrous material the
> > atmosphere can permeate all of the material as it changing its

> > composition, but in the initial state the total mass is a reflection
> > of the number of inherrent dipoles which in summation is a measure of
> > the potential energy contained. With a current carrying
> > element such as aluminum when it is exposed to the atmoshere it
> > immediately forms a barrier to prevent the ongoing penetration of
> > oxidtion. Thus when a current is applied
> > it can only affect the dipoles in the protective skin depth of the
> > pattina and not affect the internal unoxidizes material where it can
> > oxidize and decay as with a ferrous material.
> > Thus the pattina can only hold a smaller number of dipoles which
> > reflects a smaller potential energy for generating a magnetic field.
> > Thus both electrical and mechanical
> > formats surround the facts of potential energy and kinetic energy when
> > in a state of equilibrium as espoused by Newtons laws.
> > Have a happy day
> > Best regards
> > Art Unwin KB9MZ.......XG (uk)
>
> The casual reader of the ng should realize that this insane posting is not
> representative of the technical background of ham radio operators.- Hide quoted text -
>
> - Show quoted text -

You know. that statement was made a decade ago by W7EL and he started
up a storm of auguements
on this newsgroup which pushed off so many knoweledgable engineers/
radio hams. Problem was that W7EL choose hismelf as the adjudicator as
what is right and what was wrong! Knoweledgable did not always agree
with W7EL but with the diatribes thrown they choose to leave. Now you
also have chosen to be the adjudicator in conjunction with W7EL!
Give me a break.
Art Unwin KB9MZ...xg (uk)

1016. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 03:46:34 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <HiVjj.372$so6.109@newssvr19.news.prodigy.net>
Source record: 29332

AI4QJ wrote:
> "art" <aunwin@insightbb.com> wrote in message
> news:ddea9cfe-5603-4a90-888e-a45a62177e15@z17g2000hsg.googlegroups.com...
>> All the laws of the universe are directly a reflection of the action
>> that Newtons laws
>> pertain to. All Newtons laws pertain to relative movement of mass
>> which is comprised of time, mass and relative distance to form a state
>> of equilibrium.
>> We all know how mechanical laws are conneted to Newton but how is
>> electricity essentially the same? We all know that magnetism is a
>> reflection of the smallest dipole
>> relative angle at any point in time. We also know that this dipole can
>> also turn during a period of time such that the magnetic field of
>> force at any point in time is reflected by the angle that the dipole
>> takes. This dipole in electrical terms is a microsom of the large
>> mechanical forces in relative movement.
>> For electricity the dipole takes up an alignment that reflect the
>> current flow at any point and place in time. Thus with a dc current
>> all the dipoles aligne with each other with respect to the current
>> flow in a two dimensional form. When applying an alternating current
>> we are also really applying a DC current but with a rotational or
>> three degrees of freedom such that at any point in time all dipole
>> alignment reflect the torque angle at that particular point which is
>> NOT the same as any other dipole point alignment.
>> Thus when current is not applied the molecular dipole arrangement fall
>> back to the directions it had prior to the onset of current to provide
>> a stated of equilibrium.
>> In the case of a DC current supplied the microscopic dipoles ALL have
>> the same alignement and when the current ceases to be applied the
>> dipoles still stay in alignment with each other. So in effect ,the
>> movement of the micro dipole in electricity is exactly the same as a
>> mechanical element where all the forces of the electrical dipoles are
>> summated. There are difference with mechanical elements which can be
>> determined by its mass and structural make up such as how they perform
>> in a magnetic field. Earlier we expressed the strength of a magnetic
>> field is measured in part by the angular position of its resident
>> dipoles.For a true magnet formed with a ferrous material the
>> atmosphere can permeate all of the material as it changing its
>> composition, but in the initial state the total mass is a reflection
>> of the number of inherrent dipoles which in summation is a measure of
>> the potential energy contained. With a current carrying
>> element such as aluminum when it is exposed to the atmoshere it
>> immediately forms a barrier to prevent the ongoing penetration of
>> oxidtion. Thus when a current is applied

>> it can only affect the dipoles in the protective skin depth of the
>> pattina and not affect the internal unoxidizes material where it can
>> oxidize and decay as with a ferrous material.
>> Thus the pattina can only hold a smaller number of dipoles which
>> reflects a smaller potential energy for generating a magnetic field.
>> Thus both electrical and mechanical
>> formats surround the facts of potential energy and kinetic energy when
>> in a state of equilibrium as espoused by Newtons laws.
>> Have a happy day
>> Best regards
>> Art Unwin KB9MZ.......XG (uk)
>
>
> The casual reader of the ng should realize that this insane posting is not
> representative of the technical background of ham radio operators.
>
>

Art is entitled to his opinions which are no more crazy than, say,
Christian dominionism, or "creation science." They may be wrong and
hard to make sense of, but at least they're honest and
original.
73,
Tom Donaly, KA6RUH

1017. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 03:48:17 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <7kVjj.373$so6.348@newssvr19.news.prodigy.net>
Source record: 29333

AI4QJ wrote:
> "art" <aunwin@insightbb.com> wrote in message
> news:e7d00cd2-679a-427f-987e-9c15fd22a90a@j78g2000hsd.googlegroups.com...
>> I just looked the above title up on Google
>> Guess what! They show a graph of the magnetic wave
>> in a tipped manner which is exactly what computor programs show for a
>> radiator
>> in equilibrium. Shades of a diamagnetic field no less, which is not
>> the same as one seen when one uses non diamagnetic iron filings when
>> in junior high school.
>> These search engines are great since the evidence keeps piling up
>> where sooner or later the dam is going to break.Remember that guy who
>> came along with a NEC program that confirmed the tipped radiator. No
>> body challenged the results of NEC even when it opposed existing book
>> text! Why? They did not want to suggest that the books were in error
>> and thus would not debate the reults given independently.
>> Art
>
> The casual reader of the ng should realize that this insane posting is not
> representative of the technical background of ham radio operators.
>
>

Nor are the posts of AI4QJ.
73,
Tom Donaly, KA6RUH

1018. Re: FOR ALL AMATEUR OPERATORS AND INSTANT EXPERTS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 03:50:37 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <imVjj.374$so6.235@newssvr19.news.prodigy.net>
Source record: 29334

AI4QJ wrote:
> "art" <aunwin@insightbb.com> wrote in message
> news:58618071-6e51-4e6a-a3f7-93e209107c52@h11g2000prf.googlegroups.com...
>> Gentlemen
>> Radio is about fields , waves, inductors e.t.c and diamagnetic
>> materials which does not include iron.!
>> So to refer to the magnetic field of iron has nothing to do with
>> radio. For antennas we use diamagnetic materials which have a skin.
>> None of these, when a current is passed thru them ,allows a field to
>> be formed on the inside like a iron magnet ! So gentlemen, get back to
>> basics and review what a field looks like under these circumstances. I
>> am not going to tell you because your niche in life is to argue,
>> so check things out for yourself. Think academicaly or in a
>> scientific fashion instead of CB ers
>> And another thing. All laws are bound to the focal point of
>> equilibrium. When there is not a state of equilibrium you have varying
>> waves which do not appear when equilibrium is present.
>> So be specific if you are refering to a non equilibrium status since
>> all laws must be modified to account for this. Otherwise, your debates
>> will go on for years and years and years without closure
>> Art Unwin KB9MZ......xg(uk)
>
> The casual reader of the ng should realize that this insane posting is not
> representative of the technical background of ham radio operators.
>
>

The repetitive nature, and lack of a credible argument, of this post is
duly noted.
73,
KA6RUH

1019. Re: Internal actions of a radiator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:02:54 UTC
From: art <aunwin@insightbb.com>
Message-ID: <e3a2c609-5c2b-4f4d-93ee-413f9810c1c7@e4g2000hsg.googlegroups.com>
Source record: 29335

On 17 Jan, 18:41, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:8b462433-fcd0-4a41-bc9e-baebbf2a0bfa@e4g2000hsg.googlegroups.com...
>
>
>
>
>
> >A radiator is made from a myriad of capacitors and inductors
> > in the formof a myriad of loop circuits along the length of a
> > radiator.
> > When energy is transferred from the generator the angular direction
> > of the inherrent dipoles must be at the same angle with respect to
> > time.
> > Same goes for the angular position at return. This places all in a
> > frame
> > of equilibrium. It the angle is not the same there is obviously a
> > mismatch
> > which the generator cannot correct with a instantaneous change of
> > phase.
> > If the phases are different at the beginning it can be seen as out of
> > equilibrium
> > at the end also which can worsen for every pont along the radiator
> > circuit.
> > The difference in angular direction of the micro dipoles is a measure
> > of
> > the change in real current amplitude compared to the angle taken
> > later
> > at that point and that point only.
> > Though a radiator has a multitude of like components, with its
> > similarities
> > we can look at an individual cuircit as a representitive of the whole
> > which
> > multiplied at a later time to reflect the time of one period or
> > revolution.
> > The loop circuit is made up of a parallel circuit consisting of an
> > inductance
> > and a capacitor. Ofcourse the circuit itself consists of resistances
> > which
> > allows current to flow thru its center to generate heat. But at this
> > time
> > we can all accept the presence of resistance. Both of the components
> > alluded to recieves energy initially in sino soidal form and then

> > stores
> > that energy. But with both components being mirror image with each
> > other
> > they take turns in their operation of storing energy.each dependent on
> > the
> > phase of the inherrent micro dipoles. They also have the ability to
> > empty
> > out the stored energy which is in a form totally unlike the sino
> > soidal form
> > of collection. In fact the discharge is synonymous with an explosion
> > with each
> > storage vessel collecting the contents of the others explosion. We
> > must
> > recognise that these exchanges also lose energy which fortunately the
> > generator replaces continuesly to replace the energy lost ,say to
> > resistance
> > heat e.t.c The change over point of collecting energy of both storage
> > components.is the relative phases of their individual energy content
> > voltage
> > which in a tank circuit are constantly changing with respect to the
> > phase angle
> > of the current such that when the phases of voltage and current is the
> > same
> > it then becomes a DC current and removes itself from its container.
> > Thus the mechanism between the inductance and capacitance is the
> > depository
> > of energy between themselves where the time varying energy, which
> > reflects
> > the time constant of the energy reservior, generates an external
> > magnetic field.
> > At the same time an external sino soidal current is in constant
> > supply from the
> > generator to replace energy lost in the above stated interchanges and
> > resistances.
> > Tomorrow we will examine how these above internal actions lead to the
> > radiation
> > phenomina that allows information to be passed from a radiator to
> > another like radiator
> > or receiver via propergation of potential energy.
> > Have a happy day
> > Art Unwin KB9MZ...XG(uk)
> > Art Unwin
>
> The casual reader of the ng should realize that this insane posting is not
> representative of the technical background of ham radio operators.- Hide quoted text -
>
> - Show quoted text -

That's a feeble attempt of censorship. Presumably you also cross
posted

like the rest of your friends.
As I have stated before, free speech is a wonderful thing,
the other side of the coin is that it shows the education level of the
speaker!
Art

1020. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:18:23 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A28ED76288AEmcoslocomcastnet@216.196.97.136>
Source record: 29336

"Harry - SM0VPO" <oeieio@hotmail.com> wrote in
news:xIMij.2787$R_4.2111@newsb.telia.net:

> If you are having trouble with neighbours, then make a wooden antenna
> using brush-handles, or even a fishing pole. Let the neighbours see it
> and make a fool of themselves when they accuse you of disturbance to
> the TV sets. Then you can use the real antenna another day without
> fear. ;-)

Or get a Ham buddy to make a QSO on your station while you are over
at the neighbors! "How can it be my station when I'm standing here in
front of you?? hehe

- 73 de Mike N3LI -

1021. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:21:32 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmp9g7$3mc$1@news.albasani.net>
Source record: 29337

Cecil Moore wrote:

> ...
> There are a host of applications that simply cannot be dummied
> down to the lumped circuit level. I am unable to teach my dog
> to look at the clock and tell whether it is dinnertime or not.
> Is that my fault or hers? The answer is more complicated than
> one might think at first glance.

Well, sure. But you are bragging about the intelligence of your
dog--you are not likely to find that in a ng--often. <ROFLOL>

Regards,
JS

1022. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:29:36 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A28EF5CF244Emcoslocomcastnet@216.196.97.136>
Source record: 29338

"Tam" <t-tammaru@comcast.net> wrote in
news:tJWdnSrLGeWkFRLanZ2dnUVZ_r-vnZ2d@comcast.com:

>
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:ETJjj.1023$EZ3.185@nlpi070.nbdc.sbc.com...
>> Tam wrote:
>>> Almost certainly, the power rating of the terminator is either 1/8,
>>> 1/4, or 1/2 W.
>>
>> Does Radio Shack not specify the power rating?
>> --
>> 73, Cecil http://www.w5dxp.com
>
> Not in the catalog. Maybe on the bubble pack.

I dout they have a power rating on Digital line terminators! That isn't
one of the specs in common use in that field.

They aren't made for terminating much power at all.

As for the original question, they can be used as a terminator, but not
at the power levels we are likely to use, unless you are into QRPp.

- 73 de Mike N3LI -

1023. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:34:22 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A28F02BB66F3mcoslocomcastnet@216.196.97.136>
Source record: 29339

"Tom Donaly" <dtdonaly@sbcglobal.net> wrote in
news:HiVjj.372$so6.109@newssvr19.news.prodigy.net:

> Art is entitled to his opinions which are no more crazy than, say,
> Christian dominionism, or "creation science." They may be wrong and
> hard to make sense of, but at least they're honest and
> original.

Art's ideas are no more crazy than those you compared them to, but those
ideas are a whole lot crazier than Art's!

- 73 d eMike N3LI -

1024. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:36:09 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47902cb8$0$5127$4c368faf@roadrunner.com>
Source record: 29340

"Tom Donaly" <dtdonaly@sbcglobal.net> wrote in message
news:HiVjj.372$so6.109@newssvr19.news.prodigy.net...
> AI4QJ wrote:
>> "art" <aunwin@insightbb.com> wrote in message
>> news:ddea9cfe-5603-4a90-888e-a45a62177e15@z17g2000hsg.googlegroups.com...
>>> All the laws of the universe are directly a reflection of the action
>>> that Newtons laws
>>> pertain to. All Newtons laws pertain to relative movement of mass
>>> which is comprised of time, mass and relative distance to form a state
>>> of equilibrium.
>>> We all know how mechanical laws are conneted to Newton but how is
>>> electricity essentially the same? We all know that magnetism is a
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>>> relative angle at any point in time. We also know that this dipole can
>>> also turn during a period of time such that the magnetic field of
>>> force at any point in time is reflected by the angle that the dipole
>>> takes. This dipole in electrical terms is a microsom of the large
>>> mechanical forces in relative movement.
>>> For electricity the dipole takes up an alignment that reflect the
>>> current flow at any point and place in time. Thus with a dc current
>>> all the dipoles aligne with each other with respect to the current
>>> flow in a two dimensional form. When applying an alternating current
>>> we are also really applying a DC current but with a rotational or
>>> three degrees of freedom such that at any point in time all dipole
>>> alignment reflect the torque angle at that particular point which is
>>> NOT the same as any other dipole point alignment.
>>> Thus when current is not applied the molecular dipole arrangement fall
>>> back to the directions it had prior to the onset of current to provide
>>> a stated of equilibrium.
>>> In the case of a DC current supplied the microscopic dipoles ALL have
>>> the same alignement and when the current ceases to be applied the
>>> dipoles still stay in alignment with each other. So in effect ,the
>>> movement of the micro dipole in electricity is exactly the same as a
>>> mechanical element where all the forces of the electrical dipoles are
>>> summated. There are difference with mechanical elements which can be
>>> determined by its mass and structural make up such as how they perform
>>> in a magnetic field. Earlier we expressed the strength of a magnetic
>>> field is measured in part by the angular position of its resident
>>> dipoles.For a true magnet formed with a ferrous material the
>>> atmosphere can permeate all of the material as it changing its
>>> composition, but in the initial state the total mass is a reflection
>>> of the number of inherrent dipoles which in summation is a measure of
>>> the potential energy contained. With a current carrying
>>> element such as aluminum when it is exposed to the atmoshere it

>>> immediately forms a barrier to prevent the ongoing penetration of
>>> oxidtion. Thus when a current is applied
>>> it can only affect the dipoles in the protective skin depth of the
>>> pattina and not affect the internal unoxidizes material where it can
>>> oxidize and decay as with a ferrous material.
>>> Thus the pattina can only hold a smaller number of dipoles which
>>> reflects a smaller potential energy for generating a magnetic field.
>>> Thus both electrical and mechanical
>>> formats surround the facts of potential energy and kinetic energy when
>>> in a state of equilibrium as espoused by Newtons laws.
>>> Have a happy day
>>> Best regards
>>> Art Unwin KB9MZ.......XG (uk)
>>
>>
>> The casual reader of the ng should realize that this insane posting is
>> not representative of the technical background of ham radio operators.
>
> Art is entitled to his opinions which are no more crazy than, say,
> Christian dominionism, or "creation science." They may be wrong and
> hard to make sense of, but at least they're honest and
> original.

I agree. They are just as crazy as Christian dominionism and "creation
science."

1025. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:37:32 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47902d0b$0$5107$4c368faf@roadrunner.com>
Source record: 29341

"Tom Donaly" <dtdonaly@sbcglobal.net> wrote in message
news:7kVjj.373$so6.348@newssvr19.news.prodigy.net...
> AI4QJ wrote:
>> "art" <aunwin@insightbb.com> wrote in message
>> news:e7d00cd2-679a-427f-987e-9c15fd22a90a@j78g2000hsd.googlegroups.com...
>>> I just looked the above title up on Google
>>> Guess what! They show a graph of the magnetic wave
>>> in a tipped manner which is exactly what computor programs show for a
>>> radiator
>>> in equilibrium. Shades of a diamagnetic field no less, which is not
>>> the same as one seen when one uses non diamagnetic iron filings when
>>> in junior high school.
>>> These search engines are great since the evidence keeps piling up
>>> where sooner or later the dam is going to break.Remember that guy who
>>> came along with a NEC program that confirmed the tipped radiator. No
>>> body challenged the results of NEC even when it opposed existing book
>>> text! Why? They did not want to suggest that the books were in error
>>> and thus would not debate the reults given independently.
>>> Art
>>
>> The casual reader of the ng should realize that this insane posting is
>> not representative of the technical background of ham radio operators.
>
> Nor are the posts of AI4QJ.

plonk

1026. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:40:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <b5Wjj.38863$ID6.6095@newssvr27.news.prodigy.net>
Source record: 29342

Gene Fuller wrote:
> Therefore, your proof that my "Incorrect" assertion is incorrect is
> itself incorrect.

Please answer the question. It is known that
Re(ExH*)/2 = 0 for pure standing waves all up and
down the line. If E and H* are both non-zero, how
can Re(ExH*)/2 be zero?
--
73, Cecil http://www.w5dxp.com

1027. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:42:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <87Wjj.38864$ID6.29450@newssvr27.news.prodigy.net>
Source record: 29343

Gene Fuller wrote:
> Cecil Moore wrote:
>> The E-field and H-field of an EM wave can certainly
>> be represented as an exponential function when the
>> EM wave is normal to the reference plane. Think
>> about it. Hecht used that feature in his book.
>
> Totally ducking the issue, as usual.

No, I'm waiting for an answer from you. It is known
that Re(ExH*)/2=0 for pure standing waves all up
and down the line. Since E and H* are not zero all
up and down the line, how is that possible?
--
73, Cecil http://www.w5dxp.com

1028. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:43:40 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <08Wjj.2382$7d1.513@news01.roc.ny>
Source record: 29344

art wrote:

> You have called me a liar and a fool but are not willing to raise a
> few thousand dollars to prove that I do not have a 160M antenna on the
> top of my tower, that I am a fool and a liar Money is waiting for you
> and your backers just by y showing I do not have a 160M antenna
> sitting on my tower. You have some gall to call me names and then
> backslide when asked to prove your point.
> No, I am not going to insult you, your own actions show what manner of
> man you are.
> Art Unwin...KB9MZ....xg(uk)

Art, I've asked you to provide information on your 160m antenna twice previously. You referred me to an eham tower of babel after the first and responded something about not operating on 160 for the second.

I'll ask you for the third time: Would you explain your 160m antenna for us? Do you believe it to be as good or better than a full-sized inverted L over an extensive radial field? Have I wasted time, effort and money in installing my inverted L when an 18 foot antenna would have done the same job?

Dave K8MN

1029. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:44:39 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47902eb5$0$5107$4c368faf@roadrunner.com>
Source record: 29345

"art" <aunwin@insightbb.com> wrote in message
news:c06c401f-5d3e-4967-9ef5-77fa43a32004@m34g2000hsf.googlegroups.com...
On 17 Jan, 18:25, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:1af37bea-6b11-4a5e-a25f-afd83cf3c493@l1g2000hsa.googlegroups.com...
>
> >your whole posting is just silly. First you accuse me of lieing now
> >you want to provoke me with stupidity. You need to upgrade to a
> >understanding of a tank circuit.Yes, it is used in your transmitter.
> >Google it and study it. Free speech is great but it also reveals your
> >mentality. And you are just bull shiting in the absence of knoweledge."
>
> OK art, I notice a great improvement in your having only 3 spelling errors
> in 5 sentences. You are a fool. If your postings could ever be elevated to
> the level of mere stupidity, then it might be possible to correct your
> misconceptions. However, one cannot deal with true insanity by any
> rational
> approach such as that. You do not drive me to use Google; you drive me to
> dictionary.com so I can find the words appropriate to describe the idiocy
> of
> your ravings. However, it isn't worth the effort so I will leave you mired
> in your intellectual wasteland, reading your postings from time to time
> for
> the entertainment value of comic relief. For the sake of the hobby I will
> continue point out the fairy-tale nature of your postings lest the casual
> reader of this newsgroup ever get the wrong impression of what the typical
> ham radio operator thinks is antenna "theory".
>
> AI4QJ

:No, I am not going to insult you,

I'm sure you have had you fill of hurling insults at me tonite. Just part of
the entertainment.

:your own actions show what manner of:
:man you are.

Pot Kettle Black

Tell me how a 1/4W tank circuit in my transmitter works, art.

AI4QJ

1030. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 04:51:06 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <_eWjj.2383$7d1.1813@news01.roc.ny>
Source record: 29346

Tom Donaly wrote:
> AI4QJ wrote:
>> "art" <aunwin@insightbb.com> wrote in message

>>> Thus the pattina can only hold a smaller number of dipoles which
>>> reflects a smaller potential energy for generating a magnetic field.
>>> Thus both electrical and mechanical
>>> formats surround the facts of potential energy and kinetic energy when
>>> in a state of equilibrium as espoused by Newtons laws.
>>> Have a happy day
>>> Best regards
>>> Art Unwin KB9MZ.......XG (uk)
>>
>>
>> The casual reader of the ng should realize that this insane posting is
>> not representative of the technical background of ham radio operators.
>>
>
> Art is entitled to his opinions which are no more crazy than, say,
> Christian dominionism, or "creation science." They may be wrong and
> hard to make sense of, but at least they're honest and
> original.

If they are wrong, they aren't honest. They're simply bad science and not worthy of our time. One of Art's biggest problems is that he writes in kooky generalities and never ever provides specifics. I've asked him three times for information on his 18 foot 160m antenna. All I've gotten in response is a bad tap dance.

I have no choice but to put him down as a lonely old eccentric, a few degrees off level.

Dave K8MN

1031. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 05:05:55 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmpc3ejpk1@news.albasani.net>
Source record: 29347

Mike Coslo wrote:
> "Tom Donaly" <dtdonaly@sbcglobal.net> wrote in
> news:HiVjj.372$so6.109@newssvr19.news.prodigy.net:
>
>> Art is entitled to his opinions which are no more crazy than, say,
>> Christian dominionism, or "creation science." They may be wrong and
>> hard to make sense of, but at least they're honest and
>> original.
>
> Art's ideas are no more crazy than those you compared them to, but those
> ideas are a whole lot crazier than Art's!
>
> - 73 d eMike N3LI -
>

Oh yeah, the premise(s) you state are self evident! Rocks turning into biological organisms. Krist, mundane really--for the "wackos way of thinking." Everyone else realizes it take a mind to "create/make something." You damn bizarre idiot! <ROFLOL>

Gawd, and you think it would be easy for someone to follow logic ...

JS

1032. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 05:07:43 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmpc6qjpk2@news.albasani.net>
Source record: 29250

John Smith wrote:

> ...
> Gawd, and you think it would be easy for someone to follow logic ...
>
> JS

And then, these damn kooks have the sheer gall to poke fun at Art?
Geesh, they must not have mirrors to look in!

JS

1033. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 05:38:23 UTC
From: art <aunwin@insightbb.com>
Message-ID: <528fd18f-3548-45cd-9ab7-a41123a6cc50@d21g2000prf.googlegroups.com>
Source record: 29251

On 17 Jan, 20:43, Dave Heil <k...@frontiernet.net> wrote:
> art wrote:
> > You have called me a liar and a fool but are not willing to raise a
> > few thousand dollars to prove that I do not have a 160M antenna on the
> > top of my tower, that I am a fool and a liar Money is waiting for you
> > and your backers just by y showing I do not have a 160M antenna
> > sitting on my tower. You have some gall to call me names and then
> > backslide when asked to prove your point.
> > No, I am not going to insult you, your own actions show what manner of
> > man you are.
> > Art Unwin...KB9MZ....xg(uk)
>
> Art, I've asked you to provide information on your 160m antenna twice
> previously. You referred me to an eham tower of babel after the first
> and responded something about not operating on 160 for the second.
>
> I'll ask you for the third time: Would you explain your 160m antenna
> for us? Do you believe it to be as good or better than a full-sized
> inverted L over an extensive radial field? Have I wasted time, effort
> and money in installing my inverted L when an 18 foot antenna would have
> done the same job?
>
> Dave K8MN

Dave,
Over the years many have asked that same question and I have answered
it many times.
When ever a newbie comes along they always ask the same question
without looking back at my past posts since they want to argue. Now it
is you who is starting the post with a caustic comment regarding the
"tower of Babel" but at no time have you or any newbie initiated a
discussion before making a insult to follow the crowd. What do you
think I should do when you call my writing "babel"? Now the computor
programs state that a tilted element provides more horizontal gain
than a horizontal element. This was followed up independently on this
newsgroup.No debate regarding the coroberation
So should we all dump the antenna computor programs? Many hams say
they did this or did that and produced better than sliced bread. Hams
respond that you didn't measure on the range properly so give me the
math. I started off with the math which was corroberated by a doctor
working for a space agency. Guess what? He got plastered for "poor"
mathematics.
This group cannot debate any thing which is why only a few dominate
the group now. Past experts have left!So I ask you"how should this

group be run"?
Art

1034. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 05:38:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <yXWjj.38867$ID6.34652@newssvr27.news.prodigy.net>
Source record: 29252

Gene Fuller wrote:
> The phasor has nothing to do with spatial direction of the field vector.

Sorry, but The IEEE Dictionary disagrees with you.
In the description of the Poynting vector, it says:
"E and H are the electric and magnetic field vectors
in phasor notation ..."

I have prepared a graph of a snapshot in time of
a forward wave and reflected wave of equal magnitudes.
When the waves are superposed at the reference plane,
the total E-field and total H-field are 180 degrees
out of phase. The graph is at:

http://www.w5dxp.com/EHSuper.JPG
--
73, Cecil http://www.w5dxp.com

1035. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 05:44:56 UTC
From: art <aunwin@insightbb.com>
Message-ID: <996af735-4c09-4f67-ba68-201f257f42f2@1g2000hsl.googlegroups.com>
Source record: 29253

On 17 Jan, 20:44, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:c06c401f-5d3e-4967-9ef5-77fa43a32004@m34g2000hsf.googlegroups.com...
> On 17 Jan, 18:25, "AI4QJ" <nos...@yahoo.com> wrote:
>
>
>
>
>
> > "art" <aun...@insightbb.com> wrote in message
>
> >news:1af37bea-6b11-4a5e-a25f-afd83cf3c493@l1g2000hsa.googlegroups.com...
>
> > >your whole posting is just silly. First you accuse me of lieing now
> > >you want to provoke me with stupidity. You need to upgrade to a
> > >understanding of a tank circuit.Yes, it is used in your transmitter.
> > >Google it and study it. Free speech is great but it also reveals your
> > >mentality. And you are just bull shiting in the absence of knoweledge."
>
> > OK art, I notice a great improvement in your having only 3 spelling errors
> > in 5 sentences. You are a fool. If your postings could ever be elevated to
> > the level of mere stupidity, then it might be possible to correct your
> > misconceptions. However, one cannot deal with true insanity by any
> > rational
> > approach such as that. You do not drive me to use Google; you drive me to
> > dictionary.com so I can find the words appropriate to describe the idiocy
> > of
> > your ravings. However, it isn't worth the effort so I will leave you mired
> > in your intellectual wasteland, reading your postings from time to time
> > for
> > the entertainment value of comic relief. For the sake of the hobby I will
> > continue point out the fairy-tale nature of your postings lest the casual
> > reader of this newsgroup ever get the wrong impression of what the typical
> > ham radio operator thinks is antenna "theory".
>
> > AI4QJ
>
> :No, I am not going to insult you,
>
> I'm sure you have had you fill of hurling insults at me tonite. Just part of
> the entertainment.
>
> :your own actions show what manner of:

> :man you are.
>
> Pot Kettle Black
>
> Tell me how a 1/4W tank circuit in my transmitter works, art.
>
> AI4QJ- Hide quoted text -
>
> - Show quoted text -

You have one in your transmitter and you don't know how it works so
you ask me.
Why? You can ask KB9..... or the MI5. If you cross post they will get
back to you.
I promise.They miss you. Maybe one of the above is actually you!

1036. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 05:58:44 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmpf6emqv1@news.albasani.net>
Source record: 29254

art wrote:

> ...
> Dave,
> Over the years many have asked that same question and I have answered
> it many times.

Yeah Art, I have notice the exact same thing. I think he is one of those "special people." Most likely, took "special classes" when he was in school. We should probable just ignore this fact--indeed, we should, most likely, just ignore him ...

> When ever a newbie comes along they always ask the same question
> without looking back at my past posts since they want to argue. Now it
> is you who is starting the post with a caustic comment regarding the
> "tower of Babel" but at no time have you or any newbie initiated a
> discussion before making a insult to follow the crowd. What do you
> think I should do when you call my writing "babel"? Now the computor
> programs state that a tilted element provides more horizontal gain
> than a horizontal element. This was followed up independently on this
> newsgroup.No debate regarding the coroberation
> So should we all dump the antenna computor programs? Many hams say
> they did this or did that and produced better than sliced bread. Hams
> respond that you didn't measure on the range properly so give me the
> math. I started off with the math which was corroberated by a doctor
> working for a space agency. Guess what? He got plastered for "poor"
> mathematics.
> This group cannot debate any thing which is why only a few dominate
> the group now. Past experts have left!So I ask you"how should this
> group be run"?
> Art

Yes, but all that is probably just a factor/side-effect of the special classes he which he was "initiated" with.

You'd be better looking for more "intellectual fields" to plant your ideas in ...

Warm regards,
JS

1037. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 06:01:03 UTC
From: art <aunwin@insightbb.com>
Message-ID: <5ae0f9af-4c5c-480a-8f37-5b2239493cb9@f10g2000hsf.googlegroups.com>
Source record: 29255

On 17 Jan, 13:30, dfi...@nc.rr.com wrote:
> On Jan 17, 2:13 pm, art <aun...@insightbb.com> wrote:
>
>
>
>
>
> > On 17 Jan, 09:51, Cecil Moore <nos...@w5dxp.com> wrote:
>
> > > art wrote:
> > > > How can one focus so long on travelling and standing waves when the
> > > > radiation portion
> > > > of the subject has not been explained? If waves is the subject it
> > > > cannot be discussed coherently if you cannot describe the mechanism of
> > > > radiation, ...
>
> > > The mechanism of radiation is pretty simple from a quantum
> > > electrodynamic standpoint. Accelerated electrons emit
> > > photons. Some of the photons escape the antenna. The
> > > energy lost by the escaping photons must be replaced
> > > by the source. QED. :-)
>
> > > Art, if you would replace electrons with photons in
> > > your blast-off theory, you will be closer to the facts.
> > > --
> > > 73, Cecil http://www.w5dxp.com
>
> > If it concentrated on
> > say, a simple parallel circuit, a very simple circuit then the
> > absolute physics of what is being discussed would be an immense help
> > in explaining this wave discussion.ARRL states that an antenna is a
> > simple parallel circuit
>
> Here is my civil response: For this discussion there is little benefit
> in using lumped component theory. The standing wave stores energy in
> an antenna in a manner similar to energy stored in an inductor and a
> capacitor in a resonant component circuit but it is not very useful to
> use lumped components when explaining why a standing wave cannot be
> used to measure delay in a coil, for example.
>
> Further questions that challenge your (and the ARRL's) simplified
> model:
>
> Is the resonant circuit dependent on the capacitance and inductance of

> the antenna or its length?
>
> If your answer is "both", (which it is), why does it happen to be
> both?
>
> Why does 1/4WL of the length of the antenna just happen to be a
> resonant point of the capacitance (in x _farads) and inductance (in y-
> henries) of the antenna?
>
> Why physically is that so? Nature is telling you something there.
>
> You should understand that concept well before you get to the
> radiation of particles (and they WILL be photons).
>
> AI4QJ
>
> but this concentration on antenna workings is
>
>
>
> > blind siding every body as well as providing a means for twisting the
> > discussion because the makings of radiation is not known.
> > Why not illustrate waves in a simple parallel circuit so that
> > observers can partake in this discussion which, if it ever comes to
> > closure, could then be used to demonstrate their effect on radiation?
> > Onlookers are more than willing to partake in the discussion but
> > presently they are on the side lines because as presented it is
> > limited to only those whose intent is to argue without obtaining
> > closure and their feeding habits are insatiable as you are finding
> > out.
> > Best regards
> > Art Unwin KB9MZ......XG- Hide quoted text -
>
> > - Show quoted text -- Hide quoted text -
>
> - Show quoted text -- Hide quoted text -
>
> - Show quoted text -

Why are you asking me all these questions?
Can't you read a book?
Why not ask an expert on Eham and then come back
armed for an arguement. At the moment you are un armed
and defenceless. By the way the money is still out there.
It is not such a large amount but it will pay for lunch
while you crow about proving me a liar or you could be crying
about how you were dethroned instead. T'was you who made
that foolish statement in the first place. Somebody stated
that they had a 160M antenna on the top of their tower which
isaparently is rediculous. Now a small amount of money is

being mentioned and now you have second thoughts.
A 160M antenna is crazy for those who believe all is known about
antennas
and you perceive yourself as an expert.What are you waiting
for,chicken wings?

1038. Re: Loop antenna question????

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 07:08:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13p0k3qkj5bvvac@corp.supernews.com>
Source record: 29256

I can only offer a couple of guesses.

Possibly the antenna is intended for receiving rather than transmitting. If that's the case, then the mismatch isn't as serious as for transmitting, although it would cause about a 6.5 dB signal loss compared to a matched antenna if connected directly to a 50 ohm receiver.

The impedances and SWR you quote aren't quite consistent. 9 + j68 ohms has an impedance magnitude of about 69 ohms, not 95. And it would result in an SWR of 15.95, not 14.8, on a 50 ohm transmission line. The MFJ calculates these from each other, so I have no explanation why you'd see contradictory values like that.

I can't comment on the balun setup except to say that the length of the transmission line loop is likely to have a significant effect on the antenna impedance.

Roy Lewallen, W7EL

WA4SZE@gmail.com wrote:
> Greetings!
>
> I picked up 2 Alford loop antennas from a ham fest. The antenna(s)
> is for 112 mhz The data plate states VOR antenna 50 ohms. The
> antenna(s) has Three N connectors one is to feed the RF from the
> transmitter the other two are connected with a 31.5 inch length of
> RG-214 coax. (the 31.5 inch coax came with the loops)
>
> I looked in the ARRL antenna hand book and it looks like the loop of
> coax is configured as a 4 to 1 step up Balun??? The ARRL hand
> book states that the Coax loop should be a electrical half wave of
> coax : The coax loop is about 5 inches short of 1/2 wave at 112 mhz
>
> When I hook up my MFJ-269 I get the following:
>
> Freq: 112 mhz
>
> RS - 9
>
> XS - 68
>
> Impedance : 95 ohms
>
> VSWR 14.8 ????????
>
> both loops have about the same readings!

>
> WHY??? They are stamped with 50 ohms ?? but they don't measure out
> to the data plate??
> Can the length of the Balun loop have effect on the VSWR of the loops
>
> What do the MFJ-269 readings tell you
>
> Thanks!!!!!
> Dave

1039. Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 07:59:37 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <J%Yjj.6125$xm1.1670@fe2.news.blueyonder.co.uk>
Source record: 29257

Hi..

I wish to build shorty dipoles for 20 and 80 meters and have considered coil loaded but dismissed them as too narrow band so i`m considering linear loading
for b/width and space ...(my garden is 14ft x 35ft)...

I find my homebrew magloops r/x very well but don`t t/x too good!!! hence the need for a larger directional ant on the rotator without encroaching on neighbours space ....(too much) .... ;o)

I have googled, but there isn`t much info available and what there is, is a little
too technical for me to take in.. :o/

Is anyone familiar with the merits (or otherwise) + information and s/ware for
designing and building said antennae ?? all help and pointers welcome.

Thanks..

Len....G6ZSG.....

1040. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 09:36:14 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <8q_jj.55641$_m.6678@bignews4.bellsouth.net>
Source record: 29258

"Dave Heil" <k8mn@frontiernet.net> wrote in message

(snip) > I have no choice but to put him down as a lonely old eccentric, a few
> degrees off level.
>
> Dave K8MN

"Judge not lest ye be judged"

I come here to learn and converse with others of similar interests. Unfortunately, the atmosphere here is very hostile and uninviting. Who the hell wants to argue all of the time? Not me.

Many of you are far more educated than I, but many of you demonstrate precisely why I chose not to be brainwashed with a formal education. Many cannot see past the end of their noses, yet they insist upon laying down the law regarding what is acceptable science and what is not. As though anyone actually knows anything at all.

Each and every day there are new announcements that reshape our scientific paradigm. Who can keep up? It was while I was trying to keep up that I finally realized that the more we learn, the more we should realize that nothing is certain. Yet the same young/old coots are in here argueing day after day that what they learned in the 1940's and 50's, 60's, 70's, 80's, 90's and now the 20's, is the Gospel Truth. I wish you could see just how silly you appear to others. I'm not pointing the finger at anyone in particular.

Let's not forget that one's educational level has nothing to do with native IQ.

Ed, NM2K

1041. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 09:38:02 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <Pr_jj.55643$_m.36266@bignews4.bellsouth.net>
Source record: 29259

"Dave Heil" <k8mn@frontiernet.net> wrote in message
news:QnUjj.2374$7d1.2181@news01.roc.ny...
> Cecil Moore wrote:
>> Mr. Jim wrote:
>>> Romney just lost my VOTE.
>>
>> I suspect any rational vote would go to Ron Paul.
>
> I see you're still doing your comedy routine, Cecil.
>
> Dave K8MN

Ron Paul. If they made a movie about Ron Paul life story,
who would you think would be the best actor to represent
him? I vote for Don Knotts, deceased though he may be.

Ed, NM2K

1042. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 12:36:43 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <v31kj.6998$xm1.768@fe2.news.blueyonder.co.uk>
Source record: 29260

"MGFoster" <me@privacy.com> wrote in message
news:13p1522o1qvkk5f@corp.supernews.com...
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I got some pretty good search results when I Googled "linear loaded
> antenna". You have to put the phrase in quotes to get best results. My
> search yielded about 193 results.

Yes, thanks i did the same with the same result except that i didn`t use
quotes .... i`ll try that anyway...
The results i got weren`t very helpfull, i did a search of this NG....

> There's an antenna called the "Cobra Junior"
> www.vk1od.net/cobra/index.htm that may be of interest.

Yes i saw that, very nice.

> Of course Cibek has a very technical discussion of various loaded
> antennas. I usually just read the last paragraph summaries to find out
> what he's driving at. www.cebik.com/gp/linvert1.html

That`s where i have problems.

> Here's a good short description of linear loading - I believe the ASCII
> graphic is accidentally end-wrapped. lists.contesting.com/_topband/2002
> 09/msg00030.html
>
> Here's a description of a portable linear loading antenna:
> http://www.io.com/~n5fc/notebk_ant.htm that seems good for moderate
> distances.

I wish to build single band dipoles not needing an atu......
I was thinking along the lines of a 28meg dipole with loading wires to 20
meters
below the main element spaced approx 6 inches as a starter, along the lines
of a
shortened vertical.......

Thanks for reply.

Cheers..

Len ....G6ZSG.......

1043. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 12:42:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <z81kj.391$hI1.9@nlpi061.nbdc.sbc.com>
Source record: 29261

Gene Fuller wrote:
> ... your long exposition above
> is not what you said previously, E*H*sin(A).

I think you know that I meant the magnitudes only,
but to be entirely technically correct it should
have been:

Poynting vector = ExH = |E|*|H|*sin(A)

The same question remains: When E and H are both
not zero, how can the Poynting vector be zero?
--
73, Cecil http://www.w5dxp.com

1044. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 12:58:06 UTC
From: Dave <noone@nowhere.com>
Message-ID: <yn1kj.6910$rG.4586@trndny02>
Source record: 29262

```
"AI4QJ" <nospam@yahoo.com> wrote in message
news:47902d0b$0$5107$4c368faf@roadrunner.com...
>
> "Tom Donaly" <dtdonaly@sbcglobal.net> wrote in message
> news:7kVjj.373$so6.348@newssvr19.news.prodigy.net...
>> AI4QJ wrote:
>>> "art" <aunwin@insightbb.com> wrote in message
>>> news:e7d00cd2-679a-427f-987e-9c15fd22a90a@j78g2000hsd.googlegroups.com...
>>>> I just looked the above title up on Google
>>>> Guess what! They show a graph of the magnetic wave
>>>> in a tipped manner which is exactly what computor programs show for a
>>>> radiator
>>>> in equilibrium. Shades of a diamagnetic field no less, which is not
>>>> the same as one seen when one uses non diamagnetic iron filings when
>>>> in junior high school.
>>>> These search engines are great since the evidence keeps piling up
>>>> where sooner or later the dam is going to break.Remember that guy who
>>>> came along with a NEC program that confirmed the tipped radiator. No
>>>> body challenged the results of NEC even when it opposed existing book
>>>> text! Why? They did not want to suggest that the books were in error
>>>> and thus would not debate the reults given independently.
>>>> Art
>>>
>>> The casual reader of the ng should realize that this insane posting is
>>> not representative of the technical background of ham radio operators.
>>
>> Nor are the posts of AI4QJ.
>
> plonk
>

at least ai4qj recognizes pure bs when he sees it.
```

1045. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 13:28:45 UTC
From: ltdoc@yahoo.com
Message-ID: <953ab415-32ca-43e7-bf7c-81859dc777a2@s19g2000prg.googlegroups.com>
Source record: 29263

You really do want to be careful about mixing politics and radio. One is based on fact, the other is based on ... I'm not sure what it's based on, to tell the truth. Then again, after reading some of the posts here, maybe they aren't all that different??
- 'Doc

1046. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 13:57:10 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <a5c979f0-ee7b-4529-951c-12de28513e24@i72g2000hsd.googlegroups.com>
Source record: 29264
Cross-posted to: rec.radio.amateur.antenna, rec.radio.amateur.digital.misc, rec.radio.amateur.equipment, rec.radio.amateur.misc

On Jan 16, 1:34 pm, "laborkei" <laborkeiNOS...@hotmail.com> wrote:
> 'I am ashamed tonight that I am a Republican!' remarked one ham radio
> viewer. '[Romney] speaks in
> derogatory tones about hams. He certainly shows an ignorance as to what we
> do and are capable of. I
> suggest a grass roots campaign of local hams calling the State House and
> The
> Governor's Office to
> protest.'

It's not ignorance - he's clearly in Motorola's back pocket, to take away whatever ham spectrum he can to give to the big communications cartels. All in the name of "emergency response", of course, but anyone who can add up a couple bandwidths knows that the real need is to give it to the cellphone companies.

The ARRL has to kind of pussyfoot around these issues because you can't have hams being against the communications cartels as long as "emergency responder radio" spectrum is their trump card.

Tim N3QE

1047. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 14:37:08 UTC
From: art <aunwin@insightbb.com>
Message-ID: <fb838224-3241-4ce2-8cff-24969b7eef70@p69g2000hsa.googlegroups.com>
Source record: 29265

On 18 Jan, 04:36, "Lee" <lo012a4...@blueyonder.co.uk> wrote:
> "MGFoster" <m...@privacy.com> wrote in message
>
> news:13p1522o1qvkk5f@corp.supernews.com...
>
> > -----BEGIN PGP SIGNED MESSAGE-----
> > Hash: SHA1
>
> > I got some pretty good search results when I Googled "linear loaded
> > antenna". You have to put the phrase in quotes to get best results. My
> > search yielded about 193 results.
>
> Yes, thanks i did the same with the same result except that i didn`t use
> quotes .... i`ll try that anyway...
> The results i got weren`t very helpfull, i did a search of this NG....
>
> > There's an antenna called the "Cobra Junior"
> >www.vk1od.net/cobra/index.htmthat may be of interest.
>
> Yes i saw that, very nice.
>
> > Of course Cibek has a very technical discussion of various loaded
> > antennas. I usually just read the last paragraph summaries to find out
> > what he's driving at. www.cebik.com/gp/linvert1.html
>
> That`s where i have problems.
>
> > Here's a good short description of linear loading - I believe the ASCII
> > graphic is accidentally end-wrapped. lists.contesting.com/_topband/2002
> > 09/msg00030.html
>
> > Here's a description of a portable linear loading antenna:
> >http://www.io.com/~n5fc/notebk_ant.htmthat seems good for moderate
> > distances.
>
> I wish to build single band dipoles not needing an atu......
> I was thinking along the lines of a 28meg dipole with loading wires to 20
> meters
> below the main element spaced approx 6 inches as a starter, along the lines
> of a
> shortened vertical.......
>
> Thanks for reply.
>

> Cheers..
>
> Len ....G6ZSG.......

LEE.
First get a hoola hoop from ASDA or a hose pipewith which you can make your own

Get a similar diameter former and wind wire on it close wound first in one direction and then reverse the windings on top of the first windings. Slide this on the hula hoop and then stretch it out like a fish net. The length of the wire must equal or exceed the wave length of the frequency required. You have two wire ends at the same point with which you can supply power. The wound wire is infact a loop circuit of its own and you can stretch it out using a MFJ 259 until you hit the sweet spot. Impedance will be around 20+ ohms which increases with the number of wavelengths used Note that the inductance is cancelled by the reverse turns and the capacitance is cancelled by the cross winding.Tho the antenna covers little area apurture is covered by gain, the loop with its inherrant gapaqcitive positioning creates an electric field that extends beyond its physical shape. You see this effect in a mobile when the audio increases as you drive by power lines and the like.
Cheers and beers
Art Unwin KB9MZ....XG (uk)

1048. Re: electro-magnetic radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 14:53:09 UTC
From: art <aunwin@insightbb.com>
Message-ID: <a09edd27-b714-441d-ab09-9b307a7071b9@s8g2000prg.googlegroups.com>
Source record: 29266

On 18 Jan, 04:58, "Dave" <no...@nowhere.com> wrote:
> "AI4QJ" <nos...@yahoo.com> wrote in message
>
> news:47902d0b$0$5107$4c368faf@roadrunner.com...
>
>
>
>
>
>
>
> > "Tom Donaly" <dtdon...@sbcglobal.net> wrote in message
> >news:7kVjj.373$so6.348@newssvr19.news.prodigy.net...
> >> AI4QJ wrote:
> >>> "art" <aun...@insightbb.com> wrote in message
> >>>news:e7d00cd2-679a-427f-987e-9c15fd22a90a@j78g2000hsd.googlegroups.com...
> >>>> I just looked the above title up on Google
> >>>> Guess what! They show a graph of the magnetic wave
> >>>> in a tipped manner which is exactly what computor programs show for a
> >>>> radiator
> >>>> in equilibrium. Shades of a diamagnetic field no less, which is not
> >>>> the same as one seen when one uses non diamagnetic iron filings when
> >>>> in junior high school.
> >>>> These search engines are great since the evidence keeps piling up
> >>>> where sooner or later the dam is going to break.Remember that guy who
> >>>> came along with a NEC program that confirmed the tipped radiator. No
> >>>> body challenged the results of NEC even when it opposed existing book
> >>>> text! Why? They did not want to suggest that the books were in error
> >>>> and thus would not debate the reults given independently.
> >>>> Art
> >
> >>> The casual reader of the ng should realize that this insane posting is
> >>> not representative of the technical background of ham radio operators.
> >
> >> Nor are the posts of AI4QJ.
> >
> > > plonk
> >
> > at least ai4qj recognizes pure bs when he sees it.- Hide quoted text -
> >
> > - Show quoted text -

David, your denial of the mathematics of adding a time varying field
to Gaussian law to make it equal to Maxwell's laws doesn't make it

change. The mathematics is there, but since you can't handle integrals you chose to deny it and accuse others of poor mathematics.I don't know where you got your mathematics teachings other than it was probably in the U.S.Let me assure you once again, the mathematics is sound, the doctor from MIT made the mathematical steps very clear to all on the group yet this group, including you, denied the integrity of the math.
The results from new math is inherrently the same as old mathematics and your BS does not cancel that fact, even tho the group followed you into that same pit.
Have a happy day.
Art Unwin KB9MZ..XG (uk)

1049. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 15:14:26 UTC
From: Harry - SM0VPO <oeieio@hotmail.com>
Message-ID: <mn3kj.2928$R_4.2140@newsb.telia.net>
Source record: 29267

>> If you are having trouble with neighbours, then make a wooden antenna
>> using brush-handles, or even a fishing pole. Let the neighbours see it
>> and make a fool of themselves when they accuse you of disturbance to
>> the TV sets. Then you can use the real antenna another day without
>> fear. ;-)

> Or get a Ham buddy to make a QSO on your station while you are over
> at the neighbors! "How can it be my station when I'm standing here in
> front of you?? hehe

Must remember that one :-)
Thanks!

1050. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 15:21:51 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fmqg6h$g93$1@aioe.org>
Source record: 29268

"art" wrote
>Tho the antenna covers little area apurture is covered by gain, the loop
>with its inherrant gapaqcitive positioning creates an electric field that
>extends beyond its physical shape. You see this effect in a mobile when the
>audio increases as you drive by
power lines and the like.

More likely it is due to the collection and re-radiation of fields by nearby conductors, so as to increase the net field arriving at the mobile antenna.

RF

1051. Re: To Harry From OP: Re: Airport Tower Comms, and My Receiving Antenna Orientation ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 15:39:08 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <d5394ddd-5a1e-49df-94f5-a818d5338053@i12g2000prf.googlegroups.com>
Source record: 29269

Wimpie wrote:
> Hello Bob,
>
> On 14 ene, 19:44, "Robert11" <rgs...@notme.com> wrote:
> > Hi Harry,
> >
> > Great explanations. Thank you.
> >
> > I will try to build your suggested antenna first chance I get. Will let you
> > know how it works out.
> > BTW: is this what's (also) called a "J Pole" ?
> >
> > Should it be pointed in any specific manner toward the source of what you
> > are trying to receive ?
> > e.g.: should a plane formed from the short & long lengths be pointed to the
> > source ?
> >
> > Q1: I have no idea how it's constructed, but what I describe as vertical,
> > the "tube" of the antenna is true up-down vertical.
> >
> > Q2: Signal is "fairly" strong; it's only the noise that makes it hard to
> > listen to when held vertically in the normal manner. Much better
> > horizontally, and vertically downward, like I mentioned.
>
> Are you sure that it is noise, is there some speech or music in the
> "noise"? It could be an intermodulation product or just overload to
> your receiver from a local FM broadcast station. See what happens
> when you listen outside. when it is interference from your own
> domestic equipment, the level should drop when outside your house.
> Many so called "wide band receivers" give problems when used with a
> good outdoor antenna.
>
> Wim
> PA3DJS
> www.tetech.nl
>
> [rest deleted]

it is not unusal for the transmiters at an airport to produce a huge
amount of interrmod. This is because you may have a dozen or more
transmitters all keying at once and their antennas are closely spaced
often only 4 to 6 ft apart. This is not usally a problem for air
traffic control because the receivers are remotely located from the

transmitters often a mile or more separating the two. On the occasion this is a problem circulators are placed on the transmitters to eliminate the intermod'

If you are a good distance from the tx site and are still experiencing an intermod probllem it is because the mixing action is taking place in your rx in instead of the transmitters.

Jimmie

Jimmie

1052. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:03:36 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <s54kj.451666$kj1.38602@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29270

```
Cecil Moore wrote:
> Gene Fuller wrote:
>> Therefore, your proof that my "Incorrect" assertion is incorrect is
>> itself incorrect.
>
> Please answer the question. It is known that
> Re(ExH*)/2 = 0 for pure standing waves all up and
> down the line. If E and H* are both non-zero, how
> can Re(ExH*)/2 be zero?

Known by whom?

If you are talking about time and/or spatial averages then yes, the
Poynting vector will be zero. If you are talking about instantaneous
calculations at any point and time, then no, the Poynting vector will
not be zero all up and down the line.

Once again you have misinterpreted something you read in a book.

73,
Gene
W4SZ
```

1053. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:04:43 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <v64kj.451671$kj1.3306@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29271

```
Cecil Moore wrote:
> Gene Fuller wrote:
>> Cecil Moore wrote:
>>> The E-field and H-field of an EM wave can certainly
>>> be represented as an exponential function when the
>>> EM wave is normal to the reference plane. Think
>>> about it. Hecht used that feature in his book.
>>
>> Totally ducking the issue, as usual.
>
> No, I'm waiting for an answer from you. It is known
> that Re(ExH*)/2=0 for pure standing waves all up
> and down the line. Since E and H* are not zero all
> up and down the line, how is that possible?

Anything is possible in your Fractured Fairytale Physics.
```

1054. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:10:05 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <xb4kj.451693$kj1.2178@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29272

Cecil Moore wrote:
> Gene Fuller wrote:
>> The phasor has nothing to do with spatial direction of the field vector.
>
> Sorry, but The IEEE Dictionary disagrees with you.
> In the description of the Poynting vector, it says:
> "E and H are the electric and magnetic field vectors
> in phasor notation ..."
>
> I have prepared a graph of a snapshot in time of
> a forward wave and reflected wave of equal magnitudes.
> When the waves are superposed at the reference plane,
> the total E-field and total H-field are 180 degrees
> out of phase. The graph is at:
>
> http://www.w5dxp.com/EHSuper.JPG

The graph is complete nonsense. There is no rotation of the fields when they undergo reflection. Any ordinary text on E&M or optics will show you the equations and the correct sketches.

You are obviously still confusing phasors and fields. More FFP.

73,
Gene
W4SZ

1055. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:22:55 UTC
From: nm5k@wt.net
Message-ID: <1589e372-d054-489b-b9b6-10930b5f4c93@s12g2000prg.googlegroups.com>
Source record: 29273

On Jan 18, 3:36 am, "Ed Cregger" <ecreg...@bellsouff.net> wrote:

> Yet the same young/old coots are in here argueing day after
> day that what they learned in the 1940's and 50's, 60's,
> 70's, 80's, 90's and now the 20's, is the Gospel Truth. I
> wish you could see just how silly you appear to others. I'm
> not pointing the finger at anyone in particular.

But on the other hand many of those theories have been tested
over and over again in all those years. If they pass the continued
test of time, I trust them more than I do bafflegab that usually
breaks these fairly well proven theories with no prior testing done
of the new theories.
I have nothing against trying new ideas, but they should at
least be tested and proven in the real world before they are
unleashed as "fact", or that I need to "recognize" something
that is obviously not the case, already proven through years of
repeated testing.
I've told Art many times... If you build it and it works, they will
come. He refuses.
When a person proclaims that they have a new theory which will
likely break the laws of older proven theory, it's that persons
obligation to prove his case, not the other way around.
And to do that requires getting off ones rear to build and test
the real deal, in the real world and letting the chips fall where
they may.
Art claims to have an 18 ft antenna for 160m on his tower,
but on the other hand he says he does not operate.
So how is he going to test it?
And if it's going to be a fair test, he needs a reference antenna.
If I claimed to have a small antenna that was equal in efficiency
to a full size antenna, I would A/B compare it to a full size
antenna.
If the chips fell in an undesirable manner, I would scrap the
thing, and move on to something else.
It's not like it would be the end of the world.
Art never gets this far. So due to a lack of actual testing, it's
like a dog chasing it's tail, while barking at the moon at the
same time.
I'm all for new ideas, and I surely know that in the history of
the world, people will likely see things much differently 200
years from now, than they do today.
That's a given..
All I'm saying is... Don't feed me a turd and call it steak,
without tasting it first. I can smell the difference in most

cases just from my own prior experiences.
If I thought a 18 ft element could equal a full size element
on 160m, you can bet I would already have one in the air.
But I know just from prior testing with just half size dipoles
using efficient Hi-Q loading coils at optimum locations, that
even they couldn't quite match up. I had to go to a "Z" dipole
to get close to full size efficiency.
So when I hear stories of small radiators wound with thin
22 gauge wire in a "to me" perverted contra wound method,
and this is supposed to be the answer to all our prayers,
please excuse me if I don't rush out to nominate Art for the
Nobel prize in physics without a little real world
demonstration. Using a real full size antenna to compare
it with would be nice.
I would expect no less from even an alien if he promised a
free lunch deal like that. Or myself for that matter.
MK

1056. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:26:50 UTC
From: art <aunwin@insightbb.com>
Message-ID: <2bd6b932-6feb-4b7b-94c8-3286d5cf7d15@c23g2000hsa.googlegroups.com>
Source record: 29274

On 18 Jan, 07:21, "Richard Fry" <r...@adams.net> wrote:
> "art" wrote>Tho the antenna covers little area apurture is covered by gain, the loop
> >with its inherrant gapaqcitive positioning creates an electric field that
> >extends beyond its physical shape. You see this effect in a mobile when the
> >audio increases as you drive by
>
> power lines and the like.
> ---------------
>
> More likely it is due to the collection and re-radiation of fields by nearby
> conductors, so as to increase the net field arriving at the mobile antenna.
>
> RF

Exactly. The antennas electrical field is larger than its physical
size.

1057. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:31:27 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmqk8q$p26$1@news.albasani.net>
Source record: 29275

Ed Cregger wrote:

> ...
> Ron Paul. If they made a movie about Ron Paul life story,
> who would you think would be the best actor to represent
> him? I vote for Don Knotts, deceased though he may be.
>
> Ed, NM2K
>
>

How about Arnold Swartz-a-negger?

Ain't much of a governor, but I think he plays one on TV. <ROFLOL>

JS

1058. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:34:09 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmqkds$p26$2@news.albasani.net>
Source record: 29276

Ed Cregger wrote:

> ...
> Ron Paul. If they made a movie about Ron Paul life story,
> who would you think would be the best actor to represent
> him? I vote for Don Knotts, deceased though he may be.
>
> Ed, NM2K
>
>

Jesse Ventura?

Not much of a governor either ... but, put him in a wrestling ring with
all the others and he shines! <ROFLOL>

JS

1059. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:38:31 UTC
From: alan.hartwell@gmail.com
Message-ID: <88003e6c-63a4-4184-9fdb-d2b27781450a@e10g2000prf.googlegroups.com>
Source record: 29277

On Jan 18, 3:36 am, "Ed Cregger" <ecreg...@bellsouff.net> wrote:
> <snip>
>
> Many of you are far more educated than I, but many of you
> demonstrate precisely why I chose not to be brainwashed with
> a formal education. Many cannot see past the end of their
> noses, yet they insist upon laying down the law regarding
> what is acceptable science and what is not. As though anyone
> actually knows anything at all.
>
> <snip>
>
> Let's not forget that one's educational level has nothing to
> do with native IQ.
>
> Ed, NM2K

You are correct to say that education has nothing to do with IQ. Faraday had little formal training, yet his arduous work is now exalted by naming one of the basic electromagnetic laws after him. But I take issue with the idea that you can't actually know anything at all. For instance, electrodynamic theory was developed 150 years ago, and the KNOWN successful results of that are numerous.

Newtonian mechanics held up well for hundreds of years. A whole industrial revolution was built on it. Yet some pesky observations by Michelson and Morley regarding the invariant speed of light found it wanting. Relativistic mechanics subsumed Newtonian mechanics, but Einstein didn't invalidate Newton. I believe the mathematical term "embedding" applies.

I am currently re-studying the original theory of Maxwell, et. al., with the intent of finding some chink in the armor. Tesla reported longitudinal electromagnetic wave phenomena, which contradicts the now-standard theory that EM waves can ONLY be transversal. Using Maxwell's original quaternion equations, before Heviside simplified them into the now-standard vector form, one can derive longitudinal wave components. If those exist, does that prove you don't know how to operate a ham radio? No, it just means you're radiating something in addition to what you expect.

You CAN know something and apply it. You just need to realize that what you know isn't complete, and never can be.

1060. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:48:37 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fmql97$244$1@aioe.org>
Source record: 29278

"art"
> Exactly. The antennas electrical field is larger
> than its physical size.

My comment concerned a mobile antenna coupling into nearby conductors.

Are you saying that this is the basis for increased gain from your 160-m, gaussian, compact, full-wave, tank circuit, tilted antenna in equilibrium?

RF

1061. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 16:59:04 UTC
From: art <aunwin@insightbb.com>
Message-ID: <d186a7f2-ff2d-4334-8648-85f1351f8494@d70g2000hsb.googlegroups.com>
Source record: 29279

On 18 Jan, 08:48, "Richard Fry" <r...@adams.net> wrote:
> "art"> Exactly. The antennas electrical field is larger
> > than its physical size.
>
> _________
>
> My comment concerned a mobile antenna coupling into nearby conductors.
>
> Are you saying that this is the basis for increased gain from your 160-m,
> gaussian, compact, full-wave, tank circuit, tilted antenna in equilibrium?
>
> RF

And what is "THIS"?

1062. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 17:16:17 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fmqmt3$7su$1@aioe.org>
Source record: 29280

> And what is "THIS"?

Rewritten to clarify for "art"

Are you saying that coupling from your 160-m, gaussian, compact, full-wave, tank circuit, tilted antenna in equilibrium into randomly located conductors near the transmit antenna is the basis for increased gain from that antenna?

Such random couplings ARE the reason for the increased signals you mentioned in your earlier statement, "You see this effect in a mobile when the audio increases as you drive by power lines and the like," and it appears you are claiming that effect to explain the performance of your 160-m, gaussian, etc, etc antenna in equilibrium.

Please explain.

RF

1063. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 17:17:03 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A297CEC9E0B6Noemailadr@208.49.80.251>
Source record: 29281

alan.hartwell@gmail.com wrote:

> I am currently re-studying the original theory of Maxwell, et.
> al., with the intent of finding some chink in the armor. Tesla
> reported longitudinal electromagnetic wave phenomena, which
> contradicts the now-standard theory that EM waves can ONLY be
> transversal. Using Maxwell's original quaternion equations, before
> Heviside simplified them into the now-standard vector form, one
> can derive longitudinal wave components. If those exist, does that
> prove you don't know how to operate a ham radio? No, it just means
> you're radiating something in addition to what you expect.

Tesla made a lot of claims to try to get money from investors. There is no evidence to support his claims of longitudinal electromagnetic waves. What kind of detector did he use? In the century or so since then, why has nobody re-discovered these waves?

You can determine the probability these waves exist with very simple logic.

The range equations for radar and deep space communication are very well established, and the radiated energy is well understood. In order to make progress on discovering longitudinal waves, you have to find some anomaly. If you could show some error in the equations where power was missing, you might be on to something. But first you have to show there really is an anomaly.

If these waves exist, where does the power come from and where does it go? What mechanism determines how the power is split between normal EM waves and longitudinal waves?

You can measure power very accurately. Signal to noise ratio is one of the most crucial parameters in satellite communication. If there were any anomalies in the range equations, someone would have discovered them long ago. And Roy would have updated his code.

You can bet on that!

Regards,

Mike Monett

1064. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 17:18:16 UTC
From: art <aunwin@insightbb.com>
Message-ID: <803de054-a0c4-406c-83ed-84ced07f34ea@s19g2000prg.googlegroups.com>
Source record: 29282

On 18 Jan, 08:38, alan.hartw...@gmail.com wrote:
> On Jan 18, 3:36 am, "Ed Cregger" <ecreg...@bellsouff.net> wrote:
>
> > <snip>
>
> > Many of you are far more educated than I, but many of you
> > demonstrate precisely why I chose not to be brainwashed with
> > a formal education. Many cannot see past the end of their
> > noses, yet they insist upon laying down the law regarding
> > what is acceptable science and what is not. As though anyone
> > actually knows anything at all.
>
> > <snip>
>
> > Let's not forget that one's educational level has nothing to
> > do with native IQ.
>
> > Ed, NM2K
>
> You are correct to say that education has nothing to do with IQ.
> Faraday had little formal training, yet his arduous work is now
> exalted by naming one of the basic electromagnetic laws after him. But
> I take issue with the idea that you can't actually know anything at
> all. For instance, electrodynamic theory was developed 150 years ago,
> and the KNOWN successful results of that are numerous.
>
> Newtonian mechanics held up well for hundreds of years. A whole
> industrial revolution was built on it. Yet some pesky observations by
> Michelson and Morley regarding the invariant speed of light found it
> wanting. Relativistic mechanics subsumed Newtonian mechanics, but
> Einstein didn't invalidate Newton. I believe the mathematical term
> "embedding" applies.
>
> I am currently re-studying the original theory of Maxwell, et. al.,
> with the intent of finding some chink in the armor. Tesla reported
> longitudinal electromagnetic wave phenomena, which contradicts the now-
> standard theory that EM waves can ONLY be transversal. Using Maxwell's
> original quaternion equations, before Heviside simplified them into
> the now-standard vector form, one can derive longitudinal wave
> components. If those exist, does that prove you don't know how to
> operate a ham radio? No, it just means you're radiating something in
> addition to what you expect.
>
> You CAN know something and apply it. You just need to realize that

> what you know isn't complete, and never can be.

The chink is provided by Gauss.Adding a time varient to his law of statics brings you to
Maxwells law Holding on to the equilibrium underpinnings you may then insert a radiator that also is in equilibrium i.e. a full wave length. Now you are equipped to insert same into a antenna program to determine shape ,size,elevation e.t.c for maximum horizontal gain. Maxwells law will then show that to meet this requirement is for the radiator to not be parallel to the ground surface but tipped to an angle. This angle is the summation of the curl vector and others that are entailed.Gauss following from the Newtonian aproach of equilibrium provides a pasaage of knoweledge that was not available in the blank statements of Maxwell.
All this provides a picture which equals a thousand words and a sound basis to build upon.
The understanding of this aproach has been stalled with this newsgroup on the basis of transformation of static field to a dynamic field is illegal, regardless of the math proving otherwise! Facts are stranger than the fiction of this group.
Have fun with your studies.
Art Unwin KB9MZ...xg (uk)

1065. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 17:20:24 UTC
From: art <aunwin@insightbb.com>
Message-ID: <d23d9985-45fe-4a32-8952-38c72b994d4e@f47g2000hsd.googlegroups.com>
Source record: 29283

On 18 Jan, 09:16, "Richard Fry" <r...@adams.net> wrote:
> > And what is "THIS"?
>
> ----------
>
> Rewritten to clarify for "art"
>
> Are you saying that coupling from your 160-m, gaussian, compact, full-wave,
> tank circuit, tilted antenna in equilibrium into randomly located conductors
> near the transmit antenna is the basis for increased gain from that antenna?
>
> Such random couplings ARE the reason for the increased signals you mentioned
> in your earlier statement, "You see this effect in a mobile when the audio
> increases as you drive by power lines and the like," and it appears you are
> claiming that effect to explain the performance of your 160-m, gaussian,
> etc, etc antenna in equilibrium.
>
> Please explain.
>
> RF

No.I do not carry telephone poles on my vehical.What strange thinking

1066. Re: Energy and Work

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 17:34:02 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ien1p3p3d8gbbt8c8a6g3s5rrs6ts0ehfd@4ax.com>
Source record: 29284

On Fri, 18 Jan 2008 07:22:48 -0500, Chuck <nospam@nospam.at.all>
wrote:

>Thanks for the response, Richard.

Hi Chuck,

You're welcome.

>I had consulted Feynman's Volumes I and II prior to posting and saw
>nothing there to support the idea that an EM wave performs work in
>moving through a region of free space. Hence, my original post.

It is also noteworthy that electrons don't exhibit much friction
either. (Feynman is particularly interesting in regard to friction
too.)

73's
Richard Clark, KB7QHC

1067. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 17:41:18 UTC
From: art <aunwin@insightbb.com>
Message-ID: <f38c3df1-836d-4558-80f1-0b60b216602f@q77g2000hsh.googlegroups.com>
Source record: 29285

On 18 Jan, 09:17, Mike Monett <N...@email.adr> wrote:
> alan.hartw...@gmail.com wrote:
>
> > I am currently re-studying the original theory of Maxwell, et.
> > al., with the intent of finding some chink in the armor. Tesla
> > reported longitudinal electromagnetic wave phenomena, which
> > contradicts the now-standard theory that EM waves can ONLY be
> > transversal. Using Maxwell's original quaternion equations, before
> > Heviside simplified them into the now-standard vector form, one
> > can derive longitudinal wave components. If those exist, does that
> > prove you don't know how to operate a ham radio? No, it just means
> > you're radiating something in addition to what you expect.
>
> Tesla made a lot of claims to try to get money from investors. There
> is no evidence to support his claims of longitudinal electromagnetic
> waves. What kind of detector did he use? In the century or so since
> then, why has nobody re-discovered these waves?
>
> You can determine the probability these waves exist with very simple
> logic.
>
> The range equations for radar and deep space communication are very
> well established, and the radiated energy is well understood. In
> order to make progress on discovering longitudinal waves, you have
> to find some anomaly. If you could show some error in the equations
> where power was missing, you might be on to something. But first you
> have to show there really is an anomaly.
>
> If these waves exist, where does the power come from and where does
> it go? What mechanism determines how the power is split between
> normal EM waves and longitudinal waves?
>
> You can measure power very accurately. Signal to noise ratio is one
> of the most crucial parameters in satellite communication. If there
> were any anomalies in the range equations, someone would have
> discovered them long ago. And Roy would have updated his code.
>
> You can bet on that!
>
> Regards,
>
> Mike Monett

Roy's program is nothing more than a calculator.
It is not equipped with computor analytical skills such as an
optimizer where the computor searches for possible changes to the
imput to determine maximum required results .
As a calculator you insert the math question and the calculator
provides the result
A computor optimizer does exactly what the title suggests, it works
for you in search of a better arrangement that you supplied so you may
determine an optimum solution for the inputted request. None tell you
that thematerial used must be diamagnetic so just use aluminum or
copper
and you will be O.K. As far as purchasing a computor program there are
choices out there that are not so basic.
Art
Art

1068. Re: Hazel Park (MI) ARC Swap January 20

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 17:42:08 UTC
From: budapest@hungary.net
Message-ID: <4790e4ca.1066421@news.motzarella.org>
Source record: 29286
Cross-posted to: rec.radio.amateur.swap,rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,rec.radio.cb

On Thu, 17 Jan 2008 19:43:00 -0500, Mike <kc2ftn@arrl.net> wrote:

> You're not firing on all cylinders tonight, are you? My question, is
>since it wasn't originally posted in all these groups, why the last
>moron, felt it was necessary to suddenly cross-post his response to
>everyone.
>
>
>Zoltan wrote:
>> On Thu, 17 Jan 2008 12:22:59 -0500, Mike <kc2ftn@arrl.net> wrote:
>>
>>> How did this thread go from rec.radio.swap and
>>> rec.radio.amateur.boatanchors to suddenly being posted into all of these
>>> other groups?
>>>
>>>
>> Duh . It is called cross posting.
>>
>>
>>
>> ZOLTAN say man who have head up ass, have shitty outlook on life.
>>
>
The real question is why do YOU keep cross posting this crap Mikey?

--
ZOLTAN say I can lead a fool to wisdom, but I can't make him think.

1069. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:04:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <HS5kj.1219$nK5.596@nlpi069.nbdc.sbc.com>
Source record: 29287

Gene Fuller wrote:
> Once again you have misinterpreted something you read in a book.

Once again, you have refused to answer a simple question.
If E and H are not zero, how can ExH be zero?
--
73, Cecil http://www.w5dxp.com

1070. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:07:54 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <_V5kj.145828$MJ6.102319@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29288

Cecil Moore wrote:
> Gene Fuller wrote:
>> Once again you have misinterpreted something you read in a book.
>
> Once again, you have refused to answer a simple question.
> If E and H are not zero, how can ExH be zero?

What is this? The RRAA version of "When did you stop beating your wife?"

1071. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:12:43 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmqsb4eqj1@news.service.uci.edu>
Source record: 29292

Dave wrote:
> "Jim Kelley" <jwkelley@uci.edu> wrote in message
> news:fmjjth$pq7$1@news.service.uci.edu...
>
>>
>>Cecil Moore wrote:
>>
>>
>>>If an EM wave exists, it's
>>>Poynting vector is ExM. The energy in that individual wave *must*
>>>be conserved. If that energy is not conserved, the conservation
>>>of energy principle is violated.
>>
>>When a wave is canceled, there is no wave. Therefore there can be no
>>energy associated with that wave. If there is energy, then it must be
>>associated with a wave that is not canceled. Same thing is true when I
>>have candy. If it's not in my left hand, then it must be in my right
>>hand. It's all very profound.
>>
>
>
> but you can neither create nor destroy energy, so it can't just be
> 'canceled' it has to be either converted to some other form of energy or go
> somewhere else... it can't just disappear.

Hi Dave -

I think most people here are already quite aware of that. To what
energy do you specifically refer?

ac6xg

1072. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:15:20 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmqsg5eqj2@news.service.uci.edu>
Source record: 29296

Cecil Moore wrote:

> Jim Kelley wrote:
>
>>
>> Cecil Moore wrote:
>>
>>> Since the standing wave energy is being used to transform
>>> impedances, it cannot also be used for radiation purposes -
>>> like the energy in a standing wave on a transmission line
>>> cannot be used both to transform impedances and to heat
>>> up a load.
>>
>>
>> Would you care to elaborate on the idea that "energy is being used to
>> transform impedances"?
>
>
> If reflections are nonexistent, no transformation takes
> place, i.e. there is no SWR circle, just a point at the
> center of the Smith Chart and the system is flat.
>
> If reflections exist, then the superposition of the
> forward wave and reflected wave transforms the
> load impedance to some other impedance on the SWR
> circle.
>
> A 1/4WL transformer, for instance, will not transform
> unless there are reflections present.

1073. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:18:11 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fmqqh5$ke5$1@aioe.org>
Source record: 29289

"art" wrote:
> No.I do not carry telephone poles on my vehical.

But aren't you claiming the effects you noted for a mobile antenna near other conductors for your 160-m, time-variant Gaussian, diamagnetic, cosmic-particle-levitating, compact, full-wave, tank circuit, tilted antenna in equilibrium that you have described as installed on top of a short tower in your back yard?

BTW, do you have means to change the tilt of your antenna when you want to get best coverage in various different directions?

RF

1074. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:24:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <utp1p3p855441ipupviam4bcf3krqgogii@4ax.com>
Source record: 29291

On Fri, 18 Jan 2008 07:59:37 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
wrote:

>I find my homebrew magloops r/x very well but don`t t/x too good!!! hence
>the need for a larger directional ant on the rotator without encroaching on
>neighbours space ....(too much) .... ;o)

Hi Lee,

I presume you mean by maploops, those that are only a meter or so in diameter. You need a larger loop for 80M. A simple one turn with plenty of surface area and low Ohmic contacts is preferred as anything more complex invites massive loss.

The law with small antennas is their Radiation Resistance in relation to their Ohmic Resistance. Most would grab some #12 wire and shrug it off without a thought. That lack of thought generates calories in heat. Some would add wire turns, the proximity of them merely multiplies the heat, not the signal.

Either way the tune up seems great, but the results are miserable (no doubt the source of your statement above). A good low band loop will have a sharp tuning (narrow bandwidth). A poor low band loop will appear to exhibit a great SWR for a broad bandwidth, You can test this yourself with almost no effort at all.

Let's take that one meter diameter loop that is available from several commercial outlets, and instead build it your self with house wire (#12). The Radiation Resistance in the 80M band will be 528 millionths of an Ohm, Copper loss will be 16 thousandths of an Ohm (not counting skin effect) - we still haven't computed connection issues. Already, your copper loss is thirty times the radiation resistance - I will let you delve into the issues of efficiency.

Doubling that loop diameter will double the copper loss to 32 thousandths of an Ohm, but what happens to Radiation Resistance? It now runs more to 8 thousandths of an Ohm. The ratio has dropped from 30:1 to 4:1 in this doubling of size - even when the resistance of the wire grew, the Radiation Resistance grew faster. Efficiency increases dramatically.

Increase the loop size and use a larger conductor.

73's
Richard Clark, KB7QHC

1075. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:25:05 UTC
From: art <aunwin@insightbb.com>
Message-ID: <b5519dcf-f8d4-44a5-ad90-98da8fd102ae@d70g2000hsb.googlegroups.com>
Source record: 29290

On 18 Jan, 10:18, "Richard Fry" <r...@adams.net> wrote:
> "art" wrote:
> > No.I do not carry telephone poles on my vehical.
>
> --------
>
> But aren't you claiming the effects you noted for a mobile antenna near
> other conductors for your 160-m, time-variant Gaussian, diamagnetic,
> cosmic-particle-levitating, compact, full-wave, tank circuit, tilted antenna
> in equilibrium that you have described as installed on top of a short tower
> in your back yard?
>
> BTW, do you have means to change the tilt of your antenna when you want to
> get best coverage in various different directions?
>
> RF

No. I have a radio in my Mercedes and I can tune to the local radio
stations for the music.
Yes I have a a motor like the ones used on dishes.I put in on just as
the snow started to fly
and in my haste altered the antenna some what. In the spring I will
correct that plus wire up
the rotator and tilt mechanism. Why all the questions? As one of the
adjudicators on this group
that determine all that is correct and all that is not you have
identified all that I do as a failure so why the pursuit?

1076. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:27:07 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmqt6j$g0l$1@news.service.uci.edu>
Source record: 29200

Cecil Moore wrote:

> Jim Kelley wrote:
>
>>
>> Cecil Moore wrote:
>>
>>> Since the standing wave energy is being used to transform
>>> impedances, it cannot also be used for radiation purposes -
>>> like the energy in a standing wave on a transmission line
>>> cannot be used both to transform impedances and to heat
>>> up a load.
>>
>>
>> Would you care to elaborate on the idea that "energy is being used to
>> transform impedances"?
>
>
> If reflections are nonexistent, no transformation takes
> place, i.e. there is no SWR circle, just a point at the
> center of the Smith Chart and the system is flat.

> If reflections exist, then the superposition of the
> forward wave and reflected wave transforms the
> load impedance to some other impedance on the SWR
> circle.
>
> A 1/4WL transformer, for instance, will not transform
> unless there are reflections present.

You fail to explain how any of that makes energy unavailable for
"radiation purposes".

ac6xg

1077. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:52:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lz6kj.33753$4V6.23166@newssvr14.news.prodigy.net>
Source record: 29293

Gene Fuller wrote:
> The graph is complete nonsense. There is no rotation of the fields when
> they undergo reflection. Any ordinary text on E&M or optics will show
> you the equations and the correct sketches.

Good grief, Gene. There is a 360 degree rotation in the fields
every wavelength. The direction of rotation is associated with
the direction of travel of the wave and is displayed by EZNEC
when the current phase option is turned on. All you have to
do to see the rotation of the traveling wave is to download
http://www.w5dxp.com/rhombicT.EZ

Those simplified sketches are making you simple-minded.
Assuming you are a member of the IEEE, look up this paper:
"Rotation in electromagnetic field equations". Or Google
"Rotation and the Electromagnetic Field".

"Optics", by Hecht, is one of your ordinary texts. That is
where the material for that graph comes from. The IEEE Dictionary
says: "E and H are the electric and magnetic field vectors in
phasor notation". If that graph is nonsense to you, it is your
fault, not mine.

Hecht says "Optics", 4th edition, page 289, about standing waves:

"The composite disturbance is then:

E = Eo[sin(kx+wt) + sin(kx-wt)]

Applying the identity:

sin A + sin B = 2 sin 1/2(A+B)*cos 1/2(A-B)

yields:

E(x,t) = 2*Eo*sin(kx)*cos(wt)"

"This is the equation for a STANDING or STATIONARY WAVE, as opposed
to a traveling wave. Its profile does not move through space; it is
clearly not of the form Func(x +/- vt)."

"... a phasor rotating counterclockwise at a rate omega is equivalent
to a wave traveling to the left (decreasing x), and similarly, one
rotating clockwise corresponds to a wave traveling to the right
(increasing x)."

Hecht uses phasors to represent EM waves all through his book.
He explains the standing wave E-field based on the two traveling

waves, E1-field and E2-field, thusly:

"The resultant phasor is E1 + E2 = E ... Keeping the two [traveling wave] phasors tip-to-tail and having E1 rotate counterclockwise as E2 rotates (at the same rate) clockwise, generates E [total] as a function of 't'."

[Standing wave phase] "doesn't rotate at all, and the resultant wave it represents doesn't progress through space - its a standing wave."

Traveling wave phase rotates. Standing wave phase doesn't.

Speaking of "... net transfer of energy, for the pure standing wave there is none."

The forward wave and reflected wave E-field and H-field vectors are represented by phasors just as indicated in the IEEE Dictionary. One is rotating clockwise and the other is rotating counterclockwise. The Poynting vector for a pure standing wave is equal to zero just as illustrated in my graph at: http://www.w5dxp.com/EHSuper.JPG Given those boundary conditions and solving for the angle between the standing wave E-field and H-field yields 0 or 180 degrees.

Are you really more interested in presenting false information and saving face than you are in valid technical facts?
--
73, Cecil http://www.w5dxp.com

1078. Re: Hazel Park (MI) ARC Swap January 20

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:55:33 UTC
From: Mike <kc2ftn@arrl.net>
Message-ID: <4790f629$0$4989$4c368faf@roadrunner.com>
Source record: 29294
Cross-posted to: rec.radio.amateur.swap,rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,rec.radio.cb

In reply to you.

ZOLTAN wrote:
> On Thu, 17 Jan 2008 19:43:00 -0500, Mike <kc2ftn@arrl.net> wrote:
>
>> You're not firing on all cylinders tonight, are you? My question, is
>> since it wasn't originally posted in all these groups, why the last
>> moron, felt it was necessary to suddenly cross-post his response to
>> everyone.
>>
>>
>> Zoltan wrote:
>>> On Thu, 17 Jan 2008 12:22:59 -0500, Mike <kc2ftn@arrl.net> wrote:
>>>
>>>> How did this thread go from rec.radio.swap and
>>>> rec.radio.amateur.boatanchors to suddenly being posted into all of these
>>>> other groups?
>>>>
>>>>
>>> Duh . It is called cross posting.
>>>
>>>
>>>
>>> ZOLTAN say man who have head up ass, have shitty outlook on life.
>>>
> The real question is why do YOU keep cross posting this crap Mikey?
>
>
>
>
>
>
> --
> ZOLTAN say I can lead a fool to wisdom, but I can't make him think.

1079. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 18:58:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RF6kj.33756$4V6.19205@newssvr14.news.prodigy.net>
Source record: 29295

Gene Fuller wrote:
> Cecil Moore wrote:
>> Once again, you have refused to answer a simple question.
>> If E and H are not zero, how can ExH be zero?
>
> What is this? The RRAA version of "When did you stop beating your wife?"

No, this is the RRAA version of someone unwilling to accept
technical facts. Your name is Legion.
--
73, Cecil http://www.w5dxp.com

1080. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 19:03:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nK6kj.33757$4V6.1175@newssvr14.news.prodigy.net>
Source record: 29297

Jim Kelley wrote:
> I think most people here are already quite aware of that. To what energy
> do you specifically refer?

Probably the wave energy that you say never existed.
But you have never provided an example of waves
that can exist without energy.

Set the FSU flash example to 180 degrees out of
phase and please explain conceptually where the
energy in those two waves goes when they
superpose to zero in a transmission line.

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index.html
--
73, Cecil http://www.w5dxp.com

1081. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 19:06:08 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmqvh0$i54$1@news.service.uci.edu>
Source record: 29203

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> I think most people here are already quite aware of that. To what
>> energy do you specifically refer?
>
>
> Probably the wave energy that you say never existed.

So unless somebody can point to the energy that is "in" waves which don't exist, then I will have to stick with the idea that there is no energy to be associated with waves that don't exist. To me it is the only logical way to look at it, even though I may be subject to abuse from crackpots. ;-)

ac6xg

1082. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 19:38:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <te7kj.40174$Pv2.11775@newssvr23.news.prodigy.net>
Source record: 29201

Jim Kelley wrote:
> You fail to explain how any of that makes energy unavailable for
> "radiation purposes".

This is not rocket science. If the energy is being used to
transform impedances, it is obviously unavailable to be lost
as radiation. If all the forward energy is radiated by the
antenna, there exists no impedance transformation in the
transmission line. A highly technical quote must be needed:

"You can't have your energy cake and eat it too." :-)
--
73, Cecil http://www.w5dxp.com

1083. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 19:47:16 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <8n7kj.452547$kj1.63198@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29202

Cecil Moore wrote:
> Gene Fuller wrote:
>> The graph is complete nonsense. There is no rotation of the fields
>> when they undergo reflection. Any ordinary text on E&M or optics will
>> show you the equations and the correct sketches.
>
> Good grief, Gene. There is a 360 degree rotation in the fields
> every wavelength. The direction of rotation is associated with
> the direction of travel of the wave and is displayed by EZNEC
> when the current phase option is turned on. All you have to
> do to see the rotation of the traveling wave is to download
> http://www.w5dxp.com/rhombicT.EZ
>
> Those simplified sketches are making you simple-minded.
> Assuming you are a member of the IEEE, look up this paper:
> "Rotation in electromagnetic field equations". Or Google
> "Rotation and the Electromagnetic Field".
>
> "Optics", by Hecht, is one of your ordinary texts. That is
> where the material for that graph comes from. The IEEE Dictionary
> says: "E and H are the electric and magnetic field vectors in
> phasor notation". If that graph is nonsense to you, it is your
> fault, not mine.
>
> Hecht says "Optics", 4th edition, page 289, about standing waves:
>
> "The composite disturbance is then:
>
> E = Eo[sin(kx+wt) + sin(kx-wt)]
>
> Applying the identity:
>
> sin A + sin B = 2 sin 1/2(A+B)*cos 1/2(A-B)
>
> yields:
>
> E(x,t) = 2*Eo*sin(kx)*cos(wt)"
>
> "This is the equation for a STANDING or STATIONARY WAVE, as opposed
> to a traveling wave. Its profile does not move through space; it is
> clearly not of the form Func(x +/- vt)."
>
> "... a phasor rotating counterclockwise at a rate omega is equivalent
> to a wave traveling to the left (decreasing x), and similarly, one

> rotating clockwise corresponds to a wave traveling to the right
> (increasing x)."
>
> Hecht uses phasors to represent EM waves all through his book.
> He explains the standing wave E-field based on the two traveling
> waves, E1-field and E2-field, thusly:
>
> "The resultant phasor is E1 + E2 = E ... Keeping the two [traveling
> wave] phasors tip-to-tail and having E1 rotate counterclockwise as
> E2 rotates (at the same rate) clockwise, generates E [total] as a
> function of 't'."
>
> [Standing wave phase] "doesn't rotate at all, and the resultant
> wave it represents doesn't progress through space - its a standing
> wave."
>
> Traveling wave phase rotates. Standing wave phase doesn't.
>
> Speaking of "... net transfer of energy, for the pure standing
> wave there is none."
>
> The forward wave and reflected wave E-field and H-field vectors
> are represented by phasors just as indicated in the IEEE Dictionary.
> One is rotating clockwise and the other is rotating counterclockwise.
> The Poynting vector for a pure standing wave is equal to zero just
> as illustrated in my graph at: http://www.w5dxp.com/EHSuper.JPG
> Given those boundary conditions and solving for the angle between
> the standing wave E-field and H-field yields 0 or 180 degrees.
>
> Are you really more interested in presenting false information
> and saving face than you are in valid technical facts?

Cecil,

This is truly sad. I thought you had finally begun to understand this stuff, but you have regressed back into the same old nonsense. You are still totally confusing phasors with field vectors. They are utterly, totally, and absolutely unrelated.

Get help.

Call me what you like. Bye.

73,
Gene
W4SZ

1084. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 19:50:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Vp7kj.36588$JD.20903@newssvr21.news.prodigy.net>
Source record: 29204

Gene Fuller wrote:
> Any ordinary text on E&M or optics will show
> you the equations and the correct sketches.

Please stop staring at your simple-minded sketches
and stare at this diagram of an EM wave for awhile.
Maybe you are due for an epiphany.

http://www.w5dxp.com/EHWave.JPG
--
73, Cecil http://www.w5dxp.com

1085. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 19:53:13 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmr2avkqv1@news.service.uci.edu>
Source record: 29222

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> You fail to explain how any of that makes energy unavailable for
>> "radiation purposes".
>
>
> This is not rocket science.

Or any other kind of science for that matter.

> If the energy is being used to
> transform impedances, it is obviously unavailable to be lost
> as radiation.

Sure, assuming energy is being "used" to perform an operation in which
no work is done. You'll need to prove the first part of the sentence
in order to show the second part to be true.

ac6xg

1086. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 19:55:20 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmr2f0kqv2@news.service.uci.edu>
Source record: 29221

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> So unless somebody can point to the energy that is "in" waves which
>> don't exist, then I will have to stick with the idea that there is no
>> energy to be associated with waves that don't exist.
>
>
> Jim, here is the s-parameter equation for the waves that
> you assert don't exist.
>
> b1 = s11*a1 + s12*a2 = 0
>
> s11*a1 is not zero. s12*a2 is not zero. How you can assert
> that they don't exist is really strange.

Perhaps I just understand the meaning of zero better than you do?

ac6xg

1087. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 19:56:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cw7kj.40176$Pv2.30754@newssvr23.news.prodigy.net>
Source record: 29205

Jim Kelley wrote:
> So unless somebody can point to the energy that is "in" waves which
> don't exist, then I will have to stick with the idea that there is no
> energy to be associated with waves that don't exist.

Jim, here is the s-parameter equation for the waves that
you assert don't exist.

b1 = s11*a1 + s12*a2 = 0

s11*a1 is not zero. s12*a2 is not zero. How you can assert
that they don't exist is really strange. Not only do they
exist but the HP apnote 95-1 even tells us that the power
associated with them is |s11*a1|^2 and |s12*a2|^2. You will
find that the powers obey the power density (irradiance)
equation from the field of optical physics.
--
73, Cecil http://www.w5dxp.com

1088. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:02:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KB7kj.36589$JD.15003@newssvr21.news.prodigy.net>
Source record: 29206

Gene Fuller wrote:
> This is truly sad. I thought you had finally begun to understand this
> stuff, but you have regressed back into the same old nonsense. You are
> still totally confusing phasors with field vectors. They are utterly,
> totally, and absolutely unrelated.

Saying that doesn't make it true, Gene, although it may hoodwink
some of the uninitiated into believing your old wives' tales.

I just posted a more sophisticated diagram of an EM wave for
you at: http://www.w5dxp.com/EHWave.JPG

Have those simple-minded sketches that you have been staring
at made you simple-minded or are you capable of something else?
--
73, Cecil http://www.w5dxp.com

1089. Re: BPL draws more media attention ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:06:13 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmr0rgpte1@news.albasani.net>
Source record: 29207

John Smith wrote:
> John Smith I wrote:
>> http://www.itbusinessedge.com/blogs/cip/?p=170
>>
>> Regards,
>> JS
>
> http://www.eetimes.com/news/semi/showArticle.jhtml?articleID=202400285
>
> Regards,
> JS

India steps further forward, pushing the USA further towards 3rd world
status ... :-(

http://www.expresscomputeronline.com/20080121/technology01.shtml

JS

1090. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:08:08 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmr0v3pte2@news.albasani.net>
Source record: 29208

alan.hartwell@gmail.com wrote:

> ...
> You are correct to say that education has nothing to do with IQ.
> Faraday had little formal training, yet his arduous work is now
> exalted by naming one of the basic electromagnetic laws after him.
>> ...

Amen, end of story ...

Regards,
JS

1091. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:09:14 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmr115pte3@news.albasani.net>
Source record: 29209

John Smith wrote:
> alan.hartwell@gmail.com wrote:
>
>> ...
>> You are correct to say that education has nothing to do with IQ.
>> Faraday had little formal training, yet his arduous work is now
>> exalted by naming one of the basic electromagnetic laws after him.
> >> ...
>
> Amen, end of story ...
>
> Regards,
> JS

Oh yeah, don't forget Einstein--his "teachers" thought him slow and
retarded!

Regards,
JS

1092. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:09:25 UTC
From: art <aunwin@insightbb.com>
Message-ID: <84a9ff9c-b062-468f-b374-b7aaaf34de25@i29g2000prf.googlegroups.com>
Source record: 29210

On 18 Jan, 10:52, Cecil Moore <nos...@w5dxp.com> wrote:
> Gene Fuller wrote:
> > The graph is complete nonsense. There is no rotation of the fields when
> > they undergo reflection. Any ordinary text on E&M or optics will show
> > you the equations and the correct sketches.
>
> Good grief, Gene. There is a 360 degree rotation in the fields
> every wavelength. The direction of rotation is associated with
> the direction of travel of the wave and is displayed by EZNEC
> when the current phase option is turned on. All you have to
> do to see the rotation of the traveling wave is to
downloadhttp://www.w5dxp.com/rhombicT.EZ
>
> Those simplified sketches are making you simple-minded.
> Assuming you are a member of the IEEE, look up this paper:
> "Rotation in electromagnetic field equations". Or Google
> "Rotation and the Electromagnetic Field".
>
> "Optics", by Hecht, is one of your ordinary texts. That is
> where the material for that graph comes from. The IEEE Dictionary
> says: "E and H are the electric and magnetic field vectors in
> phasor notation". If that graph is nonsense to you, it is your
> fault, not mine.
>
> Hecht says "Optics", 4th edition, page 289, about standing waves:
>
> "The composite disturbance is then:
>
> E = Eo[sin(kx+wt) + sin(kx-wt)]
>
> Applying the identity:
>
> sin A + sin B = 2 sin 1/2(A+B)*cos 1/2(A-B)
>
> yields:
>
> E(x,t) = 2*Eo*sin(kx)*cos(wt)"
>
> "This is the equation for a STANDING or STATIONARY WAVE, as opposed
> to a traveling wave. Its profile does not move through space; it is
> clearly not of the form Func(x +/- vt)."
>
> "... a phasor rotating counterclockwise at a rate omega is equivalent
> to a wave traveling to the left (decreasing x), and similarly, one

> rotating clockwise corresponds to a wave traveling to the right
> (increasing x)."
>
> Hecht uses phasors to represent EM waves all through his book.
> He explains the standing wave E-field based on the two traveling
> waves, E1-field and E2-field, thusly:
>
> "The resultant phasor is E1 + E2 = E ... Keeping the two [traveling
> wave] phasors tip-to-tail and having E1 rotate counterclockwise as
> E2 rotates (at the same rate) clockwise, generates E [total] as a
> function of 't'."
>
> [Standing wave phase] "doesn't rotate at all, and the resultant
> wave it represents doesn't progress through space - its a standing
> wave."
>
> Traveling wave phase rotates. Standing wave phase doesn't.
>
> Speaking of "... net transfer of energy, for the pure standing
> wave there is none."
>
> The forward wave and reflected wave E-field and H-field vectors
> are represented by phasors just as indicated in the IEEE Dictionary.
> One is rotating clockwise and the other is rotating counterclockwise.
> The Poynting vector for a pure standing wave is equal to zero just
> as illustrated in my graph at:http://www.w5dxp.com/EHSuper.JPG
> Given those boundary conditions and solving for the angle between
> the standing wave E-field and H-field yields 0 or 180 degrees.
>
> Are you really more interested in presenting false information
> and saving face than you are in valid technical facts?
> --
> 73, Cecil http://www.w5dxp.com

Cecil,
Just a small question.
Do you include in your analysis of E and H waves
the effect of the field produced by a diamagnetic field produced by
current flow in the material, where the field has a tendency to be at
right angles? This is what PROF Hately was looking to do on his EH
invention without understanding the importance of the material used in
generating the fields in question.
Best regards
Art Unwin KB9MZ...xg

1093. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:12:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NK7kj.40177$Pv2.29730@newssvr23.news.prodigy.net>
Source record: 29211

John Smith wrote:
> Oh yeah, don't forget Einstein--his "teachers" thought him slow and
> retarded!

My high school algebra teacher accused me of cheating
because I could factor third-degree polynomials in
my head and she couldn't. :-)
--
73, Cecil http://www.w5dxp.com

1094. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:15:43 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmr1dapte4@news.albasani.net>
Source record: 29212
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc

Tim Shoppa wrote:

>> ...
> The ARRL has to kind of pussyfoot around these issues because you
> can't have hams being against the communications cartels as long as
> "emergency responder radio" spectrum is their trump card.
>
> Tim N3QE

Everyone I know, who is "cutting edge", is ~1Ghz+. My 100W Ghz amp is unbelievable--I am now constructing the 1KW (and I am telling you, there ARE major design/construction problems to deal with!)--dreaming about 4KW!

HF is just too-too ...

Regards,
JS

1095. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:15:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <PN7kj.40180$Pv2.21568@newssvr23.news.prodigy.net>
Source record: 29213

art wrote:
> Do you include in your analysis of E and H waves
> the effect of the field produced by a diamagnetic field produced by
> current flow in the material, ...

Nope, I tend to ignore effects that I judge to be secondary.
Of course, I don't even pretend to exercise perfect judgment.
--
73, Cecil http://www.w5dxp.com

1096. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:18:45 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmr1j0pte5@news.albasani.net>
Source record: 29214

Cecil Moore wrote:

> ...
> My high school algebra teacher accused me of cheating
> because I could factor third-degree polynomials in
> my head and she couldn't. :-)

Cecil:

I attempted to avoid this point, where you now have me.

Believe me man, you are a "cut above"--and it IS noticeable! But then,
you have the br*ss b*lls to stand 'yer ground, something I admire also ...

Warmest regards,
JS

1097. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:24:47 UTC
From: "alan.hartwell@gmail.com" <alan.hartwell@gmail.com>
Message-ID: <868eab3c-73d4-44c6-a00c-2d1c6f06ae9a@e6g2000prf.googlegroups.com>
Source record: 29215

On Jan 18, 11:17 am, Mike Monett <N...@email.adr> wrote:

> You can determine the probability these waves exist with very simple
> logic.
>
> The range equations for radar and deep space communication are very
> well established, and the radiated energy is well understood. In
> order to make progress on discovering longitudinal waves, you have
> to find some anomaly. If you could show some error in the equations
> where power was missing, you might be on to something. But first you
> have to show there really is an anomaly.

I'll be the first to admit there doesn't appear to be much probability for longitudinal waves, since there seems to be no convincing empirical evidence. But, as with Michelson and Morley, who LOGICALLY thought that light should travel at a slower speed against the aether, maybe we just haven't been doing the right observation. Current theory says longitudinal waves can't happen, so nobody seriously looks for them or thinks to attribute any potential anomaly to them. We might have a case of circular reasoning. Besides, practical antennas are designed for transverse far-fields, so I don't expect they would produce much in the way of longitudinal waves, which may be a near-field phenomena.

The quaternion development of EM theory implies that charge divergence is one source of longitudinal waves. That happens along the axis of antenna conductors, but I doubt the efficiency of conversion, assuming there is any, would be very high. Another theoretical source of longitudinal waves come from high rate of change electric fields. Tesla's inventions exhibited both sources. His pancake coils created high current divergence, albeit in a spiral pattern. And his high voltage spark discharge devices created exceedingly high rates of change of voltage.

Where would the power come from for longitudinal waves? If I can't use regular electricity, I'm holding out for conversion of zero-point energy or direct mass-energy conversion. Yeah, I know, more crackpot long shots.

I'll need something to do in retirement other than the wife's housework. I read that mental challenges help stave off Alzheimer's. You can't beat this for a challenge. Or maybe this falling down this rabbit hole of kookism is the onset of Alzheimer's. Hmm. Hadn't thought of that before.

1098. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:25:24 UTC
From: art <aunwin@insightbb.com>
Message-ID: <47e1813b-1a1f-4882-8ab7-236b9e3151fd@e23g2000prf.googlegroups.com>
Source record: 29216

On 18 Jan, 12:15, Cecil Moore <nos...@w5dxp.com> wrote:
> art wrote:
> > Do you include in your analysis of E and H waves
> > the effect of the field produced by a diamagnetic field produced by
> > current flow in the material, ...
>
> Nope, I tend to ignore effects that I judge to be secondary.
> Of course, I don't even pretend to exercise perfect judgment.
> --
> 73, Cecil http://www.w5dxp.com

But when adding vectors as I see it there is no secondary vectors,
which in this case
says both vectors are in phase no less.I thought I would probe a bit
in this long
thread to ascertain where the controversy is. To understand that alone
in the face of thousand postings is a very difficult task indeed.Even
more so for a mechanical engineer
Very best regards
Art

1099. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:31:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <M08kj.36592$JD.1707@newssvr21.news.prodigy.net>
Source record: 29217

alan.hartwell@gmail.com wrote:
> But, as with Michelson and Morley, who LOGICALLY
> thought that light should travel at a slower speed against the aether,
> maybe we just haven't been doing the right observation.

Light does travel at a slower speed against the aether
but relativity changes the length of a second when going
against the aether so it is undetectable.
--
73, Cecil http://www.w5dxp.com

1100. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:33:13 UTC
From: dfinn1@nc.rr.com
Message-ID: <94ef690b-e53c-46b1-89fb-5f657b88486a@d70g2000hsb.googlegroups.com>
Source record: 29218

On Jan 18, 12:44 am, art <aun...@insightbb.com> wrote:
> On 17 Jan, 20:44, "AI4QJ" <nos...@yahoo.com> wrote:
>
>
>
>
>
> > "art" <aun...@insightbb.com> wrote in message
>
> >news:c06c401f-5d3e-4967-9ef5-77fa43a32004@m34g2000hsf.googlegroups.com...
> > On 17 Jan, 18:25, "AI4QJ" <nos...@yahoo.com> wrote:
>
> > > "art" <aun...@insightbb.com> wrote in message
>
> > > >news:1af37bea-6b11-4a5e-a25f-afd83cf3c493@l1g2000hsa.googlegroups.com...
>
> > > > >your whole posting is just silly. First you accuse me of lieing now
> > > > >you want to provoke me with stupidity. You need to upgrade to a
> > > > >understanding of a tank circuit.Yes, it is used in your transmitter.
> > > > >Google it and study it. Free speech is great but it also reveals your
> > > > >mentality. And you are just bull shiting in the absence of knoweledge."
>
> > > > OK art, I notice a great improvement in your having only 3 spelling errors
> > > > in 5 sentences. You are a fool. If your postings could ever be elevated to
> > > > the level of mere stupidity, then it might be possible to correct your
> > > > misconceptions. However, one cannot deal with true insanity by any
> > > > rational
> > > > approach such as that. You do not drive me to use Google; you drive me to
> > > > dictionary.com so I can find the words appropriate to describe the idiocy
> > > > of
> > > > your ravings. However, it isn't worth the effort so I will leave you mired
> > > > in your intellectual wasteland, reading your postings from time to time
> > > > for
> > > > the entertainment value of comic relief. For the sake of the hobby I will
> > > > continue point out the fairy-tale nature of your postings lest the casual
> > > > reader of this newsgroup ever get the wrong impression of what the typical
> > > > ham radio operator thinks is antenna "theory".
>
> > > >AI4QJ
>
> > > :No, I am not going to insult you,
>
> > > I'm sure you have had you fill of hurling insults at me tonite. Just part of
> > > the entertainment.

>
> > :your own actions show what manner of:
> > :man you are.
>
> > Pot Kettle Black
>
> > Tell me how a 1/4W tank circuit in my transmitter works, art.
>
> >AI4QJ- Hide quoted text -
>
> > - Show quoted text -
>
> You have one in your transmitter and you don't know how it works so
> you ask me.
> Why? You can ask KB9..... or the MI5. If you cross post they will get
> back to you.
> I promise.They miss you. Maybe one of the above is actually you!- Hide quoted text -
>
> - Show quoted text -

So you found out that I have a 1/4 wave tank circuit in my
transmitter. Only the MI5 could have known that. Hmmm...

1101. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:33:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <H28kj.36594$JD.12841@newssvr21.news.prodigy.net>
Source record: 29219

art wrote:
> To understand that alone
> in the face of thousand postings is a very difficult task indeed.Even
> more so for a mechanical engineer

When I drive across a long bridge, I am trusting that
most mechanical engineers don't have a problem with
vectors. :-)
--
73, Cecil http://www.w5dxp.com

1102. keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:36:01 UTC
From: "Juan M." <jdmollanNOSPAMPLEASE@juno.com>
Message-ID: <wLmdnTTKd4AkkAzanZ2dnUVZ_u2mnZ2d@centurytel.net>
Source record: 29220
Cross-posted to: alt.radio.amateur,news.misc.radio.amateur.antenna,rec.radio.amateur.antenna

A problem seeking a solution.

I live in a wooded area of the Pacific Northwest with dozens of fir trees of 100 ft or more in height that make wonderful supports for high dipoles and other wire antennas. These particular trees have very few limbs at anything below the 60 ft level so using a crossbow or slingshot for installation is not practical. I have been forced to employ a professional tree climber to install the eyebolts and halyards. Using this system, the antennas can be raised and lowered for maintenance or modification.

This system works fine until our winter storms kick in. Often, during those storms, a tree will lose a limb or two and take the antenna down with it. I am then left with a halyard tied to an insulator 50 ft or more above the ground with no way to get the insulator back down short of hiring another costly climber.

Does anyone have any solutions to this problem?

73,

John

AE7P

1103. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:43:27 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmr31apte8@news.albasani.net>
Source record: 29223

Cecil Moore wrote:

> ...
> When I drive across a long bridge, I am trusting that
> most mechanical engineers don't have a problem with
> vectors. :-)

Yeah, used to be that way in California--last earthquake destroyed
that--maybe you heard about it? :-D

Regards,
JS

1104. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:56:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Gn8kj.36596$JD.975@newssvr21.news.prodigy.net>
Source record: 29224

Jim Kelley wrote:
> Sure, assuming energy is being "used" to perform an operation in which
> no work is done. You'll need to prove the first part of the sentence in
> order to show the second part to be true.

Your ignorance is showing, Jim. It takes absolutely no work to
transform impedances because those impedances are virtual and
meet the IEEE Dictionary definition (B) for "impedance" which
requires zero work.

It might be better to say the reflected energy is performing
a "function" which requires no work (possibly a lot like being
a physics professor). :-)
--
73, Cecil http://www.w5dxp.com

1105. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:58:22 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fmr3te$18r0$1@f04n12.cac.psu.edu>
Source record: 29225

```
Cecil Moore wrote:
> art wrote:
>> To understand that alone
>> in the face of thousand postings is a very difficult task indeed.Even
>> more so for a mechanical engineer
>
> When I drive across a long bridge, I am trusting that
> most mechanical engineers don't have a problem with
> vectors. :-)

Amazing! I'm watching the time stamp on these missiles... erm..
missives, and you guys are almost in chat mode!

Respectfully, y'all ought to step back an catch yer collective breaths! ;^)

- 73 de Mike N3LI -
```

1106. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 20:58:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Yp8kj.36597$JD.31821@newssvr21.news.prodigy.net>
Source record: 29226

Jim Kelley wrote:
>> s11*a1 is not zero. s12*a2 is not zero. How you can assert
>> that they don't exist is really strange.
>
> Perhaps I just understand the meaning of zero better than you do?

OTOH, perhaps not. If my bank balance is zero, does that
mean there have been zero debits and zero credits over
the entire previous month?
--
73, Cecil http://www.w5dxp.com

1107. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 21:01:58 UTC
From: art <aunwin@insightbb.com>
Message-ID: <5e16dc46-362f-4830-97b4-d9f5be9b8bea@d21g2000prf.googlegroups.com>
Source record: 29227

On 18 Jan, 12:33, Cecil Moore <nos...@w5dxp.com> wrote:
> art wrote:
> > To understand that alone
> > in the face of thousand postings is a very difficult task indeed.Even
> > more so for a mechanical engineer
>
> When I drive across a long bridge, I am trusting that
> most mechanical engineers don't have a problem with
> vectors. :-)
> --
> 73, Cecil http://www.w5dxp.com

No Cedcil I don't have a problem with vectors but apparently those
that follow the sciences of electricity do. From time memorial
electrical engineers have used iron filings to determine
the field lines of an inductor. Yet at the same time we do NOT use a
ferrous material for antennas.Thus when using E and H in radiation
calculations one must determine the the phases of both that are
applicable to the material used. Where the books of old place the EH
vector at the pont of radiation as 90 degrees to each other this can
only be seen as representitive of a ferrous field, where as, a
diamagnetic field vector is exactly the phase of the electric field
vector, putting aside for the moment the "curl" vector. When
considering a radiative circuit one must fully understand that the
current creating the field
is the instant expiration of a capacitor. When a inductance accepts
such energy to generate its field one must determine the material used
to ascertain the true shape of the field. It is no coincidence that a
diamagnetic field is noted for its levitation properties that a
ferrous material cannot supply.So instead of accepting formulae where
a magnetic field is assumed to be consistant the same for all
materials for all materials one must understand that this assumption
is not correct even tho it has consumed the sciences of today which
has forced the generation of the new sciences of the day. It is time
the books were redwritten to reflect the true workings of nature
around which Newtons laws still stands.
My two penny worth from a mechanical engineer.
Best regards as always
Art Unwin KB9MZ....XG(uk)

1108. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 21:05:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <mw8kj.36599$JD.7958@newssvr21.news.prodigy.net>
Source record: 29228

Michael Coslo wrote:
> Amazing! I'm watching the time stamp on these missiles... erm..
> missives, and you guys are almost in chat mode!

What is even more amazing is that someone in CA can
reply to my TX posting before I posted it. :-)

Reminds me of a tale. A guy in Abilene, TX was taking
a bus to Hobbs, NM. It left at 12:00 and got there
at 12:10. When asked if he wanted a ticket, the guy
replied, "No, but if you don't mind, I'd like to watch
that sucker dig out when it leaves."
--
73, Cecil http://www.w5dxp.com

1109. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 21:06:58 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <Sx8kj.2419$7d1.923@news01.roc.ny>
Source record: 29229

Ed Cregger wrote:
> "Dave Heil" <k8mn@frontiernet.net> wrote in message
>
> (snip) > I have no choice but to put him down as a lonely
> old eccentric, a few
>> degrees off level.
>>
>> Dave K8MN
>
>
> -------------
>
>
> "Judge not lest ye be judged"

I don't mind being judged, Ed, as long as you don't mind being judged. :-)

> I come here to learn and converse with others of similar
> interests.

Many of us come for the same reason. A number actually are quite
expert. Those are the fellows from whom I learn.

> Unfortunately, the atmosphere here is very
> hostile and uninviting. Who the hell wants to argue all of
> the time? Not me.

You're right, Ed. A number of those who are hostile are experts. Most
are not.

> Many of you are far more educated than I, but many of you
> demonstrate precisely why I chose not to be brainwashed with
> a formal education.

If that's your view, I think I can see why you might have had difficulties.

> Many cannot see past the end of their
> noses, yet they insist upon laying down the law regarding
> what is acceptable science and what is not. As though anyone
> actually knows anything at all.

Is it your opinion that no one here knows anything at all?

> Each and every day there are new announcements that reshape
> our scientific paradigm. Who can keep up?

There's always someone who can keep up, Ed. You'll find a number of
them here.

> It was while I was
> trying to keep up that I finally realized that the more we
> learn, the more we should realize that nothing is certain.

I might have to take issue with that. I can think of a number of certainties. You don't believe there are any?

> Yet the same young/old coots are in here argueing day after
> day that what they learned in the 1940's and 50's, 60's,
> 70's, 80's, 90's and now the 20's, is the Gospel Truth.

What's your position, Ed? If nothing regarding antennas is true, we're all wasting our time here.

> I
> wish you could see just how silly you appear to others. I'm
> not pointing the finger at anyone in particular.

Though you responded to my comments regarding one who never provides any details of his peculiar theories.

> Let's not forget that one's educational level has nothing to
> do with native IQ.

...but a crackpot is generally a crackpot, whatever his IQ or educational level. A great deal of useful information may be found here. It is accompanied by a great deal of misinformation. Do you know how to separate the wheat from the chaff?

Dave K8MN

>
> Ed, NM2K
>
>

1110. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 21:07:53 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <Jy8kj.2420$7d1.1816@news01.roc.ny>
Source record: 29230

Ed Cregger wrote:
> "Dave Heil" <k8mn@frontiernet.net> wrote in message
> news:QnUjj.2374$7d1.2181@news01.roc.ny...
>> Cecil Moore wrote:
>>> Mr. Jim wrote:
>>>> Romney just lost my VOTE.
>>> I suspect any rational vote would go to Ron Paul.
>> I see you're still doing your comedy routine, Cecil.
>>
>> Dave K8MN
>
> ------------
>
> Ron Paul. If they made a movie about Ron Paul life story,
> who would you think would be the best actor to represent
> him? I vote for Don Knotts, deceased though he may be.

I see that you *do* know how to separate the wheat from the chaff.

Dave K8MN

1111. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 21:20:23 UTC
From: Dave <noone@nowhere.com>
Message-ID: <rK8kj.25$uB6.10@trndny05>
Source record: 29231

"Michael Coslo" <mjc5@psu.edu> wrote in message
news:fmr3te$18r0$1@f04n12.cac.psu.edu...
> Cecil Moore wrote:
>> art wrote:
>>> To understand that alone
>>> in the face of thousand postings is a very difficult task indeed.Even
>>> more so for a mechanical engineer
>>
>> When I drive across a long bridge, I am trusting that
>> most mechanical engineers don't have a problem with
>> vectors. :-)
>
> Amazing! I'm watching the time stamp on these missiles... erm.. missives,
> and you guys are almost in chat mode!
>
> Respectfully, y'all ought to step back an catch yer collective breaths!
> ;^)
>
> - 73 de Mike N3LI -

Thats what would be fun! a #rraa irc chat channel! just think of the real
time discussions that could go on there!!

1112. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 21:25:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pP8kj.432$hI1.11@nlpi061.nbdc.sbc.com>
Source record: 29232

Gene Fuller wrote:
> This is truly sad. I thought you had finally begun to understand this
> stuff, but you have regressed back into the same old nonsense. You are
> still totally confusing phasors with field vectors. They are utterly,
> totally, and absolutely unrelated.

Gene, in order to alleviate your ignorance on this subject,
I have come up with a lecture:

http://au.youtube.com/watch?v=0PI82Z7exIs&feature=PlayList&p=1CE5B4FFFA997E5D&index=37

It is titled: "Lecture-38-Phasor Form of Poynting Theorem" - enjoy!
--
73, Cecil http://www.w5dxp.com

1113. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 21:42:15 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ls62p3l1n2dfs8mgobqu1hsbtfr9dpvnif@4ax.com>
Source record: 29233
Cross-posted to: alt.radio.amateur,news.misc.radio.amateur.antenna,rec.radio.amateur.antenna

On Fri, 18 Jan 2008 12:36:01 -0800, "Juan M."
<jdmollanNOSPAMPLEASE@juno.com> wrote:

>This system works fine until our winter storms kick in. Often, during those
>storms, a tree will lose a limb or two and take the antenna down with it. I
>am then left with a halyard tied to an insulator 50 ft or more above the
>ground with no way to get the insulator back down short of hiring another
>costly climber.
>
>Does anyone have any solutions to this problem?

Hi John,

From Rain City (Seattle). I did this in a Maple forest. I did mine
with pulleys top and bottom with a continuous loop like a flag pole. I
then passed up another pulley on that loop for the runner holding the
wire antenna. Then I made sure it would break at the wire connection,
not the rope. The continuous loop always gave me access to the pulley
that the antenna rope passed through. I used a two liter bottle of
water to ballast and tension the wire pulley system.

Think FUSE. Choose your point of failure, don't let it happen.

73's
Richard Clark, KB7QHC

1114. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 22:17:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KA9kj.1182$EZ3.160@nlpi070.nbdc.sbc.com>
Source record: 29234

Cecil Moore wrote:
> http://au.youtube.com/watch?v=0PI82Z7exIs&feature=PlayList&p=1CE5B4FFFA997E5D&index=37
> It is titled: "Lecture-38-Phasor Form of Poynting Theorem" - enjoy!

Wow! I never thought I would ever see this information outside
of a university lecture. There are a number of these lectures
available. Anyone who is serious about this subject line should
avail themselves of the considerable technical knowledge contained
in these lectures.
--
73, Cecil http://www.w5dxp.com

1115. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 22:37:19 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmrc5l$1ji$1@news.service.uci.edu>
Source record: 29236

Cecil Moore wrote:
> Jim Kelley wrote:
>
>>> s11*a1 is not zero. s12*a2 is not zero. How you can assert
>>> that they don't exist is really strange.
>>
>>
>> Perhaps I just understand the meaning of zero better than you do?
>
>
> OTOH, perhaps not. If my bank balance is zero, does that
> mean there have been zero debits and zero credits over
> the entire previous month?

Nope. Keep trying though. You'll get it if you really put your mind
to it.

ac6xg

1116. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 22:38:36 UTC
From: richardharrison@webtv.net
Message-ID: <15148-47912A6C-480@storefull-3254.bay.webtv.net>
Source record: 29235

Art, KB9MZ.......XG wrote:
"ARRL states that an antenna is a simple parallel circuit but this
concentration on antenna workings is blind siding --------."

Stop right there. The type of resonant circuit depends upon length and
construction of the antenna. My 20th edition of The ARRL Antenna Book
says on page 2-6:
"Near its half-wave resonant frequency, a center-fed lamba/2 dipole
exhibits much the same characteristics as
a coventonal series-resonant circuit."

Best regards, Richard Harrison, KB5WZI

1117. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 22:39:12 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fmrc97$1ji$2@news.service.uci.edu>
Source record: 29237

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> Sure, assuming energy is being "used" to perform an operation in which
>> no work is done. You'll need to prove the first part of the sentence
>> in order to show the second part to be true.
>
>
> Your ignorance is showing, Jim. It takes absolutely no work to
> transform impedances because those impedances are virtual and
> meet the IEEE Dictionary definition (B) for "impedance" which
> requires zero work.

:-) No work means no power, and no ________. See if you can fill in
the blank.

ac6xg

1118. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 23:39:16 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fmrdb4$k2s$1@aioe.org>
Source record: 29238

"art" wrote
> ... Why all the questions? As one of the adjudicators on this group
> that determine all that is correct and all that is not you have
> identified all that I do as a failure so why the pursuit?

To give you, and others in your camp the chance to recognize how your unsupported/unproven beliefs appear to those having specific education and knowledge based on the proven results of many decades of antenna design, and the many decades of proven, practical experience with such designs.

RF

1119. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-18 23:45:22 UTC
From: k6me <k6me@roadrunner.com>
Message-ID: <479139ce$0$4984$4c368faf@roadrunner.com>
Source record: 29239
Cross-posted to: alt.radio.amateur,news.misc.radio.amateur.antenna,rec.radio.amateur.antenna

I live near Lake Tahoe and tree limbs are not the only problem so like Richard I use 3" HD closed pulleys running 1/4" Nylon rope to my end insulators and a 8x8x16" cement block at the bottom of each end for tension. Have found that good quality 12 GA Copper Clad steel wire is all but impossible to break. It might sag but get the Snow, Ice or Limb off and back up it goes.
BTW: I have used a wrist-rocket/slingshot and spinning reel to shoot accurately over limbs or the tops of 200' Pines.
Good Luck. K6ME

1120. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 00:07:51 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <efa77951-70de-4c7b-9517-b1c7dc8a1204@f47g2000hsd.googlegroups.com>
Source record: 29240

On Jan 19, 8:39 am, "Richard Fry" <r...@adams.net> wrote:
> "art" wrote> ... Why all the questions? As one of the adjudicators on this group
> > that determine all that is correct and all that is not you have
> > identified all that I do as a failure so why the pursuit?
>
> --------
>
> To give you, and others in your camp the chance to recognize how your
> unsupported/unproven beliefs appear to those having specific education and
> knowledge based on the proven results of many decades of antenna design, and
> the many decades of proven, practical experience with such designs.
>
> RF

Hi Richard

Are we to take it you regard Art's claim's for his 160m antenna
to be a fraud?

Derek

1121. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 00:16:51 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmrfhdiot1@news.albasani.net>
Source record: 29241

Cecil Moore wrote:
> Cecil Moore wrote:
>> http://au.youtube.com/watch?v=0PI82Z7exIs&feature=PlayList&p=1CE5B4FFFA997E5D&index=37
>> It is titled: "Lecture-38-Phasor Form of Poynting Theorem" - enjoy!
>
> Wow! I never thought I would ever see this information outside
> of a university lecture. There are a number of these lectures
> available. Anyone who is serious about this subject line should
> avail themselves of the considerable technical knowledge contained
> in these lectures.

Cecil:

Excellent! find ...

Thanks,
JS

1122. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 00:19:03 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmrfliiot2@news.albasani.net>
Source record: 29242

Michael Coslo wrote:

> ...
> Amazing! I'm watching the time stamp on these missiles... erm..
> missives, and you guys are almost in chat mode!
>
> Respectfully, y'all ought to step back an catch yer collective breaths! ;^)
>
> - 73 de Mike N3LI -

Yeah, I just bet.

But we are seeing the "mirror image" of that. It amazes us that someone
is so stupid as to use a usenet host which is slower than the postal system!

JS

1123. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 00:22:25 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmrfrriot3@news.albasani.net>
Source record: 29243

art wrote:

>> ...
> Art Unwin KB9MZ....XG(uk)

Sounds to me there is a "crack under the door" and the light coming
through is suggesting ether has NOT the properties of iron ...

Regards,
JS

1124. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 00:25:41 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmrg20iot4@news.albasani.net>
Source record: 29244

Dave Heil wrote:

> ...
> I see that you *do* know how to separate the wheat from the chaff.
>
> Dave K8MN

From time to time I have wondered why some seem just "damn dense."
That single sentence explained it all ...

JS

1125. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 00:27:28 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmrg5aiot5@news.albasani.net>
Source record: 29245

Dave Heil wrote:

>> ...
> ...but a crackpot is generally a crackpot, whatever his IQ or
> educational level. A great deal of useful information may be found
> here. It is accompanied by a great deal of misinformation. Do you know
> how to separate the wheat from the chaff?
>
> Dave K8MN
>
>>
>> Ed, NM2K
>>

Yeah, stop dropping chaff in my damn wheat! <ROFLOL>

JS

1126. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 00:57:05 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <Sv2dnWxBcs5B1wzanZ2dnUVZ_uGknZ2d@comcast.com>
Source record: 29246
Cross-posted to: alt.radio.amateur,news.misc.radio.amateur.antenna,rec.radio.amateur.antenna

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:ls62p3l1n2dfs8mgobqu1hsbtfr9dpvnif@4ax.com...
> On Fri, 18 Jan 2008 12:36:01 -0800, "Juan M."
> <jdmollanNOSPAMPLEASE@juno.com> wrote:
>
>>This system works fine until our winter storms kick in. Often, during
>>those
>>storms, a tree will lose a limb or two and take the antenna down with it.
>>I
>>am then left with a halyard tied to an insulator 50 ft or more above the
>>ground with no way to get the insulator back down short of hiring another
>>costly climber.
>>
>>Does anyone have any solutions to this problem?
>
> Hi John,
>
> From Rain City (Seattle). I did this in a Maple forest. I did mine
> with pulleys top and bottom with a continuous loop like a flag pole. I
> then passed up another pulley on that loop for the runner holding the
> wire antenna. Then I made sure it would break at the wire connection,
> not the rope. The continuous loop always gave me access to the pulley
> that the antenna rope passed through.

Just be sure the two ropes coming off the pulley don't gett tangled up with
each other. Mine did

>I used a two liter bottle of
> water to ballast and tension the wire pulley system.
>

This also works. As the tree sways back and forth, you don't want the wire
to keep moving. I brought the fixed end of the rope some distance from the
tree, and fastened it to half of a cinder block laying on the ground. The
cinder block will move to give you slack, but not move back when the branch
moves in the other direction.

Tam/WB2TT
> Think FUSE. Choose your point of failure, don't let it happen.
>
> 73's
> Richard Clark, KB7QHC

1127. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 03:33:56 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47916fa2$0$18417$4c368faf@roadrunner.com>
Source record: 29247

"Richard Fry" <rfry@adams.net> wrote in message
news:fmqqh5$ke5$1@aioe.org...
> "art" wrote:
>> No.I do not carry telephone poles on my vehical.
> --------
>
> But aren't you claiming the effects you noted for a mobile antenna near
> other conductors for your 160-m, time-variant Gaussian, diamagnetic,
> cosmic-particle-levitating, compact, full-wave, tank circuit, tilted
> antenna in equilibrium that you have described as installed on top of a
> short tower in your back yard?
>
> BTW, do you have means to change the tilt of your antenna when you want to
> get best coverage in various different directions?

It appears that we have reached a Eureka moment: The secret for the mysterious increase in gain of the 160-m, time-variant Gaussian, diamagnetic, cosmic-particle-levitating, compact, full-wave, tank circuit, tilted antenna in equilibrium that has been described as allegedly installed on top of a short tower has been uncovered. Such gain might be optimized by rotating the the 160-m, time-variant Gaussian, diamagnetic, cosmic-particle-levitating, compact, full-wave, tank circuit, tilted antenna in equilibrium to a sweet spot in the vicinity of the randomly located conductors that increases the efficiency of the coupling. Great detective work Richard. Downside is that we will have to wait a little bit longer for someone else to solve the unified field theory.

1128. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 04:37:42 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <q8fkj.2448$7d1.1442@news01.roc.ny>
Source record: 29248

John Smith wrote:
> Dave Heil wrote:
>
>> ...
>> I see that you *do* know how to separate the wheat from the chaff.
>>
>> Dave K8MN
>
> From time to time I have wondered why some seem just "damn dense." That
> single sentence explained it all ...

I've never thought you "damn dense", but I'm glad if I've helped you
with one of your problems, "John".

Dave K8MN

1129. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 04:45:38 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <Sffkj.2451$7d1.2231@news01.roc.ny>
Source record: 29249

John Smith wrote:
> Dave Heil wrote:
>
> >> ...
>> ...but a crackpot is generally a crackpot, whatever his IQ or
>> educational level. A great deal of useful information may be found
>> here. It is accompanied by a great deal of misinformation. Do you
>> know how to separate the wheat from the chaff?
>
>
> Yeah, stop dropping chaff in my damn wheat! <ROFLOL>

I've yet to advance any claims for an astounding new concept in the field of antennas, "John". I'm always interested in the theoretical. Most of my knowledge of antennas is in the practical. I don't feel as if you are one who could teach me anything I don't already know on the subject.

My exposure to you here and elsewhere reveals you to be an anonymous fellow who boasts of 5KW amplifiers and of using high power on the Citizens Band. You claim to be a teacher of some sort, but your English skills are at the high school level and your knowledge of punctuation is minimal.

Dave K8MN

1130. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 04:50:52 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <Mkfkj.2326$Sa1.1689@news02.roc.ny>
Source record: 29150

Tam wrote:
>
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:ls62p3l1n2dfs8mgobqu1hsbtfr9dpvnif@4ax.com...
>> On Fri, 18 Jan 2008 12:36:01 -0800, "Juan M."
>> <jdmollanNOSPAMPLEASE@juno.com> wrote:
>>
>>> This system works fine until our winter storms kick in. Often,
>>> during those
>>> storms, a tree will lose a limb or two and take the antenna down with
>>> it. I
>>> am then left with a halyard tied to an insulator 50 ft or more above the
>>> ground with no way to get the insulator back down short of hiring
>>> another
>>> costly climber.
>>>
>>> Does anyone have any solutions to this problem?
>>
>> Hi John,
>>
>> From Rain City (Seattle). I did this in a Maple forest. I did mine
>> with pulleys top and bottom with a continuous loop like a flag pole. I
>> then passed up another pulley on that loop for the runner holding the
>> wire antenna. Then I made sure it would break at the wire connection,
>> not the rope. The continuous loop always gave me access to the pulley
>> that the antenna rope passed through.
>
> Just be sure the two ropes coming off the pulley don't gett tangled up
> with each other. Mine did
>
> >I used a two liter bottle of
>> water to ballast and tension the wire pulley system.
>>
>
> This also works. As the tree sways back and forth, you don't want the
> wire to keep moving. I brought the fixed end of the rope some distance
> from the tree, and fastened it to half of a cinder block laying on the
> ground. The cinder block will move to give you slack, but not move back
> when the branch moves in the other direction.

I've often used window sash weights. There isn't much call for 'em
these days and they can often be found at yard sales and flea markets
for next to nothing. If you can't find them, try using a quart milk
carton filled with concrete mix. After you've filled the container with

the concrete, place a large fender washer on the end of a three or four inch long eye bolt, add a nut and stick it in the concrete. A pencil through the eye will hold it in position until the concrete cures.

Afterward, it is simple to peel away the waxed paper carton. The concrete can be painted some neutral color.

Dave K8MN

1131. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 05:10:18 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <01b0d928-40d9-4600-ab28-d255749633c4@t1g2000pra.googlegroups.com>
Source record: 29151

On Jan 18, 3:36 pm, "Juan M." <jdmollanNOSPAMPLE...@juno.com> wrote:
> A problem seeking a solution.
>
> I live in a wooded area of the Pacific Northwest with dozens of fir trees of
> 100 ft or more in height that make wonderful supports for high dipoles and
> other wire antennas. These particular trees have very few limbs at anything
> below the 60 ft level so using a crossbow or slingshot for installation is
> not practical. I have been forced to employ a professional tree climber to
> install the eyebolts and halyards. Using this system, the antennas can be
> raised and lowered for maintenance or modification.
>
> This system works fine until our winter storms kick in. Often, during those
> storms, a tree will lose a limb or two and take the antenna down with it. I
> am then left with a halyard tied to an insulator 50 ft or more above the
> ground with no way to get the insulator back down short of hiring another
> costly climber.
>
> Does anyone have any solutions to this problem?

Install continuous loops through all your pulleys rather than
"halyards". Hauling one side of the loop hoists the insulator and
hauling the other side of the loop brings it back down to where you
can work on it. Regardless of the condition or fates of wires
suspended between pulleys.

An aside you might check out: Really nice pulleys:

http://www.harkenstore.com/uniface.urd/SCCYSPW1

w3rv

1132. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 05:42:25 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <070b30ae-4b37-4f9b-87be-2181dc82a6f7@s8g2000prg.googlegroups.com>
Source record: 29152

On Jan 19, 12:10 am, Brian Kelly <ke...@dvol.com> wrote:
> On Jan 18, 3:36 pm, "Juan M." <jdmollanNOSPAMPLE...@juno.com> wrote:
>
>
>
> > A problem seeking a solution.
>
> > I live in a wooded area of the Pacific Northwest with dozens of fir trees of
> > 100 ft or more in height that make wonderful supports for high dipoles and
> > other wire antennas. These particular trees have very few limbs at anything
> > below the 60 ft level so using a crossbow or slingshot for installation is
> > not practical. I have been forced to employ a professional tree climber to
> > install the eyebolts and halyards. Using this system, the antennas can be
> > raised and lowered for maintenance or modification.
>
> > This system works fine until our winter storms kick in. Often, during those
> > storms, a tree will lose a limb or two and take the antenna down with it. I
> > am then left with a halyard tied to an insulator 50 ft or more above the
> > ground with no way to get the insulator back down short of hiring another
> > costly climber.
>
> > Does anyone have any solutions to this problem?
>
> Install continuous loops through all your pulleys rather than
> "halyards". Hauling one side of the loop hoists the insulator and
> hauling the other side of the loop brings it back down to where you
> can work on it. Regardless of the condition or fates of wires
> suspended between pulleys.
>
> An aside you might check out: Really nice pulleys:
>
> http://www.harkenstore.com/uniface.urd/SCCYSPW1

FUBAR'd link. Sorry.

Try | http://www.harkenstore.com
>catalog
>small boat blocks
>classic blocks
>bullet blocks
>See #082,098,166,183

w3rv

1133. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 06:01:47 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fms3o5lvj1@news.albasani.net>
Source record: 29153

Dave Heil wrote:
> John Smith wrote:
>> Dave Heil wrote:
>>
>>> ...
>>> I see that you *do* know how to separate the wheat from the chaff.
>>>
>>> Dave K8MN
>>
>> From time to time I have wondered why some seem just "damn dense."
>> That single sentence explained it all ...
>
> I've never thought you "damn dense", but I'm glad if I've helped you
> with one of your problems, "John".
>
> Dave K8MN

Well, it was a bit of an over-statement ... you are far from dense ...
sometimes just too cynical for your own good.

Regards,
JS

1134. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 06:03:14 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fms3qslvj2@news.albasani.net>
Source record: 29154

Dave Heil wrote:

> ...
> I've yet to advance any claims for an astounding new concept in the
> field of antennas, "John". I'm always interested in the theoretical.
> Most of my knowledge of antennas is in the practical. I don't feel as
> if you are one who could teach me anything I don't already know on the
> subject.
>
> My exposure to you here and elsewhere reveals you to be an anonymous
> fellow who boasts of 5KW amplifiers and of using high power on the
> Citizens Band. You claim to be a teacher of some sort, but your English
> skills are at the high school level and your knowledge of punctuation is
> minimal.
>
> Dave K8MN
>

Ahh, Dave, you wear me out ...

Regards,
JS

1135. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 06:08:55 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fms45i$n7o$1@news.albasani.net>
Source record: 29155
Cross-posted to: alt.radio.amateur,news.misc.radio.amateur.antenna,rec.radio.amateur.antenna

Tam wrote:

> ...
> This also works. As the tree sways back and forth, you don't want the
> wire to keep moving. I brought the fixed end of the rope some distance
> from the tree, and fastened it to half of a cinder block laying on the
> ground. The cinder block will move to give you slack, but not move back
> when the branch moves in the other direction.
>
> Tam/WB2TT
>> Think FUSE. Choose your point of failure, don't let it happen.
>>
>> 73's
>> Richard Clark, KB7QHC
>

A couple of decades ago, I experimented with the "cylinder" (don't know the correct term for it) from a screen door. This is the device which allows the door to be opened quickly and then to close slowly. There is an adjustment on it which allows this action to be speeded/slowed. I remember that I ended up with 3 or four in series. The final "fail safe" was a weight which would move to prevent damage to the antenna.

It worked until I went on to other antennas ... I am surprised no antenna manufacturer has designed a device more suitable but along the same lines.

Regards,
JS

1136. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 07:11:51 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <Oohkj.77371$K27.11014@bignews6.bellsouth.net>
Source record: 29156

<alan.hartwell@gmail.com> wrote in message
news:88003e6c-63a4-4184-9fdb-d2b27781450a@e10g2000prf.googlegroups.com...
> On Jan 18, 3:36 am, "Ed Cregger" <ecreg...@bellsouff.net>
> wrote:
>> <snip>
>>
>> Many of you are far more educated than I, but many of you
>> demonstrate precisely why I chose not to be brainwashed
>> with
>> a formal education. Many cannot see past the end of their
>> noses, yet they insist upon laying down the law regarding
>> what is acceptable science and what is not. As though
>> anyone
>> actually knows anything at all.
>>
>> <snip>
>>
>> Let's not forget that one's educational level has nothing
>> to
>> do with native IQ.
>>
>> Ed, NM2K
>
> You are correct to say that education has nothing to do
> with IQ.
> Faraday had little formal training, yet his arduous work
> is now
> exalted by naming one of the basic electromagnetic laws
> after him. But
> I take issue with the idea that you can't actually know
> anything at
> all. For instance, electrodynamic theory was developed 150
> years ago,
> and the KNOWN successful results of that are numerous.
>
> Newtonian mechanics held up well for hundreds of years. A
> whole
> industrial revolution was built on it. Yet some pesky
> observations by
> Michelson and Morley regarding the invariant speed of
> light found it
> wanting. Relativistic mechanics subsumed Newtonian
> mechanics, but
> Einstein didn't invalidate Newton. I believe the

> mathematical term
> "embedding" applies.
>
> I am currently re-studying the original theory of Maxwell,
> et. al.,
> with the intent of finding some chink in the armor. Tesla
> reported
> longitudinal electromagnetic wave phenomena, which
> contradicts the now-
> standard theory that EM waves can ONLY be transversal.
> Using Maxwell's
> original quaternion equations, before Heviside simplified
> them into
> the now-standard vector form, one can derive longitudinal
> wave
> components. If those exist, does that prove you don't know
> how to
> operate a ham radio? No, it just means you're radiating
> something in
> addition to what you expect.
>
> You CAN know something and apply it. You just need to
> realize that
> what you know isn't complete, and never can be.

I do not disagree with a thing that you have said.

Ed Cregger

1137. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 09:22:43 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <Djjkj.154905$036.54897@fe1.news.blueyonder.co.uk>
Source record: 29157

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:utp1p3p855441ipupviam4bcf3krqgogii@4ax.com...
> On Fri, 18 Jan 2008 07:59:37 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
<
> Hi Lee,
>
> I presume you mean by maploops, those that are only a meter or so in
> diameter. You need a larger loop for 80M. A simple one turn with
> plenty of surface area and low Ohmic contacts is preferred as anything
> more complex invites massive loss.
>
> The law with small antennas is their Radiation Resistance in relation
> to their Ohmic Resistance. Most would grab some #12 wire and shrug it
> off without a thought. That lack of thought generates calories in
> heat. Some would add wire turns, the proximity of them merely
> multiplies the heat, not the signal.
>
> Either way the tune up seems great, but the results are miserable (no
> doubt the source of your statement above). A good low band loop will
> have a sharp tuning (narrow bandwidth). A poor low band loop will
> appear to exhibit a great SWR for a broad bandwidth, You can test
> this yourself with almost no effort at all.
>
> Let's take that one meter diameter loop that is available from several
> commercial outlets, and instead build it your self with house wire
> (#12). The Radiation Resistance in the 80M band will be 528
> millionths of an Ohm, Copper loss will be 16 thousandths of an Ohm
> (not counting skin effect) - we still haven't computed connection
> issues. Already, your copper loss is thirty times the radiation
> resistance - I will let you delve into the issues of efficiency.
>
> Doubling that loop diameter will double the copper loss to 32
> thousandths of an Ohm, but what happens to Radiation Resistance? It
> now runs more to 8 thousandths of an Ohm. The ratio has dropped from
> 30:1 to 4:1 in this doubling of size - even when the resistance of the
> wire grew, the Radiation Resistance grew faster. Efficiency increases
> dramatically.
>
> Increase the loop size and use a larger conductor.
>
> 73's
> Richard Clark, KB7QHC

Hi! Richard.

Yes, I already have a 3ft dia magloop 3-30megs also a 5ft square
magloop for 14-80megs..... both cover the 14meg band....
they work extremely well. and as they are virtually noiseles i hear
stations that can`t be heard on a regular wideband antenna
due to a better sn ratio, albeit, at reduced signal strength.....also,
unfortunately, with reduced transmission levels.....
(very good listening antennas).

That`s why i need a larger, lower `Q` antenna ....which will also
fit in my garden space to t/x on.....

I like 20 meters a lot running Slowscan, Hampal and Digital Voice.

Regards..

Len....G6ZSG......

1138. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 10:19:20 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <164950f6-3d3e-4d33-9466-1178af698f77@e25g2000prg.googlegroups.com>
Source record: 29158

On Jan 19, 8:39 am, "Richard Fry" <r...@adams.net> wrote:

>
> To give you, and others in your camp the chance to recognize how your
> unsupported/unproven beliefs appear to those having specific education and
> knowledge based on the proven results of many decades of antenna design, and
> the many decades of proven, practical experience with such designs.
>
> RF

All experience based on yesterdays knowledge which does not allow for
new discoveries, because you are an expert and there is nothing for
you to learn that you do not know already.
Some expert!

Derek

1139. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 12:18:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FUlkj.1291$nK5.1052@nlpi069.nbdc.sbc.com>
Source record: 29159

Jim Kelley wrote:
> :-) No work means no power, ...

You are right, of course. I've been retired for a decade now and forgot what work was. :-) Work can have the dimensions of joules. Reflected power is in joules/sec. The joules in the reflected wave is equal to the reflected power times the length of the transmission line in seconds.
--
73, Cecil http://www.w5dxp.com

1140. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 12:41:07 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fmsr56sct1@aioe.org>
Source record: 29160

"Derek" wrote:

> Are we to take it you regard Art's claim's for his 160m antenna
> to be a fraud?

So far neither the performance of Art's 160-m antenna, nor the claims he makes for its underlying physics have been publicly proven by scientific methods.

> All experience based on yesterdays knowledge which does
> not allow for new discoveries, because you are an expert
> and there is nothing for you to learn that you do not know already.

Not at all. Discoveries continue to be made in the sciences. And when they are, they are supported by natural law, are thoroughly documented and presented in such a context, and those discoveries and their results can be replicated by others.

If Art could followed that course he would get a better response to his concepts, if he still chose to present them.

RF

1141. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 13:04:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Czmkj.537$uE.319@newssvr22.news.prodigy.net>
Source record: 29161

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> Jim Kelley wrote:
>>> Perhaps I just understand the meaning of zero better than you do?
>>
>> OTOH, perhaps not. If my bank balance is zero, does that
>> mean there have been zero debits and zero credits over
>> the entire previous month?
>
> Nope. Keep trying though. You'll get it if you really put your mind to
> it.

It is a gross confusion of cause and effect to say:
"If two waves superpose to zero, those two waves
don't exist." If the component waves being emitted
by a Yagi antenna don't exist, then it is a waste
of time and money to put up a Yagi antenna.

Maybe you should notify HP that they are wasting their
time publishing the following equation since s11*a1
and s12*a2 don't exist.

b1 = s11*a1 + s12*a2 = 0

That equation does *not* imply that s11*a1 and s12*a2
must equal zero. In fact those non-zero values are easy
to calculate. Square each and you have the power associated
with each of those components.

The irradiance equation from optical physics can be
derived by squaring the s-parameter normalized voltage
equation. Since (a1*a2) is a phasor term in that equation,
the phase angle between a1 and a2 must be included in the
result.
--
73, Cecil http://www.w5dxp.com

1142. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 14:45:35 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <d710cd9b-f9c2-409e-88a3-c5dd779445c5@c23g2000hsa.googlegroups.com>
Source record: 29162

On Jan 19, 9:41 pm, "Richard Fry" <r...@adams.net> wrote:
> "Derek" wrote:
> > Are we to take it you regard Art's claim's for his 160m antenna
> > to be a fraud?
>
> So far neither the performance of Art's 160-m antenna, nor the claims he
> makes for its underlying physics have been publicly proven by scientific
> method.

So should he produce his antenna and showed that is was all he
claimed you would not accept it because it would not have been proven
by "scientific" methods to you.
The fact that it work's would count for nothing?. That's weard.

Derek

1143. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 15:07:30 UTC
From: Dave <noone@nowhere.com>
Message-ID: <Smokj.72$ec.35@trndny02>
Source record: 29163

"Derek" <blueyhi5s@yahoo.com.au> wrote in message
news:d710cd9b-f9c2-409e-88a3-c5dd779445c5@c23g2000hsa.googlegroups.com...
> On Jan 19, 9:41 pm, "Richard Fry" <r...@adams.net> wrote:
>> "Derek" wrote:
>> > Are we to take it you regard Art's claim's for his 160m antenna
>> > to be a fraud?
>>
>> So far neither the performance of Art's 160-m antenna, nor the claims he
>> makes for its underlying physics have been publicly proven by scientific
>> method.
>
> So should he produce his antenna and showed that is was all he
> claimed you would not accept it because it would not have been proven
> by "scientific" methods to you.
> The fact that it work's would count for nothing?. That's weard.
>
> Derek

i have a very small 160m antenna that 'works'. How well art's antenna
works, and in his case, the more important question is how he can prove or
demonstrate to someone that the cosmic equilibrium static particles that
levitate from it when he uses it are the real questions.

1144. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 15:14:15 UTC
From: richardharrison@webtv.net
Message-ID: <15736-479213C7-465@storefull-3253.bay.webtv.net>
Source record: 29165

Art wrote:
"When an inductance accepts such energy to generate its field one must determine the material used to ascertain the true shape of the field."

Bunk! Broadcast arrays have the same pattern using either painted steel towers or galvanized steel towers.

Best regards, Richard Harrison, KB5WZI

1145. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 15:16:56 UTC
From: ltdoc@yahoo.com
Message-ID: <129ab8f5-aa4f-4e24-84d5-be269933a0e1@e4g2000hsg.googlegroups.com>
Source record: 29164

I haven't had any problems using a weight, through a pulley, to hold a wire antenna up. If that weight really gets to bouncing on the end of that line, I figure it isn't quite heavy enough, or the tree is moving so much the antenna isn't gonna stay up anyway (just hope the tree does).
- 'Doc

1146. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 16:24:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <l094p3te21pbfm5rh6kiajo6il6pthvtdk@4ax.com>
Source record: 29166

On Sat, 19 Jan 2008 06:45:35 -0800 (PST), Derek
<blueyhi5s@yahoo.com.au> wrote:

> The fact that it work's would count for nothing?.

Hi Derek,

What fact?

73's
Richard Clark, KB7QHC

1147. Re: folding a dipole in half

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 16:50:35 UTC
From: richardharrison@webtv.net
Message-ID: <4960-47922A5B-748@storefull-3256.bay.webtv.net>
Source record: 29168

Roy Lewallen wrote:
"Thus we see that the (quarter wavelength) folded dipole exhibits the qualities of a shunt-tuned circuit and has a terminal resistance value Ra of high magnitude."

Yes, my copy of Bailey says the same. I got the 6000 ohms from page 509 in the catalog section where large diameter rods were used for the 200 MHz antenna.

Looking at Bailey`s page 508, Fig. 8-14, it seems a 1/2-wavelength perimeter can be opened into a loop instead of a folded dipole and iits radiation resistannce drops to about 5 ohms. This is a mixed blessing because as Roy says, "There`s no free lunch". A loop configuration does not lower the loss resistance in the conductor and this will extract a larger percentage of the energy fed to the conductor with a lower radiation resistance.

A closed loop has an inductive reactance at frequencies below first resonance (when the wire perimeter is almost 1/2-wavelength). This reactance can be compensated with a simple low loss series capacitor. It is unfortunate to not have room for a straight radiator.

Best regards, Richard Harrison, KB5WZI

1148. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 16:54:18 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3594p3lf3g90c1bn2jn3ucqmhug0a5nv1a@4ax.com>
Source record: 29167

On Sat, 19 Jan 2008 09:22:43 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
wrote:

>Yes, I already have a 3ft dia magloop 3-30megs also a 5ft square
>magloop for 14-80megs..... both cover the 14meg band....
>they work extremely well. and as they are virtually noiseles i hear
>stations that can`t be heard on a regular wideband antenna
>due to a better sn ratio, albeit, at reduced signal strength.....also,
>unfortunately, with reduced transmission levels.....
>(very good listening antennas).

Hi Len (Lee?),

Are these commercial loops with substantial conductors (well beyond
what would be called wire)? If so, then pushing them into 80M is
going to be a trick unless the 3-30MHz model in fact works. If it
does not, it needs more capacitance, and that is going to be a loss
leader if you try to add any.

The only other limitation in the 20M band would be how high are they?

>That`s why i need a larger, lower `Q` antenna ....which will also
>fit in my garden space to t/x on.....
>
>I like 20 meters a lot running Slowscan, Hampal and Digital Voice.

As far as 20M goes, your garden is long enough for a conventional
dipole - provided you have the support, and the direction favors your
need. If not, it seems unlikely you will gain anything over the
magloops. (Go for more height.)

73's
Richard Clark, KB7QHC

1149. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 17:43:39 UTC
From: nm5k@wt.net
Message-ID: <89d17455-e013-4279-bd2c-1b177a9d4570@d21g2000prf.googlegroups.com>
Source record: 29169

On Jan 19, 8:45 am, Derek <blueyh...@yahoo.com.au> wrote:
> On Jan 19, 9:41 pm, "Richard Fry" <r...@adams.net> wrote:
>
> > "Derek" wrote:
> > > Are we to take it you regard Art's claim's for his 160m antenna
> > > to be a fraud?
>
> > So far neither the performance of Art's 160-m antenna, nor the claims he
> > makes for its underlying physics have been publicly proven by scientific
> > method.
>
> So should he produce his antenna and showed that is was all he
> claimed you would not accept it because it would not have been proven
> by "scientific" methods to you.
> The fact that it work's would count for nothing?. That's weard.
>
> Derek

Define "works"...
Nearly anything will radiate to some extent. Even many dummy loads
and light bulbs. How much better than a dummy load would be the real
issue in the case of his small antenna.
If he did not test the antenna according to accepted methods commonly
used, this would not matter to you?
At the very least he could put up a full sized reference dipole,
chase the spiders from the innerds of his radio, and compare
them. He doesn't even have to actually transmit to do these simple
comparisons for himself.
But in order to prove an antenna to the big wide world out there, he's
going to need to test it on an excepted antenna test range, and then
provide all the data if he wants anyone pay much attention.
This would apply to anyone, not just Art.
It seems you would except his word on it, without actually seeing any
proof of this claimed full sized lunch from a dinky radiator.
That would be weird to me.
MK

1150. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 18:56:12 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <479247ca$0$4971$4c368faf@roadrunner.com>
Source record: 29170

<alan.hartwell@gmail.com> wrote in message
news:868eab3c-73d4-44c6-a00c-2d1c6f06ae9a@e6g2000prf.googlegroups.com...

> I'll be the first to admit there doesn't appear to be much probability
> for longitudinal waves, since there seems to be no convincing
> empirical evidence. But, as with Michelson and Morley, who LOGICALLY
> thought that light should travel at a slower speed against the aether,
> maybe we just haven't been doing the right observation. Current theory
> says longitudinal waves can't happen, so nobody seriously looks for
> them or thinks to attribute any potential anomaly to them. We might
> have a case of circular reasoning. Besides, practical antennas are
> designed for transverse far-fields, so I don't expect they would
> produce much in the way of longitudinal waves, which may be a near-
> field phenomena.
>
> The quaternion development of EM theory implies that charge divergence
> is one source of longitudinal waves. That happens along the axis of
> antenna conductors, but I doubt the efficiency of conversion, assuming
> there is any, would be very high. Another theoretical source of
> longitudinal waves come from high rate of change electric fields.
> Tesla's inventions exhibited both sources. His pancake coils created
> high current divergence, albeit in a spiral pattern. And his high
> voltage spark discharge devices created exceedingly high rates of
> change of voltage.
>
> Where would the power come from for longitudinal waves? If I can't use
> regular electricity, I'm holding out for conversion of zero-point
> energy or direct mass-energy conversion. Yeah, I know, more crackpot
> long shots.
>
> I'll need something to do in retirement other than the wife's
> housework. I read that mental challenges help stave off Alzheimer's.
> You can't beat this for a challenge. Or maybe this falling down this
> rabbit hole of kookism is the onset of Alzheimer's. Hmm. Hadn't
> thought of that before.

Alan,

Have you ever come across the following paper by Harold Aspden? It is fairly
wild and might give you some concepts to consider.

http://www.energyscience.org.uk/le/le24.htm

73 de AI4QJ

1151. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 23:37:43 UTC
From: Bob <bobsakol@hotmail.com>
Message-ID: <dc29a$479289d7$cef8bfce$17244@TEKSAVVY.COM-Free>
Source record: 29171

"Brian Kelly" <kelly@dvol.com> wrote in message
news:01b0d928-40d9-4600-ab28-d255749633c4@t1g2000pra.googlegroups.com...
> On Jan 18, 3:36 pm, "Juan M." <jdmollanNOSPAMPLE...@juno.com> wrote:
>> A problem seeking a solution.
>>
>> I live in a wooded area of the Pacific Northwest with dozens of fir trees
>> of
>> 100 ft or more in height that make wonderful supports for high dipoles
>> and
>> other wire antennas. These particular trees have very few limbs at
>> anything
>> below the 60 ft level so using a crossbow or slingshot for installation
>> is
>> not practical. I have been forced to employ a professional tree climber
>> to
>> install the eyebolts and halyards. Using this system, the antennas can
>> be
>> raised and lowered for maintenance or modification.
>>
>> This system works fine until our winter storms kick in. Often, during
>> those
>> storms, a tree will lose a limb or two and take the antenna down with it.
>> I
>> am then left with a halyard tied to an insulator 50 ft or more above the
>> ground with no way to get the insulator back down short of hiring another
>> costly climber.
>>
>> Does anyone have any solutions to this problem?
>
> Install continuous loops through all your pulleys rather than
> "halyards". Hauling one side of the loop hoists the insulator and
> hauling the other side of the loop brings it back down to where you
> can work on it. Regardless of the condition or fates of wires
> suspended between pulleys.
>
> An aside you might check out: Really nice pulleys:
>
> http://www.harkenstore.com/uniface.urd/SCCYSPW1
>
> w3rv

Juan you see, they luring you to buy expensive stuff, don't buy! be
smart! Art is right! same gang ..

1152. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 23:38:44 UTC
From: Bob <bobsakol@hotmail.com>
Message-ID: <830dc$47928a14$cef8bfce$17848@TEKSAVVY.COM-Free>
Source record: 29172

"Brian Kelly" <kelly@dvol.com> wrote in message
news:070b30ae-4b37-4f9b-87be-2181dc82a6f7@s8g2000prg.googlegroups.com...
> On Jan 19, 12:10 am, Brian Kelly <ke...@dvol.com> wrote:
>> On Jan 18, 3:36 pm, "Juan M." <jdmollanNOSPAMPLE...@juno.com> wrote:
>>
>>
>>
>> > A problem seeking a solution.
>>
>> > I live in a wooded area of the Pacific Northwest with dozens of fir
>> > trees of
>> > 100 ft or more in height that make wonderful supports for high dipoles
>> > and
>> > other wire antennas. These particular trees have very few limbs at
>> > anything
>> > below the 60 ft level so using a crossbow or slingshot for installation
>> > is
>> > not practical. I have been forced to employ a professional tree
>> > climber to
>> > install the eyebolts and halyards. Using this system, the antennas can
>> > be
>> > raised and lowered for maintenance or modification.
>>
>> > This system works fine until our winter storms kick in. Often, during
>> > those
>> > storms, a tree will lose a limb or two and take the antenna down with
>> > it. I
>> > am then left with a halyard tied to an insulator 50 ft or more above
>> > the
>> > ground with no way to get the insulator back down short of hiring
>> > another
>> > costly climber.
>>
>> > Does anyone have any solutions to this problem?
>>
>> Install continuous loops through all your pulleys rather than
>> "halyards". Hauling one side of the loop hoists the insulator and
>> hauling the other side of the loop brings it back down to where you
>> can work on it. Regardless of the condition or fates of wires
>> suspended between pulleys.
>>
>> An aside you might check out: Really nice pulleys:
>>
>> http://www.harkenstore.com/uniface.urd/SCCYSPW1

>
> FUBAR'd link. Sorry.
>
> Try | http://www.harkenstore.com
>>catalog
>>small boat blocks
>>classic blocks
>>bullet blocks
>>See #082,098,166,183
>
> w3rv

ye, ye u cant sell this stuff?

1153. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 23:44:45 UTC
From: Bob <bobsakol@hotmail.com>
Message-ID: <52887$47928b7e$cef8bfce$20702@TEKSAVVY.COM-Free>
Source record: 29173

"Brian Kelly" <kelly@dvol.com> wrote in message
news:070b30ae-4b37-4f9b-87be-2181dc82a6f7@s8g2000prg.googlegroups.com...
> On Jan 19, 12:10 am, Brian Kelly <ke...@dvol.com> wrote:
>> On Jan 18, 3:36 pm, "Juan M." <jdmollanNOSPAMPLE...@juno.com> wrote:
>>
>>
>>
>> > A problem seeking a solution.
>>
>> > I live in a wooded area of the Pacific Northwest with dozens of fir
>> > trees of
>> > 100 ft or more in height that make wonderful supports for high dipoles
>> > and
>> > other wire antennas. These particular trees have very few limbs at
>> > anything
>> > below the 60 ft level so using a crossbow or slingshot for installation
>> > is
>> > not practical. I have been forced to employ a professional tree
>> > climber to
>> > install the eyebolts and halyards. Using this system, the antennas can
>> > be
>> > raised and lowered for maintenance or modification.
>>
>> > This system works fine until our winter storms kick in. Often, during
>> > those
>> > storms, a tree will lose a limb or two and take the antenna down with
>> > it. I
>> > am then left with a halyard tied to an insulator 50 ft or more above
>> > the
>> > ground with no way to get the insulator back down short of hiring
>> > another
>> > costly climber.
>>
>> > Does anyone have any solutions to this problem?
>>
>> Install continuous loops through all your pulleys rather than
>> "halyards". Hauling one side of the loop hoists the insulator and
>> hauling the other side of the loop brings it back down to where you
>> can work on it. Regardless of the condition or fates of wires
>> suspended between pulleys.
>>
>> An aside you might check out: Really nice pulleys:
>>
>> http://www.harkenstore.com/uniface.urd/SCCYSPW1

>
> FUBAR'd link. Sorry.
>
> Try | http://www.harkenstore.com
>>catalog
>>small boat blocks
>>classic blocks
>>bullet blocks
>>See #082,098,166,183
>
> w3rv

http://cgi.ebay.com/2-removable-pulley-swivel-eye_W0QQitemZ150205241648QQihZ005QQcategoryZ61788QQssPageNameZWDVWQQrdZ1QQcmdZViewItem#ebayphotohosting

1154. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 23:47:39 UTC
From: Bob <bobsakol@hotmail.com>
Message-ID: <7dad5$47928c2b$cef8bfce$21211@TEKSAVVY.COM-Free>
Source record: 29174

"Bob" <bobsakol@hotmail.com> wrote in message
news:dc29a$479289d7$cef8bfce$17244@TEKSAVVY.COM-Free...
>
> "Brian Kelly" <kelly@dvol.com> wrote in message
> news:01b0d928-40d9-4600-ab28-d255749633c4@t1g2000pra.googlegroups.com...
>> On Jan 18, 3:36 pm, "Juan M." <jdmollanNOSPAMPLE...@juno.com> wrote:
>>> A problem seeking a solution.
>>>
>>> I live in a wooded area of the Pacific Northwest with dozens of fir
>>> trees of
>>> 100 ft or more in height that make wonderful supports for high dipoles
>>> and
>>> other wire antennas. These particular trees have very few limbs at
>>> anything
>>> below the 60 ft level so using a crossbow or slingshot for installation
>>> is
>>> not practical. I have been forced to employ a professional tree climber
>>> to
>>> install the eyebolts and halyards. Using this system, the antennas can
>>> be
>>> raised and lowered for maintenance or modification.
>>>
>>> This system works fine until our winter storms kick in. Often, during
>>> those
>>> storms, a tree will lose a limb or two and take the antenna down with
>>> it. I
>>> am then left with a halyard tied to an insulator 50 ft or more above the
>>> ground with no way to get the insulator back down short of hiring
>>> another
>>> costly climber.
>>>
>>> Does anyone have any solutions to this problem?
>>
>> Install continuous loops through all your pulleys rather than
>> "halyards". Hauling one side of the loop hoists the insulator and
>> hauling the other side of the loop brings it back down to where you
>> can work on it. Regardless of the condition or fates of wires
>> suspended between pulleys.
>>
>> An aside you might check out: Really nice pulleys:
>>
>> http://www.harkenstore.com/uniface.urd/SCCYSPW1
>>
>> w3rv

>
> Juan you see, they luring you to buy expensive stuff, don't buy! be
> smart! Art is right! same gang ..

great pulley! for all your antennas...

http://cgi.ebay.com/HUGE-VINTAGE-PULLEY-BYRON-JACKSONS-IRON-WORKS_W0QQitemZ370013401350QQihZ024QQcategoryZ104043QQssPageNameZWDVWQQrdZ1QQcmdZViewItem
>
>

1155. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-19 23:57:00 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fmu2o5$4rq$5@news.albasani.net>
Source record: 29175

Bob wrote:

> ...
> great pulley! for all your antennas...
>
> http://cgi.ebay.com/HUGE-VINTAGE-PULLEY-BYRON-JACKSONS-IRON-WORKS_W0QQitemZ370013401350QQihZ024QQcategoryZ104043QQssPageNameZWDVWQQrdZ1QQcmdZViewItem
>>
>
>

[busting a gut here!]

Yep, a very sturdy skyhook!

LOL,
JS

1156. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 00:15:43 UTC
From: art <aunwin@insightbb.com>
Message-ID: <0e080a67-5e17-455b-96b1-2da0e9891d4e@f47g2000hsd.googlegroups.com>
Source record: 29176

On 19 Jan, 06:45, Derek <blueyh...@yahoo.com.au> wrote:
> On Jan 19, 9:41 pm, "Richard Fry" <r...@adams.net> wrote:
>
> > "Derek" wrote:
> > > Are we to take it you regard Art's claim's for his 160m antenna
> > > to be a fraud?
>
> > So far neither the performance of Art's 160-m antenna, nor the claims he
> > makes for its underlying physics have been publicly proven by scientific
> > method.
>
> So should he produce his antenna and showed that is was all he
> claimed you would not accept it because it would not have been proven
> by "scientific" methods to you.
> The fact that it work's would count for nothing?. That's weard.
>
> Derek

Derek.
I thought you would like to know that I made another 160M antenna
today which isvery much smaller than the one I have on my tower. If
somebody takes you up on your bet you will be able to afford a trip to
Central Illinois and I will give it to you to take home to Sydney or
what ever.
It is compact enough for carry on luggage so it will not be a
problem.It is below zero temps
here at the moment but it has resonant points either side of 160M on
the ground one of which is 200 ohms the other is outside the scope of
my MFJ 259 . I could measure it on a SA if I have to but it is best
now to wait until spring unless a bet is made. When it goes up one of
the resonant points will move to 160M.
My next antenna to make will be small enough to put on a dinner plate
for the broadcast band but I really do need to fix the plasma tv as
the wife likes watching the tennis from down under on the big TV. I
believe it got a lightning pulse from the cable line so I need to
change out a relay or a transistor amplifier /switch to get it going
again. Small relays are known to weld anf the front end transisters
are not made to handle a high current, hopefully it is one of the two.
My Best Regards and many thanks for your confidence in my honesty.
G,Day
Art Unwin KB9MZ...XG(uk)

1157. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 00:35:36 UTC
From: art <aunwin@insightbb.com>
Message-ID: <fc5bafaf-2612-4ce6-8eb2-8d5652de80c0@k2g2000hse.googlegroups.com>
Source record: 29177

On 19 Jan, 09:43, n...@wt.net wrote:
> On Jan 19, 8:45 am, Derek <blueyh...@yahoo.com.au> wrote:
>
>
>
>
>
> > On Jan 19, 9:41 pm, "Richard Fry" <r...@adams.net> wrote:
>
> > > "Derek" wrote:
> > > > Are we to take it you regard Art's claim's for his 160m antenna
> > > > to be a fraud?
>
> > > So far neither the performance of Art's 160-m antenna, nor the claims he
> > > makes for its underlying physics have been publicly proven by scientific
> > > method.
>
> > So should he produce his antenna and showed that is was all he
> > claimed you would not accept it because it would not have been proven
> > by "scientific" methods to you.
> > The fact that it work's would count for nothing?. That's weard.
>
> > Derek
>
> Define "works"...
> Nearly anything will radiate to some extent. Even many dummy loads
> and light bulbs. How much better than a dummy load would be the real
> issue in the case of his small antenna.
> If he did not test the antenna according to accepted methods commonly
> used, this would not matter to you?
> At the very least he could put up a full sized reference dipole,
> chase the spiders from the innerds of his radio, and compare
> them. He doesn't even have to actually transmit to do these simple
> comparisons for himself.
> But in order to prove an antenna to the big wide world out there, he's
> going to need to test it on an excepted antenna test range, and then
> provide all the data if he wants anyone pay much attention.
> This would apply to anyone, not just Art.
> It seems you would except his word on it, without actually seeing any
> proof of this claimed full sized lunch from a dinky radiator.
> That would be weird to me.
> MK- Hide quoted text -
>
> - Show quoted text -

Maybe to you, but some people on this newsgroup have alluded to my honesty.
I never played hooky from school in my lifetime(well maybe a couple of times)
I am not a redneck so I had no fears that education would deteriate my inbuilt intelligence
like you did. So I was able to tuck a few years under my belt until a free trip came about for my family and I to Central Illinois. Didn't bargain on staying so I had to sell my house in London for a song. It now costs so much I can't hardly afford to buy it back! By the way the U.S. also subsidized the trip over, so your tax money was really appreciated.
A former immigrant who made so much money over here that he stayed.
Art Unwin KB9MZ....XG(uk)

PS.
The company paid for trips to Italy,Germany,Swiss Alps and England as well as Hispanola,PR and other Islands in the Carabbian while I was helping the company to move manufacturing offshore. Ofcourse the engineering jobs were transfered later and I was real sorry to see the guys go.Now I am retired and rarely go overseas, it is cheaper to pay relatives to do the travelling.

1158. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 01:00:11 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fmu6eu$hm9$1@aioe.org>
Source record: 29178

"art" wrote (sic):
> Derek. I thought you would like to know that I made another
>160M antenna today which isvery much smaller than the one
> I have on my tower.

Congratulations. Universal scientific accolades, a place in history with the Great Masters whose names you often quote, and huge financial rewards may be in order for you and/or the nominated beneficiaries of your estate, "art."

But first, what are the proven/provable radiation characteristics of your new 160-m antenna design as you believe them to be, in comparison to those of a conventional, proven 1/4-wave vertical monopole with a broadcast-type, radial ground system?

Please show your work.

Otherwise...

RF

PS: Derek, "JS," and any other of art's groupies -- please feel free to chime in.

1159. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 01:36:22 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <qAxkj.155044$036.99664@fe1.news.blueyonder.co.uk>
Source record: 29179

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:3594p3lf3g90c1bn2jn3ucqmhug0a5nv1a@4ax.com...
> On Sat, 19 Jan 2008 09:22:43 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
> wrote:
>
> >Yes, I already have a 3ft dia magloop 3-30megs

>>>>>> also a 5ft square magloop for 14-80megs <<<<<<<<

Typo should read - magloop for 14 - 3.5megs (can go lower at higher `Q`)

..... both cover the 14meg band....

> >they work extremely well. and as they are virtually noiseles i hear
> >stations that can`t be heard on a regular wideband antenna
> >due to a better sn ratio, albeit, at reduced signal strength.....also,
> >unfortunately, with reduced transmission levels.....
> >(very good listening antennas).

> Hi Len (Lee?),

Len, Lee Leon Leonard or Leonardo .....no problem as the birth name is
Leonard...

> Are these commercial loops with substantial conductors (well beyond
> what would be called wire)?

HOMEBREW!!! .....3ft dia loop, (10 ft circumference) 3/8" tube -
can be persuaded to 80meters ....
HOMEBREW!!! ......5`.0" square (20ft circumference) loop 3/4" tube -
can persuade it to 160meters.

> If so, then pushing them into 80M is

No problem....80meters isn`t the problem ! - they work!

> going to be a trick unless the 3-30MHz model in fact works.

It works well in the design freq of 3 - 30 megs....can work lower at higher
`Q`
.......higher `Q` not good!

> If it does not, it needs more capacitance, and that is going to be a loss
> leader if you try to add any.

Agreed.

> The only other limitation in the 20M band would be how high are they?

Vertical - ground level for vertically polarised ground wave- with
directivity.
Horizontal - 30ft for horizontal `omni directional` polarization - less
gain
than a straight, horizontal dipole at the same height.

> >That`s why i need a larger, lower `Q` antenna ....which will also
> >fit in my garden space to t/x on.....
> >
> >I like 20 meters a lot running Slowscan, Hampal and Digital Voice.
>
> As far as 20M goes, your garden is long enough for a conventional
> dipole - provided you have the support, and the direction favors your
> need. If not, it seems unlikely you will gain anything over the
> magloops.

>>>>>>(Go for more height.)<<<<<<<

If you read the o/p, you wouldn`t question everything i have already
stated Richard!!!

I don`t want a fixed dipole at low height!! i want a rotary dipole on the
top
of my tower (mast)....i am aware i can fit a 33foot fixed, wire dipole into
a
35foot garden, lengthwise, but the length of my garden runs east/west so the
dipole would fire north/south - not good..... the magloops receive very
well,
with lower noise than a regular antenna, i can hear stations i wouldn`t
normally
hear on a regular antenna, plus, a horizontal dipole, generally, has more
gain
than a horizontal omni magloop at the same height but is a noisier r/x than
the
magloop, which makes the dipole better for t/x mode....Yes?...
My garden is 14ft wide and a 14meg dipole is 33ft+, i don`t want my
neighbours
complaining when half the antenna is over their garden when i`m working east
west...hence linear loading the dipole...to shorten it!!

All i requested was a suitable design configuration for a linear loaded
halfsize
rotary dipole to go on top of the tower and my reasons why.....
not a discussion on magloops ....

I`ll go with the linear short 1/4 wave vertical layout for each leg of the
dipole,
where half the element is fed back on itself down to 6 inches from the
ground
(or, in my case, to the mast) with about 3 inch spacing of the element.

Regards.

Len ....(Lee, Leon Leonard Leonardo).....G6ZSG....

1160. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 02:26:25 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <sk95p3hji9tglgqqn8atobd99frvv6pmmk@4ax.com>
Source record: 29180

On Sun, 20 Jan 2008 01:36:22 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
wrote:

>I don`t want a fixed dipole at low height!! i want a rotary dipole on the
>top
>of my tower (mast)....i am aware i can fit a 33foot fixed, wire dipole into
>a
>35foot garden, lengthwise, but the length of my garden runs east/west so the
>dipole would fire north/south - not good..... the magloops receive very
>well,
>with lower noise than a regular antenna, i can hear stations i wouldn`t
>normally
>hear on a regular antenna, plus, a horizontal dipole, generally, has more
>gain
>than a horizontal omni magloop at the same height but is a noisier r/x than
>the
>magloop, which makes the dipole better for t/x mode....Yes?...

Hi Len,

Yes, but marginally. This is a double edged sword. The Q that gives
you such superlative receive characteristics is going to drive you
into CW mode in, perhaps, 80M, and certainly in 160M - not to speak of
the critical tuning. You have the height, something I missed from the
distraction of 20 other unrelated postings to this thread, so you have
solutions and that height is both far and away sufficient for the
upper HF, and more to the matter, the best practical solution for your
neighborhood. As to the antenna construction, you have answered the
Ohmic losses to a considerable extent, and you are aware of the
relationship of Ohmic Loss to Radiation Resistance. You would do well
to report to the group your SWR bandwidth for several of these bands
so we can get a grasp of the actual Q. Simply for 160/80/40/20, how
many KHz between the 2:1 points?

There are a lot of pluses there, except for the high Q on low bands.
You also express in your list of negatives that you don't seem to get
out (a transmit problem).

>My garden is 14ft wide and a 14meg dipole is 33ft+, i don`t want my
>neighbours
>complaining when half the antenna is over their garden when i`m working east
>west...hence linear loading the dipole...to shorten it!!

If I recall (as you have a lot of widely separate issues here), you
want to operate 20M. Your garden as you state here is too narrow (it
is) for the direction you desire. An efficient design is going to

demand end loading aka top hat style (long radial spokes at the end of each arm of the dipole you want).The end loads, if sufficiently developed (and not a simple installation, I suspect) could do it without further loading with a coil somewhere (and if it were anywhere, the good advice from years of reporting here would indicate that it would be one half to two thirds out and away from the feed point, on both sides). Another alternative is an inverted V which would seem to be within your capacity (depends on where the tower is sited).

As your interests span 20 down to 80 and Q intrudes into the bandwidth you desire at the longer wavelengths, then lowering Q would only drive down your efficiency and increase your complaint of getting out. It seems you are rapidly moving away from the loops. You might (if you can interpret the technical comments) try Arthur's contra-wound inventions. No doubt, they too would make good receive antennas, and the proximity of windings would lower Q, but this would come at a severe loss of gain and sensitivity. A receiver has enough gain to make up for this loss, but your transmitter is forever crippled with the introduction of both Ohmic loss and its loss boost due to tightly coupled currents.

A larger diameter antenna is called for if you are sticking with loops, but that is probably unmanageable.

Another breed of loop, the halfwave open loop allows you to build an omni horizontal polarized antenna in a small area, but we now enter into other issues you have not discussed. What resources, other than the tower, are available to you for supporting the linear loaded dipole you seek? If you have four support points, your garden size is not unsuited to a full half wave design, there are no Q issues, no efficiency issues - except for matching to a 5 Ohm load. What can I say? Compromise antennas demand care and feeding.

>
>All i requested was a suitable design configuration for a linear loaded
>halfsize
>rotary dipole to go on top of the tower and my reasons why.......
>not a discussion on magloops ....
>
>I`ll go with the linear short 1/4 wave vertical layout for each leg of the
>dipole,
>where half the element is fed back on itself down to 6 inches from the
>ground
>(or, in my case, to the mast) with about 3 inch spacing of the element.

You lost me entirely here. You want a horizontal dipole, and you will build a closely coupled vertical system that will rotate where half the element is within 6 inches of ground? Too much is left unsaid in this description. Is your tower guyed? Freestanding? You are using the mast (tower?) as half the antenna? Is the mast (tower?) grounded?

This sounds like you are top feeding a vertical quarterwave open transmission line that rotates around one element. If so, your feed line is going to really become a nightmare of isolation. It will show varying horizontal/vertical directivity to a loss of 10dB in any direction - if you can match to the near short circuit conditions at the feed point.

I don't think this is what you mean, but what you describe is vague.

73's
Richard Clark, KB7QHC

1161. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 02:34:03 UTC
From: art <aunwin@insightbb.com>
Message-ID: <3e4d56b9-e10c-4389-a094-f6e308676f6c@s19g2000prg.googlegroups.com>
Source record: 29181

On 19 Jan, 17:00, "Richard Fry" <r...@adams.net> wrote:
> "art" wrote (sic):> Derek. I thought you would like to know that I made another
> >160M antenna today which isvery much smaller than the one
> > I have on my tower.
>
> __________
>
> Congratulations. Universal scientific accolades, a place in history with
> the Great Masters whose names you often quote, and huge financial rewards
> may be in order for you and/or the nominated beneficiaries of your estate,
> "art."
>
> But first, what are the proven/provable radiation characteristics of your
> new 160-m antenna design as you believe them to be, in comparison to those
> of a conventional, proven 1/4-wave vertical monopole with a broadcast-type,
> radial ground system?
>
> Please show your work.
>
> Otherwise...
>
> RF
>
> PS: Derek, "JS," and any other of art's groupies -- please feel free to
> chime in.

Get lost. You are not in the circle of a need to know,only the heckler
list.
You just can't handle the truth as I told you a ground plane is not
necessary.
They just supply unwanted noise anyway compared to a antenna away from
the ground surface.
If you want to be part of a bet then call Australia as I will not be
getting your posts anymore
because they are unproductive. But don't let that stop you in
arranging the bet to prove your points as I will still cooperate in
the adjudication.

1162. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 02:34:41 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4792b357$0$10958$4c368faf@roadrunner.com>
Source record: 29182

"art" <aunwin@insightbb.com> wrote in message
news:fc5bafaf-2612-4ce6-8eb2-8d5652de80c0@k2g2000hse.googlegroups.com...

>Maybe to you, but some people on this newsgroup have alluded to my
>honesty.

Haha, they merely "alluded" to your honesty, they were never able to directly "attest" to it. How could they after hearing the whopper about of the little antenna (a.k.a. "dummy load") for the big band?

I> never played hooky from school in my lifetime(well maybe a couple
> of times)

Is this another "allusion to", or "illusion of", said honesty?

>I am not a redneck so I had no fears that education would deteriate my
>inbuilt intelligence

Indeed, if you had such fears there wouldn't have been anything to worry about since your "education" had no effect on your journey to intellectual absurdity.

>like you did. So I was able to tuck a few years under my belt until a
>free trip came about for my family and I to Central Illinois. Didn't
>bargain on staying so I had to sell my house in London for a song. It
>now costs so much I can't hardly afford to buy it back! By the way the
>U.S. also subsidized the trip over, so your tax money was really
>appreciated.

At which point during your sucking at the teat of the US taxpayer did insanity enter into the equation?

>A former immigrant who made so much money over here that he stayed.

Of course you stayed, they *all* stay. In my travels worldwide I am often able to gain the confidence of people in other countries to the point that they eventually say the negative things about the US that are deep seated in their minds. At the same time, when I was empowered to offer the prospect of green cards (as I have been a few times, and did,), without exception the response was overwhelmingly positive. So, if the US is so shitty, why do they want to come here? The only answer can be that their home countries are shittier, which in fact they always are (including any place in London that art could afford to live in). The intent of art's post is to insult and enrage Americans on this thread by saying, take all the foreign aid that you, in your stupidity and ignorance, gave to me and my family and shove it up in your idiot country's posterior. But, lest art's groupies become confused, remember that arthur stayed here by choice and he is quite happy

here, building broadcast antennas that fit on dinner plates; it might just work after all, in the same country where it was possible to generate such great profits for the inventor of the pet rock. Opportunities abound.

1163. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 02:52:04 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <oHykj.36768$JD.24634@newssvr21.news.prodigy.net>
Source record: 29183

AI4QJ wrote:
> "art" <aunwin@insightbb.com> wrote in message
> news:fc5bafaf-2612-4ce6-8eb2-8d5652de80c0@k2g2000hse.googlegroups.com...
>
>> Maybe to you, but some people on this newsgroup have alluded to my
>> honesty.
>
> Haha, they merely "alluded" to your honesty, they were never able to
> directly "attest" to it. How could they after hearing the whopper about of
> the little antenna (a.k.a. "dummy load") for the big band?
>
> I> never played hooky from school in my lifetime(well maybe a couple
>> of times)
>
> Is this another "allusion to", or "illusion of", said honesty?
>
>> I am not a redneck so I had no fears that education would deteriate my
>> inbuilt intelligence
>
> Indeed, if you had such fears there wouldn't have been anything to worry
> about since your "education" had no effect on your journey to intellectual
> absurdity.
>
>> like you did. So I was able to tuck a few years under my belt until a
>> free trip came about for my family and I to Central Illinois. Didn't
>> bargain on staying so I had to sell my house in London for a song. It
>> now costs so much I can't hardly afford to buy it back! By the way the
>> U.S. also subsidized the trip over, so your tax money was really
>> appreciated.
>
> At which point during your sucking at the teat of the US taxpayer did
> insanity enter into the equation?
>
>> A former immigrant who made so much money over here that he stayed.
>
> Of course you stayed, they *all* stay. In my travels worldwide I am often
> able to gain the confidence of people in other countries to the point that
> they eventually say the negative things about the US that are deep seated in
> their minds. At the same time, when I was empowered to offer the prospect of
> green cards (as I have been a few times, and did,), without exception the
> response was overwhelmingly positive. So, if the US is so shitty, why do
> they want to come here? The only answer can be that their home countries are
> shittier, which in fact they always are (including any place in London that
> art could afford to live in). The intent of art's post is to insult and

> enrage Americans on this thread by saying, take all the foreign aid that
> you, in your stupidity and ignorance, gave to me and my family and shove it
> up in your idiot country's posterior. But, lest art's groupies become
> confused, remember that arthur stayed here by choice and he is quite happy
> here, building broadcast antennas that fit on dinner plates; it might just
> work after all, in the same country where it was possible to generate such
> great profits for the inventor of the pet rock. Opportunities abound.
>
>

Pay no attention to him, Art, he's just another simple-minded nativist.
Actually, many people from India and China have come to Silicon Valley
and stayed long enough to get experience, after which, they went home,
started their own companies, and prosper to this day. Unless
AI4QJ is a Native American, he can't complain about immigration without
exposing himself as a hypocrite.
73,
Tom Donaly, KA6RUH

1164. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 03:51:32 UTC
From: art <aunwin@insightbb.com>
Message-ID: <dc5461b2-53a4-401d-9a31-4834cc8d27a9@l32g2000hse.googlegroups.com>
Source record: 29184

On 19 Jan, 18:52, "Tom Donaly" <dtdon...@sbcglobal.net> wrote:
> AI4QJ wrote:
> > "art" <aun...@insightbb.com> wrote in message
> >news:fc5bafaf-2612-4ce6-8eb2-8d5652de80c0@k2g2000hse.googlegroups.com...
>
> >> Maybe to you, but some people on this newsgroup have alluded to my
> >> honesty.
>
> > Haha, they merely "alluded" to your honesty, they were never able to
> > directly "attest" to it. How could they after hearing the whopper about of
> > the little antenna (a.k.a. "dummy load") for the big band?
>
> > I> never played hooky from school in my lifetime(well maybe a couple
> >> of times)
>
> > Is this another "allusion to", or "illusion of", said honesty?
>
> >> I am not a redneck so I had no fears that education would deteriate my
> >> inbuilt intelligence
>
> > Indeed, if you had such fears there wouldn't have been anything to worry
> > about since your "education" had no effect on your journey to intellectual
> > absurdity.
>
> >> like you did. So I was able to tuck a few years under my belt until a
> >> free trip came about for my family and I to Central Illinois. Didn't
> >> bargain on staying so I had to sell my house in London for a song. It
> >> now costs so much I can't hardly afford to buy it back! By the way the
> >> U.S. also subsidized the trip over, so your tax money was really
> >> appreciated.
>
> > At which point during your sucking at the teat of the US taxpayer did
> > insanity enter into the equation?
>
> >> A former immigrant who made so much money over here that he stayed.
>
> > Of course you stayed, they *all* stay. In my travels worldwide I am often
> > able to gain the confidence of people in other countries to the point that
> > they eventually say the negative things about the US that are deep seated in
> > their minds. At the same time, when I was empowered to offer the prospect of
> > green cards (as I have been a few times, and did,), without exception the
> > response was overwhelmingly positive. So, if the US is so shitty, why do
> > they want to come here? The only answer can be that their home countries are
> > shittier, which in fact they always are (including any place in London that

> > art could afford to live in). The intent of art's post is to insult and
> > enrage Americans on this thread by saying, take all the foreign aid that
> > you, in your stupidity and ignorance, gave to me and my family and shove it
> > up in your idiot country's posterior. But, lest art's groupies become
> > confused, remember that arthur stayed here by choice and he is quite happy
> > here, building broadcast antennas that fit on dinner plates; it might just
> > work after all, in the same country where it was possible to generate such
> > great profits for the inventor of the pet rock. Opportunities abound.
>
> Pay no attention to him, Art, he's just another simple-minded nativist.
> Actually, many people from India and China have come to Silicon Valley
> and stayed long enough to get experience, after which, they went home,
> started their own companies, and prosper to this day. Unless
> AI4QJ is a Native American, he can't complain about immigration without
> exposing himself as a hypocrite.
> 73,
> Tom Donaly, KA6RUH- Hide quoted text -
>
> - Show quoted text -

Tom,
Don't concern yourself with me. People who have something to offer
have my full attention.
This guy is acting like a baby and trying to censor me and my work,
but he can't do that if he himself has no credability. People on the
sidelines watching obviously are interested in antennas and can easily
spot those of no interest. He would be better of argueing about
standing/travelling waves which is garanteed employment for at least
five more years and where
Cecil will reply to him until hell freezes over on the subject. I may
put this new antenna
if I get brave enough to go out in the cold but then I may wait for
spring and concentrate on other things. Seems like people think I am
trying to sell them something, when I am not. I am retired and am not
interested in actively pursueing monetary rewards. I pay for a patent
as a record of my work. If money is offered I will take it to pay for
my other pursuits and I have many to complete.
Thanks for the effort anyway but let their comments slide over since
they are meaningless.
Best regards
Art Unwin...KB9MZ...xg(uk)

1165. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 04:22:40 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <k0Akj.155050$036.71314@fe1.news.blueyonder.co.uk>
Source record: 29185

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:sk95p3hji9tglgqqn8atobd99frvv6pmmk@4ax.com...
> On Sun, 20 Jan 2008 01:36:22 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
> wrote:
<
> As your interests span 20 down to 80

Only 20......

and Q intrudes into the bandwidth
> you desire at the longer wavelengths, then lowering Q would only drive
> down your efficiency and increase your complaint of getting out. It
> seems you are rapidly moving away from the loops. You might (if you
> can interpret the technical comments) try Arthur's contra-wound
> inventions. No doubt, they too would make good receive antennas, and
> the proximity of windings would lower Q, but this would come at a
> severe loss of gain and sensitivity. A receiver has enough gain to
> make up for this loss, but your transmitter is forever crippled with
> the introduction of both Ohmic loss and its loss boost due to tightly
> coupled currents.
>
> A larger diameter antenna is called for if you are sticking with
> loops, but that is probably unmanageable.

20 foot circumference is the longest magloop for 14megs operation!!!
That is with 90% efficiency...

> Another breed of loop, the halfwave open loop allows you to build an
> omni horizontal polarized antenna in a small area, but we now enter
> into other issues you have not discussed. What resources, other than
> the tower, are available to you for supporting the linear loaded
> dipole you seek?

None

If you have four support points, your garden size is
> not unsuited to a full half wave design, there are no Q issues, no
> efficiency issues - except for matching to a 5 Ohm load. What can I
> say? Compromise antennas demand care and feeding.
>
> >
> >All i requested was a suitable design configuration for a linear loaded
> >halfsize
> >rotary dipole to go on top of the tower and my reasons why.......
> >not a discussion on magloops ....
> >

> >I`ll go with the linear short 1/4 wave vertical layout for each leg of
the
> >dipole,
> >where half the element is fed back on itself down to 6 inches from the
> >ground
> >(or, in my case, to the mast) with about 3 inch spacing of the element.
>
> You lost me entirely here. You want a horizontal dipole, and you will
> build a closely coupled vertical system that will rotate where half
> the element is within 6 inches of ground? Too much is left unsaid in
> this description. Is your tower guyed? Freestanding? You are using
> the mast (tower?) as half the antenna? Is the mast (tower?) grounded?
>
> This sounds like you are top feeding a vertical quarterwave open
> transmission line that rotates around one element. If so, your feed
> line is going to really become a nightmare of isolation. It will show
> varying horizontal/vertical directivity to a loss of 10dB in any
> direction - if you can match to the near short circuit conditions at
> the feed point.

I`m not building a vertical !!!

> I don't think this is what you mean, but what you describe is vague.

Probably.
Imagine a half wave dipole with each leg folded back on itself
effectively becoming half its original physical length but still
the original electrical length, each leg is like a long thin letter
`U` ..like a folded dipole that has been cut open circuit opposite
the feed point...I shouldn`t have mentioned a vertical because
it mis-lead you, it was meant just to describe the configuration
of the dipole legs.

Cheers.

Len.......G6ZSG.......

1166. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 04:42:01 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4792d132$0$10985$4c368faf@roadrunner.com>
Source record: 29186

"art" <aunwin@insightbb.com> wrote in message
news:dc5461b2-53a4-401d-9a31-4834cc8d27a9@l32g2000hse.googlegroups.com...
On 19 Jan, 18:52, "Tom Donaly" <dtdon...@sbcglobal.net> wrote:
> AI4QJ wrote:
> > "art" <aun...@insightbb.com> wrote in message
> >news:fc5bafaf-2612-4ce6-8eb2-8d5652de80c0@k2g2000hse.googlegroups.com...
>
> >> Maybe to you, but some people on this newsgroup have alluded to my
> >> honesty.
>
> > Haha, they merely "alluded" to your honesty, they were never able to
> > directly "attest" to it. How could they after hearing the whopper about
> > of
> > the little antenna (a.k.a. "dummy load") for the big band?
>
> > I> never played hooky from school in my lifetime(well maybe a couple
> >> of times)
>
> > Is this another "allusion to", or "illusion of", said honesty?
>
> >> I am not a redneck so I had no fears that education would deteriate my
> >> inbuilt intelligence
>
> > Indeed, if you had such fears there wouldn't have been anything to worry
> > about since your "education" had no effect on your journey to
> > intellectual
> > absurdity.
>
> >> like you did. So I was able to tuck a few years under my belt until a
> >> free trip came about for my family and I to Central Illinois. Didn't
> >> bargain on staying so I had to sell my house in London for a song. It
> >> now costs so much I can't hardly afford to buy it back! By the way the
> >> U.S. also subsidized the trip over, so your tax money was really
> >> appreciated.
>
> > At which point during your sucking at the teat of the US taxpayer did
> > insanity enter into the equation?
>
> >> A former immigrant who made so much money over here that he stayed.
>
> > Of course you stayed, they *all* stay. In my travels worldwide I am
> > often
> > able to gain the confidence of people in other countries to the point
> > that

> > they eventually say the negative things about the US that are deep
> > seated in
> > their minds. At the same time, when I was empowered to offer the
> > prospect of
> > green cards (as I have been a few times, and did,), without exception
> > the
> > response was overwhelmingly positive. So, if the US is so shitty, why do
> > they want to come here? The only answer can be that their home countries
> > are
> > shittier, which in fact they always are (including any place in London
> > that
> > art could afford to live in). The intent of art's post is to insult and
> > enrage Americans on this thread by saying, take all the foreign aid that
> > you, in your stupidity and ignorance, gave to me and my family and shove
> > it
> > up in your idiot country's posterior. But, lest art's groupies become
> > confused, remember that arthur stayed here by choice and he is quite
> > happy
> > here, building broadcast antennas that fit on dinner plates; it might
> > just
> > work after all, in the same country where it was possible to generate
> > such
> > great profits for the inventor of the pet rock. Opportunities abound.
>
> Pay no attention to him, Art, he's just another simple-minded nativist.
> Actually, many people from India and China have come to Silicon Valley
> and stayed long enough to get experience, after which, they went home,
> started their own companies, and prosper to this day. Unless
> AI4QJ is a Native American, he can't complain about immigration without
> exposing himself as a hypocrite.
> 73,
> Tom Donaly, KA6RUH- Hide quoted text -
>
> - Show quoted text -

Tom,
Don't concern yourself with me. People who have something to offer
have my full attention.
This guy is acting like a baby and trying to censor me and my work,
but he can't do that if he himself has no credability. People on the
sidelines watching obviously are interested in antennas and can easily
spot those of no interest. He would be better of argueing about
standing/travelling waves which is garanteed employment for at least
five more years and where
Cecil will reply to him until hell freezes over on the subject. I may
put this new antenna
if I get brave enough to go out in the cold but then I may wait for
spring and concentrate on other things. Seems like people think I am
trying to sell them something, when I am not. I am retired and am not
interested in actively pursueing monetary rewards. I pay for a patent

as a record of my work. If money is offered I will take it to pay for
my other pursuits and I have many to complete.
Thanks for the effort anyway but let their comments slide over since
they are meaningless.

==========

One thing I will have to say, art, is that either your loyal groupies in
faith-based "science" have a problem with reading comprehension or they
suffer from a cranial deficiency that precludes their ability to process
information following the rules of simple logic. This commonality amongst
your followers, modern day Don Quixote de la Manchas attacking the fierce
windmills of reasonable science on this ng, is the prime reason for my
having plonked each and every one of them.
==========

1167. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 05:02:19 UTC
From: jawod <jawod@fuse.net>
Message-ID: <4792D5DB.1080009@fuse.net>
Source record: 29187
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

I am a Democrat. Even I can tell this is a smear job. Lots of operatives out there with their "eyes on the prize". Don't be misled by these emails. The gloves are off. Internet dispatches are ALL suspect.

We are all sailing in rough seas. In the end, each of us can pick the candidate we are most comfortable with.

73,

John
AB8O

1168. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 05:12:07 UTC
From: art <aunwin@insightbb.com>
Message-ID: <62ecaf3f-0784-472b-86fb-f3e6ef7ea42f@d21g2000prf.googlegroups.com>
Source record: 29188

```
On 19 Jan, 20:42, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:dc5461b2-53a4-401d-9a31-4834cc8d27a9@l32g2000hse.googlegroups.com...
> On 19 Jan, 18:52, "Tom Donaly" <dtdon...@sbcglobal.net> wrote:
>
>
>
>
>
> > AI4QJ wrote:
> > > "art" <aun...@insightbb.com> wrote in message
> > >news:fc5bafaf-2612-4ce6-8eb2-8d5652de80c0@k2g2000hse.googlegroups.com...
>
> > >> Maybe to you, but some people on this newsgroup have alluded to my
> > >> honesty.
>
> > > Haha, they merely "alluded" to your honesty, they were never able to
> > > directly "attest" to it. How could they after hearing the whopper about
> > > of
> > > the little antenna (a.k.a. "dummy load") for the big band?
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> > > I> never played hooky from school in my lifetime( well maybe a couple
> > >> of times)
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> > > Is this another "allusion to", or "illusion of", said honesty?
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> > >> I am not a redneck so I had no fears that education would deteriate my
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> > > Indeed, if you had such fears there wouldn't have been anything to worry
> > > about since your "education" had no effect on your journey to
> > > intellectual
> > > absurdity.
>
> > >> like you did. So I was able to tuck a few years under my belt until a
> > >> free trip came about for my family and I to Central Illinois. Didn't
> > >> bargain on staying so I had to sell my house in London for a song. It
> > >> now costs so much I can't hardly afford to buy it back! By the way the
> > >> U.S. also subsidized the trip over, so your tax money was really
> > >> appreciated.
>
> > > At which point during your sucking at the teat of the US taxpayer did
> > > insanity enter into the equation?
```

> > > >> A former immigrant who made so much money over here that he stayed.
> > > Of course you stayed, they *all* stay. In my travels worldwide I am
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> > > able to gain the confidence of people in other countries to the point
> > > that
> > > they eventually say the negative things about the US that are deep
> > > seated in
> > > their minds. At the same time, when I was empowered to offer the
> > > prospect of
> > > green cards (as I have been a few times, and did,), without exception
> > > the
> > > response was overwhelmingly positive. So, if the US is so shitty, why do
> > > they want to come here? The only answer can be that their home countries
> > > are
> > > shittier, which in fact they always are (including any place in London
> > > that
> > > art could afford to live in). The intent of art's post is to insult and
> > > enrage Americans on this thread by saying, take all the foreign aid that
> > > you, in your stupidity and ignorance, gave to me and my family and shove
> > > it
> > > up in your idiot country's posterior. But, lest art's groupies become
> > > confused, remember that arthur stayed here by choice and he is quite
> > > happy
> > > here, building broadcast antennas that fit on dinner plates; it might
> > > just
> > > work after all, in the same country where it was possible to generate
> > > such
> > > great profits for the inventor of the pet rock. Opportunities abound.
> > Pay no attention to him, Art, he's just another simple-minded nativist.
> > Actually, many people from India and China have come to Silicon Valley
> > and stayed long enough to get experience, after which, they went home,
> > started their own companies, and prosper to this day. Unless
> > AI4QJ is a Native American, he can't complain about immigration without
> > exposing himself as a hypocrite.
> > 73,
> > Tom Donaly, KA6RUH- Hide quoted text -
> > - Show quoted text -
> Tom,
> Don't concern yourself with me. People who have something to offer
> have my full attention.
> This guy is acting like a baby and trying to censor me and my work,
> but he can't do that if he himself has no credability. People on the
> sidelines watching obviously are interested in antennas and can easily
> spot those of no interest. He would be better of argueing about
> standing/travelling waves which is garanteed employment for at least

> five more years and where
> Cecil will reply to him until hell freezes over on the subject. I may
> put this new antenna
> if I get brave enough to go out in the cold but then I may wait for
> spring and concentrate on other things. Seems like people think I am
> trying to sell them something, when I am not. I am retired and am not
> interested in actively pursueing monetary rewards. I pay for a patent
> as a record of my work. If money is offered I will take it to pay for
> my other pursuits and I have many to complete.
> Thanks for the effort anyway but let their comments slide over since
> they are meaningless.
>
> ==========
>
> One thing I will have to say, art, is that either your loyal groupies in
> faith-based "science" have a problem with reading comprehension or they
> suffer from a cranial deficiency that precludes their ability to process
> information following the rules of simple logic. This commonality amongst
> your followers, modern day Don Quixote de la Manchas attacking the fierce
> windmills of reasonable science on this ng, is the prime reason for my
> having plonked each and every one of them.
> ==========- Hide quoted text -
>
> - Show quoted text -

As I have said many times, free speech is a right.The downside is that
it
portrays the manner of man who takes hold of that freedom.
When you stated I was dishonest it hurt, but then I realized that now
I
knew the manner of the man in question. When a door is slammed shut
in your face another always opens so that the light may enter. As Dr
King would say "I have seen the light"
and no doubt many others also have seen the light. I am not a liar and
some are willing to bet on it while you, the accuser, have turned
tail.
Art Unwin KB9MZ....XG(uk)

1169. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 05:13:25 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <kgl5p3l9q30qbaecsiv4flod1fqk0ttv9a@4ax.com>
Source record: 29189

On Sun, 20 Jan 2008 04:22:40 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
wrote:

>> I don't think this is what you mean, but what you describe is vague.
>
>Probably.
>Imagine a half wave dipole with each leg folded back on itself
>effectively becoming half its original physical length but still
>the original electrical length, each leg is like a long thin letter
>`U` ..like a folded dipole that has been cut open circuit opposite
>the feed point...I shouldn`t have mentioned a vertical because
>it mis-lead you, it was meant just to describe the configuration
>of the dipole legs.

Hi Len,

This is more tenable. A satisfactory dipole, no horrendous loss due
to counter winding feed. If you can hoist a beam, about 19 feet wide,
with two wires connected at the ends and returning below it about 4
inches coming back within 4 inches of the beam above; then you stand a
chance, provided you can match to about a 7 Ohm load.

I presume your description follows something like (in fixed font):

_____________________________0______________________________
| |
ï¿½
ï¿½

73's
Richard Clark, KB7QHC

1170. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 05:25:24 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4792db5a$0$10934$4c368faf@roadrunner.com>
Source record: 29190

"jawod" <jawod@fuse.net> wrote in message news:4792D5DB.1080009@fuse.net...
>I am a Democrat. Even I can tell this is a smear job. Lots of operatives
>out there with their "eyes on the prize". Don't be misled by these emails.
>The gloves are off. Internet dispatches are ALL suspect.
>
> We are all sailing in rough seas. In the end, each of us can pick the
> candidate we are most comfortable with.

Of course, our best defense is to use our allocated bands to the maximum. As long as there is a large installed base of ham equipment and the hams use it, the government is less likely to take those bands away, no matter how much lobbying occurs because they know that those bands will never be free of gross interference. At worst case, the "carpetbaggers" would be driven away by those who have invested money in their equipment. Knowledge of this MAD scenario is our best defense. Imagine what would happen if they tried to give 11m to a private company; I wouldn't bet on it succeeding. Not that I for a moment would *ever* advocate illegal operation of any kind.

1171. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 07:40:43 UTC
From: jimkelleyamps@gmail.com
Message-ID: <a1f95aa4-c793-435e-8da1-f5b4157bb3b2@k2g2000hse.googlegroups.com>
Source record: 29191

On Jan 19, 5:04 am, Cecil Moore <nos...@w5dxp.com> wrote:
> It is a gross confusion of cause and effect to say:
> "If two waves superpose to zero, those two waves
> don't exist."

Then it should be a simple matter for you to actually measure the canceled waves and their energy in order to prove everyone wrong once and for all.

> If the component waves being emitted
> by a Yagi antenna don't exist, then it is a waste
> of time and money to put up a Yagi antenna.
>
> Maybe you should notify HP that they are wasting their
> time publishing the following equation since s11*a1
> and s12*a2 don't exist.
>
> b1 = s11*a1 + s12*a2 = 0
>
> That equation does *not* imply that s11*a1 and s12*a2
> must equal zero. In fact those non-zero values are easy
> to calculate. Square each and you have the power associated
> with each of those components.

And yet when b1=0, they refuse to deliver any. It doesn't seem to lend much support for your claim.

> The irradiance equation from optical physics can be
> derived by squaring the s-parameter normalized voltage
> equation. Since (a1*a2) is a phasor term in that equation,
> the phase angle between a1 and a2 must be included in the
> result.
> --
> 73, Cecil http://www.w5dxp.com

None of the well proven methods shows a need for there to be any energy in canceled, non-existant waves. HP would certainly never affiliate themselves with a claim that there's energy associated with waves that don't exist. The irradiance equation with all its "phasor terms" is no help either. Where there is no irradiance, there is no EM energy. Even Yagi antennas fail to radiate energy from their null points. The only person I've ever seen claiming that there is energy in non-existant waves is you, Cecil. On it's face, the idea is ludicrous. And apparently you don't even find beauty in the fact that, with no energy traveling in the direction of cancelled waves, there is no need to invent a "4th mechanism of reflection" in order to conserve

that energy and get it moving in its correct direction of travel. As a bonus, there is no need for religious beliefs that interference and wave interaction cause waves to change direction. Accepting this would of course mean yet another delay in the quest for martyrdom.

ac6xg

1172. mixing of signals

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 07:49:08 UTC
From: shah <shahidali.shahid@gmail.com>
Message-ID: <d230dcdb-a996-445b-9c1b-2d2c28ae1159@d21g2000prf.googlegroups.com>
Source record: 29192

i have a problem with the mixing of signals.in my radio signals are mixing of different channels.at a same frequency different channels are running.and also a background noise.please help this out.please give me solution to thuis

1173. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 07:59:03 UTC
From: gsm@mendelson.com
Message-ID: <slrnfp5vpt.134.gsm@cable.mendelson.com>
Source record: 29193

AI4QJ wrote:
> Of course, our best defense is to use our allocated bands to the maximum. As
> long as there is a large installed base of ham equipment and the hams use
> it, the government is less likely to take those bands away, no matter how
> much lobbying occurs because they know that those bands will never be free
> of gross interference. At worst case, the "carpetbaggers" would be driven
> away by those who have invested money in their equipment. Knowledge of this
> MAD scenario is our best defense. Imagine what would happen if they tried
> to give 11m to a private company; I wouldn't bet on it succeeding. Not that
> I for a moment would *ever* advocate illegal operation of any kind.

What about giving 220-222 mHz to UPS, who then decided not to use it?

Geoff.

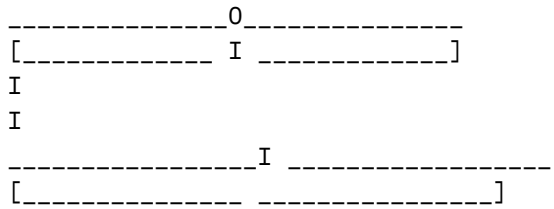
--
Geoffrey S. Mendelson, Jerusalem, Israel gsm@mendelson.com N3OWJ/4X1GM
IL Voice: (07)-7424-1667 U.S. Voice: 1-215-821-1838
Visit my 'blog at http://geoffstechno.livejournal.com/

1174. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 09:03:05 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <d7Ekj.10320$xm1.5812@fe2.news.blueyonder.co.uk>
Source record: 29194

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:kgl5p3l9q30qbaecsiv4flod1fqk0ttv9a@4ax.com...
> On Sun, 20 Jan 2008 04:22:40 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
> wrote:
>
> >> I don't think this is what you mean, but what you describe is vague.
> > >
> > >Probably.
> > >Imagine a half wave dipole with each leg folded back on itself
> > >effectively becoming half its original physical length but still
> > >the original electrical length, each leg is like a long thin letter
> > >`U` ..like a folded dipole that has been cut open circuit opposite
> > >the feed point...I shouldn`t have mentioned a vertical because
> > >it mis-lead you, it was meant just to describe the configuration
> > >of the dipole legs.
> >
> > Hi Len,
> >
> > This is more tenable. A satisfactory dipole, no horrendous loss due
> > to counter winding feed. If you can hoist a beam, about 19 feet wide,
> > with two wires connected at the ends and returning below it about 4
> > inches coming back within 4 inches of the beam above; then you stand a
> > chance, provided you can match to about a 7 Ohm load.
> >
> > I presume your description follows something like (in fixed font):
> >
> > _____________________________0_____________________________
> > | |
> > ---------------------------- ----------------------------
> >

Yes. Richard, you have it now...i was mainly concerned about the spacing
of the foldback from the parent element as i have seen much more exotic
layouts using 3 and four foldbacks using 400ohm ribbon feeder for the
element which i might try for 80 and 160, but i`ll make those using spaced
single wire dipoles rather than utilise a rigid rotatable ten meter dipole
and
a couple of lengths of wire..maybe i can do the same again for a reflector??



Regards....

Len..........G6ZSG.........

1175. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 12:20:51 UTC
From: Carter-k8vt <k8vt@ameritech.net>
Message-ID: <D0Hkj.36804$JD.21672@newssvr21.news.prodigy.net>
Source record: 29195
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

jawod wrote:
> I am a Democrat. Even I can tell this is a smear job. Lots of
> operatives out there with their "eyes on the prize". Don't be misled by
> these emails. The gloves are off. Internet dispatches are ALL suspect.
>
> We are all sailing in rough seas. In the end, each of us can pick the
> candidate we are most comfortable with.
>
> 73,
>
> John
> AB8O

John,
I would respectfully beg to differ with you. This incident actually happened a couple of years ago, -long- before he threw is hat in the ring; no reason to 'smear' him back then...

1176. Romney...who cares?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 15:12:55 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <RZudnYEDitNl-Q7anZ2dnUVZ_oWdnZ2d@bright.net>
Source record: 29196

Don't we as a country have more to worry about than worrying about if Romney feels that hams aren't necessarily needed? What about issues like social security, foreign policy, immigration, etc. Where does Romney stand on these issues? To decide to vote or not vote for any candidate based on their view of ham radio is a bit narrow minded perhaps?

--
Scott N0EDV
http://corbenflyer.tripod.com/
Gotta Fly or Gonna Die
Building RV-4 (Super Slow Build Version)

1177. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 17:01:12 UTC
From: art <aunwin@insightbb.com>
Message-ID: <38ddf3f6-7692-4997-afc9-10e5dc065b21@m34g2000hsf.googlegroups.com>
Source record: 29197

On 19 Jan, 10:56, "AI4QJ" <nos...@yahoo.com> wrote:
> <alan.hartw...@gmail.com> wrote in message
>
> ne
>
> http://www.energyscience.org.uk/le/le24.htm
>
I have just got around to reading just the intro
of the above URL. Later I will digest the rest of
the lesson.
What struck me was how deftly the author pointed out
where pseudo experts have dominated science thru the ages
such that it reflects the poles of the many led by the few.
It shows time and time again that science is a popularity
contest where the so called "in crowd" of of self rightious
people have been able to thwat the advances of science of
the past centuries. Gallilao comes to mind as does Green
of Nottingham and Heavieside of Clapton and ofcourse my favorite
Gauss. We are seeing the same thing here on this newsgroup
where passed tenents are held on to the death by those
addicted to the passed. Naturally I think about my own case.
I presented a trail of science where each step can be examined in
depth
on Googles when reading the achievements of others.
There is not one point on the trail that prior science does not
repute.
It fills a void with respect to radiation where presently there
is nothing else presented to fill this gap of knoweledge.
Yet we can see how humans react to change with out a morsel
of evidence to contradict the new are able to gather a baying crowd
similar to that around madame Guillotine to view the death of nobles.
Ofcourse at that time academia had not closed its society off
from the outside where now they are better equipped against the poll
makers
such that the only efforts left to derail in science are those
generated outside the
academic world and also judged by those who are also excluded by the
closed society
as a unproven value. Vincent was different. He generated his skunk
works from the inside of academia who were desperate to include
themselves into the closed.science of academia, Where they could
supply information that would not and does not pass the time of day in
academia.
I read a tale once that a man hid from facts by hiding in a garbage

can where he suddenly realised he was closed off from all the worries of the world. Where the temperature was warm and food tho spoiled was available for the picking. Ofcourse there was the smell but what did it really matter as nobody else was around that could smell and thus insult him.
In this group there is evidence that some of its members have emerged from their former places of confort and thus show that even in speech does the former odour prevail.
Humans must get away from this syndrome of resistance to change and regain its inherrant inquisitiveness.
Very best regards to all
Art Unwin....KB9MZ...XG(uk)

1178. Re: Romney...who cares?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 17:18:50 UTC
From: James <jnipperxxx@nospamfdn.com>
Message-ID: <OsWdnVsd7vnrHw7anZ2dnUVZ_g-dnZ2d@comcast.com>
Source record: 29198

Exactly what are you talking about ??

Don't we as a country have more to worry about than worrying about if
Romney feels that hams aren't necessarily needed? What about issues
like social security, foreign policy, immigration, etc. Where does
Romney stand on these issues? To decide to vote or not vote for any
candidate based on their view of ham radio is a bit narrow minded perhaps?

1179. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 17:19:32 UTC
From: Bob <bobsakol@hotmail.com>
Message-ID: <bab27$47938193$cef8bfee$5918@TEKSAVVY.COM-Free>
Source record: 29199

"MGFoster" <me@privacy.com> wrote in message
news:13oucpt4qftq763@corp.supernews.com...
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I saw this 50 ohm "terminator" BNC connector at Radio Shack today and
> was wondering if it could be used as an antenna dummy load? It is
> designed as a computer network terminator - just a female jack without
> any output connector. I believe the only question would be "Could it
> stand the power output?" What if the output was just 5W? Anybody know
> about this product or have used it as a dummy load?
>
> It'd sure save the price of a "real" dummy antenna (it was priced about
> $4.00 USD).
>
> Thanks
> --
> MGFoster:::mgf00 <at> earthlink <decimal-point> net
> Oakland, CA (USA)
> ** Respond only to this newsgroup. I DO NOT respond to emails **
>
> -----BEGIN PGP SIGNATURE-----
> Version: PGP for Personal Privacy 5.0
> Charset: noconv
>
> iQA/AwUBR48zz4echKqOuFEgEQJ4OwCeKdWRKG4P8cxND+FGxpF38ISyc+4AoNoU
> T4vopRD2S1IPgrw9CO/dW50t
> =TmNl
> -----END PGP SIGNATURE-----

Hi, look here:
http://www.bourns.com/components.aspx?cmsphid=7631383|7163299|3412571

DIY - you need piece of AL heatsink and connector. Enjoy own dummy load! 73

1180. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 17:21:58 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <LqLkj.54760$Mu4.26118@bignews7.bellsouth.net>
Source record: 29100

"art" <aunwin@insightbb.com> wrote in message
news:38ddf3f6-7692-4997-afc9-10e5dc065b21@m34g2000hsf.googlegroups.com...
> On 19 Jan, 10:56, "AI4QJ" <nos...@yahoo.com> wrote:
>> <alan.hartw...@gmail.com> wrote in message
>>
>> ne
>>
>> http://www.energyscience.org.uk/le/le24.htm
>>
> I have just got around to reading just the intro
> of the above URL. Later I will digest the rest of
> the lesson.
> What struck me was how deftly the author pointed out
> where pseudo experts have dominated science thru the ages
> such that it reflects the poles of the many led by the
> few.
> It shows time and time again that science is a popularity
> contest where the so called "in crowd" of of self
> rightious
> people have been able to thwat the advances of science of
> the past centuries. Gallilao comes to mind as does Green
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> Gauss. We are seeing the same thing here on this newsgroup
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> I presented a trail of science where each step can be
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> on Googles when reading the achievements of others.
> There is not one point on the trail that prior science
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> repute.
> It fills a void with respect to radiation where presently
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> Yet we can see how humans react to change with out a
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> of evidence to contradict the new are able to gather a
> baying crowd
> similar to that around madame Guillotine to view the death
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> Ofcourse at that time academia had not closed its society

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> against the poll
> makers
> such that the only efforts left to derail in science are
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> generated outside the
> academic world and also judged by those who are also
> excluded by the
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> as a unproven value. Vincent was different. He generated
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> works from the inside of academia who were desperate to
> include
> themselves into the closed.science of academia, Where they
> could
> supply information that would not and does not pass the
> time of day in
> academia.
> I read a tale once that a man hid from facts by hiding in
> a garbage
> can where he suddenly realised he was closed off from all
> the worries
> of the world. Where the temperature was warm and food tho
> spoiled was
> available for the picking. Ofcourse there was the smell
> but what did
> it really matter as nobody else was around that could
> smell and thus
> insult him.
> In this group there is evidence that some of its members
> have emerged
> from their former places of confort and thus show that
> even in speech
> does the former odour prevail.
> Humans must get away from this syndrome of resistance to
> change and
> regain its inherrant inquisitiveness.
> Very best regards to all
> Art Unwin....KB9MZ...XG(uk)
>

Do you suppose that red blood cells look down their noses at white blood cells? After all, there are far more red blood cells than white blood cells. Numbers alone would indicate that they are superior. Perhaps the white blood cells feel that they are superior because there are fewer of them. Plus, they have the noblest task of all, that of defending the world/body.

Without either type, our bodies would cease to function.

So it is with various types of people. We need them all.
Each have their function. None are expendable.

Ed, NM2K

1181. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 17:26:26 UTC
From: Bob <bobsakol@hotmail.com>
Message-ID: <9ca77$47938331$cef8bfee$6107@TEKSAVVY.COM-Free>
Source record: 29101

"MGFoster" <me@privacy.com> wrote in message
news:13oucpt4qftq763@corp.supernews.com...
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I saw this 50 ohm "terminator" BNC connector at Radio Shack today and
> was wondering if it could be used as an antenna dummy load? It is
> designed as a computer network terminator - just a female jack without
> any output connector. I believe the only question would be "Could it
> stand the power output?" What if the output was just 5W? Anybody know
> about this product or have used it as a dummy load?
>
> It'd sure save the price of a "real" dummy antenna (it was priced about
> $4.00 USD).
>
> Thanks
> --
> MGFoster:::mgf00 <at> earthlink <decimal-point> net
> Oakland, CA (USA)
> ** Respond only to this newsgroup. I DO NOT respond to emails **
>
> -----BEGIN PGP SIGNATURE-----
> Version: PGP for Personal Privacy 5.0
> Charset: noconv
>
> iQA/AwUBR48zz4echKqOuFEgEQJ4OwCeKdWRKG4P8cxND+FGxpF38ISyc+4AoNoU
> T4vopRD2S1IPgrw9CO/dW50t
> =TmNl
> -----END PGP SIGNATURE-----

Hi, The second link:
http://www.caddock.com/Online_catalog/current_sense/Current.html

at the bottom of the page you can see resistor: MP9100, 100Watts! just
amazing! 73's

1182. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 17:29:19 UTC
From: Bob <bobsakol@hotmail.com>
Message-ID: <9a005$479383de$cef8bfee$6191@TEKSAVVY.COM-Free>
Source record: 29102

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:ETJjj.1023$EZ3.185@nlpi070.nbdc.sbc.com...
> Tam wrote:
>> Almost certainly, the power rating of the terminator is either 1/8, 1/4,
>> or 1/2 W.
>
> Does Radio Shack not specify the power rating?
> --
> 73, Cecil http://www.w5dxp.com

Hey engineer! here is link:
http://www.caddock.com/Online_catalog/current_sense/Current.html
MP9100
Dont lure good people to smacks shops! Just DIY!

1183. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 17:51:27 UTC
From: art <aunwin@insightbb.com>
Message-ID: <f6bb77af-2d66-4d93-885a-248aafbbecb6@c4g2000hsg.googlegroups.com>
Source record: 29103

On 20 Jan, 09:21, "Ed Cregger" <ecreg...@bellsouff.net> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:38ddf3f6-7692-4997-afc9-10e5dc065b21@m34g2000hsf.googlegroups.com...
>
>
>
>
>
> > On 19 Jan, 10:56, "AI4QJ" <nos...@yahoo.com> wrote:
> >> <alan.hartw...@gmail.com> wrote in message
>
> >> ne
>
> >>http://www.energyscience.org.uk/le/le24.htm
>
> > > I have just got around to reading just the intro
> > > of the above URL. Later I will digest the rest of
> > > the lesson.
> > > What struck me was how deftly the author pointed out
> > > where pseudo experts have dominated science thru the ages
> > > such that it reflects the poles of the many led by the
> > > few.
> > > It shows time and time again that science is a popularity
> > > contest where the so called "in crowd" of of self
> > > rightious
> > > people have been able to thwat the advances of science of
> > > the past centuries. Gallilao comes to mind as does Green
> > > of Nottingham and Heavieside of Clapton and ofcourse my
> > > favorite
> > > Gauss. We are seeing the same thing here on this newsgroup
> > > where passed tenents are held on to the death by those
> > > addicted to the passed. Naturally I think about my own
> > > case.
> > > I presented a trail of science where each step can be
> > > examined in
> > > depth
> > > on Googles when reading the achievements of others.
> > > There is not one point on the trail that prior science
> > > does not
> > > repute.
> > > It fills a void with respect to radiation where presently
> > > there
> > > is nothing else presented to fill this gap of knoweledge.

> > Yet we can see how humans react to change with out a
> > morsel
> > of evidence to contradict the new are able to gather a
> > baying crowd
> > similar to that around madame Guillotine to view the death
> > of nobles.
> > Ofcourse at that time academia had not closed its society
> > off
> > from the outside where now they are better equipped
> > against the poll
> > makers
> > such that the only efforts left to derail in science are
> > those
> > generated outside the
> > academic world and also judged by those who are also
> > excluded by the
> > closed society
> > as a unproven value. Vincent was different. He generated
> > his skunk
> > works from the inside of academia who were desperate to
> > include
> > themselves into the closed.science of academia, Where they
> > could
> > supply information that would not and does not pass the
> > time of day in
> > academia.
> > I read a tale once that a man hid from facts by hiding in
> > a garbage
> > can where he suddenly realised he was closed off from all
> > the worries
> > of the world. Where the temperature was warm and food tho
> > spoiled was
> > available for the picking. Ofcourse there was the smell
> > but what did
> > it really matter as nobody else was around that could
> > smell and thus
> > insult him.
> > In this group there is evidence that some of its members
> > have emerged
> > from their former places of confort and thus show that
> > even in speech
> > does the former odour prevail.
> > Humans must get away from this syndrome of resistance to
> > change and
> > regain its inherrant inquisitiveness.
> > Very best regards to all
> > Art Unwin....KB9MZ...XG(uk)
>
> -------------
>

> Do you suppose that red blood cells look down their noses at
> white blood cells? After all, there are far more red blood
> cells than white blood cells. Numbers alone would indicate
> that they are superior. Perhaps the white blood cells feel
> that they are superior because there are fewer of them.
> Plus, they have the noblest task of all, that of defending
> the world/body.
>
> Without either type, our bodies would cease to function.
>
> So it is with various types of people. We need them all.
> Each have their function. None are expendable.
>
> Ed, NM2K- Hide quoted text -
>
> - Show quoted text -

Yes. But when they over estimate their abilities in areas outside
their field of expertise you can expect problems.
Both a set of gears as well as a wrench each have superb qualities.
Let the wrench place itself between the grinding teeth of gears
then
all progress comes to a halt
Art

1184. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 17:56:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9627p3tn32jsn67jiccr33unilk4apnrla@4ax.com>
Source record: 29104

On Sun, 20 Jan 2008 09:03:05 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
wrote:

>Yes. Richard, you have it now...i was mainly concerned about the spacing
>of the foldback from the parent element as i have seen much more exotic
>layouts using 3 and four foldbacks using 400ohm ribbon feeder for the
>element which i might try for 80 and 160, but i`ll make those using spaced
>single wire dipoles rather than utilise a rigid rotatable ten meter dipole
>and
>a couple of lengths of wire..

Hi Len,

As for going lower to 80M using 3 or more foldbacks (for the simpler
dipole) to keep it in your garden. Stick with your mag loops, because
it doesn't get any better.

Using 3 foldbacks for 80M (and the antenna is too wide for your
garden) will give you a 10 KHz bandwidth at the 2:1 SWR points. Making
the antenna smaller to fit, drives up the Q. 160M only portends worse
Q (from your point of view).

A small dipole, like a small loop, either are going to be hi Q if they
are to be efficient.

>maybe i can do the same again for a reflector??
>
> _____________O_____________
> [_____________ I _____________]
> I
> I
> _________________I _________________
>[_____________ _____________]
>

YOW!!!

You are now getting quite elaborate. You can accomplish this, with
great care, and if you have the patience to raise and lower this half
a dozen times or more to get it right.

73's
Richard Clark, KB7QHC

1185. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 18:15:01 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9p37p3hs131iue84fggo0a4hmadjc00ijl@4ax.com>
Source record: 29105

On Sun, 20 Jan 2008 12:29:19 -0500, "Bob" <bobsakol@hotmail.com>
wrote:

>
>"Cecil Moore" <nospam@w5dxp.com> wrote in message
>news:ETJjj.1023$EZ3.185@nlpi070.nbdc.sbc.com...
>> Tam wrote:
>>> Almost certainly, the power rating of the terminator is either 1/8, 1/4,
>>> or 1/2 W.
>>
>> Does Radio Shack not specify the power rating?
>> --
>> 73, Cecil http://www.w5dxp.com
>
>Hey engineer! here is link:
>http://www.caddock.com/Online_catalog/current_sense/Current.html
>MP9100
>Dont lure good people to smacks shops! Just DIY!

Unlikely to be useful above the LW to AM band.

73's
Richard Clark, KB7QHC

1186. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 19:06:08 UTC
From: You <you@shadow.orgs>
Message-ID: <you-E2E0B6.10074020012008@netnews.worldnet.att.net>
Source record: 29106
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

In article <D0Hkj.36804$JD.21672@newssvr21.news.prodigy.net>,
Carter-k8vt <k8vt@ameritech.net> wrote:

> jawod wrote:
> > I am a Democrat. Even I can tell this is a smear job. Lots of
> > operatives out there with their "eyes on the prize". Don't be misled by
> > these emails. The gloves are off. Internet dispatches are ALL suspect.
> >
> > We are all sailing in rough seas. In the end, each of us can pick the
> > candidate we are most comfortable with.
> >
> > 73,
> >
> > John
> > AB8O
>
> John,
> I would respectfully beg to differ with you. This incident actually
> happened a couple of years ago, -long- before he threw is hat in the
> ring; no reason to 'smear' him back then...

You miss the point, the smear is NOW. Why bring up comments that are
two years OLD, NOW? To smear the guy, is the only reason.....

1187. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 19:06:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FYMkj.4308$jJ5.2875@newssvr11.news.prodigy.net>
Source record: 29107

jimkelleyamps@gmail.com wrote:
> Then it should be a simple matter for you to actually measure the
> canceled waves and their energy in order to prove everyone wrong once
> and for all.

The energy in the canceled waves is why the forward
power is often greater than the source power. As the
Melles-Groit web page says:

http://www.mellesgriot.com/products/optics/oc_2_1.htm

"Clearly, if the wavelength of the incident light and the
thickness of the film are such that a phase difference exists
between reflections of p, then reflected wavefronts interfere
destructively, and overall reflected intensity is a minimum.
If the two reflections are of equal amplitude, then this
amplitude (and hence intensity) minimum will be zero."

When it is zero, total destructive interference and wave
cancellation has occurred.

"In the absence of absorption or scatter, the principle of
conservation of energy indicates all 'lost' reflected intensity
will appear as enhanced intensity in the transmitted beam. The
sum of the reflected and transmitted beam intensities is always
equal to the incident intensity. THIS IMPORTANT FACT HAS BEEN
CONFIRMED EXPERIMENTALLY." (emphasis mine)

Melles-Groit says it has been confirmed experimentally.
That's good enough for me. What it is about the Melles-Groit
web page that you don't understand?

> And yet when b1=0, they refuse to deliver any.

No, the the energy is delivered (redistributed) in the
opposite direction. What is it about the FSU web page
that you don't understand?

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

"... when two waves of equal amplitude and wavelength that are
180-degrees ... out of phase with each other meet, they are not
actually annihilated, ... All of the photon energy present in
these waves must somehow be recovered or redistributed in a new
direction, according to the law of energy conservation ... Instead,
upon meeting, the photons are redistributed to regions that permit

constructive interference, so the effect should be considered as
a redistribution of light waves and photon energy rather than
the spontaneous construction or destruction of light."

> None of the well proven methods shows a need for there to be any
> energy in canceled, non-existant waves.

The Melles-Groit web page says the energy in the canceled waves
"appears as enhanced intensity in the transmitted beam" (forward wave).

The FSU web page says the energy in the canceled waves is
"redistributed to regions that permit constructive interference"
(forward wave).

That's good enough for me.
--
73, Cecil http://www.w5dxp.com

1188. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 19:06:16 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47939c18$0$30687$4c368faf@roadrunner.com>
Source record: 29108
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

"Carter-k8vt" <k8vt@ameritech.net> wrote in message
news:D0Hkj.36804$JD.21672@newssvr21.news.prodigy.net...
> jawod wrote:
>> I am a Democrat. Even I can tell this is a smear job. Lots of
>> operatives out there with their "eyes on the prize". Don't be misled by
>> these emails. The gloves are off. Internet dispatches are ALL suspect.
>>
>> We are all sailing in rough seas. In the end, each of us can pick the
>> candidate we are most comfortable with.
>>
>> 73,
>>
>> John
>> AB8O
>
> John,
> I would respectfully beg to differ with you. This incident actually
> happened a couple of years ago, -long- before he threw is hat in the ring;
> no reason to 'smear' him back then...

It was my understanding when it was first brought up that what he meant was they the government agencies were fully able to handle there own comm needs. It would have truly been udder stupidity on his part for him to have meant anything else. It is true that the amateur radio community is needed less and less even though we are more than willing and able to fill the need. A very small case in point: A charity walk/run used to be handled by the local ham radio clubs providing emergency communication and coordination via handheld radios and the local repeaters. This past year it was handled by the Girl Scouts using cell phones.

Jimmie

1189. Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 19:51:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mi87p39hkrm8os9t03k01umib29cfh2915@4ax.com>
Source record: 29109

On Sat, 19 Jan 2008 23:40:43 -0800 (PST), jimkelleyamps@gmail.com
wrote:

>The only person I've ever seen claiming that there is energy
>in non-existant waves is you, Cecil.

Hi Jim,

That's not strictly true. I for one have always maintained there is energy where it cancels, it is also somewhere else when it adds. On the other hand if it is no where else to add, that seems to put an end to it. Like a draw match in a tug of war, the rope may not be moving, but its tension is obvious by the nulled energies.

>On it's face, the idea is ludicrous.

Perhaps at the myopic scale of picking a point to the exclusion of examining all points illuminated (radiated, or otherwise excited) by two sources.

As for the non-existence of waves, I would read this as the resultant combination of two waves exhibiting a null at a locality. This then argues: What is a wave? Sorry to bring up that zombie topic as it will no doubt lead to Cecilaborations he constructs only for idle diversion - that is not my fault, and I certainly don't follow his narcissistic meanderings with as much attachment as you or Keith or Gene (or Art's fawning, but puzzled adoration). Clearly you cannot have a wave (3D by its very nature) at a 1D point. The absurd extension of the argument would then deny a wave exists anywhere because all singularities examined lack dimension.

Let's simply divorce the second source and look at the dipole. It clearly is a source of energy, no one is going to deny that I hope (OK, Cecil will as this post is draining the numbers on his celebrity status). We can still discuss fields (includes DC then) or waves (extending to AC/RF). We can combine them, every text does this in the first chapter. We find a line bisecting the dipole with a null response. An infinitesimal point residing in the infinite bisecting plane can't tell the difference between a null and no field/wave certainly. Is energy non-existent? The tug of war informs us otherwise. Turn off the dipole, and you win the argument of non-existent energy - but the rope collapses to the ground, falling out of its 2D shape. Even for the tug of war, the evidence still differentiates between the two circumstances.

This non-existence blossoms into:
>Even Yagi antennas fail to radiate energy from their null points.
such is the well from which Arthur draws his inspiration.

Antennas radiate equally in all directions from all points. Nulls are
the products of the sums of those radiations at a remote point.

Cecil's MENSES challenges collapse from their own internal faults
easily enough, pursuing his illusions are not required unless this
greek chorus enjoys polluting the well to sustain the comedy.

73's
Richard Clark, KB7QHC

1190. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 20:03:27 UTC
From: art <aunwin@insightbb.com>
Message-ID: <d0fccf21-8c4a-494c-b3d5-84a0e8ad1cb9@y5g2000hsf.googlegroups.com>
Source record: 29110

On 20 Jan, 09:51, art <aun...@insightbb.com> wrote:
> On 20 Jan, 09:21, "Ed Cregger" <ecreg...@bellsouff.net> wrote:
>
>
>
>
>
> > "art" <aun...@insightbb.com> wrote in message
>
> >news:38ddf3f6-7692-4997-afc9-10e5dc065b21@m34g2000hsf.googlegroups.com...
>
> > > On 19 Jan, 10:56, "AI4QJ" <nos...@yahoo.com> wrote:
> > >> <alan.hartw...@gmail.com> wrote in message
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> > >>http://www.energyscience.org.uk/le/le24.htm
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> > > > I have just got around to reading just the intro
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> > > > What struck me was how deftly the author pointed out
> > > > where pseudo experts have dominated science thru the ages
> > > > such that it reflects the poles of the many led by the
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> > > > It shows time and time again that science is a popularity
> > > > contest where the so called "in crowd" of of self
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> > > > Gauss. We are seeing the same thing here on this newsgroup
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> > > > addicted to the passed. Naturally I think about my own
> > > > case.
> > > > I presented a trail of science where each step can be
> > > > examined in
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> > > > on Googles when reading the achievements of others.
> > > > There is not one point on the trail that prior science
> > > > does not
> > > > repute.
> > > > It fills a void with respect to radiation where presently

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> > > is nothing else presented to fill this gap of knoweledge.
> > > Yet we can see how humans react to change with out a
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> > > of evidence to contradict the new are able to gather a
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> > > similar to that around madame Guillotine to view the death
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> > > Ofcourse at that time academia had not closed its society
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> > > as a unproven value. Vincent was different. He generated
> > > his skunk
> > > works from the inside of academia who were desperate to
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> > > themselves into the closed.science of academia, Where they
> > > could
> > > supply information that would not and does not pass the
> > > time of day in
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> > > I read a tale once that a man hid from facts by hiding in
> > > a garbage
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> > > the worries
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> > > it really matter as nobody else was around that could
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> > > insult him.
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> > > from their former places of confort and thus show that
> > > even in speech
> > > does the former odour prevail.
> > > Humans must get away from this syndrome of resistance to
> > > change and
> > > regain its inherrant inquisitiveness.
> > > Very best regards to all
> > > Art Unwin....KB9MZ...XG(uk)
>

> > -------------
>
> > Do you suppose that red blood cells look down their noses at
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> > that they are superior because there are fewer of them.
> > Plus, they have the noblest task of all, that of defending
> > the world/body.
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> > Without either type, our bodies would cease to function.
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> > So it is with various types of people. We need them all.
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> > Ed, NM2K- Hide quoted text -
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> Yes. But when they over estimate their abilities in areas outside
> their field of expertise you can expect problems.
> Both a set of gears as well as a wrench each have superb qualities.
> Let the wrench place itself between the grinding teeth of gears
> then
> all progress comes to a halt
> Art- Hide quoted text -
>
> - Show quoted text -

I proved myself as a true ham today. I had this new antenna on hand
but the temperature was zero F degrees. Undaunted I went outside and
disassembled my presenst antenna and took it off the tower and then
replaced it with my replacement extra portable 160M antenna. By the
time I finished at noon the temperature has reached a balmy 12 degrees
F. Warmed myself up and the
put the MFJ259 on the line in the shack. The resistance did not go
below 20 ohms and climbed to 100 ohms at one end of the band.Swr on
the meter showed a max of 3:1 across the whole band.
I will have to wait a day or so to check it again to see if a matching
effort is required
when using the tube output of the amp which is tunable ofcourse. Now
to the wifes honey doos for the rest of the day.Again, facts are
stranger than fiction when using an antenna that is a tight squash
into a lawyers briefcase which is larger than the norm. That defies
the long held housewives tail that size is everything even tho
aperture is proportional to gain, all ofcourse based on a yagi design
which all hams are sure cannot be beaten by a smaller antenna
array.Where are the censors of the day? By the way when the WHOLE
radiator is 70foot or so away from ground the decrease in noise is
tremendous.

Regards to all
Art Unwin KB9MZ....XG(uk)

1191. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 20:19:42 UTC
From: art <aunwin@insightbb.com>
Message-ID: <e2b4bd7f-14f9-4ee9-8e98-cb2e53f4f7f4@v29g2000hsf.googlegroups.com>
Source record: 29111

On 20 Jan, 11:51, Richard Clark <kb7...@comcast.net> wrote:
> On Sat, 19 Jan 2008 23:40:43 -0800 (PST), jimkelleya...@gmail.com
> wrote:
>
> >The only person I've ever seen claiming that there is energy
> >in non-existant waves is you, Cecil.
>
> Hi Jim,
>
> That's not strictly true. I for one have always maintained there is
> energy where it cancels, it is also somewhere else when it adds. On
> the other hand if it is no where else to add, that seems to put an end
> to it. Like a draw match in a tug of war, the rope may not be moving,
> but its tension is obvious by the nulled energies.
>
> >On it's face, the idea is ludicrous.
>
> Perhaps at the myopic scale of picking a point to the exclusion of
> examining all points illuminated (radiated, or otherwise excited) by
> two sources.
>
> As for the non-existence of waves, I would read this as the resultant
> combination of two waves exhibiting a null at a locality. This then
> argues: What is a wave? Sorry to bring up that zombie topic as it
> will no doubt lead to Cecilaborations he constructs only for idle
> diversion - that is not my fault, and I certainly don't follow his
> narcissistic meanderings with as much attachment as you or Keith or
> Gene (or Art's fawning, but puzzled adoration). Clearly you cannot
> have a wave (3D by its very nature) at a 1D point. The absurd
> extension of the argument would then deny a wave exists anywhere
> because all singularities examined lack dimension.
>
> Let's simply divorce the second source and look at the dipole. It
> clearly is a source of energy, no one is going to deny that I hope
> (OK, Cecil will as this post is draining the numbers on his celebrity
> status). We can still discuss fields (includes DC then) or waves
> (extending to AC/RF). We can combine them, every text does this in
> the first chapter. We find a line bisecting the dipole with a null
> response. An infinitesimal point residing in the infinite bisecting
> plane can't tell the difference between a null and no field/wave
> certainly. Is energy non-existent? The tug of war informs us
> otherwise. Turn off the dipole, and you win the argument of
> non-existent energy - but the rope collapses to the ground, falling

> out of its 2D shape. Even for the tug of war, the evidence still
> differentiates between the two circumstances.
>
> This non-existence blossoms into:>Even Yagi antennas fail to radiate energy from their null points.
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> such is the well from which Arthur draws his inspiration.
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> Antennas radiate equally in all directions from all points. Nulls are
> the products of the sums of those radiations at a remote point.
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> Cecil's MENSES challenges collapse from their own internal faults
> easily enough, pursuing his illusions are not required unless this
> greek chorus enjoys polluting the well to sustain the comedy.
>
> 73's
> Richard Clark, KB7QHC

I am compelled to respond to this collection of words from which I see
a conclusion
of what is to be considered agreement or disagreement.
The wise will accept that there is disagreement and no amount of
slander is likely to change that. Because the wise retreat to the side
lines it by no means to be taken as representing anything. Where as
you little twit, are now trying to portray what you apparently knew
all along at the same time covering your words with camoflarge to
disguise your present position until more information is at hand.

1192. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 20:33:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1fb7p3h96ltbq101rbr4b30ftqfkqsepfo@4ax.com>
Source record: 29112

On Sun, 20 Jan 2008 12:19:42 -0800 (PST), art <aunwin@insightbb.com>
wrote:

>I am compelled to respond to this collection of words from which I see
>a conclusion
>of what is to be considered agreement or disagreement.

Sounds like equilibrium does it? Or it is like so much of your theory
and is the non-existence of 'ment.' Is there such a thing as an
infitesmal thought in the plane bisecting bafflegab?

Laissez l'ï¿½meute de rire continuer!

73's
Richard Clark, KB7QHC

1193. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 20:47:33 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4793b367$0$18439$4c368faf@roadrunner.com>
Source record: 29113

"art" <aunwin@insightbb.com> wrote in message
news:38ddf3f6-7692-4997-afc9-10e5dc065b21@m34g2000hsf.googlegroups.com...
> On 19 Jan, 10:56, "AI4QJ" <nos...@yahoo.com> wrote:
>> <alan.hartw...@gmail.com> wrote in message
>>
>> ne
>>
>> http://www.energyscience.org.uk/le/le24.htm
>>
> I have just got around to reading just the intro
> of the above URL. Later I will digest the rest of
> the lesson.
> What struck me was how deftly the author pointed out
> where pseudo experts have dominated science thru the ages
> such that it reflects the poles of the many led by the few.
> It shows time and time again that science is a popularity
> contest where the so called "in crowd" of of self rightious
> people have been able to thwat the advances of science of
> the past centuries. Gallilao comes to mind as does Green
> of Nottingham and Heavieside of Clapton and ofcourse my favorite
> Gauss. We are seeing the same thing here on this newsgroup

Wrong Art, the very purpose that the link was posted in this thread was to encourage alternative concepts to those developed in the 1800's, 1904, 1905 and the 1930's.

There may indeed be a case for the Aether; personally, free space is merely a concept of nothingness that only contains those parameters that the scientist tends to use in his model. In electromagnetics, free space has a characteristic impedance of Zo (377 ohms), it has permeability and permittivity which fit well into our mathematical models. How can nothingness have a characteristc impedance of 377 ohms? And today we have a little more information (much more); we have theories of exotic matter and energy that are so new that no one has really taken a second look at the old concepts and perhaps investigated for possible linkages. There may be new possible explanations for the infinite negative energy of a Dirac sea that didn't make sense in the 30's; there is only a shortage of physicists with the time and money to come up with new theories in a short time.

Art, I'm sure your response to these statements will be negative (curiously which, as in the past, actually tended to support your persistence and encourage your new ideas but oppose your lack of scientific method). Finish reading the article and understand the math. Judge for yourself if you see any chinks. But do note thar Dr. Aspden uses math and logic to make his points. He also publishes references in his paper. He leaves himself wide

open for peer review. This is the way it is properly done and completely opposite of the faith-based approach you foist upon us.

1194. Re: Romney...who cares?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 21:07:48 UTC
From: Hippie <pmunsel@tsbcglobal.net>
Message-ID: <EKOkj.4326$jJ5.2993@newssvr11.news.prodigy.net>
Source record: 29114

"James" <jnipperxxx@nospamfdn.com> wrote in message
news:OsWdnVsd7vnrHw7anZ2dnUVZ_g-dnZ2d@comcast.com...
> Exactly what are you talking about ??
>
> ------------------------------------
>
> Don't we as a country have more to worry about than worrying about if
> Romney feels that hams aren't necessarily needed? What about issues
> like social security, foreign policy, immigration, etc. Where does
> Romney stand on these issues? To decide to vote or not vote for any
> candidate based on their view of ham radio is a bit narrow minded perhaps?
>
>
>
It seems that about 2 years ago, Romney made a statement concerning
Amateur Radio, and something to the effect he does not support it as a means
of communication during emergencies. As I said, this was made 2 years ago,
and is now a BIG topic for some reason. While I am not planning to vote for
him, I guess someone felt the need to bring this up, to stir up the Ham
community. Looks like it did a good job from what I've seen all over the
place now. If that's the only negative thing anyone can find, he may well
may be the top choice, but then again, that does not seem to be the reason a
person is elected to most offices...
73

1195. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 21:55:59 UTC
From: Carter-k8vt <k8vt@ameritech.net>
Message-ID: <PrPkj.40757$Pv2.26531@newssvr23.news.prodigy.net>
Source record: 29115
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

> In article <D0Hkj.36804$JD.21672@newssvr21.news.prodigy.net>,
> Carter-k8vt <k8vt@ameritech.net> wrote:
>
>> jawod wrote:
>>> I am a Democrat. Even I can tell this is a smear job. Lots of
>>> operatives out there with their "eyes on the prize". Don't be misled by
>>> these emails. The gloves are off. Internet dispatches are ALL suspect.
>>>
>>> We are all sailing in rough seas. In the end, each of us can pick the
>>> candidate we are most comfortable with.
>>>
>>> 73,
>>>
>>> John
>>> AB8O
>> John,
>> I would respectfully beg to differ with you. This incident actually
>> happened a couple of years ago, -long- before he threw is hat in the
>> ring; no reason to 'smear' him back then...

You wrote:

> You miss the point, the smear is NOW.

No, 'You', I believe YOU miss the point. *Romney* said he did not like ham radio operators. Words from *his* own mouth. Period.

Please tell me why -quoting- what HE ACTUALLY SAID is a smear...and if by some stretch of the imagination, you manage to twist a direct quote around as a being a smear, well then, Romney smeared himself. Finally, are we to give him a free pass just because he said it 'x' number of (years) (weeks) (days) ago?

> Why bring up comments that are
> two years OLD, NOW?

Well, because he never retracted the statement. Presumably then, these are STILL his feelings towards hams. Again, does a negative statement he makes just 'time out' and shouldn't be quoted after a certain period of time even though he still stands by the statement? What period of time would you suggest that after which, we just ignore what he said?

1196. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 22:22:02 UTC
From: nm5k@wt.net
Message-ID: <e49e7f47-93a1-4d3e-a590-83ad9bc2e962@i29g2000prf.googlegroups.com>
Source record: 29116

On Jan 20, 11:51 am, art <aun...@insightbb.com> wrote:

>
> Yes. But when they over estimate their abilities in areas outside
> their field of expertise you can expect problems.

Pot+Kettle=Black?

>I proved myself as a true ham today.

You tacked your license to the wall above your MFJ259?

BTW, any directional gain means little if only a small amount
of the applied RF is radiated by the small inefficient antenna.
With such a small antenna, "gain" is the last thing you should be
worried about.
My MW receiving loops have a great f/s ratio. That does not
mean I would want to use them as transmitting antennas.. :/
Git my drift Vern?
MK

1197. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 22:55:40 UTC
From: art <aunwin@insightbb.com>
Message-ID: <4671fa2f-c7eb-44a3-869b-87f85a99d42c@i12g2000prf.googlegroups.com>
Source record: 29117

On 20 Jan, 14:22, n...@wt.net wrote:
> On Jan 20, 11:51 am, art <aun...@insightbb.com> wrote:
>
>
>
> > Yes. But when they over estimate their abilities in areas outside
> > their field of expertise you can expect problems.
>
> Pot+Kettle=Black?
>
> >I proved myself as a true ham today.
>
> You tacked your license to the wall above your MFJ259?
>
> BTW, any directional gain means little if only a small amount
> of the applied RF is radiated by the small inefficient antenna.
> With such a small antenna, "gain" is the last thing you should be
> worried about.
> My MW receiving loops have a great f/s ratio. That does not
> mean I would want to use them as transmitting antennas.. :/
> Git my drift Vern?
> MK

This antenna of mine has really got you in a headlock.Your breathing is close to being cut off and there is no blood flowing to your brain such that you are so angry and can't think straight.
What on earth does this antenna mean to a red neck who brags of avoiding schooling? Is it regret of some sort? It is not a secret antenna! Sooner or later you will have the opportunity to make one yourself. Probably in time for the peak of the next sunspot cycle. But then, what use will you make of it other than talk? On the other hand I don't remember anytime referring to your antennas either for transmitting or receiving other than hearing you say, in effect, that they cam beat anything on the planet. Having never met a redneck from the mountains I can only assume that such talk is the very nature of a redneck that makes them a subject for comedy. For that you do a terrific job with respect to american humour.

1198. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 23:01:28 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn0js3fvb6@news.albasani.net>
Source record: 29118

art wrote:
> ... Having never met a redneck from
> the mountains I can only assume that such talk is the very nature of a
> redneck that makes them a subject for comedy. For that you do a
> terrific job with respect to american humour.

Art:

Is that a "stab" at placing a knife within a velvet sheath?

Chuckle,
JS

1199. Re: Romney...who cares?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 23:43:22 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <G8WdnVboe4oHQQ7anZ2dnUVZ_uidnZ2d@bright.net>
Source record: 29119

See the thread: "Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies."

Scott

James wrote:

> Exactly what are you talking about ??
>
> ------------------------------------
>
> Don't we as a country have more to worry about than worrying about if
> Romney feels that hams aren't necessarily needed? What about issues
> like social security, foreign policy, immigration, etc. Where does
> Romney stand on these issues? To decide to vote or not vote for any
> candidate based on their view of ham radio is a bit narrow minded perhaps?
>
>
>

--
Scott
http://corbenflyer.tripod.com/
Gotta Fly or Gonna Die
Building RV-4 (Super Slow Build Version)

1200. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-20 23:48:47 UTC
From: nm5k@wt.net
Message-ID: <8d7a8cf2-d340-4081-97af-0ddcd123fe5c@e6g2000prf.googlegroups.com>
Source record: 29120

On Jan 20, 4:55 pm, art <aun...@insightbb.com> wrote:

>
> This antenna of mine has really got you in a headlock.

You must be dreaming... :/

>Your breathing
> is close to being cut off and there is no blood flowing to your brain
> such that you are so angry and can't think straight.

Angry? Have you lost your mind? This is comedy to me.
On a personal level, I could care less about you or your
sub par developments of psuedo science.
It does bother me that you pollute the minds of
unsuspecting newbies with your bafflegab though.
Not a whole lot, but enough to where I feel compelled
to tweak your ass every once in a while.
Maybe I better quit though, as it seems that when I do
this, it cuts off the flow of blood to your brain, and you
become very angry, and can't think straight. :/

> What on earth does this antenna mean to a red neck who brags of
> avoiding schooling? Is it regret of some sort? It is not a secret
> antenna!

You got that right. It's not even new for that matter.
You think you are the first person to try to invent a small
perverted antenna with the performance of a full size version?
I'm curious... You and and that EH antenna guy are not
joined at the hip are you? Inquiring ponderers relish an
answer.

>Sooner or later you will have the opportunity to make one
> yourself.

Why would I want a sub par antenna when I already have
manly full size versions? You need to get out of the sun..
That 12 degrees is frying your brain...

>Probably in time for the peak of the next sunspot cycle.

I don't depend on the sunspot cycles. That's probably why
I'm usually on the lower bands. My manly full size antennas
don't hurt things either..
Most any sub par design can me made to "work" on the higher
HF bands with enough efficiency to fool people who have never

tried a full size version.

>But
> then, what use will you make of it other than talk?

I agree. I already have enough dummy loads as it is.
I don't need an air cooled model that is mounted on a
tower.

>On the other hand
> I don't remember anytime referring to your antennas either for
> transmitting or receiving other than hearing you say, in effect, that
> they cam beat anything on the planet.

I expect you will be able to find me saying that with a google deja
search? I have made no claims as to my antennas being the
best on the planet. I do claim to avoid elevated dummy loads
though. I admit it. Sue me.

>Having never met a redneck from
> the mountains I can only assume that such talk is the very nature of a
> redneck that makes them a subject for comedy. For that you do a
> terrific job with respect to american humour.

I wasn't born in the mountains, although I think such a peaceful
setting would be nice. I was born in the downtown Dallas area.
The only mountains there are man made, and most are
glistening with lights and blinky things.
I have the dubious distinction of being born across the
street from where a certain president died a few years later.
BTW, here in the United States it's humor, not humour.
Git-R-Done Vern! Riches and fame await!
You might even end up cover boy of QST! Dang.. I'm
already impressed just thinking about it. :)

1201. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 00:00:19 UTC
From: art <aunwin@insightbb.com>
Message-ID: <f4047c86-e9da-44f0-ba2d-8ab972bd1586@i7g2000prf.googlegroups.com>
Source record: 29121

On 20 Jan, 15:01, John Smith <assemblywiz...@gmail.com> wrote:
> art wrote:
> > ... Having never met a redneck from
> > the mountains I can only assume that such talk is the very nature of a
> > redneck that makes them a subject for comedy. For that you do a
> > terrific job with respect to american humour.
>
> Art:
>
> Is that a "stab" at placing a knife within a velvet sheath?
>
> Chuckle,
> JS

I don't understand that John!
I do remember a trip thru the mountains when we saw a sign that stated "rest area ahead" but it was a red graffity sort of sign. We kept our eyes open and later came upon it. It was an old mattress placed on the side of the road. We later came across a flea market which we intended to visit but we couldn't. There was only one huge car park that was marked for the handicap only, and it was full! We thought was mighty unfriendly. Other than that it was beautiful country. I heard one guy say I should have gone to the most afluent areas,I told him we did once and they were very friendly and invited us to a house warming. We did not go ofcourse because of the set conditions where guests had to promise to help with removing the wheels! They were not attached to the house as they had fallen off en route and landed up in a marshy area.
Regards
Art

1202. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 00:24:11 UTC
From: art <aunwin@insightbb.com>
Message-ID: <99b695e4-7750-485f-b2e9-3c59de429855@t1g2000pra.googlegroups.com>
Source record: 29122

On 18 Jan, 09:18, art <aun...@insightbb.com> wrote:
> On 18 Jan, 08:38, alan.hartw...@gmail.com wrote:
>
>
>
>
>
> > On Jan 18, 3:36 am, "Ed Cregger" <ecreg...@bellsouff.net> wrote:
>
> > > <snip>
>
> > > Many of you are far more educated than I, but many of you
> > > demonstrate precisely why I chose not to be brainwashed with
> > > a formal education. Many cannot see past the end of their
> > > noses, yet they insist upon laying down the law regarding
> > > what is acceptable science and what is not. As though anyone
> > > actually knows anything at all.
>
> > > <snip>
>
> > > Let's not forget that one's educational level has nothing to
> > > do with native IQ.
>
> > > Ed, NM2K
>
> > You are correct to say that education has nothing to do with IQ.
> > Faraday had little formal training, yet his arduous work is now
> > exalted by naming one of the basic electromagnetic laws after him. But
> > I take issue with the idea that you can't actually know anything at
> > all. For instance, electrodynamic theory was developed 150 years ago,
> > and the KNOWN successful results of that are numerous.
>
> > Newtonian mechanics held up well for hundreds of years. A whole
> > industrial revolution was built on it. Yet some pesky observations by
> > Michelson and Morley regarding the invariant speed of light found it
> > wanting. Relativistic mechanics subsumed Newtonian mechanics, but
> > Einstein didn't invalidate Newton. I believe the mathematical term
> > "embedding" applies.
>
> > I am currently re-studying the original theory of Maxwell, et. al.,
> > with the intent of finding some chink in the armor. Tesla reported
> > longitudinal electromagnetic wave phenomena, which contradicts the now-
> > standard theory that EM waves can ONLY be transversal. Using Maxwell's
> > original quaternion equations, before Heviside simplified them into

> > the now-standard vector form, one can derive longitudinal wave
> > components. If those exist, does that prove you don't know how to
> > operate a ham radio? No, it just means you're radiating something in
> > addition to what you expect.
>
> > You CAN know something and apply it. You just need to realize that
> > what you know isn't complete, and never can be.
>
> The chink is provided by Gauss.Adding a time varient to his law of
> statics brings you to
> Maxwells law Holding on to the equilibrium underpinnings you may then
> insert a radiator that also is in equilibrium i.e. a full wave length.
> Now you are equipped to insert same into a antenna program to
> determine shape ,size,elevation e.t.c for maximum horizontal gain.
> Maxwells law will then show that to meet this requirement is for the
> radiator to not be parallel to the ground surface but tipped to an
> angle. This angle is the summation of the curl vector and others that
> are entailed.Gauss following from the Newtonian aproach of equilibrium
> provides a pasaage of knoweledge that was not available in the blank
> statements of Maxwell.
> All this provides a picture which equals a thousand words and a sound
> basis to build upon.
> The understanding of this aproach has been stalled with this newsgroup
> on the basis of transformation of static field to a dynamic field is
> illegal, regardless of the math proving otherwise! Facts are stranger
> than the fiction of this group.
> Have fun with your studies.
> Art Unwin KB9MZ...xg (uk)- Hide quoted text -
>
> - Show quoted text -

OOOOps
I forgot to state that the house was not actually situated in the
afluent area in its intended spot. They made a lightning descision to
live in the neigboring county where the wheels came off. The house was
close to the road and leaning at an angle but they figures with the
gouges made by the axles in the dirt woud save them some costs in
drainage and with the windows leaning towards the sky they could sun
bathe while sitting in the living room.
Brain power they proudly stated while at the same time scratching
their rear ends.
Oh, and another thing. That graffitty sign I mentioned earlier which
was a red spray paint, they sprayed that on the board after the red
paint background on the board had dried off.
Regards
Art

1203. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 00:37:49 UTC
From: art <aunwin@insightbb.com>
Message-ID: <fd18f6db-90d3-44df-a7fb-f92a72ba62aa@x69g2000hsx.googlegroups.com>
Source record: 29123

On 20 Jan, 16:00, art <aun...@insightbb.com> wrote:
> On 20 Jan, 15:01, John Smith <assemblywiz...@gmail.com> wrote:
>
> > art wrote:
> > > ... Having never met a redneck from
> > > the mountains I can only assume that such talk is the very nature of a
> > > redneck that makes them a subject for comedy. For that you do a
> > > terrific job with respect to american humour.
>
> > Art:
>
> > Is that a "stab" at placing a knife within a velvet sheath?
>
> > Chuckle,
> > JS
>
> I don't understand that John!
> I do remember a trip thru the mountains when we saw a sign that stated
> "rest area ahead" but it was a red graffity sort of sign. We kept our
> eyes open and later came upon it. It was an old mattress placed on the
> side of the road. We later came across a flea market which we intended
> to visit but we couldn't. There was only one huge car park that was
> marked for the handicap only, and it was full! We thought was mighty
> unfriendly. Other than that it was beautiful country. I heard one guy
> say I should have gone to the most afluent areas,I told him we did
> once and they were very friendly and invited us to a house warming. We
> did not go ofcourse because of the set conditions where guests had to
> promise to help with removing the wheels! They were not attached to
> the house as they had fallen off en route and landed up in a marshy
> area.
> Regards
> Art

John I remember now, I have seen a redneck. We came across a bunch,
all looking evil
with these huges blunderbuss type weapons. But appearances are
deceiving since they were just squirrel hunting. I asked then about
the necessity of these large wierd looking rifles but they said they
came in handy if they didn't win the race to pick up the road kill.
Taking another look at them it all seemed to make sense
Art

1204. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 01:34:45 UTC
From: art <aunwin@insightbb.com>
Message-ID: <1a54751f-405d-4e83-aa79-d654ac6d5119@e6g2000prf.googlegroups.com>
Source record: 29124

On 20 Jan, 14:22, n...@wt.net wrote:
> On Jan 20, 11:51 am, art <aun...@insightbb.com> wrote:
>
>
>
> > > Yes. But when they over estimate their abilities in areas outside
> > > their field of expertise you can expect problems.
>
> Pot+Kettle=Black?
>
> >I proved myself as a true ham today.
>
> You tacked your license to the wall above your MFJ259?
>
> BTW, any directional gain means little if only a small amount
> of the applied RF is radiated by the small inefficient antenna.
> With such a small antenna, "gain" is the last thing you should be
> worried about.
> My MW receiving loops have a great f/s ratio. That does not
> mean I would want to use them as transmitting antennas.. :/
> Git my drift Vern?
> MK

Well thank you for that info. I did not know that Texas was where
rednecks came from.
How comes Cecil is so smart?

1205. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 01:37:19 UTC
From: nm5k@wt.net
Message-ID: <361ba2fe-5087-4b4d-bfa3-41753618c6f9@c4g2000hsg.googlegroups.com>
Source record: 29125

On Jan 20, 6:37 pm, art <aun...@insightbb.com> wrote:

>
> John I remember now, I have seen a redneck. We came across a bunch,
> all looking evil
> with these huges blunderbuss type weapons. But appearances are
> deceiving since they were just squirrel hunting. I asked then about
> the necessity of these large wierd looking rifles but they said they
> came in handy if they didn't win the race to pick up the road kill.
> Taking another look at them it all seemed to make sense
> Art

That was probably back when Clinton was in the White House.
With the sunset of the AWB, many rednecks have progressed
to more capable tools. Of course, the race for road kill still exists
in many areas, as many prefer the grainy texture of an aged
animal carcass.
If you can find a roadkill old enough to be yellow striped, you can
consider yourself a lucky man indeed, as these are considered
a delicacy by many. Road striped possums and skunks are a
special treat at the dinner table, broiled or fried.
These days, many rednecks have switched to Barret .50 cal
sniper rifles, AR-15's, TEC 9's, etc.
The old antique shotguns have been relegated for A/C use for the
mobile homes. IE: they are often used as a doorstop to hold the
front door open. For mobile home protection, the favored handgun
of the modern progressive redneck is the Desert Eagle .50 cal..
Git-R-Done Vern!
MK

1206. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 01:38:39 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4793f7a4$0$30709$4c368faf@roadrunner.com>
Source record: 29126

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:mi87p39hkrm8os9t03k01umib29cfh2915@4ax.com...
> On Sat, 19 Jan 2008 23:40:43 -0800 (PST), jimkelleyamps@gmail.com
> wrote:
>
>>The only person I've ever seen claiming that there is energy
>>in non-existant waves is you, Cecil.
>
> Hi Jim,
>
> That's not strictly true. I for one have always maintained there is
> energy where it cancels, it is also somewhere else when it adds. On
> the other hand if it is no where else to add, that seems to put an end
> to it. Like a draw match in a tug of war, the rope may not be moving,
> but its tension is obvious by the nulled energies.

So great to see a thread that gets back to real science rather than
"Universal Laws of the Sciences" and other such rubbish.

Your analogy of course is correct. Although total energy = F dot D and the
distance is zero, one can imagine the energy in calories being burned by the
sportsmen as they strive to maintain a static situation of cancelled forces.
The force in one direction is cancelled by the force in the other direction.
The energy of the cancellation has simply been transformed into body heat.
It will continue to dissipate as body heat until there are no more calories
to burn and we go to the other static situation which is due to the
summation of 0 + (-0) = 0. The rope drops.

In the RF standing wave, the energy simply "burns" (but not as heat") into
the radiation "resistance" at the other points on the antenna. Remove it's
source of "caloric intake" and it too eventually collapses as the forward
and reverse waves attenuate to zero by radiation.

Such a simple concept but so important.

1207. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 02:29:47 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47940397$0$31792$4c368faf@roadrunner.com>
Source record: 29127

"MGFoster" <me@privacy.com> wrote in message
news:13oucpt4qftq763@corp.supernews.com...
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I saw this 50 ohm "terminator" BNC connector at Radio Shack today and
> was wondering if it could be used as an antenna dummy load? It is
> designed as a computer network terminator - just a female jack without
> any output connector. I believe the only question would be "Could it
> stand the power output?" What if the output was just 5W? Anybody know
> about this product or have used it as a dummy load?
>
> It'd sure save the price of a "real" dummy antenna (it was priced about
> $4.00 USD).
>
> Thanks
> --
> MGFoster:::mgf00 <at> earthlink <decimal-point> net
> Oakland, CA (USA)
> ** Respond only to this newsgroup. I DO NOT respond to emails **
>
> -----BEGIN PGP SIGNATURE-----
> Version: PGP for Personal Privacy 5.0
> Charset: noconv
>
> iQA/AwUBR48zz4echKqOuFEgEQJ4OwCeKdWRKG4P8cxND+FGxpF38ISyc+4AoNoU
> T4vopRD2S1IPgrw9CO/dW50t
> =TmNl
> -----END PGP SIGNATURE-----

OK, I hacksawed one open and it looks like 1/4 watt to me. Keep in mind this
was not the RS version metioned. I think it was an old thick net terminaor.

Jimmie

1208. Re: mixing of signals

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 03:01:47 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <7WTkj.77104$L%6.72140@bignews3.bellsouth.net>
Source record: 29128

"shah" <shahidali.shahid@gmail.com> wrote in message
news:d230dcdb-a996-445b-9c1b-2d2c28ae1159@d21g2000prf.googlegroups.com...
>i have a problem with the mixing of signals.in my radio signals are
> mixing of different channels.at a same frequency different channels
> are running.and also a background noise.please help this out.please
> give me solution to thuis
>

intermod problems usually pop up where there's several repeaters in close
proximity, and/or if the receiver has less than 2 IF stages.
So try in a different location - or with a better receiver.

1209. Re: mixing of signals

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 03:09:17 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <91Ukj.77107$L%6.35901@bignews3.bellsouth.net>
Source record: 29129

"Hal Rosser" <hmrosser@bellsouth.net> wrote in message
news:7WTkj.77104$L%6.72140@bignews3.bellsouth.net...
>
> "shah" <shahidali.shahid@gmail.com> wrote in message
> news:d230dcdb-a996-445b-9c1b-2d2c28ae1159@d21g2000prf.googlegroups.com...
>>i have a problem with the mixing of signals.in my radio signals are
>> mixing of different channels.at a same frequency different channels
>> are running.and also a background noise.please help this out.please
>> give me solution to thuis
>>
>
> intermod problems usually pop up where there's several repeaters in close
> proximity, and/or if the receiver has less than 2 IF stages.
> So try in a different location - or with a better receiver.

oops - I meant if receiver has less than 3 stages (triple conversion)

1210. Re: mixing of signals

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 03:56:44 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <hL-dncNIA51qignanZ2dnUVZ_ternZ2d@comcast.com>
Source record: 29130

"shah" <shahidali.shahid@gmail.com> wrote in message
news:d230dcdb-a996-445b-9c1b-2d2c28ae1159@d21g2000prf.googlegroups.com...
>i have a problem with the mixing of signals.in my radio signals are
> mixing of different channels.at a same frequency different channels
> are running.and also a background noise.please help this out.please
> give me solution to thuis

If you are using an external amlifier, disconnect it. If you have an
amplified antenna, try something else.

Tam

1211. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 04:07:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GTUkj.36903$JD.4302@newssvr21.news.prodigy.net>
Source record: 29131

Richard Clark wrote:
> That's not strictly true. I for one have always maintained there is
> energy where it cancels, it is also somewhere else when it adds. On
> the other hand if it is no where else to add, that seems to put an end
> to it. Like a draw match in a tug of war, the rope may not be moving,
> but its tension is obvious by the nulled energies.

This is not rocket science. If destructive interference
occurs in free space or in a transmission line, an equal
magnitude of constructive interference must occur somewhere
else in order to satisfy the conservation of energy principle.
The energy apparently"lost" during destructive interference
is simply redistributed to regions that permit constructive
interference. That is the way antenna radiation patterns
work and that is the way that waves interfere at an
impedance discontinuity in a transmission line.

http://www.mellesgriot.com/products/optics/oc_2_1.htm

"Clearly, if the wavelength of the incident light and
the thickness of the film are such that a phase difference
exists between reflections of p, then reflected wavefronts
interfere destructively, and overall reflected intensity is
a minimum. If the two reflections are of equal amplitude,
then this amplitude (and hence intensity) minimum will be
zero." (Referring to 1/4 wavelength thin films.)

"In the absence of absorption or scatter, the principle of
conservation of energy indicates all 'lost' reflected intensity
will appear as enhanced intensity in the transmitted beam.
The sum of the reflected and transmitted beam intensities is
always equal to the incident intensity. This important fact
has been confirmed experimentally."

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

"... when two waves of equal amplitude and wavelength that are
180-degrees ... out of phase with each other meet, they are not
actually annihilated, ... All of the photon energy present in
these waves must somehow be recovered or redistributed in a new
direction, according to the law of energy conservation ... Instead,
upon meeting, the photons are redistributed to regions that permit
constructive interference, so the effect should be considered as
a redistribution of light waves and photon energy rather than

the spontaneous construction or destruction of light."
--
73, Cecil http://www.w5dxp.com

1212. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 04:19:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <4178p3tdjpaac84ekhu4m0s4l6lcs915t3@4ax.com>
Source record: 29132

Among the usual suspects, On Mon, 21 Jan 2008 04:07:02 GMT, Cecil
Moore <nospam@w5dxp.com> wrote:

>...
More cecilaborations in rocket science to improve tug-of-war.

The laugh riot continues.

73's
Richard Clark, KB7QHC

1213. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 05:50:04 UTC
From: art <aunwin@insightbb.com>
Message-ID: <fb5da058-305d-49c6-b148-aa0b63fd54fe@s13g2000prd.googlegroups.com>
Source record: 29133

On 20 Jan, 12:47, "AI4QJ" <nos...@yahoo.com> wrote:
> "art" <aun...@insightbb.com> wrote in message
>
> news:38ddf3f6-7692-4997-afc9-10e5dc065b21@m34g2000hsf.googlegroups.com...
>
>
>
>
>
> > On 19 Jan, 10:56, "AI4QJ" <nos...@yahoo.com> wrote:
> >> <alan.hartw...@gmail.com> wrote in message
>
> >> ne
>
> >>http://www.energyscience.org.uk/le/le24.htm
>
> > > I have just got around to reading just the intro
> > > of the above URL. Later I will digest the rest of
> > > the lesson.
> > > What struck me was how deftly the author pointed out
> > > where pseudo experts have dominated science thru the ages
> > > such that it reflects the poles of the many led by the few.
> > > It shows time and time again that science is a popularity
> > > contest where the so called "in crowd" of of self rightious
> > > people have been able to thwat the advances of science of
> > > the past centuries. Gallilao comes to mind as does Green
> > > of Nottingham and Heavieside of Clapton and ofcourse my favorite
> > > Gauss. We are seeing the same thing here on this newsgroup
>
> Wrong Art, the very purpose that the link was posted in this thread was to
> encourage alternative concepts to those developed in the 1800's, 1904, 1905
> and the 1930's.
>
> There may indeed be a case for the Aether; personally, free space is merely
> a concept of nothingness that only contains those parameters that the
> scientist tends to use in his model. In electromagnetics, free space has a
> characteristic impedance of Zo (377 ohms), it has permeability and
> permittivity which fit well into our mathematical models. How can
> nothingness have a characteristc impedance of 377 ohms? And today we have a
> little more information (much more); we have theories of exotic matter and
> energy that are so new that no one has really taken a second look at the
> old concepts and perhaps investigated for possible linkages. There may be
> new possible explanations for the infinite negative energy of a Dirac sea
> that didn't make sense in the 30's; there is only a shortage of physicists

> with the time and money to come up with new theories in a short time.
>
> Art, I'm sure your response to these statements will be negative (curiously
> which, as in the past, actually tended to support your persistence and
> encourage your new ideas but oppose your lack of scientific method). Finish
> reading the article and understand the math. Judge for yourself if you see
> any chinks. But do note thar Dr. Aspden uses math and logic to make his
> points. He also publishes references in his paper. He leaves himself wide
> open for peer review. This is the way it is properly done and completely
> opposite of the faith-based approach you foist upon us.- Hide quoted text -
>
> - Show quoted text -

No. Now I have read the whole thing I can state that my work resulted
from my travels
after Gauss which lead me to my personal law that an antenna to be of
maximum efficiency must be made from a diamagnetic material which can
be any size or shape or elevation as long as it is in a state of
equilibrium. I followed thru with this on computor programs which
confirmed
with my analysis. I have since made antennas of different size,shape
and elevation which is contrary to the norm which gives me impetus to
pursue the line of thought further. Gaussian law gave me a measure of
belief that static particles were at rest on a radiator which when
coupled to a diamagnetic inductance gave particles at rest at each and
every point of the radiator an ejection at right angles to the
radiator. Googling on each and every point of that traeveling gave
credence to the parth taken.When seeing that each point of a radiator
can be considered a minute electrical circuit it can be deduced that
many samples are ejected in pattern form as is the individual
impactson the radiator itself thus creating an occillation
a phenomina that has been accepted for many a year. To see the mirror
image of these impacts on a receiving antenna does seem realistic if
all particles follow the same trajectory.
The anti gravitational effects of a diamagnetic field gives credence
to a straight line trajectory and so on. So the dust can be lihas to
be linked in some way to the solar flow of particles pattern of eleven
years which matches the turn over of the sun's poles which is known to
lead to a heavy increase in solar dust into our atmosphere and where
the earth also has additional poles based on the location of various
inate elements which tend to congregate.
These poles obviously have a connection to the earth's wobbly rotation
by movement of these various poles that could account for the curl
vector in radiation as it does with a pendulum.
So I have invented a plausable account for radiation which for myself
I consider more reasonable because of computor results and my antenna
building. So far this trail has lead to antennas that are in
equilibrium and of various shapes and elevations that matches the
conclusions found on the trail.Existing computor programs also verify
the trail.When lstening to my small antennas with their wide band

coverage and small size I feel that I should be forgiven if I consider the trail of conclusions are correct. But even if this were not so the trail taken on this premise produced a different line of thought on antennas that work exactly as predicted. So now I share my work and thoughts as a layman in this area with other laymen
and not to the any society of physics which are closed units. I am doing this to document my work for what it is and by no means put my self on the same pedestal as Einstein, Newton and others. So by sharing and explaining my thoughts with outhers I am taken to task purely because such works are only credibly submitted by those skilled in the arts within a closed circle. So it is considered wrong that I share my experiences with other laymen if it is not previously approved or meet the texts submitted by experts. So hams are now not interested in antennas and I am in errorin explaining trails taken which appear contrary to the teachings given to laymen some 50 years ago. So the options provided by laymen is to not share, to not discuss, to not sway people to rethink that which is 50 years old and to not infer that bigger is not better. If you are a contestor you must keep quiet with respect to your experiences and take them to your grave thus giving science time to stumble across it in the future as we have had enough of the re inventing of the wheel when we discover to our dismay it was written up by somebody who is now deceased. I know that people are resistant to change especially those with experiences that are repeated exactly the same for every consecutive day without change.
If this is so why is this newsgroup in existance? To keep old koots in employ? Or to hold dear all the ideals that all hams have spent to survive in their lives and keep the new at bay.
Would it not be better to converse and study each points found on the trail so others will see a chink in my logic that can lead to even better ideas. Could we review the trail and separate the good from the bad leaving a new rock on which to build? Or is it our destiny to prevent change to our ideals such when we die we take with us the reasons for this being a hobby?"
The hobby cannot survive purely on the basis on the enjoyement of slander and one upmanship.
When we have gone there will be no reason for this newsgroup or our hobby since we are destroying the very tenents that allowed us to enjoy and thus prevent those who follow us to have the same rewards.
In our younger days science profited from ham radio , but in our older days our intransience is destroying it for future generations.Why because there can be no future if we convince the young that all is known about the radiation field and they should pursue other areas to satisfy their inquisitivenes or in its absence just go with the flow of depression.
can be any size ,shape and elevation

1214. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 06:13:14 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn1d5k$n53$1@news.albasani.net>
Source record: 29134

Richard Clark wrote:

>
>> ...
> More cecilaborations in rocket science to improve tug-of-war.
>
> The laugh riot continues.
>
> 73's
> Richard Clark, KB7QHC

If you are truly laughing that loudly, you ARE an idiot. I think Cecil has done an excellent job, if you have followed him (and, I cannot claim I have COMPLETELY done so), however, he has shown there ARE holes in what we "believe." And, some things don't quite "mate-up" and what we have taken for granted looks differently when under the "microscope." "Standing Waves" is but the shining example.

Your nature is just so abrasive/abusive as to be repulsive and, at least a bit, disgusting. I have to admit, I really don't understand you, or why you think simple discussion on these matters is so "dangerous." Frankly, though this all, I kind of like the "cloak-and-dagger" nature of your "cryptic" posts, however, lately them seem a bit move vicious and NOT that enjoyable.

Don't we all come away better after having had to open a smith chart and plug some equations into a calculator? Look at some software modeling, etc.?

I mean, I am at a total loss here ... you are the final oracle? Well, you and your chosen books? Get a hold on yourself man ...

Regards,
JS

1215. Re: 18AVQ details required

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 06:27:29 UTC
From: HRBE <hrbe@bigpond.net.au>
Message-ID: <IXWkj.5549$421.873@news-server.bigpond.net.au>
Source record: 29135

John,
Can you please verify your email address for me as I do have a good copy of what you are looking for.
I recently built the same antenna, but had to put an external inductor at the base as the coil inside of the bottom insulator was US.
73
VK2KCE
John

"JERD" <jedunk@REMOVEbigpond.net.au> wrote in message news:hBb3j.17981$CN4.595@news-server.bigpond.net.au...
>I have changed over to a long wire antenna and have given my 20 year old
>Hy-Gain 18AVQ vertical to a fellow ham. It needs some repairs and I am
>wondering if anyone can lead me to the construction/assembly details of
>this antenna.
>
> In particular how the connector at the bottom of the antenna connects to
> the internals!
>
> VK5JE
>
> You have hobbies. I have hobbies.
> Chances are I have one that you don't.
> I'll leave it up to you to decide!
> http://www.flightsimulatorandhobbies.com/
> --
>
>
>

1216. Re: Romney...who cares?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 07:58:06 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <8gYkj.56921$vt2.38505@bignews8.bellsouth.net>
Source record: 29136

"Scott" <acepilot@bloomer.net> wrote in message
news:G8WdnVboe4oHQQ7anZ2dnUVZ_uidnZ2d@bright.net...
> See the thread: "Re: Governor Romney dismissed role of
> Amateur Radio Operators in Emergencies."
>
> Scott
>
>
> James wrote:
>
>> Exactly what are you talking about ??
>>
>> -------------------------------------
>>
>> Don't we as a country have more to worry about than
>> worrying about if
>> Romney feels that hams aren't necessarily needed? What
>> about issues
>> like social security, foreign policy, immigration, etc.
>> Where does
>> Romney stand on these issues? To decide to vote or not
>> vote for any
>> candidate based on their view of ham radio is a bit
>> narrow minded perhaps?
>>
>>
>>
>
> --
> Scott
> http://corbenflyer.tripod.com/
> Gotta Fly or Gonna Die
> Building RV-4 (Super Slow Build Version)

In the end, it all works out, because I dismiss Romney as a
presidential candidate.

Ed, NM2K

1217. Re: Romney...who cares?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 08:33:02 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn1lbo$4th$2@news.albasani.net>
Source record: 29137

Ed Cregger wrote:

> ...
> In the end, it all works out, because I dismiss Romney as a
> presidential candidate.
>
> Ed, NM2K
>
>

Romney is a fool, but then what of the available, "news covered" candidates are not? If we were choosing them for fitness to dress a cannibals table, I guess any of 'em would serve. But to put us back on course? Restore a gov't of the people? Show ability to solve the deep economic/social problems we face? Reduce gov't? Drop back to the set of the simple ten commandments as law? Phuffft!

We all realize we are in trouble, right?

Ron Paul--2008!

Regards,
JS

1218. Re: Linear Loaded Antennas ??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 08:42:10 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <CVYkj.13929$xm1.7401@fe2.news.blueyonder.co.uk>
Source record: 29138

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:9627p3tn32jsn67jiccr33unilk4apnrla@4ax.com...
> On Sun, 20 Jan 2008 09:03:05 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
> wrote:
<>
> Hi Len,
>
> As for going lower to 80M using 3 or more foldbacks (for the simpler
> dipole) to keep it in your garden. Stick with your mag loops, because
> it doesn't get any better.
>
> Using 3 foldbacks for 80M (and the antenna is too wide for your
> garden) will give you a 10 KHz bandwidth at the 2:1 SWR points. Making
> the antenna smaller to fit, drives up the Q. 160M only portends worse
> Q (from your point of view).
>
> A small dipole, like a small loop, either are going to be hi Q if they
> are to be efficient.

Ah!! thanks for that Richard, I`ve learned something new as i thought `Q`
remained the same as for a regular dipole - stretched or folded...

> >maybe i can do the same again for a reflector??
> >
> > _____________O_____________
> > [_____________ I _____________]
> > I
> > I
> > _________________I _________________
> >[_____________ _____________]
> >
>
> YOW!!!
>
> You are now getting quite elaborate. You can accomplish this, with
> great care, and if you have the patience to raise and lower this half
> a dozen times or more to get it right.

Well, i`ve got a bit of time now i`m retired .... ;o)

I`m also looking into a Marconi vertical linear loaded, i`ve already
got considerable radials buried as a start.

Regards......

Lee.....G6ZSG......

1219. Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 09:04:11 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A2CCC11ACFDAnonenowhere@61.9.191.5>
Source record: 29139

Can anyone point me to information on calculating the effective resistance, including proximity effect, of conductors in a two wire open transmission line.

Owen

1220. Re: BPL draws more media attention ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 14:17:56 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <4794a89c$0$6500$4c368faf@roadrunner.com>
Source record: 29140

>
>
> India steps further forward, pushing the USA further towards 3rd world
> status ... :-(
>
>
> http://www.expresscomputeronline.com/20080121/technology01.shtml
>
> JS

India already urinates into their own water supply, do you really find it surprising the do not have a problem of possibly polluting the worlds only propagated bandwidth.

I do not think anybody has a problem with alternative high speed data provisions, just the ones that damage other information systems. Hey, if there is a BPL system that does not radiate RF, particularly in the HF and public service spectrum, I would not expect any detractors from the radio camp. BPL still has to survive being commercially viable. You really should get over this BPL fixation of yours, it is clouding your logic. It is also very much off topic, turning you into a troll.

Regards,

Chris

1221. THIS IS A MUST MUST MUST SEE!!! Red Skelton's Pledge of Allegiance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 14:52:20 UTC
From: Steve <kenwood1701@hotmail.com>
Message-ID: <4794b194$0$6371$607ed4bc@cv.net>
Source record: 29141

sorry, I know this is not related to this group but it needs to be watched
and passed on!!

PLEASE LOOK AT WHAT RED SKELTON SAID IN 1969.
IF YOU AGREE WITH IT (and you will!!) SEND TO EVERYONE YOU CAN.

> Click here: YouTube - Red Skelton's Pledge of Allegiance
> <http://www.youtube.com/watch?v=Kfz2XDXaeqc>

http://www.youtube.com/watch?v=Kfz2XDXaeqc

1222. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 15:00:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Yr2lj.846$uE.228@newssvr22.news.prodigy.net>
Source record: 29142

John Smith wrote:
> If you are truly laughing that loudly, you ARE an idiot.

Last night I did a Google search for "destructive interference
energy" and waded through about 50 web pages on the subject.
Needless to say, I found mass confusion, even among the "experts"
who are supposed to know the answer to the questions. However,
the opinions of the majority of experts matched Eugene Hecht's
concepts presented in "Optics" and the Melles-Groit and FSU web
pages that I have posted. In the absence of a local source, the
conservation of energy principle *REQUIRES* that energy "lost"
as destructive interference *MUST* appear as constructive
interference in the opposite direction in a transmission line.

We hams are usually interested in maximizing the destructive
interference toward the source, resulting in maximizing the
constructive interference toward the load. That is why we can
have 100 watts of source power with no reflected energy incident
upon the source AND 200 watts of forward power on the transmission
line. If the forward power into an impedance discontinuity
on the source side is different from the forward power out
of the impedance discontinuity on the load side, interference
has occurred with the destructive interference on one side
of the impedance discontinuity equaling the magnitude of
constructive interference on the other side.

Here is an interferometer with two outputs that can be
considered analogous to the two directions in a transmission
line. The more destructive interference that exists at the
standard output, the more constructive interference exists
at the non-standard output.

http://www.teachspin.com/instruments/moderni/experiments.shtml

"Using Dielectric Beamsplitters to find the "MISSING ENERGY"
in destructive interference - Where is the energy of the light
going in an interferometer adjusted for destructive interference?
Below is a schematic diagram showing a way to detect the non-
standard output of a Michelson interferometerï¿½the light HEADING
BACK TOWARD THE LASER SOURCE. ... Quantitative detection demonstrates
that the standard and non-standard outputs of the interferometer are
complementary. That is, when interference is destructive at the
standard output, it is constructive at the non-standard output."
(CAPITALS emphasis mine)

The Z0-match point in a transmission line with reflections is
an interferometer of sorts. When interference is destructive
toward the source, it is constructive toward the load. All
of this is explained in my Worldradio energy analysis article:

http://www.w5dxp.com/energy.htm
--
73, Cecil http://www.w5dxp.com

1223. Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 15:11:09 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <hC2lj.153985$MJ6.107598@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29143

I typically do not like to "Xerox" material to support my arguments, but I will make an exception in this case.

Very recently RRAA's very own "John Smith" included the following comment in a message.

"I think Cecil has done an excellent job, if you have followed him (and, I cannot claim I have COMPLETELY done so), however, he has shown there ARE holes in what we 'believe.' And, some things don't quite 'mate-up' and what we have taken for granted looks differently when under the 'microscope.' 'Standing Waves' is but the shining example."

Considering the source of that comment, I am not surprised. But for any others who might have been hoodwinked by the nonsense, I will try to add a bit of color. As some may recall <BG>, there has been a bit of an ongoing discussion about the nature of energy flow, or lack thereof, in standing waves.

In order to support his point about using phasors interchangeably with field vectors, Cecil copied and posted a figure on his website under the page name of "EHWave.jpg". This figure was referenced as an extract from a book by Haznadar and Stih entitled "Electronic Fields, Waves, and Numerical Methods."

The figure itself completely misses the point, since it is simply a representation of an ordinary circularly polarized wave. The topic of polarization is not particularly relevant here. It merely complicates the arithmetic, and it adds nothing to the science of Poynting vectors or standing waves. It is, however, interesting to note that the figure caption in the original source is given quite clearly. On page 241, the page containing Cecil's copied jpeg, it says,

"Figure 8.3.2 Propagation of a circularly polarized pure direct (in the +z direction) travelling wave with phase velocity vf = c."

Whether Cecil did not see this caption, did not understand it, or was again trying to pull a fast one remains unknown. It matters not in any case.

I must give great credit to Cecil's hidden research team for finding this reference. It seems quite obscure. However, Cecil's groupies appear to have neglected to turn a few pages to arrive at page 244. On this page there is a discussion of the Poynting vector for standing waves. An exact quote, or at least as close as possible in ASCII, is,

****

"In a real domain, the instantaneous value of Poynting's vector for a pure standing wave is, according to (8.3.26a,b),

NRe = (ax ExRe x ay HyRe) = -az 1/4 (Eo^2)/Z' sin^2 (2 pi z/lambda) sin (2wt) (8.3.28b)

Using this expression, we see that the time-averaged value of Poynting's vector in a real domain is equal to zero since the time-averaged value of the function sin (2wt) is always equal to zero."

****

The equation is slightly cleaner when the "Re" subscripts are removed.

N = (ax Ex X ay Hy) = -az 1/4 (Eo^2)/Z' sin^2 (2 pi z/lambda) sin (2wt) (8.3.28b)

What is immediately observed is that the Poynting vector for an ordinary standing wave is zero only for specific locations or for specific times. At other locations and times the Poynting vector is non-zero. Only the time or space *average* is zero. This is of course exactly what I and some others have been saying. This is exactly what the traditional science says. The colloquial expression is that the energy sloshes back and forth.

This equation is easily derived from the standard representation of a standing wave, but it is *so* much more authoritative when Xeroxed from Cecil's own reference book.

The iconoclasts never give up. The 200 mpg carburetor lives on.

73,
Gene
W4SZ

1224. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 16:14:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qx3lj.41712$ID6.1546@newssvr27.news.prodigy.net>
Source record: 29144

Gene Fuller wrote:
> "Figure 8.3.2 Propagation of a circularly polarized pure direct (in the
> +z direction) travelling wave with phase velocity vf = c."
>
> Whether Cecil did not see this caption, did not understand it, or was
> again trying to pull a fast one remains unknown. It matters not in any
> case.

If I was trying to pull a fast one, I wouldn't have
posted the reference along with the graphic.

The phasors associated with a traveling wave rotate in
opposite directions for forward and reflected traveling
waves, i.e. in their exponential notations, they are
indeed polarized. If the forward and reflected waves
didn't rotate in opposite directions, the standing
waves wouldn't stand. That graph is a reasonable graph
of a uniform plane wave in exponential notation.

My graph of the superposition of forward wave phasors
and reflected wave phasors still stands at:

http://www.w5dxp.com/EHSuper.JPG

The Re part of those phasors (the fields) are 180 degrees
out of phase.

Quoting "Optics" by Hecht, concerning a traveling wave:
"... a phasor rotating counterclockwise at a rate omega
is equivalent to a wave traveling to the left (decreasing x),
and similarly, one rotating clockwise corresponds to a wave
traveling to the right (increasing x)."

The graphic I posted is a reasonable representation of
a traveling wave illustrated in exponential form. The
fields of a circularly polarized waves are virtually
identical to the phasors of a uniform plane traveling
wave. You can observe the rotation of a traveling wave
by downloading http://www.w5dxp.com/rhombicT.EZ and
turning on the current phase option.

> What is immediately observed is that the Poynting vector for an ordinary
> standing wave is zero only for specific locations or for specific times.
> At other locations and times the Poynting vector is non-zero. Only the
> time or space *average* is zero.

Which is exactly what I have been saying. The instantaneous
Poynting vector is of limited usefulness. The time-averaged
Poynting vector is the one that is useful and the one I have
been talking about, as I stated a couple of times previously.
Every time I have used the words, "Poynting vector", I have
been referring to the average Poynting vector. As you know,
I have been using the word "net" as in, "there is no net energy
flow in a standing wave".

We both agree that in a traveling wave the voltage and
current are in phase for forward waves and 180 degrees
out of phase for reflected waves. The E-field and H-field
are 90 degrees apart in both traveling wave cases. A
traveling wave is an example of a uniform plane wave.

The technical fact that the voltage and current in a pure
standing wave are 90 degrees out of phase proves that the
standing wave is NOT a uniform plane wave. In fact, in an
earlier posting, a standing wave failed all 7 properties
of a uniform plane wave.

V*I*cos(A) = average Poynting vector = 0 for a standing wave.
--
73, Cecil http://www.w5dxp.com

1225. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 16:19:52 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fn2gnarge1@aioe.org>
Source record: 29145

"Owen Duffy"
> Can anyone point me to information on calculating the effective
> resistance,
> including proximity effect, of conductors in a two wire open transmission

----

Edmund Laport's RADIO ANTENNA ENGINERING has a good treatment of open wire lines, including a chart on page 398 showing the Zo of balanced, two-conductor line as functions of wire OD and c-c spacing. The text says the plot includes proximity effect and non-uniform peripheral charge distribution. The chart shows a proximity effect only for low ratios of conductor spacing/OD (below about 4). I could scan it and send it to you if you wish.

Laport also shows the general equation as:

Zo = 276 log [2*h*a / p*SQRT(4*h^2 +a^2)]

where

h = height above ground
a =spatial dimension in the line cross-section
p = wire radius

RF

1226. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 17:07:32 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <36k9p3l4oul84ubqvvad96ft7b0e859coh@4ax.com>
Source record: 29146

On Mon, 21 Jan 2008 15:11:09 GMT, Gene Fuller <W4SZzzzzzz@att.net>
wrote:

>it is *so* much more authoritative when Xeroxed from
>Cecil's own reference book.

Indeed, Gene,

Simply drilling into Cecil's corrupted Xerography always finds the
decay of his logic.

73's
Richard Clark, KB7QHC

1227. Re: Romney...who cares?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 17:49:10 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <fW4lj.60585$N67.54491@bignews5.bellsouth.net>
Source record: 29147

"John Smith" <assemblywizard@gmail.com> wrote in message
news:fn1lbo$4th$2@news.albasani.net...
> Ed Cregger wrote:
>
>> ...
>> In the end, it all works out, because I dismiss Romney as
>> a presidential candidate.
>>
>> Ed, NM2K
>
> Romney is a fool, but then what of the available, "news
> covered" candidates are not? If we were choosing them for
> fitness to dress a cannibals table, I guess any of 'em
> would serve. But to put us back on course? Restore a
> gov't of the people? Show ability to solve the deep
> economic/social problems we face? Reduce gov't? Drop
> back to the set of the simple ten commandments as law?
> Phuffft!
>
> We all realize we are in trouble, right?
>
> Ron Paul--2008!
>
> Regards,
> JS

Sadly, nothing has changed over the eons. Yet, here we are.

Ed Cregger

1228. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 18:41:16 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <b5d490de-5c39-4387-b357-1e8ef2224783@e32g2000prn.googlegroups.com>
Source record: 29148

On Jan 21, 1:04 am, Owen Duffy <n...@no.where> wrote:
> Can anyone point me to information on calculating the effective resistance,
> including proximity effect, of conductors in a two wire open transmission
> line.
>
> Owen

Reg Edwards' "LINE_ZIN" program includes a term for proximity effect.
It happens to be one of the programs for which he provided Pascal
source code. There are a couple lines of interest:

```
Rc:=2*Sqrt(Freq)*Len/12/Dia; { conductor
resistance }
Rc:=Rc/Sqrt(1-Sqr(Dia/Space)*(1-Sqrt(SD/Dia))); { corrected for
proximity }
```

I'd suggest you look up the source code yourself, though, and make
sure that taking these two lines out of context doesn't destroy their
meaning. The above two lines are taken from the archive at
http://www.zerobeat.net/G4FGQ/

There's what seems to me to be a pretty nice qualitative explanation
of proximity effect at http://www.sigcon.com/Pubs/news/4_1.htm. I
realize that's not what you asked about, but lurkers may be interested
in it.

Cheers,
Tom

1229. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 18:50:29 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <b03bd2c4-4bf9-4307-b809-e6d568fcdb56@1g2000hsl.googlegroups.com>
Source record: 29149

On Jan 20, 10:15 am, Richard Clark <kb7...@comcast.net> wrote:
> On Sun, 20 Jan 2008 12:29:19 -0500, "Bob" <bobsa...@hotmail.com>
> wrote:
>
>
>
> >"Cecil Moore" <nos...@w5dxp.com> wrote in message
> >news:ETJjj.1023$EZ3.185@nlpi070.nbdc.sbc.com...
> >> Tam wrote:
> >>> Almost certainly, the power rating of the terminator is either 1/8, 1/4,
> >>> or 1/2 W.
>
> >> Does Radio Shack not specify the power rating?
> >> --
> >> 73, Cecil http://www.w5dxp.com
>
> >Hey engineer! here is link:
> >http://www.caddock.com/Online_catalog/current_sense/Current.html
> >MP9100
> >Dont lure good people to smacks shops! Just DIY!
>
> Unlikely to be useful above the LW to AM band.
>
> 73's
> Richard Clark, KB7QHC

On the contrary, I've measured some of the Caddock resistors similar to those and they're quite useful to 2 meters and beyond. We were using a 100-ohm 25 watt one in a Wilkinson combiner at 450MHz successfully. YMMV, and as I wrote in this thread before, it does help to have a reliable analyzer to test them with. Much more useful, IMO, than a lot of the drivel that goes on here would be info on ways to bootstrap yourself into some decent measurements. It can be done with very inexpensive home-brew equipment, but it takes some thought and careful construction.

Cheers,
Tom

1230. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 18:58:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <oeq9p3t0rk3goh4dci7ut7d8amac7epq75@4ax.com>
Source record: 28950

On Mon, 21 Jan 2008 10:50:29 -0800 (PST), K7ITM <k7itm@msn.com> wrote:

>> >http://www.caddock.com/Online_catalog/current_sense/Current.html
>> >MP9100
>> >Dont lure good people to smacks shops! Just DIY!
>>
>> Unlikely to be useful above the LW to AM band.
>>
>
>On the contrary, I've measured some of the Caddock resistors similar
>to those and they're quite useful to 2 meters and beyond. We were
>using a 100-ohm 25 watt one in a Wilkinson combiner at 450MHz
>successfully. YMMV, and as I wrote in this thread before, it does
>help to have a reliable analyzer to test them with. Much more useful,
>IMO, than a lot of the drivel that goes on here would be info on ways
>to bootstrap yourself into some decent measurements. It can be done
>with very inexpensive home-brew equipment, but it takes some thought
>and careful construction.

Hi Tom,

Did you put the MP9100 against a heat sink? The large surface area,
thin construction for heat flow, bound on both sides by metal
clamping, a high dielectric constant, all point to a considerable
sized capacitor (I visualized a 0.01ï¿½Fd ceramic cap).

73's
Richard Clark, KB7QHC

1231. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 19:13:11 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <345e9f84-8445-4de4-940a-196243b70924@d21g2000prf.googlegroups.com>
Source record: 28951

On Jan 21, 1:04 am, Owen Duffy <n...@no.where> wrote:
> Can anyone point me to information on calculating the effective resistance,
> including proximity effect, of conductors in a two wire open transmission
> line.
>
> Owen

Also, though it covers proximity effect with relation to coils and not
transmission lines, the article at http://www.g3ynh.info/zdocs/comps/part_1.html
may be of interest. He provides a reference or two, though I'm pretty
sure the references will talk exclusively about proximity effect in
coils, too.

Cheers,
Tom

1232. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laug...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 20:36:42 UTC
From: richardharrison@webtv.net
Message-ID: <20481-4795025A-863@storefull-3255.bay.webtv.net>
Source record: 28952

John Smith wrote:
"If you are truly laughing that loudly, you ARE an idiot."

My Schaum`s Outline physics book by Frederick J. Bueche and Eugene Hecht says on page 70:
"Energy can neither be created nor destroyed,---."

And on page 366 it says:
"If two coherent waves of the same amplitude are superposed, and distructive interference (cancellation, darkness) occurs when the two waves are 180 degrees out-of-phase. Total constructive interference (reinforcement, brightness) occurs when they are in-phase."

Best regards, Richard Harrison, KB5WZI

1233. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 21:04:49 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fn31dh$6b8$1@f04n12.cac.psu.edu>
Source record: 28953

John Smith wrote:

> Yeah, I just bet.
>
> But we are seeing the "mirror image" of that. It amazes us that someone
> is so stupid as to use a usenet host which is slower than the postal
> system!

Tis an amazing universe John, and so many amazing people in it......

- 73 de Mike N3LI -

1234. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 21:21:29 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fn32cp$1ga0$1@f04n12.cac.psu.edu>
Source record: 28954

Dave Heil wrote:

> inch long eye bolt, add a nut and stick it in the concrete. A pencil
> through the eye will hold it in position until the concrete cures.

Arrrrgh! That'a a little extreme, donchya think Dave?

hehe.

- 73 de Mike N3LI -

1235. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 21:24:08 UTC
From: richardharrison@webtv.net
Message-ID: <4960-47950D78-1008@storefull-3256.bay.webtv.net>
Source record: 28955

Richard Fry wrote:
"Edmund Laport`s RADIO ANTENNA ENGINEERING has a good treatment of open wire lines, including a chart on page 398 showing Zo of balanced two-conductor lines as functions of wire OD and c-c spacing."

Yes and on pages 380 and 381 he gives transmission line height as 120 inches.

Best regards, Richard Harrison, KB5WZI

1236. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 21:38:16 UTC
From: art <aunwin@insightbb.com>
Message-ID: <a9813285-ae51-47a9-bc14-bf84a4455f2d@e10g2000prf.googlegroups.com>
Source record: 28956

On 19 Jan, 07:14, richardharri...@webtv.net (Richard Harrison) wrote:
> Art wrote:
>
> "When an inductance accepts such energy to generate its field one must
> determine the material used to ascertain the true shape of the field."
>
> Bunk! Broadcast arrays have the same pattern using either painted steel
> towers or galvanized steel towers.
>
> Best regards, Richard Harrison, KB5WZI

So you reject the magnetic field shape of a diamagnetic material
being deifferent from its steel counterpart?

1237. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 22:25:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pa6vi7fmcsl37@corp.supernews.com>
Source record: 28957

Skin effect can, of course, be easily calculated if the conductor diameter is at least several skin depths. If you can't make that assumption, the calculation is much more involved, but not difficult for a computer, involving modified Bessel functions.

There's a graph of a proximity effect factor in Johnson & Graham, _High-Speed Signal Propagation: Advanced Black Magic_, p. 43. The caption says it's derived from Terman's _Radio Engineer's Handbook_ (1943), p. 43. An approximate equation for calculating proximity effect appears on p. 8-51 of Kaiser, _Electromagnetic Compatibility Handbook_ (CRC Press, 2005). It's a bit involved to try and duplicate in ASCII.

Roy Lewallen, W7EL

Owen Duffy wrote:
> Can anyone point me to information on calculating the effective resistance,
> including proximity effect, of conductors in a two wire open transmission
> line.
>
> Owen

1238. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 22:55:15 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn37sc$71v$2@news.albasani.net>
Source record: 28958

art wrote:

> ...
> So you reject the magnetic field shape of a diamagnetic material
> being deifferent from its steel counterpart?

I have heavy military 12 ft. SS whips, a magnet will stick to them ...

Regards,
JS

1239. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 23:10:42 UTC
From: art <aunwin@insightbb.com>
Message-ID: <12182099-6b42-475c-b630-1dfb3dd4b694@u10g2000prn.googlegroups.com>
Source record: 28959

On 21 Jan, 14:55, John Smith <assemblywiz...@gmail.com> wrote:
> art wrote:
> > ...
> > So you reject the magnetic field shape of a diamagnetic material
> > being deifferent from its steel counterpart?
>
> I have heavy military 12 ft. SS whips, a magnet will stick to them ...
>
> Regards,
> JS

Then it is not fully efficient as a diamagnetic material.
You will note that the SS retains energy in its magnetic
condition via a hysteresis curve.
Art

1240. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 23:16:55 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn394v$71v$3@news.albasani.net>
Source record: 28960

art wrote:

> ...
> Then it is not fully efficient as a diamagnetic material.
> You will note that the SS retains energy in its magnetic
> condition via a hysteresis curve.
> Art

This all got me wondering ...

Just walked out to garage, with a neodymium magnet, where I have some 8+ ft whips stuck up overhead. Only one of them had NO attraction to the magnet at all. I believe it is an old antenna specialists ChickenBand whip!

Apparently, back in the 70's the SS in the whips was better. However, I think the military ones contain the iron for strength, they are tough.

Regards,
JS

1241. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 23:23:54 UTC
From: art <aunwin@insightbb.com>
Message-ID: <7175eae0-b26e-4ae8-819f-59e47d66329f@d4g2000prg.googlegroups.com>
Source record: 28961

On 21 Jan, 15:10, art <aun...@insightbb.com> wrote:
> On 21 Jan, 14:55, John Smith <assemblywiz...@gmail.com> wrote:
>
> > art wrote:
> > > ...
> > > So you reject the magnetic field shape of a diamagnetic material
> > > being deifferent from its steel counterpart?
>
> > I have heavy military 12 ft. SS whips, a magnet will stick to them ...
>
> > Regards,
> > JS
>
> Then it is not fully efficient as a diamagnetic material.
> You will note that the SS retains energy in its magnetic
> condition via a hysteresis curve.
> Art

Let me qualify my remarks a bit more. Diamagnetic materials produce an
oxide on its surface
which controls the magnetic field but without retention of energy.
Stainless steel has chromium and nickel as part of its contents which
also produce an oxide on its surfaces. I would imagine that the
configuration of the magnetic field would be somewhat different and
the iron content would also retain magnetic energy instead of using it
for radiation.
Art

1242. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-21 23:28:09 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <806384f3-0892-4062-b648-342b59457957@v46g2000hsv.googlegroups.com>
Source record: 28962

On Jan 21, 10:58 am, Richard Clark <kb7...@comcast.net> wrote:
> On Mon, 21 Jan 2008 10:50:29 -0800 (PST), K7ITM <k7...@msn.com> wrote:
> >> >http://www.caddock.com/Online_catalog/current_sense/Current.html
> >> >MP9100
> >> >Dont lure good people to smacks shops! Just DIY!
>
> >> Unlikely to be useful above the LW to AM band.
>
> >On the contrary, I've measured some of the Caddock resistors similar
> >to those and they're quite useful to 2 meters and beyond. We were
> >using a 100-ohm 25 watt one in a Wilkinson combiner at 450MHz
> >successfully. YMMV, and as I wrote in this thread before, it does
> >help to have a reliable analyzer to test them with. Much more useful,
> >IMO, than a lot of the drivel that goes on here would be info on ways
> >to bootstrap yourself into some decent measurements. It can be done
> >with very inexpensive home-brew equipment, but it takes some thought
> >and careful construction.
>
> Hi Tom,
>
> Did you put the MP9100 against a heat sink? The large surface area,
> thin construction for heat flow, bound on both sides by metal
> clamping, a high dielectric constant, all point to a considerable
> sized capacitor (I visualized a 0.01µFd ceramic cap).
>
> 73's
> Richard Clark, KB7QHC

Surely you don't think they use high-K ceramic for their substrate.
Assuming alumina, A8 grade if you wish, the thermal conductivity is
sufficient, I believe, to allow a 2mm thick piece 13mm square to serve
the MP9100 at better than the data sheet thermal performance.
Relative permittivity of that alumina is about 10 at most. Even if
the 13mm square were silvered both sides, it represents a whopping
7.5pF. Assuming that's distributed evenly across the resistive
element, it gives you better than 20dB return loss out to beyond
800MHz. For a ham dummy load, that's generally fine. I'll bet this
simple back-of-the-envelope calculation yields a worse result than
you'd see in practice with an MP9100. Please note that I didn't say I
either had, or have used, an MP9100. It was a 25-watt part in a
TO-220 style package from Caddock, and I believe it was a precursor of
the series with exposed ceramic backs. It was about 20 years ago; I'd
have a hard time finding the data at this point. Please feel free to
get one of the MP9100s and measure it yourself. I'm confident the

capacitance won't be anything like 0.01uF.

Cheers,
Tom

1243. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 00:11:07 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A2D71B10CF7Cnonenowhere@61.9.191.5>
Source record: 28964

Roy, Tom, Richard and Richard,

Thanks.

I only asked half the question, I was also interested in a proximity corrected calc for Zo.

The chart in Laport looks useful Richard. I have digitised it and tried a number of curve fits. I think I will just use a cubic spline interpolation to my digitised points where D/d<2.5 and >1.1, and above that range I will use 120acosh(D/d). Laport doesn't give an expression from the graph, so I suspect that it is derived from experimental data.

Tom, thanks for the pointer to Reg's expression. I wish I knew where he got it from, or something against which to validate it... but it is a start. Interestingly, Reg doesn't seem to consider proximity effect in calculating Zo (other than indirectly from the implied R element).

Roy, I note from Googling that a lot of work has been done in recent years on skin effect in PCB tracks, ie small rectangular tracks over a large ground plane, but haven't seen work on traditional two wire open line.

I am playing with a model of a Ruthroff 1:4 balun. My model treats the windings as a coiled lossy transmission line, so good estimation of Zo and R are important to the results.

The ugly part of ferrite baluns is the ferrite. I have used published u' and u'' vs frequency curves to calculate the choke impedance for a more realistic estimate.

Comments appreciated.

Again, thanks to all for the hints.

Owen

1244. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 00:12:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <jxalj.41127$Pv2.26019@newssvr23.news.prodigy.net>
Source record: 28963

Richard Clark wrote:
> Simply drilling into Cecil's corrupted Xerography always finds the
> decay of his logic.

Richard, I admit that I am not perfect nor omniscient.
Will you admit that about yourself?
--
73, Cecil http://www.w5dxp.com

1245. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 00:40:01 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn3e0q$kv4$1@news.albasani.net>
Source record: 28965

Gene Fuller wrote:

> ...
> The iconoclasts never give up. The 200 mpg carburetor lives on.
>
> 73,
> Gene
> W4SZ
>

Actually, you are quite correct ...

As a boy, I had a moped, it did get mighty close to 200mpg. Depending on how you "drove" it (peddled it?), it could be pushed to better performance than that!

Absolute proof the 200 mpg carburetor does exist! <ROFLOL>

Regards,
JS

1246. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 00:54:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ceeap39ssafafnjlm302b4tqid9loka9n7@4ax.com>
Source record: 28966

On Mon, 21 Jan 2008 18:12:00 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Richard Clark wrote:
>> Simply drilling into Cecil's corrupted Xerography always finds the
>> decay of his logic.
>
>Richard, I admit that I am not perfect nor omniscient.
>Will you admit that about yourself?

Hmm, I've been called a gay-wad, liar, a sailor, stupid, a cheat, a
vile lover of Shakespeare by any number of correspondents here
(including you) - your fawning need for sentimental admissions that
celebrities love to gush would be a pale shade of mauve in comparison.

Feel free to spit on me again at your convenience. ;-)

Wearing my Nor'wester in this wet climate since 1995,

73's
Richard Clark, KB7QHC

1247. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 00:59:06 UTC
From: richardharrison@webtv.net
Message-ID: <4960-47953FDA-1042@storefull-3256.bay.webtv.net>
Source record: 28967

Roy wrote:
"The caption says it`s derived from Terman`s _Radio Engineer`s Handbook_(1943), p43."

Yes it`s there. Fig. 6 - "Proximity factor in parallel cylinters or tubes for very high frequencies."

Best regards, Richard Harrison, KB5WZI

1248. Re: Standing morphing to travelling waves, and other stupid notions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 01:27:34 UTC
From: richardharrison@webtv.net
Message-ID: <4962-47954686-29@storefull-3256.bay.webtv.net>
Source record: 28968

Art wrote:
"So you reject the magnetic field shape of a diamagnetic material as being different from its steel counterpart?"

Yes. A galvanized tower might just as well be solid zinc due to skin effect. No one makes any allowance for zinc, steel, copper, or gold except for resistivity. For that, the adjustment is small indeed.

Further, Maxwell`s equations are ample for all electrical radiation predictions even though these were made before radio waves had been discovered. No addenda are needed.

Best regards, Richard Harrison, KB5WZI

1249. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 05:00:53 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <9Melj.2499$Sa1.286@news02.roc.ny>
Source record: 28969

Michael Coslo wrote:
> Dave Heil wrote:
>
>> inch long eye bolt, add a nut and stick it in the concrete. A pencil
>> through the eye will hold it in position until the concrete cures.
>
> Arrrrgh! That'a a little extreme, donchya think Dave?
>
>
> hehe.

I don't care to imagine concrete blocks dangling in space or screen door closers affixed to trees, Mike.

Dave K8MN

1250. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 05:10:40 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <4bd3811d-84e6-472e-b147-924cd3a6bf83@z17g2000hsg.googlegroups.com>
Source record: 28970

On Jan 21, 2:25 pm, Roy Lewallen <w...@eznec.com> wrote:
> Skin effect can, of course, be easily calculated if the conductor
> diameter is at least several skin depths. If you can't make that
> assumption, the calculation is much more involved, but not difficult for
> a computer, involving modified Bessel functions.
>
> There's a graph of a proximity effect factor in Johnson & Graham,
> _High-Speed Signal Propagation: Advanced Black Magic_, p. 43. The
> caption says it's derived from Terman's _Radio Engineer's Handbook_
> (1943), p. 43. An approximate equation for calculating proximity effect
> appears on p. 8-51 of Kaiser, _Electromagnetic Compatibility Handbook_
> (CRC Press, 2005). It's a bit involved to try and duplicate in ASCII.
>
> Roy Lewallen, W7EL
>
> Owen Duffy wrote:
> > Can anyone point me to information on calculating the effective resistance,
> > including proximity effect, of conductors in a two wire open transmission
> > line.
>
> > Owen

I wonder if Roy's fingers got ahead of his thoughts...at least in My copy of the '43 edition of Terman's book, it's more like page 36. He publishes a graph there of the correction factor for resistance of wires in a two-wire transmission line, for the wires carrying current in opposite or in the same direction. The factor becomes large when the center-center spacing is, say less than twice the conductor diameter, as it would be in twisted-pair for most types of insulating layers.

Terman gives more references. This stuff was all worked out long ago, as I'm sure Reg would tell us if he were around. OK, quoting the footnotes in Terman:

With respect to the calcs that went nto his published curves, which assume skin depth small compared with other dimensions involved,

"1. The curve for currents in opposite direction is calculated by formulas given by Sallie Pero Mead, Wave Propagation over Parallel Tubular Conductors: The Alternating Current Resistance, _Bell_System_Tech._Jour.,_ Vol 4, P. 327,1 April, 1925. The curve applying to currents flowing in the same direction is from S. Butterworth, On the Alternatng Current Resistance of Solenoidal Coils, _Proc._Roy._Soc._ (London), Vol. 107A, p 693, 1925."

With respect to calculating the effect when skin depth is not
negligible compared with the other dimensions involved,

"2. See Mead, op.cit.; also, H. B. Dwight, Proximity Effect in Wires
and Thin Tubes, _Trans._A.I.E.E.,_ Vol. 42, p. 850, 1923."

OK, Owen, if you can actually find these references, it seems like
they should do the trick for you with respect to resistance, at
least. If they also cover the effect on inductance, perhaps they'll
take care of the problem for you. I do have an explanation in a text
about how inductance varies with frequency because of the skin effect,
thereby affecting the impedance of a transmission line, but I don't
believe it covers proximity effect...

Cheers, Tom

1251. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 05:20:24 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn3ueh$up6$1@news.albasani.net>
Source record: 28971

Dave Heil wrote:

> ...
> I don't care to imagine concrete blocks dangling in space or screen door
> closers affixed to trees, Mike.
>
> Dave K8MN

Neither do I.

I'd imagine a pulley in the tree which a rope attached to the antenna to be tensioned was attached. This rope would then run to a weight on the ground to where the HD door closers were attached.

I mean, I'd imagine that as opposed to beginning to pour concrete to which an eyebolt with a insufficient deadman held into the concrete!

JS

1252. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 05:29:11 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A2DA79E7F49Enonenowhere@61.9.191.5>
Source record: 28972

Thanks Tom,

I did mean to note in my last post that Laport's graph of D/r vs Zo with proximity correction is frequency independent.

I thought the effect would be frequency dependent. Perhaps not sufficient to be concerned about, perhaps he overlooked it?

I did ask Reg about the R calc a long time ago, and he dismissed the discussion with an explanation that it was from notes in his engineering notebook from a long time ago, and then went on the tell me the value of his book of personal 'recipes', but he didn't share it.

When he did publish the source of a few of his progs, it didn't occur to me to look at them for possibly useful hints.

I think the model I have now is probably adequately accurate to question some of the golden rules of baluns. At the end of the day, the uncertainty in characterising ferrites at a frequency, at a temperature, at a flux level, and on a given day is the main worry. I don't think I need to get into Bessel functions for the actual current distribution, and trying to derive corrected values for R and Zo from first principles.

Owen

1253. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 05:54:29 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <pyflj.2502$Sa1.1515@news02.roc.ny>
Source record: 28973

John Smith wrote:
> Dave Heil wrote:
>
>> ...
>> I don't care to imagine concrete blocks dangling in space or screen
>> door closers affixed to trees, Mike.
>>
>> Dave K8MN
>
> Neither do I.
>
> I'd imagine a pulley in the tree which a rope attached to the antenna to
> be tensioned was attached. This rope would then run to a weight on the
> ground to where the HD door closers were attached.
>
> I mean, I'd imagine that as opposed to beginning to pour concrete to
> which an eyebolt with a insufficient deadman held into the concrete!

Try to keep your anonymous sniping to yourself, CB "John". There's *no*
dead man in the concrete. It is simply a bolt, a large fender washer
and a nut. It is supporting only a wire antenna. It isn't guying a
tower. A 3/8", three or four inch long bolt in concrete is more than
sufficient for the job. Read my earlier post where I suggest a window
sash weight. These are cast iron with a loop at the top end. Both have
been used without failure for decades. No Rube Goldberg devices were
necessary.

Dave K8MN

1254. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 07:50:31 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn4780hbg1@news.albasani.net>
Source record: 28974

Dave Heil wrote:
> ... It is simply a bolt, a large fender washer
> and a nut. It is supporting only a wire antenna. It isn't guying a
> tower. A 3/8", three or four inch long bolt in concrete is more than
> sufficient for the job. Read my earlier post where I suggest a window
> sash weight. These are cast iron with a loop at the top end. Both have
> been used without failure for decades. No Rube Goldberg devices were
> necessary.
>
> Dave K8MN

The fender washer, now mentioned, would go a long way towards creating a
better deadman ...

JS

1255. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 07:56:36 UTC
From: Bob <bobsakol@hotmail.com>
Message-ID: <aea37$4795a1be$cef8bfb9$19259@TEKSAVVY.COM-Free>
Source record: 28975

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:oeq9p3t0rk3goh4dci7ut7d8amac7epq75@4ax.com...
> On Mon, 21 Jan 2008 10:50:29 -0800 (PST), K7ITM <k7itm@msn.com> wrote:
>
>>> >http://www.caddock.com/Online_catalog/current_sense/Current.html
>>> >MP9100
>>> >Dont lure good people to smacks shops! Just DIY!
>>>
>>> Unlikely to be useful above the LW to AM band.
>>>
>>
>>On the contrary, I've measured some of the Caddock resistors similar
>>to those and they're quite useful to 2 meters and beyond. We were
>>using a 100-ohm 25 watt one in a Wilkinson combiner at 450MHz
>>successfully. YMMV, and as I wrote in this thread before, it does
>>help to have a reliable analyzer to test them with. Much more useful,
>>IMO, than a lot of the drivel that goes on here would be info on ways
>>to bootstrap yourself into some decent measurements. It can be done
>>with very inexpensive home-brew equipment, but it takes some thought
>>and careful construction.
>
> Hi Tom,
>
> Did you put the MP9100 against a heat sink? The large surface area,
> thin construction for heat flow, bound on both sides by metal
> clamping, a high dielectric constant, all point to a considerable
> sized capacitor (I visualized a 0.01ï¿½Fd ceramic cap).
>
> 73's
> Richard Clark, KB7QHC

Hi Richard, Would you check out this link:
http://www.bourns.com/components.aspx?cmsphid=7631383|7163299|3412571

Which one will be the best for let say, 400 Watts dummy? Thank you.
Regards. Bob

1256. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 08:19:46 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn48uqhbg3@news.albasani.net>
Source record: 28976

Dave Heil wrote:

> ...
> Dave K8MN

OK. Sorry. I see the fender mentioned washer mentioned in one of your previous posts. That is bound to happen, I only scan 1 out of 4-10 of your posts--and have my news reader set to mark your new posts as already having been read, easy to miss 'em. <LOL>

JS

1257. Re: Proximity effect in two wire open TL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 08:40:08 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <cf280d96-e092-4390-936e-6f40811239a1@t1g2000pra.googlegroups.com>
Source record: 28977

On Jan 21, 9:29 pm, Owen Duffy <n...@no.where> wrote:
> Thanks Tom,
>
> I did mean to note in my last post that Laport's graph of D/r vs Zo with
> proximity correction is frequency independent.
>
> I thought the effect would be frequency dependent. Perhaps not sufficient
> to be concerned about, perhaps he overlooked it?
>
> I did ask Reg about the R calc a long time ago, and he dismissed the
> discussion with an explanation that it was from notes in his engineering
> notebook from a long time ago, and then went on the tell me the value of
> his book of personal 'recipes', but he didn't share it.
>
> When he did publish the source of a few of his progs, it didn't occur to
> me to look at them for possibly useful hints.
>
> I think the model I have now is probably adequately accurate to question
> some of the golden rules of baluns. At the end of the day, the
> uncertainty in characterising ferrites at a frequency, at a temperature,
> at a flux level, and on a given day is the main worry. I don't think I
> need to get into Bessel functions for the actual current distribution,
> and trying to derive corrected values for R and Zo from first principles.
>
> Owen

It is interesting that you bring all this up just at this time. The
past couple of days, I've been playing with making a balun out of a
twisted-pair transmission line. One of my big problems right now is
making a decent 50 ohm twisted pair (or I was thinking of making a
twisted four-wire line, but it's kind of painful trying to keep the
wires in the same order all the way along the line -- this with Litz
wire (15 strands of 44AWG)...). Tomorrow I'll probably try a twisted
pair of 32AWG polyurethane magnet wire. I believe it will come out
reasonably close to 50 ohms. I'm interested in doing this with no
magnetic core, as such a core introduces distortion, and I really want
to avoid that.

Cheers,
Tom

1258. Broke down and bought one ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 08:47:34 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn4aiuopl1@news.albasani.net>
Source record: 28978
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

After varying success with homebrew SDRs' (software defined radios)
built on PCI breadboards stuck into old PCs', I made the jump into a
commercial one--bit "pricey" though--a little under five grand for the
Flex-5000C ... I am as anxious as a kid waiting his order from the back
of a comic book! (they still do that, don't they?) :-)

Regards,
JS

1259. Re: Broke down and bought one ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 08:52:54 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn4asuopl2@news.albasani.net>
Source record: 28979
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

John Smith wrote:
> After varying success with homebrew SDRs' (software defined radios)
> built on PCI breadboards stuck into old PCs', I made the jump into a
> commercial one--bit "pricey" though--a little under five grand for the
> Flex-5000C ... I am as anxious as a kid waiting his order from the back
> of a comic book! (they still do that, don't they?) :-)
>
> Regards,
> JS

Forgot to include the URL, in case anyone else is interested:

http://www.flex-radio.com/Products.aspx?topic=f5k_features

Regards,
JS

1260. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 12:49:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ODllj.865$hI1.407@nlpi061.nbdc.sbc.com>
Source record: 28980

Richard Clark wrote:
> Hmm, I've been called a gay-wad, liar, a sailor, stupid, a cheat, a
> vile lover of Shakespeare by any number of correspondents here
> (including you)

Sorry, that's a false statement. I have never called you a
gay-wad, a sailor, or a vile lover of Shakespeare. :-)

> - your fawning need for sentimental admissions that celebrities
> love to gush would be a pale shade of mauve in comparison.

So the answer to my question is "no", you are unwilling
to admit that you are not perfect nor omniscient. :-)
--
73, Cecil http://www.w5dxp.com

1261. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 13:14:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <P_llj.114$5K1.25@newssvr12.news.prodigy.net>
Source record: 28981

Gene Fuller wrote:
> In order to support his point about using phasors interchangeably with
> field vectors, Cecil copied and posted a figure on his website under the
> page name of "EHWave.jpg".

For the record, I have not used field vectors at all during this discussion. Everything I have ever posted have used phasors. From the IEEE Dictionary, "E and H are the electric and magnetic field vectors in phasor notation". That is what I have been doing all along.

From "Optics" by Hecht: "Therefore, its instantaneous value [for the Poynting vector] would be an impractical quantity to measure directly. This suggests that we employ an averaging procedure." Virtually every time I have used the term, "Poynting vector", I have been talking about the average value, not the instantaneous value.

EHWave.JPG is a good representation of an EM traveling wave in phasor notation. If we project the fields onto the real axis, we obtain the conventional representation.
--
73, Cecil http://www.w5dxp.com

1262. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 15:24:39 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <XUnlj.2520$Sa1.1410@news02.roc.ny>
Source record: 28982

John Smith wrote:
> Dave Heil wrote:
>> ... It is simply a bolt, a large fender washer and a nut. It is
>> supporting only a wire antenna. It isn't guying a tower. A 3/8",
>> three or four inch long bolt in concrete is more than sufficient for
>> the job. Read my earlier post where I suggest a window sash weight.
>> These are cast iron with a loop at the top end. Both have been used
>> without failure for decades. No Rube Goldberg devices were necessary.
>>
>> Dave K8MN
>
> The fender washer, now mentioned, would go a long way towards creating a
> better deadman ...

Check it out, "John". The fender washer was in my original post. If
you'd bothered to read it, you wouldn't be in an "Oops, never mind"
situation.

Dave K8MN

1263. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 15:26:15 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <rWnlj.2522$Sa1.311@news02.roc.ny>
Source record: 28983

John Smith wrote:
> Dave Heil wrote:
>
>> ...
>> Dave K8MN
>
> OK. Sorry. I see the fender mentioned washer mentioned in one of your
> previous posts. That is bound to happen, I only scan 1 out of 4-10 of
> your posts--and have my news reader set to mark your new posts as
> already having been read, easy to miss 'em. <LOL>

So you issued your statement based upon a post you didn't read?

Dave K8MN

1264. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 15:52:57 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <tjolj.157059$MJ6.111417@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28984

Cecil Moore wrote:
> Gene Fuller wrote:
>> In order to support his point about using phasors interchangeably with
>> field vectors, Cecil copied and posted a figure on his website under
>> the page name of "EHWave.jpg".
>
> For the record, I have not used field vectors at all
> during this discussion. Everything I have ever posted
> have used phasors. From the IEEE Dictionary, "E and H
> are the electric and magnetic field vectors in phasor
> notation". That is what I have been doing all along.

The "notation" is not the most important part. "Phasor notation" is simply a means expressing the phase in terms of complex numbers. The vector *direction* is all-important. That is the essential "vector" part of the Poynting analysis. The vector *direction* is not addressed at all by the phase or by phasor notation. Depending on the exact notation, the vector "magnitude" may be described by phasor notation. If one is going to correctly perform Poynting analysis, it is necessary to consider field vectors. There is no alternative.

>
> From "Optics" by Hecht: "Therefore, its instantaneous
> value [for the Poynting vector] would be an impractical
> quantity to measure directly. This suggests that we
> employ an averaging procedure." Virtually every time
> I have used the term, "Poynting vector", I have been
> talking about the average value, not the instantaneous
> value.

Most of this discussion has been based upon a disagreement between your insistence that the instantaneous Poynting vector for a standing wave is always zero at all times and places, compared to my insistence that it is not zero at all times and places. I have no disagreement with Hecht.

>
> EHWave.JPG is a good representation of an EM traveling
> wave in phasor notation. If we project the fields onto
> the real axis, we obtain the conventional representation.

The representation in EHWave.jpg is already shown in real axes. There is no projection needed. The whole point of that figure is to show a circularly polarized wave. The vector direction does indeed rotate around the propagation axis exactly as shown. The observed rotation angles around the propagation axis have nothing to do with phasors; they are real physical angles of the E-field and H-field.

73,
Gene
W4SZ

1265. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 16:57:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9h7cp3pknh0mr59b9vrjqkb815v7g7tp0k@4ax.com>
Source record: 28985

On Tue, 22 Jan 2008 02:56:36 -0500, "Bob" <bobsakol@hotmail.com>
wrote:

>Hi Richard, Would you check out this link:
>http://www.bourns.com/components.aspx?cmsphid=7631383|7163299|3412571
>
>Which one will be the best for let say, 400 Watts dummy? Thank you.
>Regards. Bob

Hi Bob,

There is every probability that either of your links will work,
although I still have a sample request that remains to be filled (but
I am in contact with their engineers).

However, backing up to the actual application, this is still not a
done deal if you are trying to push them to their "ratings." The
larger part of success is in the details, and for Heat Transfer, that
is a devil.

The practical solution will require a sink with fins and forced air in
ambient to still find it derated by 60%. Ham applications rarely
subject a dummy load to full power continuously, however. So, a good
heat sink and a one minute application of full rating in ten minutes
"may" be tolerated. You can always water cool them.

73's
Richard Clark, KB7QHC

1266. RF Power Resistors from Caddock

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 17:19:45 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <p69cp3dbvu1pmfm6b8ct1vlde255ec244p@4ax.com>
Source record: 28986

Hi All,

In regard to other postings originally inquiring into the utility of
network terminations as dummy loads, the thread drifted into more
serious power levels with the Caddock MP9100 being suggested.

I have been in correspondence with their engineers who have kindly
supplied me with these details:

>We have test data for the similarly constructed, smaller scale model MP930,
>that indicates pretty good frequency performance up to about 300 MHz or so.
>We have verbal reports that the MP9100 looks pretty good up to similar
>frequencies, but of course ï¿½pretty goodï¿½ depends on expectations and actual
>requirements. I seriously doubt that it will be useful at 3 GHz, or
>anywhere near that frequency. I have attached a drawing of an impedance
>model derived for the TO220 sized parts. The inductance for the MP9100
>should be about 10 nH, and freestanding capacitance should be about 1.5 pF.
>
>The impedance data is from testing we did using an HP 4291A Impedance
>Analyzer. Because the resistance film pattern is the same for all MP930
>resistance values (MP9100 uses the same pattern ï¿½ scaled larger), and
>measurements performed on low (< 1 Ohm) and high (> 1 kOhm) resistor samples
>confirm it, the model is valid for all resistance values. Referring to the
>impedance model depicted in the attachment, inductance (l1) in nH and
>capacitance (Cm) in pF is:
>
> Isolated One lead common
> Freestanding On heatsink to heatsink
>Model nH pF nH pF pF
>================== ============ =======
>MP930 7.60 0.75 8.00 1.75 3.65
>
>==
>
>We measured these resistances and phase shifts with 50 Ohm nominal value
>resistors:
>
>===================================
> Phase
> Shift
>F, MHz Ohms degrees
>====== ===== =======
>MP930 (freestanding)
>100 50.2 5.1
>250 51.6 12.2

>500 56.5 23.2
>
>MP930 (isolated, on heatsink)
>100 50.1 2.9
>250 50.3 7.4
>500 51.6 15.0
>
>MP930 (one lead common to heatsink)
>100 49.7 -1.80
>250 48.5 -4.50
>500 43.8 -9.70
>

73's
Richard Clark, KB7QHC

1267. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 17:34:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <1Pplj.110$Ej5.32@newssvr29.news.prodigy.net>
Source record: 28987

Gene Fuller wrote:
> Cecil Moore wrote:
>> For the record, I have not used field vectors at all
>> during this discussion. Everything I have ever posted
>> have used phasors. From the IEEE Dictionary, "E and H
>> are the electric and magnetic field vectors in phasor
>> notation". That is what I have been doing all along.
>
> The "notation" is not the most important part. "Phasor notation" is
> simply a means expressing the phase in terms of complex numbers. The
> vector *direction* is all-important. That is the essential "vector" part
> of the Poynting analysis. The vector *direction* is not addressed at all
> by the phase or by phasor notation. Depending on the exact notation, the
> vector "magnitude" may be described by phasor notation. If one is going
> to correctly perform Poynting analysis, it is necessary to consider
> field vectors. There is no alternative.

You apparently did not bother to read the IEEE Dictionary
definition above. Please do it and while you are at it,
would you please explain what the "complex conjugate"
means when one is not dealing with phasors? Exactly what
is the complex conjugate of a vector in free x,y,z space?
For instance, what is the complex conjugate of a vector
running from 0,0,0 to 1,2,3?

>> From "Optics" by Hecht: "Therefore, its instantaneous
>> value [for the Poynting vector] would be an impractical
>> quantity to measure directly. This suggests that we
>> employ an averaging procedure." Virtually every time
>> I have used the term, "Poynting vector", I have been
>> talking about the average value, not the instantaneous
>> value.
>
> Most of this discussion has been based upon a disagreement between your
> insistence that the instantaneous Poynting vector for a standing wave is
> always zero at all times and places, compared to my insistence that it
> is not zero at all times and places.

Either I misspoke or else you misunderstood. Phasor
magnitudes are usually RMS values, i.e. average
values.

If I ever said anything about the instantaneous Poynting
vector, it was a mistake. Every time I said "Poynting
vector", I was referring to the average Poynting vector.

I tend to agree with Hecht - the instantaneous Poynting vector is impractical to work with.

I always deal with phasors and averages. When I realized that Keith was talking about instantaneous values, I backed out of the discussion. I do not agree or disagree with anyone about instantaneous values. I just think they are of very limited usefulness in this discussion. It is the average values that are important here.

So I repeat: The average energy flow in a standing wave is zero so the average Poynting vector for a standing wave is zero. That was the only point I was trying to make. V*I*cos(A) are RMS phasors.
--
73, Cecil http://www.w5dxp.com

1268. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 18:11:02 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn5bjm$7uo$1@news.albasani.net>
Source record: 28988

Dave Heil wrote:

> ...
> So you issued your statement based upon a post you didn't read?
>
> Dave K8MN

Wow, what a rash statement!

There are millions, perhaps billions of books in the world. I have not seen a man yet speak who has read them all--it is just impossible--as are your posts ... :-D

JS

1269. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 18:56:51 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <T%qlj.157427$MJ6.79887@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28989

Cecil Moore wrote:
> Gene Fuller wrote:
>> Cecil Moore wrote:
>>> For the record, I have not used field vectors at all
>>> during this discussion. Everything I have ever posted
>>> have used phasors. From the IEEE Dictionary, "E and H
>>> are the electric and magnetic field vectors in phasor
>>> notation". That is what I have been doing all along.
>>
>> The "notation" is not the most important part. "Phasor notation" is
>> simply a means expressing the phase in terms of complex numbers. The
>> vector *direction* is all-important. That is the essential "vector"
>> part of the Poynting analysis. The vector *direction* is not addressed
>> at all by the phase or by phasor notation. Depending on the exact
>> notation, the vector "magnitude" may be described by phasor notation.
>> If one is going to correctly perform Poynting analysis, it is
>> necessary to consider field vectors. There is no alternative.
>
> You apparently did not bother to read the IEEE Dictionary
> definition above. Please do it and while you are at it,
> would you please explain what the "complex conjugate"
> means when one is not dealing with phasors? Exactly what
> is the complex conjugate of a vector in free x,y,z space?
> For instance, what is the complex conjugate of a vector
> running from 0,0,0 to 1,2,3?
>

A suggestion. Read the IEEE Dictionary definition of "phasor" and report
back to us if you think it is used to specify a direction in real space
rather than phase space in the complex plane.

Yes, the complex conjugate adjusts the phase portion of the wave
description. However, it does not impact the real-space vector direction.

73,
Gene
W4SZ

1270. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 19:11:03 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <bdrlj.2537$Sa1.2456@news02.roc.ny>
Source record: 28990

John Smith wrote:
> Dave Heil wrote:
>
>> ...
>> So you issued your statement based upon a post you didn't read?
>>
>> Dave K8MN
>
> Wow, what a rash statement!
>
> There are millions, perhaps billions of books in the world. I have not
> seen a man yet speak who has read them all--it is just impossible--as
> are your posts ... :-D

Yet you found time to snipe at something you hadn't read. You must be feeling pretty foolish, "John".

Dave K8MN

1271. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 19:19:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Xkrlj.1648$so6.138@newssvr19.news.prodigy.net>
Source record: 28991

Gene Fuller wrote:
> A suggestion. Read the IEEE Dictionary definition of "phasor" and report
> back to us if you think it is used to specify a direction in real space
> rather than phase space in the complex plane.

I know the difference between phasors and vectors, Gene.
Most of my textbooks represent the E and H fields as
phasors, rather than vectors, by applying some logical
boundary conditions to the vectors. The IEEE Dictionary
says the E and H fields are represented as phasors.
You seem to stand completely alone in your insistence
that E and H fields cannot be represented as phasors.
Would you mind providing one iota of proof for that
assertion?

> Yes, the complex conjugate adjusts the phase portion of the wave
> description. However, it does not impact the real-space vector direction.

Contrary to *all* of my references, you said the Poynting
vector equals E x H* which apparently implies phasors rather
than vectors. Would you care to explain your H* notation
as it applies to real-space vectors? This is my question
which you didn't answer - asked in different words.

Exactly what is the complex conjugate of the vector that
extends from 0,0,0 to 1,2,3?
--
73, Cecil http://www.w5dxp.com

1272. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 19:27:31 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn5g33dte1@news.albasani.net>
Source record: 28992

Dave Heil wrote:

> ...
> Yet you found time to snipe at something you hadn't read. You must be
> feeling pretty foolish, "John".
>
> Dave K8MN

Hey, God made me that way--some are fortunate to be able to blame the
apes! <ROFLOL>

Regards,
JS

1273. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 19:35:19 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn5ghq$l0f$1@news.service.uci.edu>
Source record: 28993

Richard Clark wrote:
> On Sat, 19 Jan 2008 23:40:43 -0800 (PST), jimkelleyamps@gmail.com
> wrote:
>
>
>>The only person I've ever seen claiming that there is energy
>>in non-existant waves is you, Cecil.
>
>
> Hi Jim,
>
> That's not strictly true. I for one have always maintained there is
> energy where it cancels, it is also somewhere else when it adds.

I was unaware that your belief system coincided with Cecil's in this regard. I now acknowledge knowing of two such people who believe in energy in nonexistent waves. Perhaps others will join in.

> As for the non-existence of waves, I would read this as the resultant
> combination of two waves exhibiting a null at a locality.

This particular "locality" is the point of discussion. That there is energy at other localities is another matter.

> Let's simply divorce the second source and look at the dipole. It
> clearly is a source of energy, no one is going to deny that I hope
> (OK, Cecil will as this post is draining the numbers on his celebrity
> status). We can still discuss fields (includes DC then) or waves
> (extending to AC/RF). We can combine them, every text does this in
> the first chapter. We find a line bisecting the dipole with a null
> response. An infinitesimal point residing in the infinite bisecting
> plane can't tell the difference between a null and no field/wave
> certainly. Is energy non-existent? The tug of war informs us
> otherwise. Turn off the dipole, and you win the argument of
> non-existent energy - but the rope collapses to the ground, falling
> out of its 2D shape. Even for the tug of war, the evidence still
> differentiates between the two circumstances.
>
> This non-existence blossoms into:
>
>>Even Yagi antennas fail to radiate energy from their null points.
>
> such is the well from which Arthur draws his inspiration.

No, actually it comes from the notion that where there are no
electromagnetic waves there is no electromagnetic energy, and vice versa.

> Antennas radiate equally in all directions from all points. Nulls are
> the products of the sums of those radiations at a remote point.

A point which blossoms into the notion that antennas radiate
nonexistent waves carrying nonexistent quantities of energy in certain
directions.

73, ac6xg

1274. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 19:44:57 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn5h3s$lb2$1@news.service.uci.edu>
Source record: 28994

Cecil Moore wrote:

> jimkelleyamps@gmail.com wrote:
>
>> Then it should be a simple matter for you to actually measure the
>> canceled waves and their energy in order to prove everyone wrong once
>> and for all.
>
>
> The energy in the canceled waves is why the forward
> power is often greater than the source power.

But that's in the wrong direction, Cecil. You claim there's power in the canceled waves. You need to be able to measure that for the proof of your belief. Obviously there's energy in the forward waves. They're not canceled.

ac6xg

1275. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 19:55:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0Trlj.1657$so6.622@newssvr19.news.prodigy.net>
Source record: 28995

Jim Kelley wrote:
> I now acknowledge knowing of two such people who believe in
> energy in nonexistent waves.

Your attempt at obfuscation is well known to all, Jim.
Two canceled waves cease to exist but the energy in the
two waves that canceled cannot cease to exist. I'm
surprised that a physics professor would be advocating
violation of the conservation of energy principle.

Maybe you would like to contact the scientist who
answered the question at:

http://www.newton.dep.anl.gov/askasci/phy00/phy00292.htm

Perhaps he can explain the laws of physics to you.

"The waves' energies simply add together. In places where
the interference is destructive, one wave cancels out the
other. (up + down = nothing.) Where it is constructive,
however, they reinforce each other
(up + up = 2 * up, down + down = 2 * down.)
That is all there is to it."

Richard E. Barrans Jr., Ph.D.
Assistant Director
PG Research Foundation, Darien, Illinois
--
73, Cecil http://www.w5dxp.com

1276. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 20:11:33 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn5ilpmrb1@news.service.uci.edu>
Source record: 28997

Cecil Moore wrote:
> Jim Kelley wrote:
>
>> I now acknowledge knowing of two such people who believe in energy in
>> nonexistent waves.
>
>
> Your attempt at obfuscation is well known to all, Jim.

It is your propensity for baseless accusation that is well known
around here, Cecil.

> Two canceled waves cease to exist but the energy in the
> two waves that canceled cannot cease to exist.

I'm sorry you're having so much trouble understanding such a simple
idea. It really does turn you surly. The waves don't 'stop
existing'. Given the conditions, they can never exist. In the steady
state, things don't first do one thing, and then some time later do
something else.

ac6xg

1277. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 20:17:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nbslj.126$J41.88@newssvr14.news.prodigy.net>
Source record: 28996

Jim Kelley wrote:
> You claim there's power in the canceled waves.

That is a false statement and you are either totally
confused or bearing your usual false witness.
I have never claimed that there is power in the
canceled waves *after* they cancel, only that there
was energy in them *before* cancellation took place.
The HP ApNote 95-1 on s-parameters agrees with me.

b1 = s11*a1 + s12*a2 now square both sides

|b1|^2 is the reflected power
|s11|^2 is the power reflection coefficient
|a1|^2 is the forward power
|s12|^2 is the power transmission coefficient
|a2|^2 is the reflected power

It's obvious that you don't understand the HP
ApNote.

There's zero energy in the total superposed wave
after cancellation. There was energy in the two
waves before they were superposed. That energy
cannot be destroyed no matter how loudly you complain.
It is more than apparent that you detest the conservation
of energy principle because it works against your
argument. But as they say in Russia, tough shitsky.

When two waves are canceled, their energy components
are redistributed to another area. In a transmission
line, with only two directions possible, their energy
components are redistributed in the other direction
from their original direction of flow. What is it about
the Melles Groit and FSU web pages that you don't
understand and what is it about the following that you
don't understand?

"The waves' energies simply add together. In places where
the interference is destructive, one wave cancels out the
other. (up + down = nothing.) Where it is constructive,
however, they reinforce each other
(up + up = 2 * up, down + down = 2 * down.)
That is all there is to it."

Richard E. Barrans Jr., Ph.D.
Assistant Director

PG Research Foundation, Darien, Illinois

P3 + P4 - 2*SQRT(P3*P4) = 0 = nothing
P1 + P2 + 2*SQRT(P1*P2) = 2P1 + 2P2
That is all there is to it.
--
73, Cecil http://www.w5dxp.com

1278. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 20:49:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8Fslj.132$J41.35@newssvr14.news.prodigy.net>
Source record: 28998

Jim Kelley wrote:
>> Two canceled waves cease to exist but the energy in the
>> two waves that canceled cannot cease to exist.
>
> I'm sorry you're having so much trouble understanding such a simple
> idea.

The idea that canceled reflections never existed in the
first place is not a simple one. If they never existed
in the first place, there is no reason to ever try to cancel
them because there was never anything to cancel. In effect,
you are saying the lack of reflections causes the reflections
never to have existed. Not only is that confusing cause and
effect but it also introduces time travel. "If you went back
in time and killed your grandfather before you were born,
you would cease to exist." But if you never existed, who
killed your grandfather? That's the exact logic that you
are using.

> It really does turn you surly. The waves don't 'stop existing'.

Yes, they do. They stop existing in their original direction
of travel. A reflected power meter proves it. A forward power
meter proves that the energy that existed in the canceled
waves joined the forward wave. What is it about the Melles-
Groit and FSU redistribution of energy explainations that
you don't understand?

> Given the conditions, they can never exist.

If reflections never exist, there is no need for a non-
reflective coating, is there? People who buy non-reflective
picture frames are wasting their money since the reflections
never exist. What is it about the Melles-Groit and FSU
explainations about redistribution of energy from the
canceled waves that you don't understand?

> In the steady state, things
> don't first do one thing, and then some time later do something else.

I've explained this before. Wave cancellation is a continuous
steady-state process. Ptot = P1 + P2 - 2*SQRT(P1*P2) = 0
is a continuous process. Every dt, waves P1 and P2 are
in the process of canceling each other during steady-state.
--

73, Cecil http://www.w5dxp.com

1279. wire size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 20:51:36 UTC
From: art <aunwin@insightbb.com>
Message-ID: <e77c3241-0608-4490-be1b-006b35b7e9ae@d70g2000hsb.googlegroups.com>
Source record: 28999

I have a home brew dipole antenna made from #22 copper What is ther
maximum power
that it can handle. Support is not a problem. I want to test it for
max power using a 8877 which will blow if the wire
opens, and they are costly. Ofcourse I would like a bit of safety in
hand. Does minimum wire size vary much dependent on band useage? I
have no idea what manufactures use for commercial style antennas!
Art

1280. Re: wire size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 20:59:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <VOslj.1832$EZ3.784@nlpi070.nbdc.sbc.com>
Source record: 29000

art wrote:
> I have a home brew dipole antenna made from #22 copper What is ther
> maximum power that it can handle.

If it is a 1/2WL dipole, the current will be maximum
at the feedpoint. Will #22 wire handle your current
at the feedpoint? Skin depth is frequency dependent.
--
73, Cecil http://www.w5dxp.com

1281. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 21:10:11 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A2DA4DEC8BE7mcoslocomcastnet@216.196.97.136>
Source record: 29001

Cecil Moore <nospam@w5dxp.com> wrote in news:M08kj.36592$JD.1707
@newssvr21.news.prodigy.net:

> Light does travel at a slower speed against the aether
> but relativity changes the length of a second when going
> against the aether so it is undetectable.

How does a second go against the aether?

- 73 de Mikw N3LI -

1282. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 21:16:07 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A2DA5E0475E3mcoslocomcastnet@216.196.97.136>
Source record: 29002

Dave Heil <k8mn@frontiernet.net> wrote in
news:9Melj.2499$Sa1.286@news02.roc.ny:

> Michael Coslo wrote:
>> Dave Heil wrote:
>>
>>> inch long eye bolt, add a nut and stick it in the concrete. A
>>> pencil through the eye will hold it in position until the concrete
>>> cures.
>>
>> Arrrrgh! That'a a little extreme, donchya think Dave?
>>
>>
>> hehe.
>
> I don't care to imagine concrete blocks dangling in space or screen
> door closers affixed to trees, Mike.

Just a joke Dave. Read the "A pencil through the eye will hold it
in position until the concrete cures" out of it's proper context.

Hey, I didn't say it was all that good of a joke.... ;^)

- 73 de Mike N3LI -

1283. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 21:16:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <H2tlj.139$J41.128@newssvr14.news.prodigy.net>
Source record: 29003

Mike Coslo wrote:
> Cecil Moore <nospam@w5dxp.com> wrote:
>> Light does travel at a slower speed against the aether
>> but relativity changes the length of a second when going
>> against the aether so it is undetectable.
>
> How does a second go against the aether?

Did I dangle a participle?

"Light does travel at a slower speed against the
aether but relativity changes the length of a second
when the light goes against the aether, so it is
undetectable."
--
73, Cecil http://www.w5dxp.com

1284. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 21:24:26 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <eatlj.2547$Sa1.2075@news02.roc.ny>
Source record: 29004

Mike Coslo wrote:
> Dave Heil <k8mn@frontiernet.net> wrote in
> news:9Melj.2499$Sa1.286@news02.roc.ny:
>
>> Michael Coslo wrote:
>>> Dave Heil wrote:
>>>
>>>> inch long eye bolt, add a nut and stick it in the concrete. A
>>>> pencil through the eye will hold it in position until the concrete
>>>> cures.
>>> Arrrrgh! That'a a little extreme, donchya think Dave?
>>>
>>>
>>> hehe.
>> I don't care to imagine concrete blocks dangling in space or screen
>> door closers affixed to trees, Mike.
>
>
> Just a joke Dave. Read the "A pencil through the eye will hold it
> in position until the concrete cures" out of it's proper context.
>
> Hey, I didn't say it was all that good of a joke.... ;^)

I didn't notice it at first reading, Mike. It isn't all that bad a joke.

I'm just glad you didn't latch on to "fender washer".

Dave K8MN

1285. Re: This N8WWM BDSM collar-me shit is FUN!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 21:43:04 UTC
From: budapest@hungary.net
Message-ID: <479660cb.13375562@news.motzarella.org>
Source record: 29005
Cross-posted to: rec.radio.cb,rec.radio.swap,rec.radio.amateur.policy,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna

Check out the dougay adair personal bondage advertisment from
collarme.com ..... he calls himself Mr Bindwell.... has crisco
kathy seen this??? SHOCKING!!!

http://www.collarme.com/details.asp?px=MrBindwell&bhcp=1

--
ZOLTAN say man who fight with wife all day get no piece at night.

1286. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 22:05:12 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn5par$17$1@news.service.uci.edu>
Source record: 29006

Cecil Moore wrote:

> jimkelleyamps@gmail.com wrote:

>> Then it should be a simple matter for you to actually measure the
>> canceled waves and their energy in order to prove everyone wrong once
>> and for all.
>
>
>
> The energy in the canceled waves is why the forward
> power is often greater than the source power.

But that's in the wrong direction, Cecil. You claim there's energy in the canceled waves. You need to be able to measure that for the proof of your belief. Obviously there's energy in the forward waves. They're not canceled.

ac6xg

1287. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 22:39:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xgulj.906$hI1.445@nlpi061.nbdc.sbc.com>
Source record: 29007

Jim Kelley wrote:
> Cecil Moore wrote:
>> The energy in the canceled waves is why the forward
>> power is often greater than the source power.
>
> But that's in the wrong direction, Cecil. You claim there's energy in
> the canceled waves. You need to be able to measure that for the proof
> of your belief. Obviously there's energy in the forward waves. They're
> not canceled.

I certainly do *NOT* claim there's energy in the
canceled waves after they are canceled. If you could
win the argument without bearing false witness, you
would already have done so.

You seem to be acting obtuse just for the hell of it.
There is energy in the canceled waves before they are
canceled. It's equal to 2*ExB. After they are canceled,
that 2*ExB energy heads in the opposite direction toward
the load. Consider that the following s-parameter
equation is a steady-state process.

b1 = s11*a1 + s12*a2 = 0

This is a continuous steady-state process. There is
energy in s11*a1. The power is equal to |s11*a1|^2
because s11 and a1 are not zero. There is energy in
s12*a2. The power is equal to |s12*a2|^2 because s12
and a2 are not zero. The power in b1 is equal to |b1|^2.

|s11*a1|^2 + |s12*a2|^2 - destructive interference = 0

For instance,

|s11*a1|^2 = 100 watts, |s12*a2| = 100 watts

Is that calculation beyond your math capabilities?

100w + 100w + 2*SQRT(100w*100w) = 0

There is a total of 200 watts in the two waves just
before they cancel during steady-state. Those 200 watts
head back toward the load after they cancel. That is
NOT a one time occurrence. It is a continuous steady-
state occurrence. The two waves are being continuously
canceled during a steady-state wave cancellation process.

Please read the HP ApNote 95-1 until you understand it.
Please study the irradiance equation until you understand
that it is a steady-state process.
--
73, Cecil http://www.w5dxp.com

1288. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laug...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 22:42:08 UTC
From: richardharrison@webtv.net
Message-ID: <10940-47967140-23@storefull-3251.bay.webtv.net>
Source record: 29010

Richard Clark wrote:
"Perhaps others will join in."

Haven`t read all the postings and don`t propose to contradict anyone. Radio waves are energy in motion. They continue so long as their supply does.

The same energy can`t be in two places at once. Energy can be redirected. Practical antennas are an example. The only non-directional antenna is the imaginary isotropic radiator which if it were constructed would by definition produce waves of equal strength in all directions. Terman says on page 871 of his 1955 opus:
"Thus a gain of 4 (or 6dB) means that the power intensity is 4 times as great (field intensity twice as great) as would be the case if the radiator in question were an isotropic antenna radiating the same total power."

The foregoing tells us power phased-out in some directions is redirected to a direction of maximum radiation. Constructive interference exactly equals destructive interference because a fixed amount of power is available and conservation of erergy must be satisfied.

The same is true on a transmission line whose only possible directions are forward and reverse.

Best regards, Richard Harrison, KB5WZI

1289. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 22:42:44 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn5rh7$2dd$1@news.service.uci.edu>
Source record: 29008

Cecil Moore wrote:

> Jim Kelley wrote:

>> I'm sorry you're having so much trouble understanding such a simple
>> idea.
>
>
> The idea that canceled reflections never existed in the
> first place is not a simple one.

Just cut the BS, Cecil. In order to prove your assertion you must first be able to describe how two co-linear, coherent waves that are 180 degrees out of phase at every point along their path and traveling in the same direction can under those circumstances at any time produce measureable energy. In addition, you must be able to measure it. Let me know when you do.

ac6xg

PS - I'd like to suggest that you ask Dr. Barrans to explain to you what 'Up + Down = Nothing' means.

1290. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 22:50:34 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn5rvt$30c$1@news.service.uci.edu>
Source record: 29011

Cecil Moore wrote:

>
> I certainly do *NOT* claim there's energy in the
> canceled waves after they are canceled.

Perhaps then you'd care to describe more fully the steady state
condition wherein the canceled waves are not canceled?

ac6xg

1291. get alife

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 22:51:12 UTC
From: "kb9rqz-1@hotmail.com" <kb9rqz-1@hotmail.com>
Message-ID: <d7527a16-54e2-4486-8f0e-2839636a9d7e@m34g2000hsf.googlegroups.com>
Source record: 29009
Cross-posted to: rec.radio.cb, rec.radio.swap, rec.radio.amateur.policy, alt.ham-radio.vhf-uhf, rec.radio.amateur.antenna

On Jan 22, 4:43 pm, budap...@hungary.net (ZOLTAN) wrote:
> Check out the dougay adair personal bondage advertisment from
> collarme.com
hmm why were you THERE at a BDSM site loking for a man

1292. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 23:00:58 UTC
From: richardharrison@webtv.net
Message-ID: <10938-479675AA-1093@storefull-3251.bay.webtv.net>
Source record: 29012

Someone wrote:
"The energy in canceled waves is why the forward power is often greater
than the source power."

Bird says:
"Power delivered to and dissipated in a load is given by:

Wl = watts into load = Wf - Wr"

Best regards, Richard Harrison, KB5WZI

1293. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 23:16:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GPulj.163$J41.110@newssvr14.news.prodigy.net>
Source record: 29013

Jim Kelley wrote:
> Just cut the BS, Cecil. In order to prove your assertion you must first
> be able to describe how two co-linear, coherent waves that are 180
> degrees out of phase at every point along their path and traveling in
> the same direction can under those circumstances at any time produce
> measureable energy. In addition, you must be able to measure it. Let
> me know when you do.

It is an indirect measurement, Jim. Given the s-parameter equation, b1 = s11*a1 + s12*a2 = 0, s11 is not zero, a1 is not zero, s12 is not zero, and a2 is not zero. Although HP cannot measure those quantities either, they tell us that |s11*a1|^2 is in watts, e.g. 100 watts. They tell us that |s12*a2|^2 is in watts, e.g. 100 watts. When all energy is accounted for, it is obvious that those 200 watts are no longer in the direction of the source but have changed direction toward the load. This ain't rocket science.

If reflections are eliminated toward the source by wave cancellation, the reflected energy is redistributed back toward the load just as explained on the Melles-Groit and FSU web pages. If it weren't headed for the source in the first place, they wouldn't say it was "REDISTRIBUTED". If 200 joules/sec disappear toward the source and there are only two directions in a transmission line, do you really want to tell us that you can't figure out in which direction those joules go? Do you need help from my 10 year old grandson?

You clearly fail to understand the process defined by the wave reflection distributed network model. Until you are in a position to discredit that model, you are just blowing smoke.
--
73, Cecil http://www.w5dxp.com

1294. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 23:28:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Y_ulj.1854$EZ3.1704@nlpi070.nbdc.sbc.com>
Source record: 29014

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> I certainly do *NOT* claim there's energy in the
>> canceled waves after they are canceled.
>
> Perhaps then you'd care to describe more fully the steady state
> condition wherein the canceled waves are not canceled?

Since I never said anything resembling that, you are
just up to your old semantic tricks, well known to
this newsgroup. If you still lack a conceptual grasp
of the process, please avail yourself of the flash
demo at:

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index.html

Set the two waves to equal magnitudes and opposite phases.
Hint: there can be no wave cancellation without waves.
--
73, Cecil http://www.w5dxp.com

1295. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 23:34:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <34vlj.167$J41.101@newssvr14.news.prodigy.net>
Source record: 29015

Richard Harrison wrote:
> Someone wrote:
> "The energy in canceled waves is why the forward power is often greater
> than the source power."
>
> Bird says:
> "Power delivered to and dissipated in a load is given by:
>
> Wl = watts into load = Wf - Wr"

The point I was trying to make is that the forward power
into a Z0-match point can be 100 watts while the forward
power out of the Z0-match point is 200 watts. In that
case, the Z0-match point is an interferometer of sorts.
An ideal non-reflective thin-film coating on glass is a
Z0-match. Hint: characteristic impedances are directly
related to indexes of refraction.
--
73, Cecil http://www.w5dxp.com

1296. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 23:36:07 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <H5vlj.475459$kj1.356955@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29016

Cecil Moore wrote:

>
> I know the difference between phasors and vectors

So, is that the reason you created a web page showing 0 and 180 degree phase shifts resulting from the reflection leading to standing waves and then tried to use the resulting entities to calculate the Poynting vector? An instantaneous Poynting vector, no less. (Now denied of course.)

8-)

73,
Gene
W4SZ

1297. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 23:47:53 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn5vbc$5vp$1@news.service.uci.edu>
Source record: 29017

Richard Harrison wrote:

> Someone wrote:
> "The energy in canceled waves is why the forward power is often greater
> than the source power."
>
> Bird says:
> "Power delivered to and dissipated in a load is given by:
>
> Wl = watts into load = Wf - Wr"
>
> Best regards, Richard Harrison, KB5WZI

Good point, Richard. Wf = Wl + Wr. Amidst all this consternation about conserving the energy in canceled waves, we should not lose sight of the fact that it is *reflections* (not canceled waves) which cause forward power to measure greater than power dissipated in the load.

ac6xg

1298. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-22 23:56:47 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn5vs2$6im$1@news.service.uci.edu>
Source record: 29018

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> Just cut the BS, Cecil. In order to prove your assertion you must
>> first be able to describe how two co-linear, coherent waves that are
>> 180 degrees out of phase at every point along their path and traveling
>> in the same direction can under those circumstances at any time
>> produce measureable energy. In addition, you must be able to measure
>> it. Let me know when you do.
>
>
> It is an indirect measurement, Jim.

:-) Sure thing. Like I said, let me know when you measure energy in
the canceled waves.

ac6xg

1299. cancelled but not cancelled, was Re: Standing-Wave Current vs Traveling-Wave Current now,

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 00:02:08 UTC
From: Dave <noone@nowhere.com>
Message-ID: <4uvlj.8920$4b6.6523@trndny08>
Source record: 29019

"Jim Kelley" <jwkelley@uci.edu> wrote in message
news:fn5rvt$30c$1@news.service.uci.edu...
>
>
> Cecil Moore wrote:
>
>>
>> I certainly do *NOT* claim there's energy in the
>> canceled waves after they are canceled.
>
> Perhaps then you'd care to describe more fully the steady state condition
> wherein the canceled waves are not canceled?
>
> ac6xg
>

now lets really have some fun with the cancelled wave and disappearing energy crowd that redirects power from here to there and sloshes it back and forth so it doesn't go anywhere.

This is after all an antennas group, so lets take a real antenna. I have 2 160m verticals that are 1/2 wavelength apart over a pretty darn good ground. Now, I can feed them either in phase to get a broadside pattern, or I can feed them 180 degrees out of phase to get an end fire pattern. Everyone here should agree that this works as it has been well demonstrated over the years, and even nec predicts it so art should be happy.

Now you may ask, why is this any big revelation... well, because it is a perfect example of waves that cancel but don't disappear, slosh, or get redirected anywhere. consider the case where the 2 verticals are fed 180 degrees out of phase. on a line 1/2 way in between them and perpendicular to them there is perfect cancellation of the two waves... and yet, you can move just a little bit off this line of symmetry and viola, the waves are both there and add as expected. in fact if you walk from one vertical to the other and keep on going on that line you will come to the center point where the waves perfectly cancel, then keep walking and just 1/4 wave later when you get to the next vertical, and everywhere from there on the two waves add together.

Now how does that happen?? is there some kind of magical reflection field set up so that no power can cross that midpoint line?? maybe this is the first evidence of a star trek type forcefield that magically deflects phasors while still letting you see the photons?? So where does the power go??? at that mid point E=0, H=0, ExH must also be 0 at all time, and

everywhere along that symmetry plane... so how can the waves add up again on the other side? quantum tunneling? art's magical levitating cosmic diamagnetic particles??? virtual photons?? oh, I forgot, these verticals are copper clad steel, doesn't the steel mess them up or something because the cosmic particles fly away? or is the thin copper enough to let them settle on an otherwise insulated slippery vertical surface??

I know what the equations say... I also know what the contest results say... the waves keep going, and going, and going... and the qso's keep coming, and coming, and coming. So lets see how well art's magical mystery antenna plays in the ultimate 160m contest this weekend... how about it art, I'm sure everyone would love to see you prove your little antenna can out play something bigger??

1300. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 00:07:16 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn60fo$76e$1@news.service.uci.edu>
Source record: 29020

Cecil Moore wrote:

> Set the two waves to equal magnitudes and opposite phases.
> Hint: there can be no wave cancellation without waves.

More to the point, there can be no waves under the conditions you describe. So, again, just when do these waves actually exist, Cecil? We apparently agree that it's not when they cancel. The only other possibility I can think of would be when they don't cancel. So, when don't they cancel? Does it occur in steady state?

ac6xg

1301. Re: Poynting Vector in Standing Waves

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 00:23:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_Nvlj.915$hI1.15@nlpi061.nbdc.sbc.com>
Source record: 29021

Gene Fuller wrote:
> Cecil Moore wrote:
>> I know the difference between phasors and vectors
>
> So, is that the reason you created a web page showing 0 and 180 degree
> phase shifts resulting from the reflection leading to standing waves and
> then tried to use the resulting entities to calculate the Poynting
> vector?

I'll get back to you on that one when I figure it out.
--
73, Cecil http://www.w5dxp.com

1302. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 00:26:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NQvlj.916$hI1.198@nlpi061.nbdc.sbc.com>
Source record: 29022

Jim Kelley wrote:
> Good point, Richard. Wf = Wl + Wr. Amidst all this consternation about
> conserving the energy in canceled waves, we should not lose sight of the
> fact that it is *reflections* (not canceled waves) which cause forward
> power to measure greater than power dissipated in the load.

Now all you have to do is figure out how those reflected
waves reverse their momentum to become forward waves.
You have never offered any explanation for that phenomenon
while criticizing everyone else's explanations.
--
73, Cecil http://www.w5dxp.com

1303. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 00:27:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <eSvlj.917$hI1.660@nlpi061.nbdc.sbc.com>
Source record: 29023

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> It is an indirect measurement, Jim.
>
> :-) Sure thing. Like I said, let me know when you measure energy in
> the canceled waves.

Let me know when you figure out an explanation for the
reversal of momentum in those reflected waves. So far,
you have absolutely refused to provide any explanation.
--
73, Cecil http://www.w5dxp.com

1304. Re: This N8WWM BDSM collar-me shit is FUN!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 00:42:45 UTC
From: Anti-Keyclown <keyklownzrnutjobs@yahoo.com>
Message-ID: <ff56ae8c-bcc5-4636-919f-03d145d779b5@m34g2000hsf.googlegroups.com>
Source record: 29024
Cross-posted to: rec.radio.cb, rec.radio.swap, rec.radio.amateur.policy, alt.ham-radio.vhf-uhf, rec.radio.amateur.antenna

On Jan 22, 4:43 pm, budap...@hungary.net (ZOLTAN) wrote:
> Check out the dougay adair personal bondage advertisment from
> collarme.com .... he calls himself Mr Bindwell.... has crisco
> kathy seen this??? SHOCKING!!!
>
> http://www.collarme.com/details.asp?px=MrBindwell&bhcp=1
>
> --
> ZOLTAN say man who fight with wife all day get no piece at night.

Thank you, zolt-fag...whichever of you queens that put that shit up is
now outta business...thank you for playing

1305. Re: get alife

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 00:44:03 UTC
From: Anti-Keyclown <keyklownzrnutjobs@yahoo.com>
Message-ID: <c75277b2-522c-4bac-8970-4f8731a4b49a@e23g2000prf.googlegroups.com>
Source record: 29025
Cross-posted to: rec.radio.cb, rec.radio.swap, rec.radio.amateur.policy, alt.ham-radio.vhf-uhf, rec.radio.amateur.antenna

On Jan 22, 5:51 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
wrote:
> On Jan 22, 4:43 pm, budap...@hungary.net (ZOLTAN) wrote:> Check out the dougay adair
personal bondage advertisment from
> > collarme.com
>
> hmm why were you THERE at a BDSM site loking for a man

he mighta been there looking for a man, but I think they just set up
the thing to stir some shit...

Pretty funny actually, considering that the AKC does dominate their
puny minds.

1306. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 01:55:35 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn66qq$dn2$1@news.service.uci.edu>
Source record: 29027

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> Good point, Richard. Wf = Wl + Wr. Amidst all this consternation
>> about conserving the energy in canceled waves, we should not lose
>> sight of the fact that it is *reflections* (not canceled waves) which
>> cause forward power to measure greater than power dissipated in the load.
>
>
> Now all you have to do is figure out how those reflected
> waves reverse their momentum to become forward waves.
> You have never offered any explanation for that phenomenon
> while criticizing everyone else's explanations.

I don't criticize everyone else's explanations, Cecil. We've discussed this countless times. It's not new or revolutionary, and there are of course pictures of it in physics books that you can look at. Born and Wolf has one, and so does Roller Blum, Physics Volume 2 - as I've pointed out before. You even have a similar chart illustrating it on your web page. Obviously I didn't invent it. It's been right there all along, just as I've told you countless times before, and naturally it (of necessity) blends seamlessly with all of your other favorite quotations.

In considering the transmission line matching transformer scenario (or the antireflection coating), when we sum up all of the partial reflections at each interface during the transient period, the sum ultimately reaches and establishes the steady state conditions. The sum of the reflections at each iteration show exactly how energy makes its way from source to load.

But to follow the energy path correctly we absolutely have to approach the problem either from the standpoint of fields or as voltages. Power doesn't propagate. Fields do - therefore only an analysis from that standpoint avoids pitfalls and misconceptions. If you want to see how energy moves, then power should be calculated after a proper voltage analysis, not in lieu of one. When approached in this manner, it is very simple to see how energy actually does move through the system. Note that you get the same answer in the end either way. Both approaches obviously conserve energy. Scattering parameters and irradiance equations are accurate shortcuts to that end. But one should be careful not to read (or invent) too much physical science into the shortcuts. They're mathematical shortcuts, not phenomenological descriptions of nature.

ac6xg

1307. Re: get alife

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 01:55:38 UTC
From: "kb9rqz-1@hotmail.com" <kb9rqz-1@hotmail.com>
Message-ID: <ca98eff3-0daa-46e9-8d16-eba62a5ed0fb@h11g2000prf.googlegroups.com>
Source record: 29026
Cross-posted to: rec.radio.cb, rec.radio.swap, rec.radio.amateur.policy, alt.ham-radio.vhf-uhf, rec.radio.amateur.antenna

On Jan 22, 7:44 pm, Anti-Keyclown <keyklownzrnutj...@yahoo.com> wrote:
> On Jan 22, 5:51 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
> wrote:
>
> > On Jan 22, 4:43 pm, budap...@hungary.net (ZOLTAN) wrote:> Check out the dougay adair
personal bondage advertisment from
> > > collarme.com
>
> > hmm why were you THERE at a BDSM site loking for a man
>
> he mighta been there looking for a man, but I think they just set up
> the thing to stir some shit...

you know you are right I knew but needed to soft peddle that
>
> Pretty funny actually, considering that the AKC does dominate their
> puny minds.

1308. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 02:03:41 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn67a1$e8c$1@news.service.uci.edu>
Source record: 29029

Cecil Moore wrote:

> Jim Kelley wrote:
>
>>
>> Cecil Moore wrote:
>>
>>> It is an indirect measurement, Jim.
>>
>>
>> :-) Sure thing. Like I said, let me know when you measure energy in
>> the canceled waves.
>
>
> Let me know when you figure out an explanation for the
> reversal of momentum in those reflected waves. So far,
> you have absolutely refused to provide any explanation.

The momentum in reflected waves changes direction upon reflection.
What part of that do you need to have explained?

So, back to you. Let's hear more about your measurement of canceled
waves.

ac6xg

1309. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 02:05:32 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn67dc$31n$1@news.albasani.net>
Source record: 29028

Cecil Moore wrote:

[material worthy of consideration]

"Cancellation" is undeniably a misnomer. In the same way there is no "cancellation" in a dummy load--rf simply becomes heat.

Somehow, within a coaxial tank circuit, something "appears" as "cancellation" of waves, but they are NOT "really" canceled--canceled, when used in the posts here has a way of SEEMING to imply that the laws of conservation of energy are being broken--I rest assured, they are not.

In the end, the rf escapes unscathed ... I guess some of the "why" this is occurring, you are explaining in the math you present. Have patience, I am in the process of digesting it and brushing up on points of my education I have seldom, if ever, used ... I have grown old and lazy and need one h*ll of a fire built under me to move. :-D

For some this is probably childs' play, to those I say, right on! For me, it has become as difficult as when I had to "wrap" my mind around binary trees--just when I was I ready to give up and change majors--I had my revelation! (indeed, I think of it as a, "Revelation Onto John" ;-))

Regards,
JS

1310. Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 02:47:47 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn69si$31n$3@news.albasani.net>
Source record: 29030

http://ap.google.com/article/ALeqM5joJW4F4GzD3zCLGLLbJvYJfMqIFAD8UB50RO1

JS

1311. Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 04:03:38 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4796bc9d$0$6162$4c368faf@roadrunner.com>
Source record: 29031

We're not the only ones arguing about this. I read that 2 lasers pointed at each other 180 degrees out of phase causes darkeness (cancellation). What happens to the energy? I have found no simple answer, yet. We may need to rely on the 'dark physics' for an explanation. Here is a very interesting post on the energy cancellation topic from PhysOrg forum:

"First off, let me thank you for calling my attention to the way I worded my thoughts about phase cancellation, I agree with you about the fact you cannot destroy energy. The point I was attempting to make was that phase cancellation when applied to an electromagnetic wave appears to me to violate the law of the conservation of energy. If an electromagnetic wave does not need a medium to travel through such as was originally thought when the aether was conceived then can we apply phase cancellation the same as we see it in other wave propagations such as waves on water or sound waves? For waves to exist in a body of water (the body of water the medium for which the waves will travel) energy is transferred directly to the water to create the waves and the same holds true for sound waves as well, energy is directly transferred to the medium in which the sound waves will travel which in turn creates the waves. For these two examples phase cancellation happens within the medium itself. For instance, when a sound wave cancels the air in which the wave is traveling has the high and low pressure wave fronts which equalize pressure canceling the waves.

How can this hold true for an electromagnetic wave experiencing phase cancellation which has no medium? My experiments are leading me to the idea that these waves are coupling. Not only that but the coupled waves will exist as a stationary coupled wave. These coupled waves exist more like a particle than a wave, they appear to have the three dimensional x,y and z coordinates associated with particles. Continued coupling appears to be taking place. They appear to develop spin possibly due to electric charge.

These experiments remind me of dark energy and maybe I have found its source. I have to wonder if there really is a medium in which electromagnetic waves travel through."

AI4QJ

1312. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 04:52:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0Kzlj.1017$uE.481@newssvr22.news.prodigy.net>
Source record: 29032

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> Set the two waves to equal magnitudes and opposite phases.
>> Hint: there can be no wave cancellation without waves.
>
> More to the point, there can be no waves under the conditions you
> describe.

Therefore, thin-film anti-reflective coatings are
a waste of time since there were no reflections to
begin with. Again, you have an effect reaching back
in time to change its own cause. If that works in
your mind, who am I to try to change it?
--
73, Cecil http://www.w5dxp.com

1313. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 05:00:22 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4796c9e6$0$6133$4c368faf@roadrunner.com>
Source record: 29033

"AI4QJ" <nospam@yahoo.com> wrote in message
news:4796bc9d$0$6162$4c368faf@roadrunner.com...
> We're not the only ones arguing about this. I read that 2 lasers pointed
> at each other 180 degrees out of phase causes darkeness (cancellation).
> What happens to the energy? I have found no simple answer, yet. We may
> need to rely on the 'dark physics' for an explanation. Here is a very
> interesting post on the energy cancellation topic from PhysOrg forum:
>
> "First off, let me thank you for calling my attention to the way I worded
> my thoughts about phase cancellation, I agree with you about the fact you
> cannot destroy energy. The point I was attempting to make was that phase
> cancellation when applied to an electromagnetic wave appears to me to
> violate the law of the conservation of energy. If an electromagnetic wave
> does not need a medium to travel through such as was originally thought
> when the aether was conceived then can we apply phase cancellation the
> same as we see it in other wave propagations such as waves on water or
> sound waves? For waves to exist in a body of water (the body of water the
> medium for which the waves will travel) energy is transferred directly to
> the water to create the waves and the same holds true for sound waves as
> well, energy is directly transferred to the medium in which the sound
> waves will travel which in turn creates the waves. For these two examples
> phase cancellation happens within the medium itself. For instance, when a
> sound wave cancels the air in which the wave is traveling has the high and
> low pressure wave fronts which equalize pressure canceling the waves.
>
> How can this hold true for an electromagnetic wave experiencing phase
> cancellation which has no medium? My experiments are leading me to the
> idea that these waves are coupling. Not only that but the coupled waves
> will exist as a stationary coupled wave. These coupled waves exist more
> like a particle than a wave, they appear to have the three dimensional x,y
> and z coordinates associated with particles. Continued coupling appears to
> be taking place. They appear to develop spin possibly due to electric
> charge.
>
> These experiments remind me of dark energy and maybe I have found its
> source. I have to wonder if there really is a medium in which
> electromagnetic waves travel through."
>
> AI4QJ

Even more interesting is the author's web site. It actually relates much to
what has been discussed thus far in classical terms. You can look for chinks
and I'm sure you will find them but I know his fundamentals are true. This
guy has an intersting vision to say the least:

http://electromagnetic-waves.com/default.aspx

1314. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 05:10:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <o%zlj.396$R84.59@newssvr25.news.prodigy.net>
Source record: 29034

Jim Kelley wrote:
> I don't criticize everyone else's explanations, Cecil.

You criticized Walter Maxwell's explanation and my explanation without offering any explanation of your own. Exactly what completely reverses the momentum of the reflected wave from the load when the power reflection coefficient is only 0.5?

> In considering the transmission line matching transformer scenario (or
> the antireflection coating), when we sum up all of the partial
> reflections at each interface during the transient period, the sum
> ultimately reaches and establishes the steady state conditions. The sum
> of the reflections at each iteration show exactly how energy makes its
> way from source to load.

The reflection model works just fine for the transient state *and* for the steady-state. The principles of superposition tell us that it doesn't matter how the steady-state signals are divided up. Their sum is always the same.

You divide it up into transient reflections. It can just as easily be divided into ten equal parts and the result will be identical.

I can devise an example using two sources with circulators with no reflections where steady-state is immediate. The results are exactly the same as a single source with reflections.

> If you want to see how
> energy moves, then power should be calculated after a proper voltage
> analysis, not in lieu of one.

Please do a voltage analysis for an anti-reflective coating tuned for laser light and get back to us. Optical physicists have been doing irradiance analysis for centuries, Jim. If you can prove them wrong, have at it. All I am doing is an irradiance analysis inside a transmission line based on centuries old techniques from the field of optics. Since you reject an irradiance analysis, your argument is not with me but with the physicists who invented the irradiance analysis and equation.
--
73, Cecil http://www.w5dxp.com

1315. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 05:12:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <S0Alj.397$R84.138@newssvr25.news.prodigy.net>
Source record: 29035

Jim Kelley wrote:
> The momentum in reflected waves changes direction upon reflection. What
> part of that do you need to have explained?

What causes 100% reflection when the power reflection
coefficient (reflectance) is only 0.5?
--
73, Cecil http://www.w5dxp.com

1316. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 05:25:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <bdAlj.1018$uE.989@newssvr22.news.prodigy.net>
Source record: 29036

AI4QJ wrote:
> We're not the only ones arguing about this. I read that 2 lasers pointed at
> each other 180 degrees out of phase causes darkeness (cancellation).

Plane waves traveling in opposite directions cause
standing waves. A dark point can certainly result.
But plane waves traveling toward each other cannot cancel.

Only coherent, collinear waves traveling in the same
direction can permanently cancel thus redistributing
the energy in another direction.

Take a look at this interferometer experiment. The
energy reflected back toward the source by wave
cancellation at the standard output is redistributed
to the non-standard output.

"Using Dielectric Beamsplitters to find the "missing
energy" in destructive interference"

http://www.teachspin.com/instruments/moderni/experiments.shtml
--
73, Cecil http://www.w5dxp.com

1317. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 05:45:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pdl3kativ4a05@corp.supernews.com>
Source record: 29037

AI4QJ wrote:
> We're not the only ones arguing about this. I read that 2 lasers pointed at
> each other 180 degrees out of phase causes darkeness (cancellation). What
> happens to the energy? I have found no simple answer, yet. We may need to
> rely on the 'dark physics' for an explanation. . .

Yes, you'll have to look beyond normal science, perhaps deep into the realm of X files and poltergeists, for an explanation of the darkness, since that's not what you get when you point two lasers at each other. Write the simple equation describing the sum of out-of-phase waves moving in opposite directions. You'll find you get a classical standing wave pattern, not "darkness".

Roy Lewallen, W7EL

1318. Re: cancelled but not cancelled, was Re: Standing-Wave Current vs T...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 06:21:05 UTC
From: richardharrison@webtv.net
Message-ID: <10938-4796DCD1-1146@storefull-3251.bay.webtv.net>
Source record: 29038

Dave wrote;
"Art`s magical levitating cosmic diamagnetic particles???"

Art surely realizes his leg is being pulled. We all know we`re only conglomerations of stardust which are mightily entertained by Art`s unrestrained theories. We love Art and when his infernal machine is perfected, Art will find us volunteering to be beamed up!

Best regards, Richard Harrison, KB5WZI

1319. Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 10:42:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pe6ftetdqh599@corp.supernews.com>
Source record: 29039

Let's take a look at the energy in pulses and sine waves. At the end of the day, the energy all has to be accounted for, whether it superposes or not. It's really not all that difficult to do the analysis, as long as we're careful not to fall into the traps which seem to have tripped up quite a few others.

First a rectangular pulse. The energy E it takes to launch a pulse of voltage Vp and duration T (seconds) on a transmission line of characteristic impedance (assumed purely real) Z0 is Pp * T = Vp * Ip * T where

Pp is the constant power applied as the pulse as created
T is the length of time the power was applied
Vp and Ip are the voltage and current of the traveling pulse

The pulse is a traveling wave, so for a forward traveling pulse, Ip = Vp / Z0; consequently, E = Vp^2 * T / Z0 = Ip^2 * T * Z0. Note that it's essential to assume a purely resistive Z0 for this simple time-domain analysis, since a reactive Z0 would cause a distortion of the pulse shape.

Once launched onto the line, we don't have any guarantee that all the energy will stay within the spatial boundaries of the pulse -- all we know for sure is how much total energy we've put into the line. But we can conceptually freeze the pulse at any instant and see where the energy is. Let's do that.

The obvious way to determine the energy in the pulse is to integrate the power, which we can easily calculate. This is, after all, what we did to find the energy we put into the line in the first place. But we're interested in the energy distribution as a function of physical position at an instant of time, so we can't find it by integrating the power. (This is a mistake that seems to be commonly made.) Why not? Well, first of all, energy is the *time* integral of the power. If we integrate the power over a time interval of zero, the result is zero. We could look at a single position on the line and integrate the power during the time it takes for the wave to move by, to get the amount of energy which went by during the time interval. But that's an indirect way of seeing where the energy is on the line at a given time, and can easily lead to invalid results. There are at least two potential problems with integrating the power over a period of time to get the energy which passes a point. The first is that we assign a sign to power, negative when energy is traveling one way and positive when traveling the other. Consequently, the result of the integral can be positive or negative. Although the concept of negative potential energy is a valid one, I don't believe it really applies to this situation, so one would have to be very careful in interpreting and dealing with the sign resulting from the

integration. The second potential problem is that an integral never produces a unique answer, but only an answer that's correct to within a constant which has to be separately determined. Careless evaluation of the constant or ignoring it altogether can produce invalid results.

So what I'm going to do is to evaluate the stored energy *per unit length* of the line at each position along the line. The meaning of this is that if we were to choose some sufficiently short segment length, the amount of energy stored on each segment will be proportional to the energy per unit length evaluated at that segment. In other words, I'll evaluate the energy density as a function of position, or the energy distribution along the line. This tells us where the energy is at the instant of evalulation. I'm going to use the convention that the stored or potential energy of a discharged line (V and I = 0) is zero.

The energy per unit length stored in the electric field, or line capacitance, is C'V^2/2, where C' is the capacitance per unit length and V is the voltage on the segment of line being evaluated. V is assumed to not vary significantly over the segment length. We can let the segment length approach zero as a limit, and say that the energy per unit length is this value at any particular point along the line, where V is the voltage at that point.

Likewise, the energy per unit length stored in the magnetic field, or line inductance, is L'I^2/2 where L' is the inductance per unit length. The total energy stored per unit length at any point is

E' = (C'V^2 + L'I^2)/2

On our line with purely real Z0, Z0 = sqrt(L'/C'), so L' = Z0^2 * C' and

E' = C'(V^2 + (Z0*I)^2)/2

where
E' is the total stored energy per unit length (or energy density) at some point
V is the voltage at that point
I is the current at that point
Z0 is the (purely real) line characteristic impedance
C' is the capacitance per unit length

Length units for E' and C' can be anything as long as they're the same for both.

Now let's look at a traveling pulse. We'll freeze it at some instant while it's traveling down the line.

At any point to the left or right of the pulse, V and I are zero, so the energy density is zero except where the pulse is. Where the pulse is, V is the pulse voltage Vp and I the pulse current Ip, so

E' = C'(Vp^2 + (Z0*Ip)^2)/2

For a traveling wave, I = V/Z0, so

E' = C'Vp^2

This energy density is constant over the whole length of the pulse, since Vp and Ip are constant over that distance. The total energy in the pulse is then

E = E' * len = C'Vp^2 * len where len is the length of the pulse in the same length units as C' and E'.

Because the energy density beyond the pulse in both directions is zero, this is also the total energy in the line, which must equal the amount we put in originally. So

E = C'Vp^2 * len = Vp^2 * T / Z0

from which we can calculate C' = T / (Z0 * len). Some manipulation of this gives

T / len = sqrt(L'C') which relates line delay to L' and C', a result which can be derived by other means.

All the energy in the line is accounted for -- it's traveling along with the pulse, confined to the width of the pulse as we'd expect.

Ok, now let's fire another pulse at it from the other end of the line, and see what happens when they completely overlap. Call the pulse 1 and 2 voltages Vp1 and Vp2, and currents Ip1 and Ip2. Assume that both have the same duration T and therefore the same length len.

Voltages and currents (or E and H fields) add in the overlap region, so the total V and I are the sum of the individual pulses' V and I. The energy density in the overlap region is then:

E' = C'((Vp1 + Vp2)^2 + (Z0*(Ip1 + Ip2))^2)/2 * len

= C'(Vp1^2 + Vp2^2 + 2*Vp1*Vp2 + Z0(Ip1^2 + Ip2^2 + 2*Ip1*Ip2))/2

But what's the simple sum of the energy densities of the two pulses?

E1' + E2' = C'(Vp1^2 + Vp2^2 + Z0*(Ip1^2 + Ip2^2))/2

Oops! The energy density of the sum of the two pulses isn't the same as the sum of the energy densities of the two pulses! And Since the overlap region length is the same as the single pulse length, the same holds true for the total energy. The problem is the two additional terms in the total energy density 2*Vp1*Vp2 and 2*Z0*Ip1*Ip2.

It turns out that we're saved -- For the forward traveling pulse, Ip1 = Vp1/Z0. For the reverse traveling pulse, Ip2 = -Vp2/Z0. So when the appropriate substitutions are made, we find that 2*Vp1*Vp2 + 2*Z0*Ip1*Ip2 = 0, so the energy in the sum of the pulses is equal to the sum of the energies of the pulses. And this is true regardless of the values of Vp1, Vp2, Ip1, and Ip2. That is, it's true for any two pulses, for any overlap length. _Provided they're traveling in opposite directions._

What happens when one pulse is the inverse of the other, that is, one is positive and the other negative? Don't they cancel?

No, they don't. In the overlap region, the voltage is indeed zero. But the current is twice that of each original pulse. The energy is simply all stored in the magnetic field (line inductance) during the overlap. The above equations still hold.

Well, we ducked that bullet. But what if the two pulses are traveling in the same direction? What then? The two troublesome terms don't cancel, so some energy ends up getting created or destroyed. But before worrying too much about that, try to imagine how you'd accomplish it. The propagation speed is the same for all pulses, so there' no way one can catch up with another if both are fired from the input. I believe you can contrive a situation where two pulses can be generated, one from each end which, if long enough, will partially overlap when going the same direction, after reflection. But the overlap and energy calculations will be different than for this example, and I'm sure the energy of the summed pulses will equal the total energy in the line. I'd appreciate seeing an analysis from anyone who thinks he can show differently. Remember that this analysis assumed that no other pulse was present at the input while the pulse was being generated. If one is, the amount of energy going into the pulse will be different. It also assumed a constant line Z0 and velocity factor (constant L' and C'), so a different analysis would have to be used if that condition is violated.

The conclusion I reach is that yes, a specific amount of energy accompanies a pulse on a transmission line having purely real Z0, and is confined to the pulse width. Although it can swap between E and H fields, the energy in the confines of the pulse stays constant in value, and simply adding when pulses overlap.

Sine waves are another problem -- there, we can easily have overlapping waves traveling in the same direction, so we'll run into trouble if we're not careful. I haven't worked the problem yet, but when I do, the energy will all be accounted for. Either the energy ends up spread out beyond the overlap region, or the energy lost during reflections will account for the apparent energy difference between the sum of the energies and the energy of the sum. You can count on it!

As always, I appreciate any corrections to either the methodology or the calculations.

Roy Lewallen, W7EL

1320. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 13:35:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <boHlj.2801$nK5.2702@nlpi069.nbdc.sbc.com>
Source record: 29040

Roy Lewallen wrote:
> It turns out that we're saved -- For the forward traveling pulse, Ip1 =
> Vp1/Z0. For the reverse traveling pulse, Ip2 = -Vp2/Z0. So when the
> appropriate substitutions are made, we find that 2*Vp1*Vp2 +
> 2*Z0*Ip1*Ip2 = 0, so the energy in the sum of the pulses is equal to the
> sum of the energies of the pulses. And this is true regardless of the
> values of Vp1, Vp2, Ip1, and Ip2. That is, it's true for any two pulses,
> for any overlap length. _Provided they're traveling in opposite
> directions._

Yes, signals traveling in opposite directions don't interfere.

> What happens when one pulse is the inverse of the other, that is, one is
> positive and the other negative? Don't they cancel?
>
> No, they don't. In the overlap region, the voltage is indeed zero. But
> the current is twice that of each original pulse. The energy is simply
> all stored in the magnetic field (line inductance) during the overlap.
> The above equations still hold.

Yes, signals traveling in opposite directions don't interfere.

> The conclusion I reach is that yes, a specific amount of energy
> accompanies a pulse on a transmission line having purely real Z0, and is
> confined to the pulse width. Although it can swap between E and H
> fields, the energy in the confines of the pulse stays constant in value,
> and simply adding when pulses overlap.

This is simply not true for coherent, collinear waves traveling
in the same direction. "Optics", by Hecht has an entire chapter
on "Interference". He says: "Briefly then, interference
corresponds to the interaction of two or more lightwaves yielding
a resultant irradiance that deviates from the sum of the component
irradiances." Irradiance is the power density of a lightwave, i.e.
watts per unit-area. Paraphrasing Hecht: Interference corresponds
to the interaction of two RF waves in a transmission line yielding
a resultant total power that deviates from the sum of the component
powers. If the total power is less than the sum of the component
powers, destructive interference has taken place (normally toward
the source). If the total power is greater than the sum of the
component powers, constructive interference has taken place
(normally toward the load). It is the goal of amateur radio
operators to cause *total destructive interference* toward the
source and *total constructive interference* toward the antenna.
These terms are defined in "Optics", by Hecht, 4th edition on
page 388. Quoting Hecht:

"In the case of *total constructive interference*, the phase
difference between the two waves is an integer multiple of
2*pi and the disturbances are in-phase."

When the phase angle is an odd multiple of of pi, "it is
referred to as *total destructive interference*.

If anyone works out the phase angles between the voltages, one
will discover that they match Hecht's definitions above.

Every text on EM wave interference that you can find will explain
how the bright interference rings are four times the intensity of
the dark interference rings so the average intensity is two times
the intensity of each equal-magnitude wave. Of course, that outcome
honors the conservation of energy principle. Using 'P' for power
density, the equation that governs such interference phenomena
in EM waves is:

Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(A)

where 'A' is the angle between the two electric fields. Every
textbook on optical physics contains that irradiance equation.
If Ptot is ever zero while P1 and P2 are not zero, one can be
absolutely certain that the "lost" energy has headed in the
opposite direction in a transmission line because there is
no other possibility. Energy is *never* lost.

RF waves in a transmission line obey the same laws of physics as
do light waves in free space. Coherent, collinear waves traveling
in the same direction do indeed interfere with each other.
Sometimes the interference is permanent as it is at an ideal
1/4WL anti-reflective thin-film coating on glass.

> Sine waves are another problem -- there, we can easily have overlapping
> waves traveling in the same direction, so we'll run into trouble if
> we're not careful. I haven't worked the problem yet, but when I do, the
> energy will all be accounted for. Either the energy ends up spread out
> beyond the overlap region, or the energy lost during reflections will
> account for the apparent energy difference between the sum of the
> energies and the energy of the sum. You can count on it!

There is no problem. Optical physicists figured it out long
before any of us were born.

www.mellesgriot.com/products/optics/oc_2_1.htm

"If the two [out-of-phase] reflections are of equal amplitude,
then this amplitude (and hence intensity) minimum will be
zero."

This applies to reflections toward the source at a Z0-match
in a transmission line.

"... the principle of
conservation of energy indicates all 'lost' reflected intensity

[in the reflected waves] will appear as enhanced intensity in
the transmitted [forward wave] beam."

i.e. All the energy seemingly "lost" during the cancellation
of reflected waves toward the source at a Z0-match in a
transmission line, is recovered in the forward wave toward
the load.

That is exactly what happens when we match our systems. We
cause destructive interference toward the source in order
to eliminate reflections toward the source. The "lost"
energy joins the forward wave toward the load making the
forward power greater than the source power.
--
73, Cecil http://www.w5dxp.com

1321. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 14:06:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uRHlj.247$0o7.25@newssvr13.news.prodigy.net>
Source record: 29041

Cecil Moore wrote:
> Every text on EM wave interference that you can find will explain
> how the bright interference rings are four times the intensity of
> the dark interference rings so the average intensity is two times
> the intensity of each equal-magnitude wave.

I certainly misspoke there. The bright interference rings
are four times the intensity of one of the two equal
waves. The dark interference rings are, of course,
zero intensity.

If the intensity of one wave is P, the intensity of the
bright rings will be 4P and the intensity of the dark
rings will be zero. The average intensity will, of course,
be 2P, the sum of the two wave intensities.
--
73, Cecil http://www.w5dxp.com

1322. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 14:12:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <iXHlj.2802$nK5.2414@nlpi069.nbdc.sbc.com>
Source record: 29042

Jim Kelley wrote:
> If you want to see how
> energy moves, then power should be calculated after a proper voltage
> analysis, not in lieu of one.

Let's return to the graphic that we earlier discussed.

http://www.w5dxp.com/thinfilm.GIF

When the first internal reflection (0.009801 watts)
arrives at t3 and first interferes with the external
reflection of 0.01 watts), what is the total reflected
power toward the load? What mechanism caused that
unexpected result?

Feel free to use voltages if you like. :-)
--
73, Cecil http://www.w5dxp.com

1323. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 14:19:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <t1Ilj.2803$nK5.768@nlpi069.nbdc.sbc.com>
Source record: 29043

Roy Lewallen wrote:
> Sine waves are another problem -- there, we can easily have overlapping
> waves traveling in the same direction, so we'll run into trouble if
> we're not careful. I haven't worked the problem yet, but when I do, the
> energy will all be accounted for. Either the energy ends up spread out
> beyond the overlap region, or the energy lost during reflections will
> account for the apparent energy difference between the sum of the
> energies and the energy of the sum. You can count on it!

An example from optics will make the situation clear.

http://www.w5dxp.com/thinfilm.GIF

At t3, when the 0.009801 watt internal reflection arrives
to interfere with the 0.01 watt external reflection, what
is the resulting reflected power toward the source?

Anyone who can answer that simple question from the field
of optics will understand what happens to the energy in
a transmission line.

Hint: the reflected power is *not* 0.01w - 0.009801w.
--
73, Cecil http://www.w5dxp.com

1324. Re: get alife

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 14:35:30 UTC
From: Steve <moparholic@hotmail.com>
Message-ID: <20080123093531.214$Nv@newsreader.com>
Source record: 29044
Cross-posted to: rec.radio.cb,rec.radio.swap,rec.radio.amateur.policy,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna

Anti-Keyclown <keyklownzrnutjobs@yahoo.com> wrote:
> On Jan 22, 5:51=A0pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
> wrote:
> > On Jan 22, 4:43=A0pm, budap...@hungary.net =A0(ZOLTAN) wrote:> Check
> > out t=
> he dougay adair personal bondage advertisment from
> > > collarme.com
> >
> > hmm why were you THERE at a BDSM site loking for a man
>
> he mighta been there looking for a man, but I think they just set up
> the thing to stir some shit...
>
You were outed again, adair!
>
> Pretty funny actually, considering that the AKC does dominate their
> puny minds.
>
http://i28.tinypic.com/ddovma.jpg

Muahahahahaha!

--
http://NewsReader.Com/

1325. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 14:58:47 UTC
From: "Juan M." <jdmollanNOSPAMPLEASE@juno.com>
Message-ID: <7pOdnQ_mVNi6ywranZ2dnUVZ_tGonZ2d@centurytel.net>
Source record: 29045

"Bob" <bobsakol@hotmail.com> wrote in message
news:dc29a$479289d7$cef8bfce$17244@TEKSAVVY.COM-Free...
>
> "Brian Kelly" <kelly@dvol.com> wrote in message
> news:01b0d928-40d9-4600-ab28-d255749633c4@t1g2000pra.googlegroups.com...
>> On Jan 18, 3:36 pm, "Juan M." <jdmollanNOSPAMPLE...@juno.com> wrote:
>>> A problem seeking a solution.
>>>
>>> I live in a wooded area of the Pacific Northwest with dozens of fir
>>> trees of
>>> 100 ft or more in height that make wonderful supports for high dipoles
>>> and
>>> other wire antennas. These particular trees have very few limbs at
>>> anything
>>> below the 60 ft level so using a crossbow or slingshot for installation
>>> is
>>> not practical. I have been forced to employ a professional tree climber
>>> to
>>> install the eyebolts and halyards. Using this system, the antennas can
>>> be
>>> raised and lowered for maintenance or modification.
>>>
>>> This system works fine until our winter storms kick in. Often, during
>>> those
>>> storms, a tree will lose a limb or two and take the antenna down with
>>> it. I
>>> am then left with a halyard tied to an insulator 50 ft or more above the
>>> ground with no way to get the insulator back down short of hiring
>>> another
>>> costly climber.
>>>
>>> Does anyone have any solutions to this problem?
>>
>> Install continuous loops through all your pulleys rather than
>> "halyards". Hauling one side of the loop hoists the insulator and
>> hauling the other side of the loop brings it back down to where you
>> can work on it. Regardless of the condition or fates of wires
>> suspended between pulleys.
>>
>> An aside you might check out: Really nice pulleys:
>>
>> http://www.harkenstore.com/uniface.urd/SCCYSPW1
>>
>> w3rv

>
> Juan you see, they luring you to buy expensive stuff, don't buy! be
> smart! Art is right! same gang ..
I have used the pulleys in previous installs, but the eyebolts go into the
trees nicely and they don't jam or freeze up.

Thanks for the ideas.

1326. Re: get alife

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 15:24:42 UTC
From: "kb9rqz-1@hotmail.com" <kb9rqz-1@hotmail.com>
Message-ID: <98665a0c-5574-4260-9d6f-d38996b81a04@m34g2000hsf.googlegroups.com>
Source record: 29046
Cross-posted to: rec.radio.cb, rec.radio.swap, rec.radio.amateur.policy, alt.ham-radio.vhf-uhf, rec.radio.amateur.antenna

On Jan 22, 8:55 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
wrote:
> On Jan 22, 7:44 pm, Anti-Keyclown <keyklownzrnutj...@yahoo.com> wrote:
>
> > On Jan 22, 5:51 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
> > wrote:
>
> > > On Jan 22, 4:43 pm, budap...@hungary.net (ZOLTAN) wrote:> Check out the dougay adair
personal bondage advertisment from
> > > collarme.com
>
> > > hmm why were you THERE at a BDSM site loking for a man
>
> > he mighta been there looking for a man, but I think they just set up
> > the thing to stir some shit...
>
> you know you are right I knew but needed to soft peddle that
>
>
>
>
>
> > Pretty funny actually, considering that the AKC does dominate their
> > puny minds.- Hide quoted text -
>
> - Show quoted text -

1327. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 16:19:40 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <wOJlj.479315$kj1.446536@bgtnsc04-news.ops.worldnet.att.net>
Source record: 29047

Cecil Moore wrote:

>
> Yes, signals traveling in opposite directions don't interfere.
>

>
> Yes, signals traveling in opposite directions don't interfere.
>

This is a distinction with no technical value. Waves in the same location are subject to the usual rules of linear superposition of the fields. Whether you want to call this "interference" is simply a philosophical choice. There is a whole gamut of results resulting from the superposition, ranging from zero field to a maximum of all the field magnitudes combined. The terms "destructive" and "constructive" are sometimes used to denote the extreme cases, but those terms are not so well defined for the more intermediate cases.

There is utterly no scientific distinction that applies to "signals traveling in opposite directions." The mathematical results may look special in the opposite direction case, but the same basic equations apply in all cases.

73,
Gene
W4SZ

1328. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 17:29:42 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f608eb66-5e18-4acf-90bd-67a8779a2ef4@e23g2000prf.googlegroups.com>
Source record: 29048

On Jan 23, 8:35 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Yes, signals traveling in opposite directions don't interfere.
Call this assertion A.

Consider two antennas several wavelengths apart and driven with the same frequency. Exploring the field strength far from the antennas we find regions with zero field strength (nulls) and regions with increased field strength. This variation in field strength is usually ascribed to interference and the pattern of variation is often called an interference pattern.

Similar results can be observed with light (google "two slit experiment").

Locate one of these nulls far from the antennas and follow it back towards the antennas. Eventually you will be on a line between the two antennas.

From assertion A above, is it your contention that far from the antennas it is "interference" that causes the variation in field strength, but that on the line drawn between the two antennas some other mechanism is responsible?

If so, what is the other mechanism? And does it only work exactly on the line, or does it start working when you get close to the line? How close?

Now I suggest that interference works just as well on the line drawn between the antennas as it does every where else and the conditions along that line are not a special case.

That said, when we look at the two slit experiment, it is generally agreed that the photons are redistributed such that there are no photons in dark regions and more photons in the bright regions.

On the line drawn between the two antennas, there are dark regions and bright regions (the standing wave). By analogy, there are no photons in the dark regions and more in the bright regions. But the photons from the two sources were travelling towards each other. What is the mechanism that redistributes the photons such that there are none in the dark regions? Do the photons stop and not enter the dark region? Or do they turn into 'dark photons' as they transit the dark regions? What are 'dark photons'?

...Keith

1329. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 17:41:24 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fn7u84$68c$1@f04n12.cac.psu.edu>
Source record: 29049

Jim Kelley wrote:
>
>
> Cecil Moore wrote:
>
>> Jim Kelley wrote:
>>
>>> Just cut the BS, Cecil. In order to prove your assertion you must
>>> first be able to describe how two co-linear, coherent waves that are
>>> 180 degrees out of phase at every point along their path and
>>> traveling in the same direction can under those circumstances at any
>>> time produce measureable energy. In addition, you must be able to
>>> measure it. Let me know when you do.
>>
>>
>> It is an indirect measurement, Jim.
>
> :-) Sure thing. Like I said, let me know when you measure energy in
> the canceled waves.

At the risk of being both a dullard and messing up all the fun, does not every destructive interference have to be balanced by a constructive interference, which in turn leads to a condition of "Okey dokey?"

A canceled wave needs a reinforced wave, and then nothing is lost, nothing is gained.

- 73 de Mike N3LI -

1330. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 17:53:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AaLlj.1057$uE.97@newssvr22.news.prodigy.net>
Source record: 29050

Gene Fuller wrote:
> Cecil Moore wrote:
>> Yes, signals traveling in opposite directions don't interfere.
>>
> This is a distinction with no technical value. Waves in the same
> location are subject to the usual rules of linear superposition of the
> fields. Whether you want to call this "interference" is simply a
> philosophical choice.

Not so. Here's what Eugene Hecht says: "... optical
interference corresponds to the interaction of two
or more [plane] light waves yielding a resultant
irradiance that deviates from the sum of the component
irradiances."

Superposition can occur with or without interference. If
P1 and P2 are the power densities for two plane waves:

If Ptot = P1 + P2, there is no interference because the
resultant power density does not deviate from the sum of
the component power densities.

If Ptot <> P1 + P2, there exists interference because
the resultant irradiance does deviate from the sum of
the component power densities.

> There is utterly no scientific distinction that applies to "signals
> traveling in opposite directions."

Interference only occurs when coherent, collinear waves
are traveling in the same direction. When they are
traveling in opposite directions, standing waves are
the result. Let's limit our discussion to plane waves.

> The mathematical results may look
> special in the opposite direction case, but the same basic equations
> apply in all cases.

Yes, but boundary conditions apply. The phasors of the plane
waves traveling toward each other are rotating in opposite
directions so interference is impossible. Here is a slide
show about interference which only occurs when the waves are
traveling in the same direction.

http://astro.gmu.edu/classes/a10594/notes/l08/l08s025.html
--
73, Cecil http://www.w5dxp.com

1331. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:01:14 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fn7vda$14os$1@f04n12.cac.psu.edu>
Source record: 29051

Roy Lewallen wrote:
> AI4QJ wrote:
>> We're not the only ones arguing about this. I read that 2 lasers
>> pointed at each other 180 degrees out of phase causes darkeness
>> (cancellation). What happens to the energy? I have found no simple
>> answer, yet. We may need to rely on the 'dark physics' for an
>> explanation. . .
>
> Yes, you'll have to look beyond normal science, perhaps deep into the
> realm of X files and poltergeists, for an explanation of the darkness,
> since that's not what you get when you point two lasers at each other.
> Write the simple equation describing the sum of out-of-phase waves
> moving in opposite directions. You'll find you get a classical standing
> wave pattern, not "darkness".

Did they say what the speed of that dark is?

- 73 de Mike N3LI -

1332. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:12:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%rLlj.239$5K1.105@newssvr12.news.prodigy.net>
Source record: 29052

Keith Dysart wrote:
> From assertion A above, is it your contention that far from
> the antennas it is "interference" that causes the variation
> in field strength, but that on the line drawn between the two
> antennas some other mechanism is responsible?

Of course not - please don't be ridiculous. If the two
antenna elements were isotropic point sources, on a
line drawn between them, there could be no interference
and there would be only standing waves in free space
along that line assuming no reflections from nearby
objects, etc.

Everywhere else there are components of waves traveling
in the same direction so interference is possible anywhere
except on that line between the point sources. When the
sources are not a point, seems to me, interference could
occur at any and all points in space.

My "assertion A above" was about transmission lines,
an essentially one-dimensional context. Two waves in
a transmission line are either traveling in opposite
directions or in the same direction.

Incidentally, I came across another interesting quote
from one of my college textbooks, "Electrical Communication",
by Albert. "Such a plot of voltage is usually referred to
as a *voltage standing wave* or as a *stationary wave*. Neither
of these terms is particularly descriptive of the phenomenon.
A *plot* of the effective values of voltage ... is *not a wave*
in the usual sense. However, the term "standing wave" is in
wide-spread use." [Emphasis is the author's]
--
73, Cecil http://www.w5dxp.com

1333. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:13:44 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn804t$2q1$1@news.service.uci.edu>
Source record: 29055

Michael Coslo wrote:
> At the risk of being both a dullard and messing up all the fun, does
> not every destructive interference have to be balanced by a constructive
> interference, which in turn leads to a condition of "Okey dokey?"
>
> A canceled wave needs a reinforced wave, and then nothing is lost,
> nothing is gained.
>
> - 73 de Mike N3LI -

Hi Mike -

One could suggest a number of different possible scenarios in which nothing is lost or gained. But an impossible scenario is one which violates thermodynamic principles. Another might describe phenomena which is not in accord with Maxwell's equations. One should therefore feel comfortable discarding any description which is inconsistent with both thermodynamics and Maxwell's equations.

73, ac6xg

1334. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:14:15 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <XtLlj.160203$MJ6.61393@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29053

Cecil Moore wrote:
> Gene Fuller wrote:
>> Cecil Moore wrote:
>>> Yes, signals traveling in opposite directions don't interfere.
>>>
>> This is a distinction with no technical value. Waves in the same
>> location are subject to the usual rules of linear superposition of the
>> fields. Whether you want to call this "interference" is simply a
>> philosophical choice.
>
> Not so. Here's what Eugene Hecht says: "... optical
> interference corresponds to the interaction of two
> or more [plane] light waves yielding a resultant
> irradiance that deviates from the sum of the component
> irradiances."
>
> Superposition can occur with or without interference. If
> P1 and P2 are the power densities for two plane waves:

Why do you attribute such magic to the word "interference"? Do you think that Hecht's "interaction" is any different than superposition?

What if the waves are not quite anti-parallel, say at an angle of 179 degrees? Is interference now possible?

Suppose the waves are only 1 degree from parallel. Does that negate the interference?

Repeating: This is a distinction with no technical value.

73,
Gene
W4SZ

1335. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:19:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tyLlj.240$5K1.101@newssvr12.news.prodigy.net>
Source record: 29054

Michael Coslo wrote:
> At the risk of being both a dullard and messing up all the fun, does
> not every destructive interference have to be balanced by a constructive
> interference, which in turn leads to a condition of "Okey dokey?"

Yep, any destructive interference toward the source is exactly
offset by constructive interference toward the antenna. If one
takes time to calculate the component phasor voltages on both
sides of a Z0-match located away from the source, the constructive
and destructive interference is obvious.

> A canceled wave needs a reinforced wave, and then nothing is lost,
> nothing is gained.

Exactly. The reflected energy that appears to be lost as
destructive interference in the direction of the source
when a Z0-match is achieved, is recovered in the forward
wave as constructive interference energy traveling toward
the antenna.
--
73, Cecil http://www.w5dxp.com

1336. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:24:37 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn80pa$3e0$1@news.service.uci.edu>
Source record: 29061

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> I don't criticize everyone else's explanations, Cecil.
>
>
> You criticized Walter Maxwell's explanation and my
> explanation without offering any explanation of your
> own.

That's everybody? Walter has in fact worked out the very explanation that you don't seem able to comprehend. It's the same one I pointed to in the physics books, which you also don't seem to be able to fully comprehend.

> Exactly what completely reverses the momentum
> of the reflected wave from the load when the power
> reflection coefficient is only 0.5?

Do you have trouble understanding that reflection changes the direction of the reflected waves? When you work the problem as I suggested - using real reflection coefficients - you'll note that no energy is lost. Your explanation is the one that has trouble working the problem using real reflection coefficients.

ac6xg

1337. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:25:07 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <953c4d03-d896-4acf-a4c9-10c17f8b17cc@t1g2000pra.googlegroups.com>
Source record: 29056

On Jan 23, 1:12 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > From assertion A above, is it your contention that far from
> > the antennas it is "interference" that causes the variation
> > in field strength, but that on the line drawn between the two
> > antennas some other mechanism is responsible?
>
> Of course not - please don't be ridiculous. If the two
> antenna elements were isotropic point sources, on a
> line drawn between them, there could be no interference
> and there would be only standing waves in free space
> along that line assuming no reflections from nearby
> objects, etc.
>
> Everywhere else there are components of waves traveling
> in the same direction so interference is possible anywhere
> except on that line between the point sources. When the
> sources are not a point, seems to me, interference could
> occur at any and all points in space.

OK. So it is your contention that "far from the antennas
it is "interference" that causes the variation in field
strength, but that on the line drawn between the two
antennas some other mechanism is responsible".

But why do you say "Of course not" and then proceed to
paraphrase my statement?

When the mechanism abruptly changes from interference
when off the line to "standing wave" when EXACTLY (how
exact?) on the line, is there any discontinuity in
the observed field strengths?

...Keith

1338. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:35:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <VNLlj.41297$Pv2.27255@newssvr23.news.prodigy.net>
Source record: 29057

Gene Fuller wrote:
> Why do you attribute such magic to the word "interference"? Do you think
> that Hecht's "interaction" is any different than superposition?

It is not magic. "Interference" and "superposition" simply
have different definitions.

Interference is a subset of superposition, i.e. interference
cannot occur without superposition but superposition can occur
without interference. This subject is covered in every optics
text that I have ever seen, including Born and Wolf. Given two
waves of equal power densities (irradiances) if the resultant
irradiance is not equal to the sum of the two irradiances, then
interference has occurred.

> What if the waves are not quite anti-parallel, say at an angle of 179
> degrees? Is interference now possible?

Impossible in a transmission line which is the context.
In free space, I would guess that interference is possible
in their common direction of travel.

> Suppose the waves are only 1 degree from parallel. Does that negate the
> interference?

For coherent waves in free space, that would ensure interference
until the beams diverged. It should result in the usual light
and dark interference rings.

> Repeating: This is a distinction with no technical value.

Maybe it would help if you published a video of you waving
your hands as you scream that assertion at the top of your
lungs? :-)
--
73, Cecil http://www.w5dxp.com

1339. Re: Broke down and bought one ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:41:01 UTC
From: Jerseyj <jerseyj69@comcast.net>
Message-ID: <jerseyj69-DBA080.13410123012008@newsgroups.comcast.net>
Source record: 29058
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

In article <fn4aiuopl1@news.albasani.net>,
John Smith <assemblywizard@gmail.com> wrote:

> After varying success with homebrew SDRs' (software defined radios)
> built on PCI breadboards stuck into old PCs', I made the jump into a
> commercial one--bit "pricey" though--a little under five grand for the
> Flex-5000C ... I am as anxious as a kid waiting his order from the back
> of a comic book! (they still do that, don't they?) :-)
>
> Regards,
> JS

Mmmmm...given how long I own my radios, and given how quickly pc
hardware improves, I'd probably go for the model that doesn't include
the integrated PC.

Jerry

1340. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:46:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0YLlj.41300$Pv2.9017@newssvr23.news.prodigy.net>
Source record: 29059

Keith Dysart wrote:
> OK. So it is your contention that "far from the antennas
> it is "interference" that causes the variation in field
> strength, but that on the line drawn between the two
> antennas some other mechanism is responsible".

It is unethical to bear false witness about what I said.
What I said was:

On a line drawn between two *isotropic point sources*,
when there are no reflections anywhere around, along
that line, interference is impossible. The only thing
existing along that line would be standing waves.
There is no point along that line where the power
density is not equal to the sum of the two sources,
i.e. there is superposition but no interference along
that line.

If the elements are not point sources, interference
is obviously possible at each and every point. I assume
your example elements are not point sources so what you
claimed was my contention was a false statement. If
you can't win the arguments without making false
statements about what I said, you lose anyway.
--
73, Cecil http://www.w5dxp.com

1341. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:47:31 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fn8248$7a4$1@aioe.org>
Source record: 29060

"Cecil Moore" wrote
> Keith Dysart wrote:
>> From assertion A above, is it your contention that far from
>> the antennas it is "interference" that causes the variation
>> in field strength, but that on the line drawn between the two
>> antennas some other mechanism is responsible?
>
> Of course not - please don't be ridiculous. If the two
> antenna elements were isotropic point sources, on a
> line drawn between them, there could be no interference
> and there would be only standing waves in free space
> along that line assuming no reflections from nearby
> objects, etc.

Cecil, hopefully you understand that even isotropic radiators near each other and excited on the same frequency with the same amount of power will generate far-field pattern nulls.

Maybe I'm misunderstanding you.

RF

1342. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:54:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <y3Mlj.41302$Pv2.8650@newssvr23.news.prodigy.net>
Source record: 29062

Richard Fry wrote:
> Cecil, hopefully you understand that even isotropic radiators near each
> other and excited on the same frequency with the same amount of power will
> generate far-field pattern nulls.
>
> Maybe I'm misunderstanding you.

I'm trying to understand how a line drawn between two
"isotropic radiators near each other" could ever be
in the far field.
--
73, Cecil http://www.w5dxp.com

1343. Re: Broke down and bought one ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 18:55:58 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn82jrsls1@news.albasani.net>
Source record: 29063
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Jerseyj wrote:

> ...
> Mmmmm...given how long I own my radios, and given how quickly pc
> hardware improves, I'd probably go for the model that doesn't include
> the integrated PC.
>
> Jerry

The firmware is upgradeable, they promise to allow you access to any new versions of the SDR software.

The CPU is an intel dual core; Just how much processing power do you need to run a radio? But then, you can cruise the web on this "radio!", run other apps (think EZNEC here), etc.

Also, if you need to control it remotely, you can still do so from another computer via firewire (say put the transceiver in your trunk and run it from a laptop in your passenger compartment), LAN, or WAN--wireless-ly. Indeed, you can control this rig from anywhere in the world using VOIP!

Personally, I thought it time to buy. Will certainly beat anything I can homebrew here ... your mileage may vary.

Regards,
JS

1344. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:04:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AcMlj.228$J41.15@newssvr14.news.prodigy.net>
Source record: 29064

Jim Kelley wrote:
> Do you have trouble understanding that reflection changes the direction
> of the reflected waves?

If you include wave cancellation as a mechanism for
energy reflection, I agree 100%. See the interferometer
example below.

I understand that a physical power reflection coefficient
of 0.5 cannot cause 100% reflection as you say it does.

One wonders why you have not commented on the interferometer
experiment that intercepted the energy reflected from the
standard output during destructive interference and routed
it to the non-standard output thus illustrating an equal
amount of constructive interference.

http://www.teachspin.com/instruments/moderni/experiments.shtml

"Using Dielectric Beamsplitters to find the "missing energy"
in destructive interference - Where is the energy of the light
going in an interferometer adjusted for destructive interference?
Below is a schematic diagram showing a way to detect the non-standard
output of a Michelson interferometerï¿½the light *heading back toward*
the laser source. That is, when interference is destructive at
the standard output, it is constructive at the non-standard output.
--
73, Cecil http://www.w5dxp.com

1345. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:05:42 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fn836bbif1@aioe.org>
Source record: 29065

"Cecil Moore wrote
> Richard Fry wrote:
>> Cecil, hopefully you understand that even isotropic radiators near each
>> other and excited on the same frequency with the same amount of power
>> will generate far-field pattern nulls.
>>
>> Maybe I'm misunderstanding you.
>
> I'm trying to understand how a line drawn between two
> "isotropic radiators near each other" could ever be
> in the far field.

Everywhere it exceeds 2*D^2/lambda in length, where D is the greatest
dimension of the array.

RF

1346. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:08:22 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <5916967c-5855-403a-bdc4-0ed99ca8a698@e10g2000prf.googlegroups.com>
Source record: 29066

On Jan 23, 1:46 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > OK. So it is your contention that "far from the antennas
> > it is "interference" that causes the variation in field
> > strength, but that on the line drawn between the two
> > antennas some other mechanism is responsible".
>
> It is unethical to bear false witness about what I said.
> What I said was:
>
> On a line drawn between two *isotropic point sources*,
> when there are no reflections anywhere around, along
> that line, interference is impossible. The only thing
> existing along that line would be standing waves.

And you also wrote:
> Everywhere else there are components of waves traveling
> in the same direction so interference is possible anywhere
> except on that line between the point sources.

I am having great difficulty finding any difference
between my writing:

So it is your contention that "far from the antennas
it is "interference" that causes the variation in field
strength, but that on the line drawn between the two
antennas some other mechanism is responsible".

and your paraphrase.

...Keith

1347. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:08:57 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn83ce$15c$1@news.service.uci.edu>
Source record: 29067

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> The momentum in reflected waves changes direction upon reflection.
>> What part of that do you need to have explained?
>
>
> What causes 100% reflection when the power reflection
> coefficient (reflectance) is only 0.5?

If you would just work the problem the hard way, you would see where you're misconception lies. Any given wave front will never reflect 100% from a surface which is only 50% reflective, no matter how vicious your insults become, how may URLs you cut and paste, or how furiously you wave your hands. But when you work the problem as has been suggested you will see how energy gets from source to load. It does not rely on macroscopic layman's explanations or mathematical shortcuts in order to get there.

The only energy "lost" by partial reflection in the process is that which is reflected back toward the source or stored in the system during the transient period. The sum of all the partial reflections equals the energy stored in the system (less the portion of energy admitted to the load or reflected back to the source). After the transient period, no energy is reflected back to the source, and the energy entering the system from the source equals the energy existed the system through the load.

I know that you understand the difference between potential and kinetic energy in mechanics. Please try to consider that the concepts are no less valid in electromagnetism. (Note that we even use the word 'potential' to describe voltage.)

73, ac6xg

1348. Re: This N8WWM BDSM collar-me shit is FUN!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:10:52 UTC
From: budapest@hungary.net
Message-ID: <47978fe0.21908046@news.motzarella.org>
Source record: 29068
Cross-posted to: rec.radio.cb,rec.radio.swap,rec.radio.amateur.policy,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna

On Tue, 22 Jan 2008 16:42:45 -0800 (PST), Anti-Keyclown
<keyklownzrnutjobs@yahoo.com> wrote:

>On Jan 22, 4:43=A0pm, budap...@hungary.net (ZOLTAN) wrote:
>> Check out the dougay adair personal bondage advertisment from
>> collarme.com ..... =A0he calls himself Mr Bindwell.... =A0has crisco
>> kathy seen this??? SHOCKING!!!
>>
>> http://www.collarme.com/details.asp?px=3DMrBindwell&bhcp=3D1
>>
>> --
>> ZOLTAN say man who fight with wife all day get no piece at night.
>
>Thank you, zolt-fag...whichever of you queens that put that shit up is
>now outta business...thank you for playing
>
Out of business? I don't think so dougay or is it mrbindwell or
n8wwm??????

http://tinyurl.com/34ul4l

Thank you for playing! HAHAHAHAHAHA!!!!!!!!

--
ZOLTAN say wife who puts husband in dogie-house soon will find him in
cathouse or bdsm personal.

1349. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:13:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <jlMlj.41303$Pv2.28826@newssvr23.news.prodigy.net>
Source record: 29069

Richard Fry wrote:
> "Cecil Moore wrote
>> Richard Fry wrote:
>>> Cecil, hopefully you understand that even isotropic radiators near each
>>> other and excited on the same frequency with the same amount of power
>>> will generate far-field pattern nulls.
>>>
>>> Maybe I'm misunderstanding you.

>> I'm trying to understand how a line drawn between two
>> "isotropic radiators near each other" could ever be
>> in the far field.

> Everywhere it exceeds 2*D^2/lambda in length, where D is the greatest
> dimension of the array.

Are you saying that the sources that are "near each other"
are far enough apart to be in each other's far field?
How could that be if the two sources are D apart?
--
73, Cecil http://www.w5dxp.com

1350. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:21:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <htMlj.41304$Pv2.9396@newssvr23.news.prodigy.net>
Source record: 29070

Keith Dysart wrote:
> I am having great difficulty finding any difference
> between my writing:
>
> So it is your contention that "far from the antennas
> it is "interference" that causes the variation in field
> strength, but that on the line drawn between the two
> antennas some other mechanism is responsible".
>
> and your paraphrase.

The difference is that your example contained elements
that are not zero dimensions. My assertions covered only
antenna elements of zero dimensions. I repeat:

On a line drawn between two coherent isotropic radiators,
in the absence of any reflections, interference along
that line is impossible because the average total
power density all along that line is constant.
There is no interference in standing waves given
"interference" as defined by Eugene Hecht in "Optics".
--
73, Cecil http://www.w5dxp.com

1351. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:29:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8AMlj.235$J41.30@newssvr14.news.prodigy.net>
Source record: 29071

Jim Kelley wrote:
> Any given wave front will never reflect 100%
> from a surface which is only 50% reflective,

That's all you have to say, Jim, to defeat your argument.
If you would stop refusing to perform a simple calculation
involving my example at:

http://www.w5dxp.com/thinfilm.GIF

you would understand. When the internal (0.009801w)
wave reflection arrives at t3 and interferes with the
(0.01w) external reflection wave, what is the resulting
reflected power back toward the source. When you calculate
the results and realize that it is not 0.01 - 0.009801 watts,
you will begin to understand the nature of interference.
--
73, Cecil http://www.w5dxp.com

1352. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:31:20 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fn84mdhlo1@aioe.org>
Source record: 29072

"Cecil Moore"
>> Everywhere it exceeds 2*D^2/lambda in length, where D is the greatest
>> dimension of the array.
>
> Are you saying that the sources that are "near each other"
> are far enough apart to be in each other's far field?
> How could that be if the two sources are D apart?

It isn't necessary for the radiators to be in each other's far field.

Here is a link to a plot of the far-field elevation pattern of a linear
array of three isotropic sources at one lambda vertical spacing.

http://i62.photobucket.com/albums/h85/rfry-100/ElevPatternfor3IsotropicSources.gif

RF

1353. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:34:22 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <25e63914-2c35-417a-a0b8-79a5bf08274a@m34g2000hsb.googlegroups.com>
Source record: 29073

On Jan 23, 2:21 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > I am having great difficulty finding any difference
> > between my writing:
>
> > So it is your contention that "far from the antennas
> > it is "interference" that causes the variation in field
> > strength, but that on the line drawn between the two
> > antennas some other mechanism is responsible".
>
> > and your paraphrase.
>
> The difference is that your example contained elements
> that are not zero dimensions. My assertions covered only
> antenna elements of zero dimensions. I repeat:
>
> On a line drawn between two coherent isotropic radiators,
> in the absence of any reflections, interference along
> that line is impossible because the average total
> power density all along that line is constant.
> There is no interference in standing waves given
> "interference" as defined by Eugene Hecht in "Optics".

So then, for "two coherent isotropic radiator",
it is your contention that "far from the antennas
it is "interference" that causes the variation in field
strength, but that on the line drawn between the two
antennas some other mechanism is responsible".

...Keith

1354. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:34:58 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn84t7$1kt$1@news.service.uci.edu>
Source record: 29076

Cecil Moore wrote:
> Jim Kelley wrote:
>
>> Do you have trouble understanding that reflection changes the
>> direction of the reflected waves?
>
>
> If you include wave cancellation as a mechanism for
> energy reflection, I agree 100%.

:-) Of course I don't include wave cancellation as a mechanism for reflection. Nor would J.C. Maxwell or even Eugene Hecht.

> One wonders why you have not commented on the interferometer
> experiment that intercepted the energy reflected from the
> standard output during destructive interference and routed
> it to the non-standard output thus illustrating an equal
> amount of constructive interference.

I've used laboratory interferometers for over 20 years, Cecil. It seems like I've been trying to explain how they work to you for almost that long.

ac6xg

1355. VLA news ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:35:47 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn84uhsls2@news.albasani.net>
Source record: 29074

http://www.dchieftain.com/news/77320-01-23-08.html

http://www.aoc.nrao.edu/

JS

1356. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:38:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2JMlj.236$J41.26@newssvr14.news.prodigy.net>
Source record: 29075

Richard Fry wrote:
> It isn't necessary for the radiators to be in each other's far field.

I'm just trying to understand your point. You said there
are nulls in the far field. If the radiators are not in
each other's far fields, how could the line drawn between
them be in the far field?
--
73, Cecil http://www.w5dxp.com

1357. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:43:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <LNMlj.41305$Pv2.4657@newssvr23.news.prodigy.net>
Source record: 29077

Keith Dysart wrote:
> So then, for "two coherent isotropic radiator",
> it is your contention that "far from the antennas
> it is "interference" that causes the variation in field
> strength, but that on the line drawn between the two
> antennas some other mechanism is responsible".

Please define "field strength". The total average
power density along a line drawn between the two
point sources is constant, i.e. the average sum
of the energy in the E-field and H-field is
constant. If you are defining "field strength"
as only the E-field, of course standing waves
are the cause, not interference, as defined by
Hecht in "Optics".
--
73, Cecil http://www.w5dxp.com

1358. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:46:18 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fn85if$l9b$1@aioe.org>
Source record: 29078

"Cecil Moore" wrote
> I'm just trying to understand your point. You said there
> are nulls in the far field. If the radiators are not in
> each other's far fields, how could the line drawn between
> them be in the far field?

X Iso source 1

==========> to far field, where nulls will exist

X Iso source 2,
1 lambda from
Iso source 1

RF

1359. Re: wire size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:49:18 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <fe3c4577-51f7-4898-bcb5-bb5eb64c8abc@v4g2000hsf.googlegroups.com>
Source record: 29079

On Jan 22, 3:51 pm, art <aun...@insightbb.com> wrote:
> I have a home brew dipole antenna made from #22 copper What is ther
> maximum power
> that it can handle. Support is not a problem. I want to test it for
> max power using a 8877 which will blow if the wire
> opens, and they are costly. Ofcourse I would like a bit of safety in
> hand. Does minimum wire size vary much dependent on band useage? I
> have no idea what manufactures use for commercial style antennas!

Wow!

An 8877 could develop 1.5 to 2kW output power (if done in a part of a world where it's legal for a ham to use that much power.)

2kW into a 50 ohm load is a current of 6 or 7 amps, assuming it's a perfect match/no standing waves.

The fusing current of 22AWG copper wire is about 40 Amps. So if everything is working and matched, it won't melt.

The higher you go in frequency, the more you'll have to derate the above, but for low HF it'll be not too bad.

But geeze.... you've got a multi-kilowatt amp and can't afford anything better than 22AWG wire???

Traditional rule-of-thumb for ham wire antennas would say that if you're pumping more than a kilowatt in, you want at least 12 gauge or 14 gauge wire. There's also the N.E.C. specs, which say that copper antenna wires have to be thicker than 14 gauge up to 150' spans, and thicker than 10 gauge over 150' spans.

Tim N3QE

1360. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:50:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <VTMlj.238$J41.17@newssvr14.news.prodigy.net>
Source record: 29080

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> One wonders why you have not commented on the interferometer
>> experiment that intercepted the energy reflected from the
>> standard output during destructive interference and routed
>> it to the non-standard output thus illustrating an equal
>> amount of constructive interference.
>
> I've used laboratory interferometers for over 20 years, Cecil. It seems
> like I've been trying to explain how they work to you for almost that long.

Translation: I am so afraid of that web page that I deleted
it and hope nobody notices. I refuse to discuss the interferometer
example because I am afraid to be proven wrong.

Please share your usual mealy-mouthing response about how I
don't understand that web page at:

http://www.teachspin.com/instruments/moderni/experiments.shtml

PLEASE NOTE THAT THE ENERGY REJECTED BY THE DESTRUCTIVE
INTERFERENCE PORT WAS ON ITS WAY BACK TO THE SOURCE BEFORE
IT WAS INTERCEPTED. CAN YOU SPELL R-E-F-L-E-C-T-I-O-N?
--
73, Cecil http://www.w5dxp.com

1361. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:53:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <aXMlj.239$J41.84@newssvr14.news.prodigy.net>
Source record: 29081

Richard Fry wrote:
> "Cecil Moore" wrote
>> I'm just trying to understand your point. You said there
>> are nulls in the far field. If the radiators are not in
>> each other's far fields, how could the line drawn between
>> them be in the far field?
>
>
> X Iso source 1
>
> ==================> to far field, where nulls will exist
>
> X Iso source 2,
> 1 lambda from
> Iso source 1

No, no, no, Richard. The line is drawn from one source to
the other source. Your line is not drawn from either
source to the other source.
--
73, Cecil http://www.w5dxp.com

1362. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 19:59:11 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fn86ak$o67$1@aioe.org>
Source record: 29082

"Cecil Moore" wrote
> No, no, no, Richard. The line is drawn from one source to
> the other source. Your line is not drawn from either
> source to the other source.

Obviously we are not talking about the same net radiations patterns.

Carry on.

RF

1363. Re: get alife

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 20:02:06 UTC
From: "kb9rqz-1@hotmail.com" <kb9rqz-1@hotmail.com>
Message-ID: <3243f16a-9767-4490-bce0-db0804b46d13@h11g2000prf.googlegroups.com>
Source record: 29083
Cross-posted to: rec.radio.cb, rec.radio.swap, rec.radio.amateur.policy, alt.ham-radio.vhf-uhf, rec.radio.amateur.antenna

On Jan 22, 8:55 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
wrote:
> On Jan 22, 7:44 pm, Anti-Keyclown <keyklownzrnutj...@yahoo.com> wrote:
>
> > On Jan 22, 5:51 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
> > wrote:
>
> > > On Jan 22, 4:43 pm, budap...@hungary.net (ZOLTAN) wrote:> Check out the dougay adair
personal bondage advertisment from
> > > collarme.com
>
> > > hmm why were you THERE at a BDSM site loking for a man
>
> > he mighta been there looking for a man, but I think they just set up
> > the thing to stir some shit...
>
> you know you are right I knew but needed to soft peddle that
>
>
>
>
>
> > Pretty funny actually, considering that the AKC does dominate their
> > puny minds.- Hide quoted text -
>
> - Show quoted text -

1364. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 20:03:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <14Nlj.41309$Pv2.16380@newssvr23.news.prodigy.net>
Source record: 29084

Richard Fry wrote:
> "Cecil Moore" wrote
>> No, no, no, Richard. The line is drawn from one source to
>> the other source. Your line is not drawn from either
>> source to the other source.

> Obviously we are not talking about the same net radiations patterns.

Sorry about that. English semantics strikes again. Your
line was indeed "between" the two sources but not the
"from - to" line that I had in mind when I said "between". :-)
--
73, Cecil http://www.w5dxp.com

1365. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 20:04:32 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn86kl$29c$1@news.service.uci.edu>
Source record: 29085

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> Any given wave front will never reflect 100% from a surface which is
>> only 50% reflective,
>
>
> That's all you have to say, Jim, to defeat your argument.

I am quite content to agree to disagree on that point if you wish.
Any exceptions to it that you would try to make could only derive from
fiction.

73, ac6xg

1366. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 20:14:03 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn876g$2fv$1@news.service.uci.edu>
Source record: 29086

Cecil Moore wrote:

> Therefore, thin-film anti-reflective coatings are
> a waste of time since there were no reflections to
> begin with. Again, you have an effect reaching back
> in time to change its own cause.

Can you spell A*B*S*U*R*D? :-)

ac6xg

1367. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 20:31:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vuNlj.240$J41.189@newssvr14.news.prodigy.net>
Source record: 29087

Jim Kelley wrote:
>
> Cecil Moore wrote:
>
>> Jim Kelley wrote:
>>> Any given wave front will never reflect 100% from a surface which is
>>> only 50% reflective,
>>
>> That's all you have to say, Jim, to defeat your argument.
>
> I am quite content to agree to disagree on that point if you wish. Any
> exceptions to it that you would try to make could only derive from fiction.

I seriously doubt that you are blind to the contradictions
in your argument and are simply hoping to slip them through
while no one is paying attention. Suffice it to say, it is
impossible for a 50% reflective surface to cause 100% reflections
without help from interference in the form of wave cancellation
due to permanent destructive interference. Anybody who understands
the process of anti-reflective thin-film coatings understands
the process of destructive interference redistributing the energy
in the direction that allows for constructive interference.

http://www.mellesgriot.com/products/optics/oc_2_1.htm

"Clearly, if the wavelength of the incident light and
the thickness of the film are such that a phase difference
exists between reflections of p, then reflected wavefronts
interfere destructively, and overall reflected intensity is
a minimum. If the two reflections are of equal amplitude,
then this amplitude (and hence intensity) minimum will be
zero." (Referring to 1/4 wavelength thin films.)

"In the absence of absorption or scatter, the principle of
conservation of energy indicates all 'lost' reflected intensity
will appear as enhanced intensity in the transmitted beam.
The sum of the reflected and transmitted beam intensities is
always equal to the incident intensity. This important fact
has been confirmed experimentally."

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

"... when two waves of equal amplitude and wavelength that are
180-degrees ... out of phase with each other meet, they are not

actually annihilated, ... All of the photon energy present in
these waves must somehow be recovered or redistributed in a new
direction, according to the law of energy conservation ... Instead,
upon meeting, the photons are redistributed to regions that permit
constructive interference, so the effect should be considered as
a redistribution of light waves and photon energy rather than
the spontaneous construction or destruction of light."
--
73, Cecil http://www.w5dxp.com

1368. Re: This N8WWM BDSM collar-me shit is FUN!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 20:45:55 UTC
From: Anti-Keyclown <keyklownzrnutjobs@yahoo.com>
Message-ID: <d03688b0-2f3f-4b90-9c54-72bfaeb3ea67@i3g2000hsf.googlegroups.com>
Source record: 29088
Cross-posted to: rec.radio.cb, rec.radio.swap, rec.radio.amateur.policy, alt.ham-radio.vhf-uhf, rec.radio.amateur.antenna

On Jan 23, 2:10 pm, budap...@hungary.net (ZOLTAN) wrote:
> On Tue, 22 Jan 2008 16:42:45 -0800 (PST), Anti-Keyclown
>
> <keyklownzrnutj...@yahoo.com> wrote:
> >On Jan 22, 4:43=A0pm, budap...@hungary.net (ZOLTAN) wrote:
> >> Check out the dougay adair personal bondage advertisment from
> >> collarme.com ..... =A0he calls himself Mr Bindwell.... =A0has crisco
> >> kathy seen this??? SHOCKING!!!
>
> >>http://www.collarme.com/details.asp?px=3DMrBindwell&bhcp=3D1
>
> >> --
> >> ZOLTAN say man who fight with wife all day get no piece at night.
>
> >Thank you, zolt-fag...whichever of you queens that put that shit up is
> >now outta business...thank you for playing
>
> Out of business? I don't think so dougay or is it mrbindwell or
> n8wwm??????
>
> http://tinyurl.com/34ul4l
>
> Thank you for playing! HAHAHAHAHAHA!!!!!!!!
>
> --
> ZOLTAN say wife who puts husband in dogie-house soon will find him in
> cathouse or bdsm personal.

funny, but again, AKC wins...you fairies are pretty desparate

1369. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 21:21:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <rdOlj.1793$so6.937@newssvr19.news.prodigy.net>
Source record: 29089

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> Therefore, thin-film anti-reflective coatings are
>> a waste of time since there were no reflections to
>> begin with. Again, you have an effect reaching back
>> in time to change its own cause.
>
> Can you spell A*B*S*U*R*D? :-)

Yep, and that describes your strange concepts to a 'T'.
Your concept that "canceled waves never existed in the
first place" requires a time machine to implement, not
to mention the paradox involved with time travel.
--
73, Cecil http://www.w5dxp.com

1370. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 21:38:53 UTC
From: dfinn1@nc.rr.com
Message-ID: <60a37c43-a1d9-49c6-9e2e-dd1bfeaa23e7@e6g2000prf.googlegroups.com>
Source record: 29090

On Jan 23, 12:45 am, Roy Lewallen <w...@eznec.com> wrote:
> AI4QJwrote:
> > We're not the only ones arguing about this. I read that 2 lasers pointed at
> > each other 180 degrees out of phase causes darkeness (cancellation). What
> > happens to the energy? I have found no simple answer, yet. We may need to
> > rely on the 'dark physics' for an explanation. . .
>
> Yes, you'll have to look beyond normal science, perhaps deep into the
> realm of X files and poltergeists, for an explanation of the darkness,
> since that's not what you get when you point two lasers at each other.
> Write the simple equation describing the sum of out-of-phase waves
> moving in opposite directions. You'll find you get a classical standing
> wave pattern, not "darkness".
>
> Roy Lewallen, W7EL

I blew this thread by saying the lasers were "pointed at each other
180 degrees out of phase". You're right, that would cause a standing
wave. If somehow the waves (laser/cohent) could be summed 180 degrees
out of phase in the same direction, then we would have cancellation
and darkness. In that case, where then does the energy go, since it
must be conserved? I believe you had mentioned poltergiests? Is that
your best hypothesis :-)

1371. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 21:44:10 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn8cfg$4bs$1@news.service.uci.edu>
Source record: 29092

Cecil Moore wrote:

> Your concept that "canceled waves never existed in the
> first place" requires a time machine to implement, not
> to mention the paradox involved with time travel.

You either completely misunderstand, or you're deliberately misstating the case. Perhaps both.

Here's what you should do: discover how waves can both cancel and exist simultaneously at any point in time, and you will prove the scientific world and their mathematics to be wrong, Cecil. It's guaranteed martyrdom on scale not seen since Galileo. :-)

ac6xg

1372. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 21:48:29 UTC
From: dfinn1@nc.rr.com
Message-ID: <a122edc0-c01b-4e1d-9ae5-01508fcad7dd@j78g2000hsd.googlegroups.com>
Source record: 29091

On Jan 23, 1:01 pm, Michael Coslo <m...@psu.edu> wrote:
> Roy Lewallen wrote:
> >AI4QJwrote:
> >> We're not the only ones arguing about this. I read that 2 lasers
> >> pointed at each other 180 degrees out of phase causes darkeness
> >> (cancellation). What happens to the energy? I have found no simple
> >> answer, yet. We may need to rely on the 'dark physics' for an
> >> explanation. . .
>
> > Yes, you'll have to look beyond normal science, perhaps deep into the
> > realm of X files and poltergeists, for an explanation of the darkness,
> > since that's not what you get when you point two lasers at each other.
> > Write the simple equation describing the sum of out-of-phase waves
> > moving in opposite directions. You'll find you get a classical standing
> > wave pattern, not "darkness".
>
>   Did they say what the speed of that dark is?
>
>   - 73 de Mike N3LI -

I guess you haven't been following. A standing wave has no speed. It
just stands there.

1373. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 21:55:18 UTC
From: dfinn1@nc.rr.com
Message-ID: <6dfc1dd3-7d6c-4c29-a13c-f0ba7631d5f7@q77g2000hsh.googlegroups.com>
Source record: 29093

On Jan 23, 12:25 am, Cecil Moore <nos...@w5dxp.com> wrote:
> AI4QJwrote:
> > We're not the only ones arguing about this. I read that 2 lasers pointed at
> > each other 180 degrees out of phase causes darkeness (cancellation).

> Only coherent, collinear waves traveling in the same
> direction can permanently cancel thus redistributing
> the energy in another direction.

Yes, of course you're right about the waves in opposited directions causing a standing wave. Your reference quoted above is the case I was talking about. I was merely pointing out that there are many other groups discussing what happens to energy when it "cancels", knowing that it must be conserved. It is the above situation that I was referring to (embarrasment and humility). I have been properly flogged by Roy and N3LI. Now that we have dispensed with that, can we discuss where the energy goes in the above case, assuming it is not poltergiests as Roy infers?

1374. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 22:24:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pffljndsffv11@corp.supernews.com>
Source record: 29094

dfinn1@nc.rr.com wrote:
>
> I blew this thread by saying the lasers were "pointed at each other
> 180 degrees out of phase". You're right, that would cause a standing
> wave. If somehow the waves (laser/cohent) could be summed 180 degrees
> out of phase in the same direction, then we would have cancellation
> and darkness. In that case, where then does the energy go, since it
> must be conserved? I believe you had mentioned poltergiests? Is that
> your best hypothesis :-)

It's a tossup among poltergeists, Cecil's math, and Art's theories. I'm not sure which would have the best shot at it.

The whole question is pretty much the same as "If pigs could fly, how could they generate enough energy to do it?" Here's a challenge I put forth some time ago, and I'll repeat it now.

Draw a diagram showing how you would get two laser beams to overlap in a straight line as you describe. Feel free to use partially reflecting mirrors, or one or two lasers. Show where all the beams go, including both the transmitted and reflected beams if you use partially reflecting mirrors. I claim that no energy will disappear, and you'll be able to account for every erg of the energy the lasers are putting out, in the form of non-canceled beams. The law of conservation of energy will be obeyed. No wave bouncing, "momentum" altering, or other imagined effects will be necessary to account for all the energy being produced by the lasers. I've been eagerly awaiting the simple diagram which will prove me wrong, but all that appears is more smoke, mirrors (figuratively only), hand waving, and the repeated posing of this and other impossible questions.

Roy Lewallen, W7EL

1375. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 22:33:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pfg5irdfpbo8d@corp.supernews.com>
Source record: 29095

dfinn1@nc.rr.com wrote:
>
> Yes, of course you're right about the waves in opposited directions
> causing a standing wave. Your reference quoted above is the case I was
> talking about. I was merely pointing out that there are many other
> groups discussing what happens to energy when it "cancels", knowing
> that it must be conserved. It is the above situation that I was
> referring to (embarrasment and humility). I have been properly flogged
> by Roy and N3LI. Now that we have dispensed with that, can we discuss
> where the energy goes in the above case, assuming it is not
> poltergiests as Roy infers?

Let's look at some of the other possibilities:

1. Dark matter
2. Antimatter
3. Another dimension
4. Somewhere Out There
5. Conversion to an itty bitty speck of matter
6. Carried off by UFOs
7. An exception is made to the law of conservation of energy by your choice of deities, including but not limited to God, Zeus, and the Flying Spaghetti Monster. Or perhaps a dispensation can be purchased from the Pope for a few joules.
8. Into the aether
9. Into Gaussian equilibrium
10. Into other ordinary laser beams, per my challenge

Take your pick.

Roy Lewallen, W7EL

1376. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 22:47:49 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn8g6i$6ie$1@news.albasani.net>
Source record: 29096

Roy Lewallen wrote:

> ...
> Draw a diagram showing how you would get two laser beams to overlap in a
> straight line as you describe. Feel free to use partially reflecting
> mirrors, or one or two lasers. ...
> ...
> Roy Lewallen, W7EL

Don't have to draw nutin'.

A beam splitter "run backwards."

Regards,
JS

1377. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 22:51:33 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn8gdi$6ie$2@news.albasani.net>
Source record: 29097

Roy Lewallen wrote:

> ...
> Let's look at some of the other possibilities:
>
> 1. Dark matter
> 2. Antimatter
> 3. Another dimension
> 4. Somewhere Out There
> 5. Conversion to an itty bitty speck of matter
> 6. Carried off by UFOs
> 7. An exception is made to the law of conservation of energy by your
> choice of deities, including but not limited to God, Zeus, and the
> Flying Spaghetti Monster. Or perhaps a dispensation can be
> purchased from the Pope for a few joules.
> 8. Into the aether
> 9. Into Gaussian equilibrium
> 10. Into other ordinary laser beams, per my challenge

11. faeries, picked off the head of a pin and forced to a life of
indebted servitude! (my final answer!)

>
> Take your pick.
>
> Roy Lewallen, W7EL

Regards,
JS

1378. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 22:55:05 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <dBPlj.160767$MJ6.99091@bgtnsc05-news.ops.worldnet.att.net>
Source record: 29098

Cecil Moore wrote:
> Gene Fuller wrote:
>> Why do you attribute such magic to the word "interference"? Do you
>> think that Hecht's "interaction" is any different than superposition?
>
> It is not magic. "Interference" and "superposition" simply
> have different definitions.
>
> Interference is a subset of superposition, i.e. interference
> cannot occur without superposition but superposition can occur
> without interference. This subject is covered in every optics
> text that I have ever seen, including Born and Wolf. Given two
> waves of equal power densities (irradiances) if the resultant
> irradiance is not equal to the sum of the two irradiances, then
> interference has occurred.
>
>> What if the waves are not quite anti-parallel, say at an angle of 179
>> degrees? Is interference now possible?
>
> Impossible in a transmission line which is the context.
> In free space, I would guess that interference is possible
> in their common direction of travel.
>
>> Suppose the waves are only 1 degree from parallel. Does that negate
>> the interference?
>
> For coherent waves in free space, that would ensure interference
> until the beams diverged. It should result in the usual light
> and dark interference rings.
>
>> Repeating: This is a distinction with no technical value.
>
> Maybe it would help if you published a video of you waving
> your hands as you scream that assertion at the top of your
> lungs? :-)

Cecil,

Many people, myself included, treat the term "interference" in a qualitative manner. The general meaning is that two entities somehow interact in a noticeable way, and the result has some signature of that interaction.

You appear to use a very precise, quantitative definition of "interference." I do not recall ever seeing such a quantitative

definition. Could you please give us a reference or an exact quote from some reasonably reputable source that defines "interference" in a quantitative and unambiguous manner?

You imply that some interactions lead to "interference" and some do not. How can the unwashed among us know when the magic occurs and when it does not?

73,
Gene
W4SZ

1379. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 23:08:37 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn8hdi$6ie$5@news.albasani.net>
Source record: 29099

Gene Fuller wrote:

> ...
> You imply that some interactions lead to "interference" and some do not.
> How can the unwashed among us know when the magic occurs and when it
> does not?
>
> 73,
> Gene
> W4SZ

You mean if I just wash it will increase my ability to understand? D*mn man, I would NEVER have thought it possible. Indeed, if most were to suggest that, I would laugh. But, given it is you, ... <chuckle>

And please, take this as a friendly joke! (albeit a poor one) I tire of the religiously devout crying "blasphemy" and posting stones and pitchforks! <ROFLOL>

Warm regards,
JS

1380. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 23:17:26 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <aWPlj.480974$kj1.66736@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28900

Cecil Moore wrote:
> Jim Kelley wrote:
>>
>> Cecil Moore wrote:
>>> One wonders why you have not commented on the interferometer
>>> experiment that intercepted the energy reflected from the
>>> standard output during destructive interference and routed
>>> it to the non-standard output thus illustrating an equal
>>> amount of constructive interference.
>>
>> I've used laboratory interferometers for over 20 years, Cecil. It
>> seems like I've been trying to explain how they work to you for almost
>> that long.
>
> Translation: I am so afraid of that web page that I deleted
> it and hope nobody notices. I refuse to discuss the interferometer
> example because I am afraid to be proven wrong.
>
> Please share your usual mealy-mouthing response about how I
> don't understand that web page at:
>
> http://www.teachspin.com/instruments/moderni/experiments.shtml
>
> PLEASE NOTE THAT THE ENERGY REJECTED BY THE DESTRUCTIVE
> INTERFERENCE PORT WAS ON ITS WAY BACK TO THE SOURCE BEFORE
> IT WAS INTERCEPTED. CAN YOU SPELL R-E-F-L-E-C-T-I-O-N?

Cecil,

I looked at that web page, and my reaction was merely, "so what"? There is nothing in there that is not well known to everyone who has ever used or studied interferometry.

You seem to forget that the entire argument on RRAA in this theme is not about *what* happens, it is about *how* it happens. There is not one person who would seriously claim any violation of conservation of energy to be valid. There is not one person who would be surprised to learn about constructive and destructive interference and the redistribution of energy. Anyone making competent physical measurements would find the same, predictable results.

What *is* at issue is the mechanism involved. None of these web references aimed at the Popular Science crowd even attempt to get into those fine details. You love to quote a web page written by a Java-dude and a lab technician. You love to quote a web page written by a

manufacturer of lenses and other optical components. Now you are quoting a web page from a company who is "dedicated to the design, development, manufacture, and marketing of apparatus appropriate for laboratory instruction in physics and engineering." None of these are necessarily wrong in what they are attempting to say. What *is* wrong is trying to use these popular-level tales in support of your hair-splitting arguments.

Spend some time reading a serious reference on conservation of energy in electromagnetic systems. You will come to understand that your concerns about "wave cancellation" and related stuff at interfaces are not only unimportant, they cannot even be determined by rational analysis. It comes very close to counting the angels on pinheads.

If you really want to dig in further, you will need to start to look at the detailed interactions of the waves with the interface materials, including the scattering formalism. Reflection does not just "happen". I do not suggest going there unless you need some sleep inducement.

73,
Gene
W4SZ

1381. Re: get alife

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 23:33:25 UTC
From: "kb9rqz-1@hotmail.com" <kb9rqz-1@hotmail.com>
Message-ID: <195e6342-1e1c-48d1-b113-4bfeef1a54af@e23g2000prf.googlegroups.com>
Source record: 28901
Cross-posted to: rec.radio.cb, rec.radio.swap, rec.radio.amateur.policy, alt.ham-radio.vhf-uhf, rec.radio.amateur.antenna

```
On Jan 23, 10:24 am, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
wrote:
> On Jan 22, 8:55 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
> wrote:
>
>
>
> > On Jan 22, 7:44 pm, Anti-Keyclown <keyklownzrnutj...@yahoo.com> wrote:
>
> > > On Jan 22, 5:51 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
> > > wrote:
>
> > > > On Jan 22, 4:43 pm, budap...@hungary.net  (ZOLTAN) wrote:> Check out the dougay
adair personal bondage advertisment from
> > > > > collarme.com
>
> > > > hmm why were you THERE at a BDSM site loking for a man
>
> > > he mighta been there looking for a man, but I think they just set up
> > > the thing to stir some shit...
>
> > you know you are right I knew but needed to soft peddle that
>
> > > Pretty funny actually, considering that the AKC does dominate their
> > > puny minds.- Hide quoted text -
>
> > - Show quoted text -- Hide quoted text -
>
> - Show quoted text -
```

1382. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 23:35:00 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn8iv9$6m0$1@news.service.uci.edu>
Source record: 28902

Roy Lewallen wrote:

> It's a tossup among poltergeists, Cecil's math, and Art's theories. I'm
> not sure which would have the best shot at it.
>
> The whole question is pretty much the same as "If pigs could fly, how
> could they generate enough energy to do it?" Here's a challenge I put
> forth some time ago, and I'll repeat it now.
>
> Draw a diagram showing how you would get two laser beams to overlap in a
> straight line as you describe. Feel free to use partially reflecting
> mirrors, or one or two lasers. Show where all the beams go, including
> both the transmitted and reflected beams if you use partially reflecting
> mirrors. I claim that no energy will disappear, and you'll be able to
> account for every erg of the energy the lasers are putting out, in the
> form of non-canceled beams. The law of conservation of energy will be
> obeyed. No wave bouncing, "momentum" altering, or other imagined effects
> will be necessary to account for all the energy being produced by the
> lasers. I've been eagerly awaiting the simple diagram which will prove
> me wrong, but all that appears is more smoke, mirrors (figuratively
> only), hand waving, and the repeated posing of this and other impossible
> questions.
>
> Roy Lewallen, W7EL

Exactly right. In fact it's a perfect example of how energy is distributed without need of ideas like "reflections caused by interference".

If we have two lasers positioned at a right angle to one another, and both are pointing at a beam splitter* oriented at 45 degrees to the light path, assuming the beams are coherent and collinear, we can create light along the path set by laser A and not laser B. If we then change the distance of one of the lasers by half a wavelength we will have light along the path set by laser B and not laser A. The canceled waves carry no energy of course. All the energy is carried by the waves which don't cancel. As Roy suggests, similar experiments having the same results can be done for example with one laser and two beam splitters. But there's more. All of the source energy is obtained using reflectors that are only partially reflective, and there are no other reflective "mechanisms" required.

Now, if you can get the apparatus to work with 100% reflective surfaces, as Cecil has described, you should then be able to get out more energy than you put in. :-)

73, ac6xg

* a beam splitter is a partially reflecting mirror which allow half
the light to pass through, and half to be reflected (i.e. it has a
reflection coefficient of .5).

1383. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-23 23:45:23 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn8jigdsb1@news.albasani.net>
Source record: 28903

Jim Kelley wrote:

> ...
> 73, ac6xg
>
> * a beam splitter is a partially reflecting mirror which allow half the
> light to pass through, and half to be reflected (i.e. it has a
> reflection coefficient of .5).
>
>

Actually, a beam splitter could be constructed of a prism, giving a much clearer picture ... and you shouldn't have to "reflect" on that long! <grin>

Regards,
JS

1384. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 00:13:49 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A2EC38FE6062Noemailadr@208.49.80.251>
Source record: 28904

Roy Lewallen <w7el@eznec.com> wrote:
[... very nice explanation]

> Sine waves are another problem -- there, we can easily have
> overlapping waves traveling in the same direction, so we'll run into
> trouble if we're not careful. I haven't worked the problem yet, but
> when I do, the energy will all be accounted for. Either the energy
> ends up spread out beyond the overlap region, or the energy lost
> during reflections will account for the apparent energy difference
> between the sum of the energies and the energy of the sum. You can
> count on it!

> As always, I appreciate any corrections to either the methodology or
> the calculations.

> Roy Lewallen, W7EL

How about analyzing a vibrating string? If you play guitar, there's a very nice note you can make by plucking a high string, then putting your finger at exactly the correct spot and removing it quickly. The note will jump to a much higher frequency and give a much purer sound. Clearly, the mechanical energy has split into two waves that cancel at the node.

In principle, you could show the node is stationary, thus contains no energy. But there is energy travelling on both sides of the null point - you can hear it.

You can also create other notes by touching different spots on the vibrating string. These create standing waves with energy travelling in both directions, but cancelling at the null points. Very similar to transmission lines.

Regards,

Mike Monett

1385. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 00:20:28 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fn8lkcrvb1@news.jpl.nasa.gov>
Source record: 28910

Richard Clark wrote:
> On Sun, 20 Jan 2008 12:29:19 -0500, "Bob" <bobsakol@hotmail.com>
> wrote:
>
>
>>"Cecil Moore" <nospam@w5dxp.com> wrote in message
>>news:ETJjj.1023$EZ3.185@nlpi070.nbdc.sbc.com...
>>
>>>Tam wrote:
>>>
>>>>Almost certainly, the power rating of the terminator is either 1/8, 1/4,
>>>>or 1/2 W.
>>>
>>>Does Radio Shack not specify the power rating?
>>>--
>>>73, Cecil http://www.w5dxp.com
>>
>>Hey engineer! here is link:
>>http://www.caddock.com/Online_catalog/current_sense/Current.html
>>MP9100
>>Dont lure good people to smacks shops! Just DIY!
>
>
> Unlikely to be useful above the LW to AM band.
>
> 73's
> Richard Clark, KB7QHC

Actually, those Caddock MP9 and MP8 non-inductive resistors are good to HF (allowing for the physical size). The inductance of the big ones (MP9100, 100W units) is about 20nH, about 3 ohms at 28 MHz. Half that for the smaller ones. The challenge is in getting the heat away from them. the thermal resistance of the MP9100 is 1.5 degrees/W, so at 100W, the resistor is 150 degrees hotter than the heatsink, and with a max temp of 175C, you'd better keep that heatsink at 25C.

1386. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 00:24:01 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fn8lr1$u2q$1@news.jpl.nasa.gov>
Source record: 28909

Richard Clark wrote:
> On Mon, 21 Jan 2008 10:50:29 -0800 (PST), K7ITM <k7itm@msn.com> wrote:
>
>
>>>>http://www.caddock.com/Online_catalog/current_sense/Current.html
>>>>MP9100
>>>>Dont lure good people to smacks shops! Just DIY!
>>>
>>>Unlikely to be useful above the LW to AM band.
>>>
>>
>>On the contrary, I've measured some of the Caddock resistors similar
>>to those and they're quite useful to 2 meters and beyond. We were
>>using a 100-ohm 25 watt one in a Wilkinson combiner at 450MHz
>>successfully. YMMV, and as I wrote in this thread before, it does
>>help to have a reliable analyzer to test them with. Much more useful,
>>IMO, than a lot of the drivel that goes on here would be info on ways
>>to bootstrap yourself into some decent measurements. It can be done
>>with very inexpensive home-brew equipment, but it takes some thought
>>and careful construction.
>
>
> Hi Tom,
>
> Did you put the MP9100 against a heat sink? The large surface area,
> thin construction for heat flow, bound on both sides by metal
> clamping, a high dielectric constant, all point to a considerable
> sized capacitor (I visualized a 0.01ï¿½Fd ceramic cap).
>
> 73's
> Richard Clark, KB7QHC

It's about 1/2 cm x 1 cm. Say it's 1/2 mm from sink to innards. 8.85
pF/m * 0.5E-4 m^2/0.5E-3m = <1pF....

pretty small.

1387. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 00:30:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pfn0ldesnm7c3@corp.supernews.com>
Source record: 28905

Mike Monett wrote:
>
> How about analyzing a vibrating string? If you play guitar, there's a very
> nice note you can make by plucking a high string, then putting your finger
> at exactly the correct spot and removing it quickly. The note will jump to
> a much higher frequency and give a much purer sound. Clearly, the
> mechanical energy has split into two waves that cancel at the node.
>
> In principle, you could show the node is stationary, thus contains no
> energy. But there is energy travelling on both sides of the null point -
> you can hear it.
>
> You can also create other notes by touching different spots on the
> vibrating string. These create standing waves with energy travelling in
> both directions, but cancelling at the null points. Very similar to
> transmission lines.
>
> Regards,
>
> Mike Monett

Sounds like a great idea. I'll look forward to seeing your analysis.

Roy Lewallen, W7EL

1388. Re: wire size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 00:31:34 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fn8m96$u2q$3@news.jpl.nasa.gov>
Source record: 28911

Tim Shoppa wrote:
> On Jan 22, 3:51 pm, art <aun...@insightbb.com> wrote:
>
>>I have a home brew dipole antenna made from #22 copper What is ther
>>maximum power
>>that it can handle. Support is not a problem. I want to test it for
>>max power using a 8877 which will blow if the wire
>>opens, and they are costly. Ofcourse I would like a bit of safety in
>>hand. Does minimum wire size vary much dependent on band useage? I
>>have no idea what manufactures use for commercial style antennas!
>
>
> Wow!
>
> An 8877 could develop 1.5 to 2kW output power (if done in a part of a
> world where it's legal for a ham to use that much power.)
>
> 2kW into a 50 ohm load is a current of 6 or 7 amps, assuming it's a
> perfect match/no standing waves.
>
> The fusing current of 22AWG copper wire is about 40 Amps. So if
> everything is working and matched, it won't melt.

That's the DC fusing current....

As an earlier poster mentioned, skin effect means that the current is
being carried in a thin layer on the surface, so the heating might be
more. Of course, the hot layer is also closer to the air.

>
> The higher you go in frequency, the more you'll have to derate the
> above, but for low HF it'll be not too bad.
>
> But geeze.... you've got a multi-kilowatt amp and can't afford
> anything better than 22AWG wire???
>
> Traditional rule-of-thumb for ham wire antennas would say that if
> you're pumping more than a kilowatt in, you want at least 12 gauge or
> 14 gauge wire. There's also the N.E.C. specs, which say that copper
> antenna wires have to be thicker than 14 gauge up to 150' spans, and
> thicker than 10 gauge over 150' spans.

The NEC rules are for mechanical strength, not current carrying capacity.

One might also wonder about corona discharge at the ends of the dipole...

>
> Tim N3QE

1389. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 00:52:32 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <kjRlj.229$Ch6.44@newssvr11.news.prodigy.net>
Source record: 28906

Mike Monett wrote:
> Roy Lewallen <w7el@eznec.com> wrote:
> [... very nice explanation]
>
>> Sine waves are another problem -- there, we can easily have
>> overlapping waves traveling in the same direction, so we'll run into
>> trouble if we're not careful. I haven't worked the problem yet, but
>> when I do, the energy will all be accounted for. Either the energy
>> ends up spread out beyond the overlap region, or the energy lost
>> during reflections will account for the apparent energy difference
>> between the sum of the energies and the energy of the sum. You can
>> count on it!
>
>> As always, I appreciate any corrections to either the methodology or
>> the calculations.
>
>> Roy Lewallen, W7EL
>
> How about analyzing a vibrating string? If you play guitar, there's a very
> nice note you can make by plucking a high string, then putting your finger
> at exactly the correct spot and removing it quickly. The note will jump to
> a much higher frequency and give a much purer sound. Clearly, the
> mechanical energy has split into two waves that cancel at the node.
>
> In principle, you could show the node is stationary, thus contains no
> energy. But there is energy travelling on both sides of the null point -
> you can hear it.
>
> You can also create other notes by touching different spots on the
> vibrating string. These create standing waves with energy travelling in
> both directions, but cancelling at the null points. Very similar to
> transmission lines.
>
> Regards,
>
> Mike Monett
>

Most undergraduate physics texts have, or should have, discussions of
vibrating strings. There's a good treatment of the subject in
William C. Elmore's and Mark A. Heald's book _Physics of Waves_
published by Dover. If you wanted to get in an argument you could
say that the energy on both sides of the node isn't traveling, but is
merely alternating between potential and kinetic. Such strings have loss

(or you wouldn't be able to hear them). Loss is a taboo subject on this newsgroup because it makes wave behavior too hard to understand for the savants posting here.
73,
Tom Donaly, KA6RUH

1390. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 00:56:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pfoh3rc5m5q80@corp.supernews.com>
Source record: 28908

Michael Coslo wrote:
>
> At the risk of being both a dullard and messing up all the fun, does
> not every destructive interference have to be balanced by a constructive
> interference, which in turn leads to a condition of "Okey dokey?"
>
> A canceled wave needs a reinforced wave, and then nothing is lost,
> nothing is gained.

Not quite, but close. It's ok to have two waves that cancel at one place but go their separate ways at others without reinforcing. Any combination of canceled, reinforced, and independent waves is ok as long as the energy all adds up to the amount put into the system.

The purveyors of these contrived questions have never been able to explain how they create these exquisite co-traveling canceled waves without also creating those nagging reinforced or non-canceled waves. Since it requires magic to create them, it should be no surprise that it requires magic to explain what happens to the energy once the magical canceling waves have been conjured up.

Roy Lewallen, W7EL

1391. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 00:56:17 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <4797e237$0$29794$4c368faf@roadrunner.com>
Source record: 28907

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13pffljndsffv11@corp.supernews.com...
> dfinn1@nc.rr.com wrote:
>>
>> I blew this thread by saying the lasers were "pointed at each other
>> 180 degrees out of phase". You're right, that would cause a standing
>> wave. If somehow the waves (laser/cohent) could be summed 180 degrees
>> out of phase in the same direction, then we would have cancellation
>> and darkness. In that case, where then does the energy go, since it
>> must be conserved? I believe you had mentioned poltergiests? Is that
>> your best hypothesis :-)
>
> It's a tossup among poltergeists, Cecil's math, and Art's theories. I'm
> not sure which would have the best shot at it.
>
> The whole question is pretty much the same as "If pigs could fly, how
> could they generate enough energy to do it?" Here's a challenge I put
> forth some time ago, and I'll repeat it now.
>
> Draw a diagram showing how you would get two laser beams to overlap in a
> straight line as you describe. Feel free to use partially reflecting
> mirrors, or one or two lasers. Show where all the beams go, including both
> the transmitted and reflected beams if you use partially reflecting
> mirrors. I claim that no energy will disappear, and you'll be able to
> account for every erg of the energy the lasers are putting out, in the
> form of non-canceled beams. The law of conservation of energy will be
> obeyed. No wave bouncing, "momentum" altering, or other imagined effects
> will be necessary to account for all the energy being produced by the
> lasers. I've been eagerly awaiting the simple diagram which will prove me
> wrong, but all that appears is more smoke, mirrors (figuratively only),
> hand waving, and the repeated posing of this and other impossible
> questions.

OK, that is a rational position. You are saying that the premise is
incorrect, that is, all light will *not* cancel when two forward coherent
light beams are superimposed 180 degrees out of phase (as happens with sound
waves and shock waves). Given the premise is invalid, then I withdraw my
question. However, I am sure I have read in some literature that indeed the
premise is true; however, you win the argument because I cannot prove the
premise is true and you have no incentive to prove the premise is wrong (you
only need to say so, and you have). Touche'.

1392. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 01:06:49 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A2ECC8CAC9DBNoemailadr@208.49.80.251>
Source record: 28912

Roy Lewallen <w7el@eznec.com> wrote:

> Mike Monett wrote:

[...]

> Sounds like a great idea. I'll look forward to seeing your analysis.
>
> Roy Lewallen, W7EL

LOL! I stopped playing guitar years ago!

Regards,

Mike Monett

1393. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 01:13:01 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pfph0s8k2cdee@corp.supernews.com>
Source record: 28913

AI4QJ wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message

>> Draw a diagram showing how you would get two laser beams to overlap in a
>> straight line as you describe. Feel free to use partially reflecting
>> mirrors, or one or two lasers. Show where all the beams go, including both
>> the transmitted and reflected beams if you use partially reflecting
>> mirrors. I claim that no energy will disappear, and you'll be able to
>> account for every erg of the energy the lasers are putting out, in the
>> form of non-canceled beams. The law of conservation of energy will be
>> obeyed. No wave bouncing, "momentum" altering, or other imagined effects
>> will be necessary to account for all the energy being produced by the
>> lasers. I've been eagerly awaiting the simple diagram which will prove me
>> wrong, but all that appears is more smoke, mirrors (figuratively only),
>> hand waving, and the repeated posing of this and other impossible
>> questions.
>
> OK, that is a rational position. You are saying that the premise is
> incorrect, that is, all light will *not* cancel when two forward coherent
> light beams are superimposed 180 degrees out of phase (as happens with sound
> waves and shock waves).

No, I'm not. Please read my posting again. I'm saying that you cannot create those two waves without also creating waves which, together, contain the amount of energy being produced by the laser(s). You can cancel all the light you want. But you can't do it without also leaving or making enough other light to account for the energy being produced.

> Given the premise is invalid, then I withdraw my
> question. However, I am sure I have read in some literature that indeed the
> premise is true; however, you win the argument because I cannot prove the
> premise is true and you have no incentive to prove the premise is wrong (you
> only need to say so, and you have). Touche'.

Huh?

I don't need to prove anything. I'm just waiting for someone to show me how he creates those co-traveling canceling waves without also creating enough other waves to account for all the energy being produced by the lasers. (I'm even perfectly willing to accept perfect mirrors, perfectly coherent, phased, and amplitude-matched lasers, and other ideal components.) Then we can take the discussion from there. C'mon, shouldn't take but a couple of minutes to sketch out the system and prove me wrong.

Roy Lewallen, W7EL

1394. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 01:13:06 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A2ECD9D37CFENoemailadr@208.49.80.251>
Source record: 28914

"Tom Donaly" <dtdonaly@sbcglobal.net> wrote:

[...]

> Most undergraduate physics texts have, or should have, discussions
> of vibrating strings. There's a good treatment of the subject in
> William C. Elmore's and Mark A. Heald's book _Physics of Waves_
> published by Dover.

> If you wanted to get in an argument you could say that the energy
> on both sides of the node isn't traveling, but is merely
> alternating between potential and kinetic.

Yes, I thought about that a bit before posting. It seems logical a
plucked string sends a wave in both directions, where it is
reflected and returns to create a standing wave.

When it forms a standing wave, it seems reasonable to say the energy
is alternating between potential and kinetic. But isn't that similar
to what happens on a transmission line that is exactly some multiple
of a quarter wavelength long?

> Such strings have loss (or you wouldn't be able to hear them).

> Loss is a taboo subject on this newsgroup because it makes wave
> behavior too hard to understand for the savants posting here.

> 73,
> Tom Donaly, KA6RUH

Regards,

Mike Monett

1395. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 01:21:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pfq04nsi3so8f@corp.supernews.com>
Source record: 28915

Mike Monett wrote:
> "Tom Donaly" <dtdonaly@sbcglobal.net> wrote:
>
> [...]
>
> > Most undergraduate physics texts have, or should have, discussions
> > of vibrating strings. There's a good treatment of the subject in
> > William C. Elmore's and Mark A. Heald's book _Physics of Waves_
> > published by Dover.
>
> > If you wanted to get in an argument you could say that the energy
> > on both sides of the node isn't traveling, but is merely
> > alternating between potential and kinetic.
>
> Yes, I thought about that a bit before posting. It seems logical a
> plucked string sends a wave in both directions, where it is
> reflected and returns to create a standing wave.
>
> When it forms a standing wave, it seems reasonable to say the energy
> is alternating between potential and kinetic. But isn't that similar
> to what happens on a transmission line that is exactly some multiple
> of a quarter wavelength long?
>

Demo 4 of the TLVis1 program I posted reference to, shows that in a transmission line with a pure standing wave (load reflection coefficient magnitude of 1), the energy between nodes alternates between the electric field (line capacitance) and magnetic field (line inductance). This is true regardless of the line length or the source termination.

Roy Lewallen, W7EL

1396. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 02:17:38 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A2ED88DF286BNoemailadr@208.49.80.251>
Source record: 28916

Roy Lewallen <w7el@eznec.com> wrote:

> Demo 4 of the TLVis1 program I posted reference to, shows that in
> a transmission line with a pure standing wave (load reflection
> coefficient magnitude of 1), the energy between nodes alternates
> between the electric field (line capacitance) and magnetic field
> (line inductance).

> This is true regardless of the line length or the source
> termination.

> Roy Lewallen, W7EL

Yes, this is a very nice demo. Thank you for posting it.

I have a question. In demo 4, the bottom window shows the Ee field
in green, Eh in red, and ETot in black.

When the demo starts, you can only see a green and a black trace.

If you pause it just as the wave hits the end, you can now see the
red trace, Eh. (This is an actual statement and has nothing to do
with the fact I am Canadian.)

What happened to the Eh trace as the wave is initally moving to the
right? Is it overlaid by the Ee trace in green? Or is it just not
plotted?

Then, when the wave hits the end and starts reflecting, the red
trace remains attached to ground, and the green trace moves up and
connects with the black trace. (Sorry for the confusing description
- you have to try it yourself to see.)

Now, as you single step, the green trace and the red trace appear to
be 180 degrees out of phase.

My problem here is someone wrote a web page that claims the electric
and magnetic fields are orthogonal:

http://www.play-hookey.com/optics/transverse_electromagnetic_wave.html

I tried sending him an email to show if the fields were orthogonal
as he claims, it would look like a pure reactance, and no energy
would be transmitted. But he is stuck on his idea and won't budge.

Now my problem is figuring out exactly what happens at the
reflection, and why the Eh field behaves the way shown in your demo.

Regards,

Mike Monett

1397. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 02:24:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pftns1u5q5vb5@corp.supernews.com>
Source record: 28917

Roy Lewallen wrote:
> Keith Dysart wrote:
>> On Jan 15, 2:24 am, Roy Lewallen <w...@eznec.com> wrote:
>>> The little program I wrote shows that, on the line being analyzed, the
>>> energy is changing -- moving -- on both sides of a point of zero power.
>>> Energy is flowing into that point from both directions at equal rates,
>>> then flowing out at equal rates. This causes the energy at that point to
>>> increase and decrease. What zero power at a given point means is that
>>> there is no *net* energy moving in either direction past that point.
>>
>> "*net* energy moving" seems to be a bit of a dangerous notion.
>>
>> If "*net* energy moving" is the time averaged power, then
>> it is zero at *every* point on the line under consideration.
>> And I do not mind this definition.
>
> That was probably a bad choice of words on my part. By net I didn't mean
> an average over some period of time. I meant energy moving past a single
> point.
>
> One possibility I envisioned was some energy moving past the point from
> left to right, and at the same time an equal amount moving at the same
> rate past the point from right to left, resulting in zero power at the
> point. However, on reflection, this couldn't happen; energy flows
> "downhill". But the phenomenon observed on the open circuited line does
> occur, where energy flows into the point from both directions equally,
> and out of the point to both directions equally, resulting in zero power
> at the point. No energy is flowing past the point, period -- the
> modifier "net" isn't necessary.
>
>> But at the points where the current or voltage is always
>> zero, it seems to me unnecessary to use the qualifier "*net*"
>> since the power IS always zero [from p(t)=v(t)*i(t)]. That
>> is, unless you are introducing another interpretation of
>> "*net*".
>
> You're right. Please consider "net" retracted.

I got to thinking about this a little more, and want to reclaim the
"net" modifier.

Hopefully we all agree that on a line with a pure standing wave (unity
magnitude load reflection coefficient), there are nodes at which the
power is zero at all times, indicating that no (and I'll reinsert "net"
here) energy is moving past that point. But there's energy going into

that node at equal rates from both sides during half the energy cycle, and out of the node during the other half cycle. We've used those observations to conclude that no energy is going past the node.

But let's look at another equally plausible explanation. We know we have a bundle of energy from the left and another equal bundle from the right which flow into the node at the same time, resulting in zero power at the node. But suppose that the bundle of energy from the left flows out to the right, and the bundle from the right flows out to the left during the next half cycle (rather than the one from the left flowing back to the left, and the one from the right to the right, as we've been tacitly assuming). Now we've moved energy across the node while retaining zero power at the node (zero power because the amount of energy moving from left to right always equals the energy moving from right to left at the node). A nice thing about this interpretation is that it meshes neatly with the concept of two traveling waves of equal amplitude moving in opposite directions. Does that solve some of the conceptual problems you've been having with the nodes?

Of course, I don't know of any way to put a tag on any particular bundle of energy, so one explanation is really as good as the other from a mathematical standpoint. But I think that the idea of moving the energy past the node relieves us of the necessity, or temptation, of devising various wave interactions to explain how the energy can just stop at the nodes.

And, maybe it'll allow me to resurrect my *net* modifier. If you go along with the new interpretation, energy is moving from left to right through the node and from right to left through the node -- there is energy moving past the node, but no *net* energy movement through the node.

Roy Lewallen, W7EL

1398. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 02:37:16 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fn8tl2agd1@news.service.uci.edu>
Source record: 28918

Cecil Moore wrote:

> The bright interference rings
> are four times the intensity of one of the two equal
> waves. The dark interference rings are, of course,
> zero intensity.

> If the intensity of one wave is P, the intensity of the
> bright rings will be 4P and the intensity of the dark
> rings will be zero.

That's right. And we know that intensity is proportional to the square of the EM field, so if P=9 then field=3. When there are two such EM fields superposed, then we have 3+3 squared which is four times greater than 3 squared. And owing to this supposed 'inequality', we have the sophomoric (literally) notion that there is "extra" energy which must come from somewhere else.

ac6xg

1399. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 02:43:21 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pfuqdmp6gbo23@corp.supernews.com>
Source record: 28919

Mike Monett wrote:
>
> Yes, this is a very nice demo. Thank you for posting it.
>
> I have a question. In demo 4, the bottom window shows the Ee field
> in green, Eh in red, and ETot in black.
>
> When the demo starts, you can only see a green and a black trace.
>
> If you pause it just as the wave hits the end, you can now see the
> red trace, Eh. (This is an actual statement and has nothing to do
> with the fact I am Canadian.)
>
> What happened to the Eh trace as the wave is initally moving to the
> right? Is it overlaid by the Ee trace in green? Or is it just not
> plotted?

The traces are drawn in the order Eh, Ee, and total. During the initial forward wave, Eh and Ee are equal, so the Ee overwrites the Eh trace.

> Then, when the wave hits the end and starts reflecting, the red
> trace remains attached to ground, and the green trace moves up and
> connects with the black trace. (Sorry for the confusing description
> - you have to try it yourself to see.)

Hopefully it'll all make sense once you think about how one trace will always win when more than one have the same value.

> Now, as you single step, the green trace and the red trace appear to
> be 180 degrees out of phase.
>
> My problem here is someone wrote a web page that claims the electric
> and magnetic fields are orthogonal:
>
> http://www.play-hookey.com/optics/transverse_electromagnetic_wave.html

You're making the same error that Cecil often does, confusing time phase with directional vector orientation. The orthogonality of E and H fields refers to the field orientations of traveling plane TEM waves in lossless 3D space or a lossless transmission line, at the same point and time. The E and H fields of these traveling waves are always in time phase, not in quadrature. The graphs show the magnitudes of the waves at various points along the line. These represent neither the time phase nor the spatial orientation of the E and H fields.

> I tried sending him an email to show if the fields were orthogonal
> as he claims, it would look like a pure reactance, and no energy
> would be transmitted. But he is stuck on his idea and won't budge.

Good for him -- he's absolutely correct. If the E and H fields were in time quadrature, you'd have a power problem. But they're not. They're in phase in any medium or transmission line having a purely real Z0 (since Z0 is the ratio of E to H of a traveling wave in that medium). This includes all lossless media. But they're always physically oriented at right angles to each other -- i.e., orthogonally, according to the right hand rule.

> Now my problem is figuring out exactly what happens at the
> reflection, and why the Eh field behaves the way shown in your demo.

Go for it!

Roy Lewallen, W7EL

1400. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 03:06:59 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A2EE0EB8B8FBNoemailadr@208.49.80.251>
Source record: 28920

Roy Lewallen <w7el@eznec.com> wrote:

[...]

> The traces are drawn in the order Eh, Ee, and total. During the
> initial forward wave, Eh and Ee are equal, so the Ee overwrites
> the Eh trace.

Good - thanks.

[...]

>> My problem here is someone wrote a web page that claims the
>> electric and magnetic fields are orthogonal:

>> http://www.play-hookey.com/optics/transverse_electromagnetic_wave.html

> You're making the same error that Cecil often does, confusing time
> phase with directional vector orientation. The orthogonality of E
> and H fields refers to the field orientations of traveling plane
> TEM waves in lossless 3D space or a lossless transmission line, at
> the same point and time.

Now you are confusing me with Cecil. I have no difficulty with the E
and H field orientation.

> The E and H fields of these traveling waves are always in time
> phase, not in quadrature.

Yes, that's what I tried to explain to him also.

> The graphs show the magnitudes of the waves at various points
> along the line. These represent neither the time phase nor the
> spatial orientation of the E and H fields.

>> I tried sending him an email to show if the fields were
>> orthogonal as he claims, it would look like a pure reactance, and
>> no energy would be transmitted. But he is stuck on his idea and
>> won't budge.

> Good for him - he's absolutely correct.

There is a bad mixup here. He claims:

"Note especially that the electric and magnetic fields are not in
phase with each other, but are rather 90 degrees out of phase. Most
books portray these two components of the total wave as being in
phase with each other, but I find myself disagreeing with that
interpretation, based on three fundamental laws of physics"

He claims the E and H fields are in quadrature. I claim he is wrong.

> If the E and H fields were in time quadrature, you'd have a power
> problem.

I believe that is what I tried to tell him. He bases his argument on the following:

1. "The total energy in the waveform must remain constant at all times."

Not true. It obviously goes to zero twice each cycle.

2. "A moving electric field creates a magnetic field. As an electric field moves through space, it gives up its energy to a companion magnetic field. The electric field loses energy as the magnetic field gains energy."

Only if the environment is purely reactive. Not true with a pure resistance.

3. "A moving magnetic field creates an electric field. This is Faraday's Law, and is exactly similar to the Ampere-Maxwell law listed above. A changing magnetic field will create and transfer its energy gradually to a companion electric field."

Again, not true in a resistive environment.

> But they're not. They're in phase in any medium or transmission
> line having a purely real Z0 (since Z0 is the ratio of E to H of a
> traveling wave in that medium). This includes all lossless media.

> But they're always physically oriented at right angles to each
> other - i.e., orthogonally, according to the right hand rule.

Yes, there is no confusion about this whatsoever.

[...]

> Roy Lewallen, W7EL

Regards,

Mike Monett

1401. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 03:08:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ajTlj.41473$Pv2.37196@newssvr23.news.prodigy.net>
Source record: 28921

dfinn1@nc.rr.com wrote:
> I blew this thread by saying the lasers were "pointed at each other
> 180 degrees out of phase". You're right, that would cause a standing
> wave. If somehow the waves (laser/cohent) could be summed 180 degrees
> out of phase in the same direction, then we would have cancellation
> and darkness. In that case, where then does the energy go, since it
> must be conserved?

Using Dielectric Beamsplitters to find the "missing energy"
in destructive interference

http://www.teachspin.com/instruments/moderni/experiments.shtml
--
73, Cecil http://www.w5dxp.com

1402. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 03:10:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MkTlj.41474$Pv2.18134@newssvr23.news.prodigy.net>
Source record: 28922

Jim Kelley wrote:
> Here's what you should do: discover how waves can both cancel and exist
> simultaneously at any point in time, ...

b1 = s11*a1 + s12*a2 = 0

It happens all the time.
--
73, Cecil http://www.w5dxp.com

1403. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 03:14:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uoTlj.41475$Pv2.28212@newssvr23.news.prodigy.net>
Source record: 28923

dfinn1@nc.rr.com wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> Only coherent, collinear waves traveling in the same
>> direction can permanently cancel thus redistributing
>> the energy in another direction.
>
> Your reference quoted above is the case I was
> talking about. I was merely pointing out that there are many other
> groups discussing what happens to energy when it "cancels", knowing
> that it must be conserved. It is the above situation that I was
> referring to (embarrasment and humility). I have been properly flogged
> by Roy and N3LI. Now that we have dispensed with that, can we discuss
> where the energy goes in the above case, assuming it is not
> poltergiests as Roy infers?

It's a no-brainer in a transmission line. If waves are
canceled in one direction, the energy that existed in
those waves before they were canceled goes in the other
direction. We hams call it a reflection.
--
73, Cecil http://www.w5dxp.com

1404. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 03:16:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2qTlj.41476$Pv2.22331@newssvr23.news.prodigy.net>
Source record: 28924

Roy Lewallen wrote:
> Draw a diagram showing how you would get two laser beams to overlap in a
> straight line as you describe.

How about one beam and some beam splitters?

Using Dielectric Beamsplitters to find the "missing energy"
in destructive interference

http://www.teachspin.com/instruments/moderni/experiments.shtml
--
73, Cecil http://www.w5dxp.com

1405. Re: wire size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 03:40:37 UTC
From: art <aunwin@insightbb.com>
Message-ID: <54f6b19d-1f86-425b-9e52-640761f5e14f@f47g2000hsd.googlegroups.com>
Source record: 28925

On 23 Jan, 16:31, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Tim Shoppa wrote:
> > On Jan 22, 3:51 pm, art <aun...@insightbb.com> wrote:
>
> >>I have a home brew dipole antenna made from #22 copper What is ther
> >>maximum power
> >>that it can handle. Support is not a problem. I want to test it for
> >>max power using a 8877 which will blow if the wire
> >>opens, and they are costly. Ofcourse I would like a bit of safety in
> >>hand. Does minimum wire size vary much dependent on band useage? I
> >>have no idea what manufactures use for commercial style antennas!
>
> > Wow!
>
> > An 8877 could develop 1.5 to 2kW output power (if done in a part of a
> > world where it's legal for a ham to use that much power.)
>
> > 2kW into a 50 ohm load is a current of 6 or 7 amps, assuming it's a
> > perfect match/no standing waves.
>
> > The fusing current of 22AWG copper wire is about 40 Amps. So if
> > everything is working and matched, it won't melt.
>
> That's the DC fusing current....
>
> As an earlier poster mentioned, skin effect means that the current is
> being carried in a thin layer on the surface, so the heating might be
> more. Of course, the hot layer is also closer to the air.
>
>
>
> > The higher you go in frequency, the more you'll have to derate the
> > above, but for low HF it'll be not too bad.
>
> > But geeze.... you've got a multi-kilowatt amp and can't afford
> > anything better than 22AWG wire???
>
> > Traditional rule-of-thumb for ham wire antennas would say that if
> > you're pumping more than a kilowatt in, you want at least 12 gauge or
> > 14 gauge wire. There's also the N.E.C. specs, which say that copper
> > antenna wires have to be thicker than 14 gauge up to 150' spans, and
> > thicker than 10 gauge over 150' spans.
>
> The NEC rules are for mechanical strength, not current carrying capacity.

>
> One might also wonder about corona discharge at the ends of the dipole...
>
>
>
>
>
> > Tim N3QE- Hide quoted text -
>
> - Show quoted text -- Hide quoted text -
>
> - Show quoted text -

Actually it is a full wave length helix winding for 160M. The teflon coated wire was what I had on hand.I will only be using 100 watts or so but you never know when the urge comes up. I have a motor driven reflector on it so I will be checking out the directivity at different close spacings.When I finally settle on a design the wire will be thicker magnet wire.
Thanks for all the info. As for heat it is mighty cold here so short transmissions should work out o.k.
Regards
Art

1406. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 03:48:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <bUTlj.2327$EZ3.2137@nlpi070.nbdc.sbc.com>
Source record: 28926

Gene Fuller wrote:
> You appear to use a very precise, quantitative definition of
> "interference." I do not recall ever seeing such a quantitative
> definition. Could you please give us a reference or an exact quote from
> some reasonably reputable source that defines "interference" in a
> quantitative and unambiguous manner?

I've already posted what Eugene Hecht said about interference.

In the irradiance (power density) equation,
Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(A)
the last term is known as the "interference term", page 388 of
"Optics" by Hecht. Here's another reference:

http://en.wikipedia.org/wiki/Interference

A Google search for "electromagnetic wave interference" yielded
1,650,000 hits.

> You imply that some interactions lead to "interference" and some do not.
> How can the unwashed among us know when the magic occurs and when it
> does not?

If the interference term in the above irradiance (power
density) equation is not zero, then interference is present.

In the s-parameter equation, b1 = s11*a1 + s12*a2, if b1
equals zero while s11, a1, s12, and a2 are not zero, then
total destructive interference is present.

Assume we superpose two coherent, collinear voltages, V1 and V2:

If (V1+V2)^2 > V1^2+V2^2, then constructive interference is
present.

If (V1+V2)^2 < V1^2+V2^2, then destructive interference is
present.
--
73, Cecil http://www.w5dxp.com

1407. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 03:55:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <r_Tlj.316$5K1.242@newssvr12.news.prodigy.net>
Source record: 28927

Gene Fuller wrote:
> I looked at that web page, and my reaction was merely, "so what"? There
> is nothing in there that is not well known to everyone who has ever used
> or studied interferometry.

That's what I have been telling you guys for years. Everything
we need to know about RF waves has already been discovered
centuries ago by optical physicists. I used those centuries
old laws of physics in my energy analysis article which produces
voltage and current results identical to any conventional analysis.

http://www.w5dxp.com/energy.htm

> You will come to understand that your concerns
> about "wave cancellation" and related stuff at interfaces are not only
> unimportant, ...

This is so typical of gurus on this newsgroup. When they lose
the argument, they invariably say it was not important to
begin with.
--
73, Cecil http://www.w5dxp.com

1408. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa Laugh Riot continues

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 04:01:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <34Ulj.317$5K1.308@newssvr12.news.prodigy.net>
Source record: 28928

Roy Lewallen wrote:
> The purveyors of these contrived questions have never been able to
> explain how they create these exquisite co-traveling canceled waves
> without also creating those nagging reinforced or non-canceled waves.

Strawman alert!
To the best of my knowledge, nobody has ever been stupid enough
to say waves cancel and the energy in them is destroyed. In fact,
I have said exactly the opposite, i.e. waves cancel and the energy
that existed in them before they were canceled is preserved.

I believe it is you who is on record as not caring where the
energy goes.
--
73, Cecil http://www.w5dxp.com

1409. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 04:03:21 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn92m6aeb1@news.albasani.net>
Source record: 28929

Cecil Moore wrote:
> Gene Fuller wrote:
>> I looked at that web page, and my reaction was merely, "so what"?
>> There is nothing in there that is not well known to everyone who has
>> ever used or studied interferometry.
>
> That's what I have been telling you guys for years. Everything
> we need to know about RF waves has already been discovered
> centuries ago by optical physicists. I used those centuries
> old laws of physics in my energy analysis article which produces
> voltage and current results identical to any conventional analysis.
>
> http://www.w5dxp.com/energy.htm
>
>> You will come to understand that your concerns about "wave
>> cancellation" and related stuff at interfaces are not only
>> unimportant, ...
>
> This is so typical of gurus on this newsgroup. When they lose
> the argument, they invariably say it was not important to
> begin with.

Although I have not completely thought it out, I would be surprised if the same did not hold true for sound waves in a sonic/audio resonator--and, this obviously is ONLY a wave which transverses a media and doesn't harm/displace any photons in the process.

You know those d*mn "photon advocates", worse than the animal rights advocates, actually. :-D

Regards,
JS

1410. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 04:04:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <97Ulj.318$5K1.116@newssvr12.news.prodigy.net>
Source record: 28930

Roy Lewallen wrote:
> I'm just waiting for someone to show me
> how he creates those co-traveling canceling waves without also creating
> enough other waves to account for all the energy being produced by the
> lasers.

Strawman alert! Roy has gone from zero energy reflected
waves to a much more rational position. Now if he would
only admit his error in using standing wave current to
try to measure the phase shift through a loading coil.
--
73, Cecil http://www.w5dxp.com

1411. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 04:08:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tbUlj.320$5K1.103@newssvr12.news.prodigy.net>
Source record: 28931

Roy Lewallen wrote:
> But I think that the idea of moving the energy
> past the node relieves us of the necessity, or temptation, of devising
> various wave interactions to explain how the energy can just stop at the
> nodes.

It also satisfies the wave reflection model which tells
us that no reflections can occur in a homogeneous medium.
--
73, Cecil http://www.w5dxp.com

1412. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 04:15:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <QhUlj.325$5K1.123@newssvr12.news.prodigy.net>
Source record: 28932

Jim Kelley wrote:
> Cecil Moore wrote:
>> If the intensity of one wave is P, the intensity of the
>> bright rings will be 4P and the intensity of the dark
>> rings will be zero.
>
> That's right. And we know that intensity is proportional to the square
> of the EM field, so if P=9 then field=3. When there are two such EM
> fields superposed, then we have 3+3 squared which is four times greater
> than 3 squared. And owing to this supposed 'inequality', we have the
> sophomoric (literally) notion that there is "extra" energy which must
> come from somewhere else.

The intensity is watts/unit-area, i.e. real energy.
If the intensity of the bright rings is 4P there is
indeed greater than average energy which requires a
zero P dark ring somewhere else in order to
average out to 2P. The "extra" energy in the bright
rings comes from the dark rings. The conservation of
energy principle allows nothing else. It is not a
sophomoric notion. It is the laws of physics in action.
--
73, Cecil http://www.w5dxp.com

1413. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 04:16:43 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn93f8aeb2@news.albasani.net>
Source record: 28933

Cecil Moore wrote:

> ...
> Strawman alert! Roy has gone from zero energy reflected
> waves to a much more rational position. Now if he would
> only admit his error in using standing wave current to
> try to measure the phase shift through a loading coil.

Good wakeup call; The discussion has become so convoluted that the original statements, point-of-discussions-beginnings, etc. has become as forgotten as the methods of pyramid construction (after hundreds of posts--spanning multiple threads) ... :-)

Regards,
JS

1414. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 04:29:04 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <kuUlj.329$5K1.63@newssvr12.news.prodigy.net>
Source record: 28934

Mike Monett wrote:
> "Tom Donaly" <dtdonaly@sbcglobal.net> wrote:
>
> [...]
>
> > Most undergraduate physics texts have, or should have, discussions
> > of vibrating strings. There's a good treatment of the subject in
> > William C. Elmore's and Mark A. Heald's book _Physics of Waves_
> > published by Dover.
>
> > If you wanted to get in an argument you could say that the energy
> > on both sides of the node isn't traveling, but is merely
> > alternating between potential and kinetic.
>
> Yes, I thought about that a bit before posting. It seems logical a
> plucked string sends a wave in both directions, where it is
> reflected and returns to create a standing wave.
>
> When it forms a standing wave, it seems reasonable to say the energy
> is alternating between potential and kinetic. But isn't that similar
> to what happens on a transmission line that is exactly some multiple
> of a quarter wavelength long?
>
> > Such strings have loss (or you wouldn't be able to hear them).
>
> > Loss is a taboo subject on this newsgroup because it makes wave
> > behavior too hard to understand for the savants posting here.
>
> > 73,
> > Tom Donaly, KA6RUH
>
> Regards,
>
> Mike Monett

When you pluck a string, you are exciting the whole string at once.
If a sound wave of the right frequency impinges on a string
perpendicular to the string's axis, the string will vibrate
sympathetically. In that case, it's hard to justify saying that two
waves are traveling in opposite directions up and down the string.
Nevertheless, the solution of the partial differential equation
describing the motion of the string, as proposed and solved by
the French mathematician D'Alembert, in 1747, is consistent with the
idea of two waves of arbitrary function traveling in opposite directions

on the string. If I were you, I'd find a copy of the differential equation of a wave on a string and compare it to the same equation describing an electromagnetic wave on a transmission line. How similar are the two?
73,
Tom Donaly, KA6RUH

1415. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 04:39:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pg5keqhifl662@corp.supernews.com>
Source record: 28935

Mike Monett wrote:
> Roy Lewallen <w7el@eznec.com> wrote:
>
> [...]
>
> > The traces are drawn in the order Eh, Ee, and total. During the
> > initial forward wave, Eh and Ee are equal, so the Ee overwrites
> > the Eh trace.
>
> Good - thanks.
>
> [...]
>
> >> My problem here is someone wrote a web page that claims the
> >> electric and magnetic fields are orthogonal:
>
> >> http://www.play-hookey.com/optics/transverse_electromagnetic_wave.html
>
> > You're making the same error that Cecil often does, confusing time
> > phase with directional vector orientation. The orthogonality of E
> > and H fields refers to the field orientations of traveling plane
> > TEM waves in lossless 3D space or a lossless transmission line, at
> > the same point and time.
>
> Now you are confusing me with Cecil. I have no difficulty with the E
> and H field orientation.
>
> > The E and H fields of these traveling waves are always in time
> > phase, not in quadrature.
>
> Yes, that's what I tried to explain to him also.
>
> > The graphs show the magnitudes of the waves at various points
> > along the line. These represent neither the time phase nor the
> > spatial orientation of the E and H fields.
>
> >> I tried sending him an email to show if the fields were
> >> orthogonal as he claims, it would look like a pure reactance, and
> >> no energy would be transmitted. But he is stuck on his idea and
> >> won't budge.
>
> > Good for him - he's absolutely correct.
>
> There is a bad mixup here. He claims:

>
> "Note especially that the electric and magnetic fields are not in
> phase with each other, but are rather 90 degrees out of phase. Most
> books portray these two components of the total wave as being in
> phase with each other, but I find myself disagreeing with that
> interpretation, based on three fundamental laws of physics"
>
> He claims the E and H fields are in quadrature. I claim he is wrong.

And you're right. I apologize. "Orthogonal" usually refers to spatial orientation, so when you said that he said they're orthogonal, my reaction was that it's correct. But I didn't look at the web page. I see by looking at it that he also says the two are in time quadrature, which of course is incorrect as you say. His "fundamental laws of physics" are certainly different from everyone else's. Thanks for providing a good example of the pitfalls of relying on the web for information.

Again my apology. You do indeed have it right. Incidentally, it's not possible for a medium to have a purely reactive (imaginary) Z0 at any non-zero frequency.

Roy Lewallen, W7EL

1416. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 04:44:44 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <479817be$0$30715$4c368faf@roadrunner.com>
Source record: 28936

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:ajTlj.41473$Pv2.37196@newssvr23.news.prodigy.net...
> dfinn1@nc.rr.com wrote:
>> I blew this thread by saying the lasers were "pointed at each other
>> 180 degrees out of phase". You're right, that would cause a standing
>> wave. If somehow the waves (laser/cohent) could be summed 180 degrees
>> out of phase in the same direction, then we would have cancellation
>> and darkness. In that case, where then does the energy go, since it
>> must be conserved?
>
> Using Dielectric Beamsplitters to find the "missing energy"
> in destructive interference
>
> http://www.teachspin.com/instruments/moderni/experiments.shtml

Ah, great reference. That explains it.

AI4QJ

1417. So you want to build your very own HDTV antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 06:02:54 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn99mb$4i1$1@news.albasani.net>
Source record: 28937

OK.

The material here may go over the head of even the hard-core gurus',
however, for those up-to-date, very technical few, I offer the
following: <grin>

http://youtube.com/watch?v=EWQhlmJTMzw

Warm regards,
JS

1418. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 06:57:36 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mkdgp35o334avjpg64kgstc891kv0282gq@4ax.com>
Source record: 28938

On Wed, 23 Jan 2008 16:24:01 -0800, Jim Lux <james.p.lux@jpl.nasa.gov>
wrote:

>It's about 1/2 cm x 1 cm. Say it's 1/2 mm from sink to innards. 8.85
>pF/m * 0.5E-4 m^2/0.5E-3m = <1pF....
>
>pretty small.

I posted the actual specifications yesterday.

73's
Richard Clark, KB7QHC

1419. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 06:58:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0odgp35kfrduksnd15l2nq8ovdock4utfj@4ax.com>
Source record: 28939

On Wed, 23 Jan 2008 16:20:28 -0800, Jim Lux <james.p.lux@jpl.nasa.gov>
wrote:

>Actually, those Caddock MP9 and MP8 non-inductive resistors are good to
>HF (allowing for the physical size). The inductance of the big ones
>(MP9100, 100W units) is about 20nH, about 3 ohms at 28 MHz. Half that
>for the smaller ones. The challenge is in getting the heat away from
>them. the thermal resistance of the MP9100 is 1.5 degrees/W, so at
>100W, the resistor is 150 degrees hotter than the heatsink, and with a
>max temp of 175C, you'd better keep that heatsink at 25C.

This was covered yesterday.

73's
Richard Clark, KB7QHC

1420. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 07:09:41 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn9dji$4i1$3@news.albasani.net>
Source record: 28940

MGFoster wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I saw this 50 ohm "terminator" BNC connector at Radio Shack today and
> was wondering if it could be used as an antenna dummy load? It is
> designed as a computer network terminator - just a female jack without
> any output connector. I believe the only question would be "Could it
> stand the power output?" What if the output was just 5W? Anybody know
> about this product or have used it as a dummy load?
>
> It'd sure save the price of a "real" dummy antenna (it was priced about
> $4.00 USD).
>
> Thanks

There is surplus store in Sacramento, Ca. The name of the store is,
"Computer Surplus", he had bins of those resistors. You could
series/parallel those until the "cows came home", I could easily imagine
a matrix capable of handling 1KW or more, at least for a minute or two ...

Look around ...

Regards,
JS

1421. Re: Radio Shack BNC 50 ohm terminator as Dummy Load

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 07:14:20 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fn9ds8$4i1$4@news.albasani.net>
Source record: 28941

John Smith wrote:

> ...
> There is surplus store in Sacramento, Ca. The name of the store is,
> "Computer Surplus", he had bins of those resistors. You could
> series/parallel those until the "cows came home", I could easily imagine
> a matrix capable of handling 1KW or more, at least for a minute or two ...
>
> Look around ...
>
> Regards,
> JS

I forgot to mention the price, they were .10 cents a piece. If you took
a bucket full off his hands, I'd imagine you'd get a MUCH better price.
<LOL>

I am sure you can find it in the phone-book ...

Regards,
JS

1422. Re: So you want to build your very own HDTV antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 13:14:54 UTC
From: ltdoc@yahoo.com
Message-ID: <6844e5ca-a16e-4d55-8c26-dcba33f76f18@e23g2000prf.googlegroups.com>
Source record: 28942

...wonder if it makes any difference what color the coat hangers are?
- 'Doc

1423. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 14:23:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vb1mj.2923$nK5.2491@nlpi069.nbdc.sbc.com>
Source record: 28943

AI4QJ wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote:
>> http://www.teachspin.com/instruments/moderni/experiments.shtml
>
> Ah, great reference. That explains it.

The following s-parameter equation explains what happens
looking into a Z0-match at a point on a transmission line.
For instance:

source--50 ohm coax--+--1/2WL 300 ohm feedline--50 ohm load

```
|
forward a1------------->|
|---->s21(a1)
s11(a1)<----| \
/ | \
/ (+)---->b2 forward
reflected b1<----(+) /
\ | /
\ |---->s22(a2)
s21(a1)<----|
|<-------------a2 reflected
|
```

b1 = s11*a1 + s12*a2 = 0

b1 is the reflected voltage back toward the source

s11*a1 is the forward voltage from the source reflected
back toward the source at the impedance discontinuity.

s12*a2 is the reflected voltage from the load that is
transmitted through the impedance discontinuity.

s11*a1 and s12*a2 are equal in magnitude and opposite
in phase so they cancel in a process which Eugene Hecht
labels *total destructive interference*.

That requires the same magnitude of constructive
interference toward the load and it is contained in
b2 = s21*a1 + s22*a2 = maximum

s21*a1 and s22*a2 are in phase resulting in the maximum
possible constructive interference toward the load.

That's what happens to the energy that existed in the
canceled reflected waves before they were canceled.

--
73, Cecil http://www.w5dxp.com

1424. Fashion Basics That Won't Break The Bank

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 16:08:59 UTC
From: jeckychai@yahoo.com.cn
Message-ID: <ede9a37f-828d-46fa-b415-6fd8fa447b07@v46g2000hsv.googlegroups.com>
Source record: 28944

There are plenty of basics you can pick up that there's no need to pay the extra to obtain a "design name." From the outside no ones going to know they aren't designer and no ones going to see the label so their a safe bet!

Items such as white jeans, flirty skirts, cotton T's, crocheted shrugs, or shorts can be purchased without the designer name. Also watch for T's put on sale by some of the big online retailers for as much as 50% off. Bluefly.com quite regularly puts DKNY and Rebecca Beeson T's on for a serious reduction in price.

Looking fresh like they just came off the rack is important. If you purchased budget items then you've save quite a few dollars so once they start looking not so fresh get rid of them.

Shoes are another arena where you can save some money. No need to buy designer. Most important is fit and comfort, and of course you need to be certain they'll work with your wardrobe. This season the wedge, as well as flats for the summer season, are in style so have some fun. If you shop carefully you can add several pair for the price of one pair of designer shoes.

Lastly you can save a whole lot of money on your jewelry. Costume jewelry is affordable and the selection is great. If you stick to costume jewelry you can buy pieces for this seasons fashion and not feel bad because you spent too much and they are out of style next year.

There are many good online store with very reasonable prices. Don't forget to have a hunt through your old jewelry as well - you might be surprised at what you find that has made it back into style. Large clunky jewelry is certainly in. As is wood and bone jewelry. Color is making a big statement this year. This is a very fun season because just about

http://www.dontplayplay.com/html/Bothsexes/20061002/47377.html

1425. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 16:45:22 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <Cg3mj.162870$MJ6.59481@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28945

Cecil Moore wrote:
> Gene Fuller wrote:
>> I looked at that web page, and my reaction was merely, "so what"?
>> There is nothing in there that is not well known to everyone who has
>> ever used or studied interferometry.
>
> That's what I have been telling you guys for years. Everything
> we need to know about RF waves has already been discovered
> centuries ago by optical physicists. I used those centuries
> old laws of physics in my energy analysis article which produces
> voltage and current results identical to any conventional analysis.
>
> http://www.w5dxp.com/energy.htm
>
>> You will come to understand that your concerns about "wave
>> cancellation" and related stuff at interfaces are not only
>> unimportant, ...
>
> This is so typical of gurus on this newsgroup. When they lose
> the argument, they invariably say it was not important to
> begin with.

1. Nice job of selective quoting to completely change the meaning of a message. Is that sort of like a line item veto?

2. As for the wave cancellation part, you have many times noted that stuff happens at interfaces or discontinuities. So why is it that you never ever consider what is happening inside those interfaces and discontinuities? Do you suppose the waves simply cancel, reflect, or whatever without assistance from the materials in the interface or discontinuity? Do you suppose that any energy or momentum considerations may need to include the materials?

This is akin to the concept of Thevenin equivalents. The view from the outside is correct and useful. There is no information about what is actually happening on the inside of the Thevenin box. In the same way the wave reflection model as seen from outside the interface or discontinuity works just fine. There is virtually no disagreement about what one would observe if correct measurements were done. On the other hand there is no possibility of figuring out how the waves actually "cancel" or what happens to the energy and momentum without considering the actual physical configuration. That sort of analysis has been done, of course. It gets into all sorts of details on electrons and Fermi surfaces, but strangely enough, it does not require Java applets on web pages.

Unless you want to look at the interactions of waves with materials in some detail, the concern about exactly what happens during a "reflection" is unimportant. The external equations work just fine.

73,
Gene
W4SZ

1426. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 17:21:38 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <CO3mj.162947$MJ6.27400@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28946

Mike Monett wrote:

>
> There is a bad mixup here. He claims:
>
> "Note especially that the electric and magnetic fields are not in
> phase with each other, but are rather 90 degrees out of phase. Most
> books portray these two components of the total wave as being in
> phase with each other, but I find myself disagreeing with that
> interpretation, based on three fundamental laws of physics"
>
> He claims the E and H fields are in quadrature. I claim he is wrong.
>
> > If the E and H fields were in time quadrature, you'd have a power
> > problem.
>
> I believe that is what I tried to tell him. He bases his argument on
> the following:
>
> 1. "The total energy in the waveform must remain constant at all
> times."
>
> Not true. It obviously goes to zero twice each cycle.
>
> 2. "A moving electric field creates a magnetic field. As an electric
> field moves through space, it gives up its energy to a companion
> magnetic field. The electric field loses energy as the magnetic
> field gains energy."
>
> Only if the environment is purely reactive. Not true with a pure
> resistance.
>
> 3. "A moving magnetic field creates an electric field. This is
> Faraday's Law, and is exactly similar to the Ampere-Maxwell law
> listed above. A changing magnetic field will create and transfer its
> energy gradually to a companion electric field."
>
>
> Regards,
>
> Mike Monett

Mike,

This concept is not unique to the web site you referenced. I have seen several other debates about the same thing.

One thing that is missed in this simple analysis is a consideration of the uncertainty principle. Heisenberg proposed in 1927 that it is not possible to simultaneously know the value of position and momentum to arbitrarily high accuracy or to know the value of energy and time to arbitrarily high accuracy.

The uncertainly for energy and time is given as delta E x delta t must be greater than or equal to h-bar, which is Planck's constant divided by 2 pi.

The energy of a photon is h-bar x omega, where omega is the angular frequency of the photon.

In order to declare a violation of energy conservation in the wave example above, one would need to examine the energy at time intervals at least as short as half the wave period. Guess what, the uncertainty principle says that if we attempt to do so we cannot determine the energy to the accuracy required in order to claim a violation of energy conservation. Note carefully that "determine" does not mean we must actually measure the energy. The energy cannot even be defined more accurately than the limit imposed by the uncertainty principle.

One way to look at this is that during the interval over which one might try to claim a violation of energy conservation the energy is in a virtual state. As you may know, this sort of consideration is everywhere when one delves into atomic scale and quantum mechanics.

73,
Gene
W4SZ

1427. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 17:59:02 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnajlg$98$1@news.service.uci.edu>
Source record: 28947

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> Here's what you should do: discover how waves can both cancel and
>> exist simultaneously at any point in time, ...
>
>
> b1 = s11*a1 + s12*a2 = 0
>
> It happens all the time.

Next time it does be sure to capture a scope trace of them and post it
to your web site.

Thanks,

ac6xg

1428. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 18:55:55 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnan05$1ij$1@news.service.uci.edu>
Source record: 28948

Cecil Moore wrote:

> If the intensity of the bright rings is 4P there is
> indeed greater than average energy which requires a
> zero P dark ring somewhere else in order to
> average out to 2P.

I guess you didn't notice the thing about the square of the sum of two numbers being four times as great as the square of one of the numbers. It simply means, for example, that a doubling in voltage is a quadrupling in power. It doesn't mean there's "extra" energy anywhere.

> The "extra" energy in the bright
> rings comes from the dark rings.

There really is no extra energy.

> The conservation of
> energy principle allows nothing else.

Conservation of energy doesn't allow for there to *be* extra energy in the first place! That's the most fundamental principle. Putting the word 'extra' in quotes doesn't change that.

> It is not a
> sophomoric notion.

The notion was apparently contrived so that sophomores wouldn't feel the need to ask as many questions.

> It is the laws of physics in action.

As far as you know.

ac6xg

1429. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 19:01:02 UTC
From: Robert Smts <bob@rsmits.ca>
Message-ID: <38646132455e800e82fad383d40a6ffe@grapevine.islandnet.com>
Source record: 28857
Cross-posted to: sci.chem,news.admin.net-abuse.usenet,comp.robotics.misc,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

or has thought of giving us
remedies for it.

493. The true religion teaches our duties; our weaknesses, pride, and lust; and the remedies, humility and mortification.

494. The true religion must teach greatness and misery; must lead to the esteem and contempt of self, to love and to hate.

495. If it is an extraordinary blindness to live without investigating what we are, it is a terrible one to live an evil life, while believing in God.

496. Experience makes us see an enormous difference between piety and goodness.

497. Against those who, trusting to the mercy of God, live heedlessly, without doing good works.--As the two sources of our sins are pride and sloth, God has revealed to us two of His attributes to cure them, mercy and justice. The property of justice is to humble pride, however holy may be our works, et non intres injudicium, etc.; and the property of mercy is to combat sloth by exhorting to good works, according to that passage: "The goodness of God leadeth to repentance, and that other of the Ninevites: "Let us do penance to see if peradventure He will pity us." And thus mercy is so far from authorising slackness that it is on the contrary the quality which formally attacks it; so that instead of saying, "If there were no mercy in God we should have to make every kind of effort after virtue," we must say, on the contrary, that it is because there is mercy in God that we must make every kind of effort.

498. It is true there is difficulty in entering into godliness. But this difficulty does not arise from the religion which begins in us, but from the irreligion which is still there. If our senses were not opposed to penitence, and if our corruption were not opposed to the purity of God, there would be nothing in this painful to us. We suffer only in proportion

1430. Re: So you want to build your very own HDTV antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 19:26:05 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnaoo8$gv5$1@news.albasani.net>
Source record: 28949

ltdoc@yahoo.com wrote:
> ...wonder if it makes any difference what color the coat hangers are?
> - 'Doc

LOL!

Now you have the "spirit!"

Warm regards,
JS

1431. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 19:36:02 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnapbd$2du$1@news.service.uci.edu>
Source record: 28851

Cecil Moore wrote:
> Mike Coslo wrote:
>
>> Cecil Moore <nospam@w5dxp.com> wrote:
>>
>>> Light does travel at a slower speed against the aether
>>> but relativity changes the length of a second when going
>>> against the aether so it is undetectable.
>>
>>
>> How does a second go against the aether?
>
>
> Did I dangle a participle?
>
> "Light does travel at a slower speed against the
> aether but relativity changes the length of a second
> when the light goes against the aether, so it is
> undetectable."

I think what he means is, how does the second know which way the
aether is pointing and why does it care?

ac6xg

1432. Re: Broke down and bought one ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 19:37:16 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnapd7$gv5$2@news.albasani.net>
Source record: 28850
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Steve H wrote:

>> ...
> As a short term investment in a radio it may not be bad value but in
> this fast changing market that has not yet had any of the big 4 players
> make a move the resale value in 5 years may be rather lower than you
> would expect for a conventional radio - think of the value of a 2002
> computer with a then state of the art sound card.
>
>
> Steve H (Luddite)

Steve:

You know I can hardly wait to lay hands on the darn thing; and, you know it will live with me for a day and, THEN, I will have the case off it.

You did see the sentence which acknowledges it has an ITX board in it (a miniature motherboard!) In effect, I am just buying a computer which knows how to be a radio ...

I tell you, I think it is enough. I do believe I will be happy with it. It is NOT like buying gold, I know it has a life expectancy and one day that will be $0.01 USD.

Still, I will be happy for a bit ... as I said, you mileage may vary. I walked into this deal with my eyes wide open ...

Warm regards,
JS

1433. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 19:48:56 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnaq33$gv5$3@news.albasani.net>
Source record: 28852

Jim Kelley wrote:

> ...
> I think what he means is, how does the second know which way the aether
> is pointing and why does it care?
>
> ac6xg
>

Just remember, as you are poking fun, Einstein, in a DIRECT statement,
ackowledged that the ether MUST exist for his theories to hold water ...
a truth some would rather ignore--for some reason(s.)

Regards,
JS

1434. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 20:41:09 UTC
From: richardharrison@webtv.net
Message-ID: <6516-4798F7E5-219@storefull-3255.bay.webtv.net>
Source record: 28853

Cecil, W5DXP wrote:
"That`s what I have been telling you guys for years."

OK. I subscribe to World Radio and Cecil`s story isn`t in the February issue but there is an antenna cover story.

When will Cecil`s story be published?

I disagree that W2DU recently was first to coin the expressions, virtual open and virtual short. We were using them in 1950 when I was still in college.

It is rumored that the 3rd edition of "Reflections" will emerge soon. When and where can I order it?

Best regards, Richard Harrison, KB5WZI

5123 Lymbar Dr. Houston, TX 77096-5317

1435. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 21:05:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <6eaek68g42b5uaddgeyk2oib6l8bdbie2o@4ax.com>
Source record: 28859
Cross-posted to: alt.fan.tolkien,alt.religion.christianity,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

that we possess
slipping away.

213. Between us and heaven or hell there is only life, which is the frailest thing in the world.

214. Injustice.--That presumption should be joined to meanness is extreme injustice.

215. To fear death without danger, and not in danger, for one must be a man.

216. Sudden death alone is feared; hence confessors stay with lords.

217. An heir finds the title-deeds of his house. Will he say, "Perhaps they are forged" and neglect to examine them?

218. Dungeon.--I approve of not examining the opinion of Copernicus; but this...! It concerns all our life to know whether the soul be mortal or immortal.

219. It is certain that the mortality or immortality of the soul must make an entire difference to morality. And yet philosophers have constructed their ethics independently of this: they discuss to pass an hour.

Plato, to incline to Christianity.

220. The fallacy of philosophers who have not discussed the immortality of the soul. The fallacy of their dilemma in Montaigne.

221. Atheists ought to say what is perfectly evident; now it is not perfectly evident that the soul is material.

222. Atheists.--What reason have they for saying that we cannot rise from the dead? What is more difficult, to be born or to rise again; that what has never been should be, or that what has been should be again? Is it more difficult to come into existence than to return to it? Habit makes the one appear easy to us; want of habit makes the other impossible. A popular way of thinking!

Why cannot a virgin bear a child? Does a hen not lay eggs without a cock? What distinguishes these outwardly from others? And who has told us that the hen may not form the germ as well as the cock?

223. What have they to say against the resurrection, and against the child-bearing of the Virgin? Which is the more difficult, to produce a man or an animal, or to reproduce it? And

1436. Re: get alife

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 21:14:26 UTC
From: "kb9rqz@amsat.org" <kb9rqz@yahoo.com>
Message-ID: <fnav3n$1q1$1@news.albasani.net>
Source record: 28854
Cross-posted to: rec.radio.cb,rec.radio.swap,rec.radio.amateur.policy,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna

<kb9rqz-1@hotmail.com> wrote in message
news:3243f16a-9767-4490-bce0-db0804b46d13@h11g2000prf.googlegroups.com...
On Jan 22, 8:55 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
wrote:
> On Jan 22, 7:44 pm, Anti-Keyclown <keyklownzrnutj...@yahoo.com> wrote:
>
> > On Jan 22, 5:51 pm, "kb9rq...@hotmail.com" <kb9rq...@hotmail.com>
> > wrote:
>
> > > On Jan 22, 4:43 pm, budap...@hungary.net (ZOLTAN) wrote:> Check out
> > > the dougay adair personal bondage advertisment from
> > > > collarme.com
>
> > > hmm why were you THERE at a BDSM site loking for a man
>
> > he mighta been there looking for a man, but I think they just set up
> > the thing to stir some shit...
>
> you know you are right I knew but needed to soft peddle that
>
>
>
>
>
>
> > Pretty funny actually, considering that the AKC does dominate their
> > puny minds.- Hide quoted text -
>
> - Show quoted text -

1437. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 21:18:57 UTC
From: richardharrison@webtv.net
Message-ID: <6516-479900C1-225@storefull-3255.bay.webtv.net>
Source record: 28855

Roy Lewallen wrote:
"I got to thinking about this a little more, and want to reclaim the
"net" modifier."

Researching my trusty 1955 Terman opus, I find on page 91, Fig. 4-3, "Vector diagrams showing manner in which the incident and reflected waves combined to produce a voltage distribution on the transmission line."

Exactly 1/4-wave back from the open-circuit load, the incident and reflected voltage vectors are out-of-phase resulting in a minimum voltage point on the line. On page 92, Fig. 4-4 shows that the minimum voltage point is also the maximum current point.

The energy does not go away at minima on the line but merely shifts from the electric field to the magnetic field or vice versa.

Best regards, Richard Harrison, KB5WZI

1438. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 21:42:03 UTC
From: Robert Smts <bob@rsmits.ca>
Message-ID: <53950605993c076c12afa653c46d6abe@grapevine.islandnet.com>
Source record: 28856
Cross-posted to: news.admin.net-abuse.usenet,comp.robotics.misc,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

is assured by a proof
of falsehood; our purse is not made secure by proof of injustice.

894. Those who love the Church lament to see the corruption of morals; but laws at least exist. But these corrupt the laws. The model is damaged.

895. Men never do evil so completely and cheerfully as when they do it from religious conviction.

896. It is in vain that the Church has established these words, anathemas, heresies, etc. They are used against her.

897. The servant knoweth not what his lord doeth, for the master tells him only the act and not the intention. And this is why he often obeys slavishly, and defeats the intention. But Jesus Christ has told us the object. And you defeat that object.

898. They cannot have perpetuity, and they seek universality; and therefore they make the whole Church corrupt, that they may be saints.

899. Against those who misuse passages of Scripture, and who pride themselves in finding one which seems to favour their error.--The chapter for Vespers, Passion Sunday, the prayer for the king.

Explanation of these words: "He that is not with me is against me." And of these others: "He that is not against you is for you." A person who says: "I am neither for nor against"; we ought to reply to him...

900. He who will give the meaning of Scripture, and does not take it from Scripture, is an enemy of Scripture. (St. Augustine, Of Christian Doctrine.)

901. Humilibus dat gratiam;223 an ideo non dedit humilitatem?224

Sui eum non receperunt; quotquot autem non receperunt,225 an non erant sui?226

902. "It must indeed be," says Feuillant, "that this is not so certain; for controversy indicates uncertainty (Saint Atha

1439. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 21:43:27 UTC
From: James <jnipperxxx@nospamfdn.com>
Message-ID: <YbrchI8Ie6sIV%KboK0foUEP%e9ooD5b@comcast.com>
Source record: 28858
Cross-posted to: news.admin.net-abuse.usenet,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.jeep,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

than any thing! Then her elder
sister, referring to her saying she could find God now, asked her, where she could find God. She answered, In heaven. Why, said she, have you been in heaven? No, said the child. By this it seems not to have been any imagination of any thing seen with bodily eyes, that she called God, when she said, I can find God now. Her mother asked her, whether she was afraid of going to hell, and if that had made her cry? She answered, Yes, I was; but now I shan't. Her mother asked her, whether she thought that God had given her salvation: she answered, Yes. Her mother asked her. When? She answered, Today. She appeared all that afternoon exceeding cheerful and joyful. One of the neighbors asked her, how she felt herself. She answered, I feel better than I did. The neighbor asked her, what made her feel better. She answered, God makes me. That evening, as she lay a-bed, she called one of her little cousins to her, who was present in the room, as having something to say to him; and when he came, she told him, that heaven was better than earth. The next day,

1440. Antenna tester.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 22:26:57 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnb3bc$cs7$1@news.albasani.net>
Source record: 28860

http://news.thomasnet.com/fullstory/810473

JS

1441. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 22:30:47 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnb3j3$62s$1@news.service.uci.edu>
Source record: 28862

Cecil Moore wrote:

> AI4QJ wrote:
>
>> "Cecil Moore" <nospam@w5dxp.com> wrote:
>>
>>> http://www.teachspin.com/instruments/moderni/experiments.shtml
>>
>>
>> Ah, great reference. That explains it.
>
>
> The following s-parameter equation explains what happens
> looking into a Z0-match at a point on a transmission line.
> For instance:
>
> source--50 ohm coax--+--1/2WL 300 ohm feedline--50 ohm load
> |
> forward a1------------->|
> |---->s21(a1)
> s11(a1)<----| \
> / | \
> / (+)---->b2 forward
> reflected b1<----(+) /
> \ | /
> \ |---->s22(a2)
> s12(a2)<----|
> |<-------------a2 reflected
> |
>
> b1 = s11*a1 + s12*a2 = 0
>
> b1 is the reflected voltage back toward the source
>
> s11*a1 is the forward voltage from the source reflected
> back toward the source at the impedance discontinuity.
>
> s12*a2 is the reflected voltage from the load that is
> transmitted through the impedance discontinuity.
>
> s11*a1 and s12*a2 are equal in magnitude and opposite
> in phase so they cancel in a process which Eugene Hecht
> labels *total destructive interference*.
>

> That requires the same magnitude of constructive
> interference toward the load and it is contained in
> b2 = s21*a1 + s22*a2 = maximum
>
> s21*a1 and s22*a2 are in phase resulting in the maximum
> possible constructive interference toward the load.

Hi Cecil -

I went ahead and corrected your drawing. At least that's what I think you meant for it to show.

> That's what happens to the energy that existed in the
> canceled reflected waves before they were canceled.

Does "before" mean before steady state? Because according to the s parameter equation you provide, as long as they are equal and opposite, s11*a1 and s12*a2 are always cancelled.

ac6xg

1442. Re: OFF TOPIC, but IMPORTANT REMINDER ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 22:33:56 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnb3of$cs7$2@news.albasani.net>
Source record: 28861

John Smith wrote:

> ...
> https://dtv2009.gov/
>
> Regards,
> JS

http://www.pressofatlanticcity.com/news/local/ocean/story/7530500p-7432381c.html

JS

1443. Re: VLA news ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 23:04:40 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnb5i3$i1c$1@news.albasani.net>
Source record: 28863

John Smith wrote:
> http://www.dchieftain.com/news/77320-01-23-08.html
>
> http://www.aoc.nrao.edu/
>
> JS

http://www.govtech.com/gt/255226?topic=117673

1444. Re: VLA news ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 23:05:22 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnb5jd$i1c$2@news.albasani.net>
Source record: 28864

John Smith wrote:
> http://www.dchieftain.com/news/77320-01-23-08.html
>
> http://www.aoc.nrao.edu/
>
> JS

http://www.melodika.net/index.php?option=com_content&task=view&id=1503&Itemid=50

1445. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 23:16:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <m07ip39ffcpscgtuiu71a333kkciomqjfd@4ax.com>
Source record: 28865

On Thu, 24 Jan 2008 11:36:02 -0800, Jim Kelley <jwkelley@uci.edu>
wrote:
>Cecil Moore wrote:
>> Did I dangle a participle?
>how does the second know which way the
>aether is pointing and why does it care?

Is this the wave vs. participle duality?

73's
Richard Clark, KB7QHC

1446. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-24 23:59:10 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <iD9mj.383$xq2.276@newssvr21.news.prodigy.net>
Source record: 28866

Richard Clark wrote:
> On Thu, 24 Jan 2008 11:36:02 -0800, Jim Kelley <jwkelley@uci.edu>
> wrote:
>> Cecil Moore wrote:
>>> Did I dangle a participle?
>> how does the second know which way the
>> aether is pointing and why does it care?
>
> Is this the wave vs. participle duality?
>
> 73's
> Richard Clark, KB7QHC

Moan!!!
73,
Tom Donaly, KA6RUH

1447. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 00:01:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <VF9mj.1139$hI1.796@nlpi061.nbdc.sbc.com>
Source record: 28867

Gene Fuller wrote:
> 2. As for the wave cancellation part, you have many times noted that
> stuff happens at interfaces or discontinuities. So why is it that you
> never ever consider what is happening inside those interfaces and
> discontinuities? Do you suppose the waves simply cancel, reflect, or
> whatever without assistance from the materials in the interface or
> discontinuity? Do you suppose that any energy or momentum considerations
> may need to include the materials?

That's one of the points I have been trying to make. The impedance
discontinuities perform the same function as half-silvered mirrors,
for instance, in interferometers. The impedance discontinuity is a
primitive interferometer.

> On the other
> hand there is no possibility of figuring out how the waves actually
> "cancel" or what happens to the energy and momentum without considering
> the actual physical configuration.

The point is that optical physicists already had it figured
out before any of us were born. The problem is that RF gurus
tend to reject any technical facts from the field of optics.

You, for instance, called me every name in the book while
arguing loud and long against any of those concepts from
the field of optical physics. Now you admit that some of
them are valid but completely unimportant. That is, at least,
an improvement.
--
73, Cecil http://www.w5dxp.com

1448. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 00:08:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <EL9mj.326$J41.6@newssvr14.news.prodigy.net>
Source record: 28868

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> b1 = s11*a1 + s12*a2 = 0
>> It happens all the time.
>
> Next time it does be sure to capture a scope trace of them and post it
> to your web site.

It happens too fast to capture on a scope but if it doesn't
happen, the s-parameter analysis is just BS. Is that really
the argument for which you want to be remembered?

By the process of elimination, we know the above interaction
actually happens in reality. If, as you say, it doesn't happen,
the conservation of energy principle is violated.

I see you have, so far, refused to perform the simple calculation
that would prove what I have been saying to be correct. I don't
blame you for refusing.
--
73, Cecil http://www.w5dxp.com

1449. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 00:15:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <mS9mj.328$J41.20@newssvr14.news.prodigy.net>
Source record: 28869

Jim Kelley wrote:
> I guess you didn't notice the thing about the square of the sum of two
> numbers being four times as great as the square of one of the numbers.
> It simply means, for example, that a doubling in voltage is a
> quadrupling in power. It doesn't mean there's "extra" energy anywhere.

On the contrary, constructive interference cannot happen
without that "extra" energy sucked up from destructive
interference (or from a local source). That's what you
are completely missing. Constructive interference between
two waves requires more energy than exists in those two
component waves. In the absence of a local source, another
two waves *must* be engaging in destructive interference
at the same time in order to supply the constructive
interference.

> Conservation of energy doesn't allow for there to *be* extra energy in
> the first place!

Therefore, those bright rings are just an illusion and
don't contain more than the average energy in the two
superposed waves. I guess that's your story and you
are sticking to it.
--
73, Cecil http://www.w5dxp.com

1450. Re: Universal laws of the sciences

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 00:20:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hX9mj.329$J41.246@newssvr14.news.prodigy.net>
Source record: 28870

Jim Kelley wrote:
> I think what he means is, how does the second know which way the aether
> is pointing and why does it care?

http://en.wikipedia.org/wiki/Lorentz_transformations
--
73, Cecil http://www.w5dxp.com

1451. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 00:27:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <12amj.1141$hl1.213@nlpi061.nbdc.sbc.com>
Source record: 28871

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "That`s what I have been telling you guys for years."
>
> OK. I subscribe to World Radio and Cecil`s story isn`t in the February
> issue but there is an antenna cover story.

Were you a subscriber to Worldradio in Oct 2005?

> When will Cecil`s story be published?

First published in WorldRadio, Oct 2005 - Jan 2006, and reproduced
here with permission.

http://www.w5dxp.com/energy.htm

> It is rumored that the 3rd edition of "Reflections" will emerge soon.
> When and where can I order it?

Last I heard, Worldradio was publishing Reflections III.
Don't know when.
--
73, Cecil http://www.w5dxp.com

1452. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 00:46:30 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnbbhj$8r1$1@news.service.uci.edu>
Source record: 28872

Cecil Moore wrote:

> It happens too fast to capture on a scope but if it doesn't
> happen, the s-parameter analysis is just BS.

I guess by now it won't come as a surprise to anyone that you believe something like that. What's surprising is that you expect someone else to. The truth is, the s-parameter analysis just says that the waves cancel. You made up the rest.

> By the process of elimination, we know the above interaction
> actually happens in reality. If, as you say, it doesn't happen,
> the conservation of energy principle is violated.

So in other words if you're wrong, then what you're saying violates conservation of energy.

ac6xg

1453. Re: wire size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 00:57:37 UTC
From: art <aunwin@insightbb.com>
Message-ID: <21d08014-49e4-45a3-8dd5-4bf544ed7dfa@v67g2000hse.googlegroups.com>
Source record: 28873

On 23 Jan, 19:40, art <aun...@insightbb.com> wrote:
> On 23 Jan, 16:31, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
>
>
>
>
> > Tim Shoppa wrote:
> > > On Jan 22, 3:51 pm, art <aun...@insightbb.com> wrote:
>
> > >>I have a home brew dipole antenna made from #22 copper What is ther
> > >>maximum power
> > >>that it can handle. Support is not a problem. I want to test it for
> > >>max power using a 8877 which will blow if the wire
> > >>opens, and they are costly. Ofcourse I would like a bit of safety in
> > >>hand. Does minimum wire size vary much dependent on band useage? I
> > >>have no idea what manufactures use for commercial style antennas!
>
> > > Wow!
>
> > > An 8877 could develop 1.5 to 2kW output power (if done in a part of a
> > > world where it's legal for a ham to use that much power.)
>
> > > 2kW into a 50 ohm load is a current of 6 or 7 amps, assuming it's a
> > > perfect match/no standing waves.
>
> > > The fusing current of 22AWG copper wire is about 40 Amps. So if
> > > everything is working and matched, it won't melt.
>
> > That's the DC fusing current....
>
> > As an earlier poster mentioned, skin effect means that the current is
> > being carried in a thin layer on the surface, so the heating might be
> > more. Of course, the hot layer is also closer to the air.
>
> > > The higher you go in frequency, the more you'll have to derate the
> > > above, but for low HF it'll be not too bad.
>
> > > But geeze.... you've got a multi-kilowatt amp and can't afford
> > > anything better than 22AWG wire???
>
> > > Traditional rule-of-thumb for ham wire antennas would say that if
> > > you're pumping more than a kilowatt in, you want at least 12 gauge or
> > > 14 gauge wire. There's also the N.E.C. specs, which say that copper

> > > antenna wires have to be thicker than 14 gauge up to 150' spans, and
> > > thicker than 10 gauge over 150' spans.
>
> > The NEC rules are for mechanical strength, not current carrying capacity.
>
> > One might also wonder about corona discharge at the ends of the dipole...
>
> > > Tim N3QE- Hide quoted text -
>
> > - Show quoted text -- Hide quoted text -
>
> > - Show quoted text -
>
> Actually it is a full wave length helix winding for 160M. The teflon
> coated wire was what I had on hand.I will only be using 100 watts or
> so but you never know when the urge comes up. I have a motor driven
> reflector on it so I will be checking out the directivity at different
> close spacings.When I finally settle on a design the wire will be
> thicker magnet wire.
> Thanks for all the info. As for heat it is mighty cold here so short
> transmissions should work out o.k.
> Regards
> Art- Hide quoted text -
>
> - Show quoted text -

It has been very cold these last few days working on antennas. Just
finished putting up anew
160M antenna but have not checked it yet as I am so tired.It is like a
TV antenna at 70 feet.
Have a reflector on it made of aluminum mesh plus a motor to place the
reflector within six inches of the driven element to about 30 inches
from the driven element.Now have to wire up the rotor and the
reflector motor and then chart the LC for all bands.HopefullyI will be
close first time for the top band.Next antenna to brew will be around
1 cuft for 160M probably out of #20 wire this time but I do need a
rest from antennas!
Regards
Art Unwin KB9MZ.....XG(uk)

1454. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 01:09:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <sFamj.7306$EZ3.2595@nlpi070.nbdc.sbc.com>
Source record: 28874

Jim Kelley wrote:
> I went ahead and corrected your drawing. At least that's what I think
> you meant for it to show.

Thanks, I must have been drunk or asleep or both when
I drew it.

>> That's what happens to the energy that existed in the
>> canceled reflected waves before they were canceled.
>
> Does "before" mean before steady state? Because according to the s
> parameter equation you provide, as long as they are equal and opposite,
> s11*a1 and s12*a2 are always cancelled.

No, "before" does not mean before steady state.
a1 is the *continuous steady-state forward voltage*.
s11 is the reflection coefficient seen by a1.
s11*a1 is the reflection that is being *continuously*
generated during steady-state. It is canceled immediately
after it is generated. It is impossible for it to be
canceled if, as you say, it never existed in the first
place. You continue to confuse cause and effect. Wave
cancellation is an effect. It cannot happen before its
own cause. Your concepts require a time machine.

From cause to effect in time sequence:
Given: a1 and a2 exist as continuous plane waves
all during steady-state.

Step 1. s11 causes s11*a1 and s12 causes s12*a2.
This step occurs at t(n). Step 2 then occurs at
t(n)+dt. As is usual in differential calculus,
the difference between t(n) and t(n)+dt cannot
be measured with instruments.

Step 2. wave cancellation immediately causes their
sum to go to zero in the original direction of travel.
Their combined component energies are redirected
in the other direction as constructive interference.

We know the two waves are canceled. There can be no
wave cancellation if the waves never existed. Therefore,
the waves *must* exist all during steady-state.

I'm sorry, but that is the way the time-honored wave
reflection model works. In optical physics, it is
the time-averaged value of the square of those terms

that is used. Time averaging signals that you say
never existed in the first place will, no doubt, drive
you up the wall. You either accept the time-honored,
time-proven math model or you don't.
--
73, Cecil http://www.w5dxp.com

1455. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 01:22:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <sRamj.579$R84.282@newssvr25.news.prodigy.net>
Source record: 28875

Jim Kelley wrote:
> The truth is, the s-parameter analysis just says that the waves
> cancel.

And you say the waves didn't cancel - that they don't
even exist during steady-state. Take your pick about
who is correct. If two waves cancel, as the s-parameter
analysis says they do, it implies that they must first
exist even if for only a dt of time.

HP never considered anyone dense enough to require an
assertion about the very existence of the s-parameter
equation components.

> So in other words if you're wrong, then what you're saying violates
> conservation of energy.

Exactly, and since the conservation of energy principle
cannot be violated, I must be right. :-)
--
73, Cecil http://www.w5dxp.com

1456. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 02:37:21 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnbi1f$b5d$1@news.service.uci.edu>
Source record: 28876

The idiot savant Cecil Moore wrote:

> Therefore, those bright rings are just an illusion and
> don't contain more than the average energy in the two
> superposed waves.

You couldn't be more wrong in your interpretation.

Perhaps you will understand it this way: the bright rings have an intensity which is equal in energy to the sum of the energy in the two superposed waves. Energy doesn't have to come from anywhere else to balance the equation.

The error you're making is the assumption that since the intensities don't add up, something has to come from somewhere else. But that's a wrong assumption to make. One shouldn't expect intensity to add like that. Obviously it doesn't add like that. The fields are what add and subtract, not intensity (or power). Power is the time derivative of energy - that's the reason a squared term comes in. But power and intensity don't propagate, therefore they don't superpose, and shouldn't be added algebraically. Fields, voltage, current, energy - it makes sense to sum those things algebraically.

When you double something and then square the sum, you get a factor of four. But you're still only doubling the 'thing' of interest. Depositing two paychecks and squaring the sum doesn't make your bank balance go up by a factor of four. But it is certainly true that you would have to borrow money from someone to make that happens. The point is that it's not a realistic expectation.

I assume you know that the meter face on your Bird wattmeter is calibrated exponentially. So, when your Bird power meter reading goes up by a factor of four, what do you think the voltage across its meter movement has actually increased by? The thing is, the Bird company understands that when power reading quadruples, the circuit voltage has only doubled. You'll note they don't claim that since the reading quadrupled instead of doubling, the "extra" power had to come from somewhere else.

If you can't understand this, that's fine. But it's not an excuse to get so bloody belligerent with people about it.

ac6xg

1457. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 03:18:26 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <jycmj.5347$Rg1.4745@nlpi068.nbdc.sbc.com>
Source record: 28877

Jim Kelley wrote:
> The idiot savant Cecil Moore wrote:
>
>> Therefore, those bright rings are just an illusion and
>> don't contain more than the average energy in the two
>> superposed waves.
>
> You couldn't be more wrong in your interpretation.
>
> Perhaps you will understand it this way: the bright rings have an
> intensity which is equal in energy to the sum of the energy in the two
> superposed waves. Energy doesn't have to come from anywhere else to
> balance the equation.
>
> The error you're making is the assumption that since the intensities
> don't add up, something has to come from somewhere else. But that's a
> wrong assumption to make. One shouldn't expect intensity to add like
> that. Obviously it doesn't add like that. The fields are what add and
> subtract, not intensity (or power). Power is the time derivative of
> energy - that's the reason a squared term comes in. But power and
> intensity don't propagate, therefore they don't superpose, and shouldn't
> be added algebraically. Fields, voltage, current, energy - it makes
> sense to sum those things algebraically.
>
> When you double something and then square the sum, you get a factor of
> four. But you're still only doubling the 'thing' of interest.
> Depositing two paychecks and squaring the sum doesn't make your bank
> balance go up by a factor of four. But it is certainly true that you
> would have to borrow money from someone to make that happens. The point
> is that it's not a realistic expectation.
>
> I assume you know that the meter face on your Bird wattmeter is
> calibrated exponentially. So, when your Bird power meter reading goes
> up by a factor of four, what do you think the voltage across its meter
> movement has actually increased by? The thing is, the Bird company
> understands that when power reading quadruples, the circuit voltage has
> only doubled. You'll note they don't claim that since the reading
> quadrupled instead of doubling, the "extra" power had to come from
> somewhere else.
>
> If you can't understand this, that's fine. But it's not an excuse to
> get so bloody belligerent with people about it.
>
> ac6xg

>

What! You mean you don't believe in the law of the conservation of power? Cecil does. Don't tell anyone, but I think he may believe in the law of the conservation of speed, too.
73,
Tom Donaly, KA6RUH

1458. Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 03:33:35 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <Noednf69voETxQTanZ2dnUVZ_uOmnZ2d@neonova.net>
Source record: 28878

It is not too hard to use the concept of traveling waves and reflections to derive the familiar reflection coefficient to SWR relationship. SWR is a measurable and useful relationship that most hams are familiar with. A clear path between SWR and traveling waves should make the concepts more understandable and believable.

Power placed on a transmission line is placed over time. No matter how small the time span interval we might want to examine, the span will always be wide enough to include some quantity of power or energy. If we desire, we can eliminate the time consideration and just consider energy, but there is no need to do that. In this derivation, the distinction between power and energy will be ignored.

We will assume that neither power nor energy can be stored at the discontinuity in amounts greater than the natural storage capacity of the lines. This assumption fixes the impedance of any waves to the impedance of the transmission lines.

Begin the derivation by assuming that power is applied to a transmission line with impedance Zo. A traveling wave moves down the transmission line to a discontinuity which is composed of a second transmission line or resistor with impedance Zl. The junction between the two lines is like a window or thin plane, with Zo on one side and Zl on the other.

Upon encountering the discontinuity, the lead edge of the wave (and all following energy levels) follow a "conservation of energy" rule that requires energy to be preserved at all times. In other words, the energy that has been conveyed to the junction by some interval of applied power is not lost to heat, radiation, or storage, but will leave the junction as fast as it arrives, and can be located, maintaining time shape.

The following equation will be valid,

Pf = Pl + Pr

where Pf = power forward, Pl = power to load, and Pr = power reflected.

Use the voltage equivalent,

(Vf^2)/Zo = (Vl^2)/Zl + (Vr^2)/Zo

where Vf = forward voltage, Vl = load voltage, and Vr = reflected voltage. The reflected wave will travel back down the main line with impedance Zo.

Simplify the equation by rearranging and substitute SWR = Zl/Zo

(Vf^2)/Zo - (Vr^2)/Zo = (Vl^2)/Zl

SWR(Vf^2 - Vr^2) = (Vl^2)

Change the Vl into terms of Vf and Vr. Vl = Vf + Vr. We can do this because at a reflection, traveling waves double back over one another, adding voltage. Substitute Vl = Vf + Vr

SWR(Vf^2 - Vr^2) = (Vf + Vr)^2

Factor the polynomial on the left above

SWR(Vf - Vr)(Vf + Vr) = (Vf + Vr)^2

Divide both sides by (Vf + Vr)

SWR(Vf - Vr) = Vf + Vr

Divide both sides by Vf

SWR(1 - Vr/Vf) = 1 + Vr/vf

Vr/Vf = Reflection coefficient Ro, substitute

SWR(1 - Ro) = 1 + Ro

Rearrange to put Ro on one side

Ro + Ro*SWR = SWR - 1

Factor out Ro and rearrange

Ro = (SWR - 1)/(SWR + 1)

We have found the familiar relationship for the Reflection Coefficient (Ro) and SWR using traveling wave logic.

Using identical logic but using current instead of voltage, the same relationship can be found from

Zo*If^2 = Zl*Il^2 + Zr*Ir^2

By examining this derivation, the reader can see that power and energy is reflected when a wave encounters a discontinuity. The reader can also see that more power is present on the transmission line than is delivered to the load.

Here is a link to additional information about transmission lines:

http://www.astrosurf.com/luxorion/qsl-transmission-line2.htm

73, Roger, W7WKB

1459. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 03:44:02 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnbluhcjt1@news.service.uci.edu>
Source record: 28879

Cecil Moore wrote:
> Thanks, I must have been drunk or asleep or both when
> I drew it.

No comment.

> From cause to effect in time sequence:
> Given: a1 and a2 exist as continuous plane waves
> all during steady-state.
>
> Step 1. s11 causes s11*a1 and s12 causes s12*a2.
> This step occurs at t(n). Step 2 then occurs at
> t(n)+dt. As is usual in differential calculus,
> the difference between t(n) and t(n)+dt cannot
> be measured with instruments.

No. Any field generated by s11*a1 would at any time negate a field
generated by s12*a2, and vice versa.

> Step 2. wave cancellation immediately causes their
> sum to go to zero in the original direction of travel.

Not only that, wave cancellation immediately cancels any
electromagnetic fields that might be attributable to either wave.

> Their combined component energies are redirected
> in the other direction as constructive interference.

Allegorically speaking.

> We know the two waves are canceled. There can be no
> wave cancellation if the waves never existed.

Correction. There can be no waves if there is field cancellation.
The conditions that cause cancellation of fields would thereby prevent
the propagation of waves.

> Therefore,
> the waves *must* exist all during steady-state.

That's very poor logic. You should know better.

> I'm sorry, but that is the way the time-honored wave
> reflection model works.

I have nothing against the reflection model, only against those who
would use it in anger. :-)

> In optical physics, it is
> the time-averaged value of the square of those terms
> that is used.

The difference that I observe is that physicists understand what they
mean.

ac6xg

1460. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 03:52:56 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnbmf7cqj1@news.service.uci.edu>
Source record: 28880

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> The truth is, the s-parameter analysis just says that the waves cancel.
>
>
> And you say the waves didn't cancel

I certainly didn't intend to.

>> So in other words if you're wrong, then what you're saying violates
>> conservation of energy.
>
>
> Exactly, and since the conservation of energy principle
> cannot be violated, I must be right. :-)

You and Hillary. :-)

ac6xg

1461. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 04:13:56 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <8mdmj.487690$kj1.68218@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28881

Cecil Moore wrote:
> Gene Fuller wrote:
>> 2. As for the wave cancellation part, you have many times noted that
>> stuff happens at interfaces or discontinuities. So why is it that you
>> never ever consider what is happening inside those interfaces and
>> discontinuities? Do you suppose the waves simply cancel, reflect, or
>> whatever without assistance from the materials in the interface or
>> discontinuity? Do you suppose that any energy or momentum
>> considerations may need to include the materials?
>
> That's one of the points I have been trying to make. The impedance
> discontinuities perform the same function as half-silvered mirrors,
> for instance, in interferometers. The impedance discontinuity is a
> primitive interferometer.

You are supporting my point exactly. There is little mystery about what happens *outside* the discontinuity. At the same time, saying something functions in the manner as half-silvered mirrors adds nothing to the technical discussion. You continue to argue mechanisms, in the style of "It [reflection] is canceled immediately *after* it is generated." Yet there is no discussion or even recognition of the physical processes that are going on. This leads to endless arguments that are little more than counting angels dancing on pinheads.

>
>> On the other hand there is no possibility of figuring out how the
>> waves actually "cancel" or what happens to the energy and momentum
>> without considering the actual physical configuration.
>
> The point is that optical physicists already had it figured
> out before any of us were born. The problem is that RF gurus
> tend to reject any technical facts from the field of optics.
>
> You, for instance, called me every name in the book while
> arguing loud and long against any of those concepts from
> the field of optical physics. Now you admit that some of
> them are valid but completely unimportant. That is, at least,
> an improvement.

I think you must be confusing me with someone else. I just went back to look at the messages I sent over the past three months. I could not find a single case where I called you any name at all, much less every name in the book. Do you consider it name calling if I disagree with you? That would explain a lot, including all of the names you have called me.

I have been a physicist working in the optics field for several decades. I have no particular difficultly with any of the concepts. What I do have difficultly understanding is someone who extrapolates valid concepts beyond their realm of applicability. The irradiance equations work fine for detailing the external effects, but they don't give any hint of what happens inside the interface. Think Thevenin.

73,
Gene
W4SZ

1462. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 04:26:26 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <479964f4$0$31792$4c368faf@roadrunner.com>
Source record: 28882

"Jim Kelley" <jwkelley@uci.edu> wrote in message
news:fnbluhcjt1@news.service.uci.edu...

>> We know the two waves are canceled. There can be no
>> wave cancellation if the waves never existed.
>
> Correction. There can be no waves if there is field cancellation. The
> conditions that cause cancellation of fields would thereby prevent the
> propagation of waves.

I have read in the literature that, although multiple particles, (photons or mass) cannot exist at the same time and place simultaneously, waves can and do exist in the same time and place simultaneously. If the waves that add (superpose to double amplitude) coexist at the same time and place, so do the waves that subtract (superpose to zero amplitude). These waves all can also coexist and superimpose with other waves of unrelated origin in the same place, with different frequencies and so on. Thus, you cannot assert that, just because there is an absence of energy, the waves never were permitted to coexist. You can only say they coexist at the same time and place but superpose to zero. This is offset by the waves whose amplitudes superpose to double amplitude at a different place at the same time. The energy in the waves that added in a defined volume were calculated by squaring the doubled amplitudes (energy X 4). The energy in the waves that superimposed in a defined volume were calculated by squaring zero (energy X 0) with a time average in the defined volume of (energy X 2) where we see that energy is conserved in the system by summing the energies of the 2 original waves.

>> Therefore,
>> the waves *must* exist all during steady-state.
>
> That's very poor logic. You should know better.

No, it is true, The wave model works exactly like that.
If you go to the particle model, you must deal with a much more complicated quantum mathematical model (Schrodinger wave equations) that looks at probabilities of particles existing at certain places and times but the result will be the same, energy will be conserved, within the allowable uncertainty factor.

AI4QJ

1463. Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 04:37:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8kpip39qjpf349psqnasqjqpk298ae9jm3@4ax.com>
Source record: 28883

On Fri, 25 Jan 2008 04:13:56 GMT, Gene Fuller <W4SZzzzzzz@att.net>
wrote:

>The irradiance equations
>work fine for detailing the external effects, but they don't give any
>hint of what happens inside the interface. Think Thevenin.

Hi Gene,

Cecil isn't going to rise far enough to catch a breath of air on this
one. You may as well drop the shoe for lurkers (and me).

I don't see the connection to Thevenin (specifically); but, for me,
inside the interface we can draw the correlation of TIR failure (the
chapter that Cecil hasn't drug across the Xerox yet) to evanescent
waves to near fields to how antennas work.

73's
Richard Clark, KB7QHC

1464. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 04:54:40 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A30A1C37AFA4nonenowhere@61.9.191.5>
Source record: 28884

Roger Sparks <rsparks@elltel.net> wrote in
news:Noednf69voETxQTanZ2dnUVZ_uOmnZ2d@neonova.net:

> ... The reader can
> also see that more power is present on the transmission line than is
> delivered to the load.

The notion that "power is present" is a different one.

Owen

1465. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 04:58:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <w%dmj.452$0o7.346@newssvr13.news.prodigy.net>
Source record: 28885

Jim Kelley wrote:
> Perhaps you will understand it this way: the bright rings have an
> intensity which is equal in energy to the sum of the energy in the two
> superposed waves. Energy doesn't have to come from anywhere else to
> balance the equation.

That just shows that you still don't understand the
interference process. The bright rings have an intensity
which is equal in energy to *double* the sum of the energy
in the two superposed waves. If P1 = P2, the total energy
in the bright rings is P1+P2+2*SQRT(P1*P2) = 2*(P1+P2).

That "extra" constructive interference energy has to come
from somewhere and it comes from the dark areas where
destructive interference occurs. In the dark areas,
P1+P2-2*SQRT(P1*P2) = 0. Taking the average of those two
equations yields (P1+P2) which is the sum of the energy
in the two superposed waves. That's only half as bright
as the bright rings.

The constructive interference energy has to exactly equal
the destructive interference energy or else the conservation
of energy principle is violated and, sure enough, they do
equal each other.
--
73, Cecil http://www.w5dxp.com

1466. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 05:00:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <D1emj.453$0o7.214@newssvr13.news.prodigy.net>
Source record: 28886

Tom Donaly wrote:
> What! You mean you don't believe in the law of the conservation of
> power? Cecil does.

You know that is a lie, Tom. I believe in the conservation of
energy and momentum. I do not believe in any conservation of
power and speed.
--
73, Cecil http://www.w5dxp.com

1467. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 05:07:17 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pirk5h1cpt4f5@corp.supernews.com>
Source record: 28887

Owen Duffy wrote:
> Roger Sparks <rsparks@elltel.net> wrote in
> news:Noednf69voETxQTanZ2dnUVZ_uOmnZ2d@neonova.net:
>
>> ... The reader can
>> also see that more power is present on the transmission line than is
>> delivered to the load.
>
> The notion that "power is present" is a different one.
>
> Owen

It's reasonable, though. Looking at demo 4 with the TLVis1 program, you can see that there's power all along the line except at specific nodal points (where I or V is always zero), yet there's no power at all being delivered to the load.

Roy Lewallen, W7EL

1468. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 05:13:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <peemj.457$0o7.18@newssvr13.news.prodigy.net>
Source record: 28888

Jim Kelley wrote:
> Any field generated by s11*a1 would at any time negate a field
> generated by s12*a2, and vice versa.

The fields (waves) contain energy which must be conserved
and momentum toward the source which must be conserved.
Since that energy doesn't flow toward the source,
it is redistributed in the only other direction
possible, i.e. toward the load. We hams call that
reversal of momentum a reflection. If you perform the
analysis using phasor voltages, the destructive
interference on the source side accompanied by an
equal amount of constructive interference on the
load side is obvious.

It is akin to destructive interference at the standard
output causing constructive interference at the non-
standard output in the previously posted example.

http://www.teachspin.com/instruments/moderni/experiments.shtml

What is it about the equality between destructive
interference and constructive interference that you
don't understand?
--
73, Cecil http://www.w5dxp.com

1469. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 05:17:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Vhemj.1907$so6.1718@newssvr19.news.prodigy.net>
Source record: 28889

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> And you say the waves didn't cancel
>
> I certainly didn't intend to.

You said the waves don't exist during steady-state.
Waves that don't exist are incapable of canceling.
Therefore, you said the waves don't cancel. This
is just one example of your confusing cause and
effect and tying your argument into a Gordian knot.
--
73, Cecil http://www.w5dxp.com

1470. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 05:32:33 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A30A82F939F2nonenowhere@61.9.191.5>
Source record: 28890

Roy Lewallen <w7el@eznec.com> wrote in news:13pirk5h1cpt4f5
@corp.supernews.com:

> Owen Duffy wrote:
>> Roger Sparks <rsparks@elltel.net> wrote in
>> news:Noednf69voETxQTanZ2dnUVZ_uOmnZ2d@neonova.net:
>>
>>> ... The reader can
>>> also see that more power is present on the transmission line than is
>>> delivered to the load.
>>
>> The notion that "power is present" is a different one.
>>
>> Owen
>
> It's reasonable, though. Looking at demo 4 with the TLVis1 program, you
> can see that there's power all along the line except at specific nodal
> points (where I or V is always zero), yet there's no power at all being
> delivered to the load.

Roy, my though was that on anything but a lossless line with VSWR=1,
instantaneous power (being the rate of flow of energy) varies with time
and location, so to make the statement that "power is present" and to
quantitatively compare it with the power at a point (being the end of the
line where the load is attached) seems to not be so reasonable.

If the statement is about average power in both cases, then it is
reasonable, obvious even, that power decreases with distance from the
source.

Perhaps "power is present" is an avoidance of the somewhat tautological
form "power flows to the load".

Owen

1471. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 05:54:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <SQemj.344$J41.240@newssvr14.news.prodigy.net>
Source record: 28891

Gene Fuller wrote:
> You are supporting my point exactly.

Gene, you have been arguing for two years that I am
wrong and now you claim my argument was your idea all
along. How very typical.

> There is little mystery about what
> happens *outside* the discontinuity.

There is no "inside" to an impedance discontinuity.
The plane is two dimensional. Everything that happens
at an impedance discontinuity is "outside" of that
plane. There is no place to hide the technical facts.

> I think you must be confusing me with someone else. I just went back to
> look at the messages I sent over the past three months. I could not find
> a single case where I called you any name at all, much less every name
> in the book.

Here are some of your strictly technical terms for
me from just the past couple of weeks:

"Fractured Fairytale Physics"
"complete nonsense"
"truly sad"
"hoodwinked by the nonsense"
"trying to pull a fast one"
"such magic"
"no technical value"
"truly bizarre"
"utter nonsense"
"utter lie"
"baloney"
"sadly amusing"
"your tricks"

> The irradiance equations
> work fine for detailing the external effects, but they don't give any
> hint of what happens inside the interface.

There is no "inside" to a plane. There is no black box
into which you can sweep the technical facts.
--
73, Cecil http://www.w5dxp.com

1472. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 06:02:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vXemj.346$J41.256@newssvr14.news.prodigy.net>
Source record: 28892

AI4QJ wrote:
> No, it is true, The wave model works exactly like that.

Yes it does. There is nowhere in the wave reflection
model that allows canceled waves never to have existed.
In none of my references does there exist an example
of destructive interference without the illustrated
component waves. I have never seen a blank page with
the title of "Destructive Interference" at the top. :-)
--
73, Cecil http://www.w5dxp.com

1473. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 06:04:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <EZemj.347$J41.322@newssvr14.news.prodigy.net>
Source record: 28893

Richard Clark wrote:
> inside the interface we can draw the correlation of TIR failure (the
> chapter that Cecil hasn't drug across the Xerox yet) to evanescent
> waves ...

In the Ramo & Whinnery discussion of the distributed
network wave reflection model, I don't recall them
mentioning evanescent waves. Perhaps you could point
me to the correct page.
--
73, Cecil http://www.w5dxp.com

1474. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 06:14:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <D7fmj.348$J41.9@newssvr14.news.prodigy.net>
Source record: 28894

Owen Duffy wrote:
> Perhaps "power is present" is an avoidance of the somewhat tautological
> form "power flows to the load".

Want to muddy the waters even more? Ramo & Whinnery say:
"Another very important case is that of a perfect conductor,
which by definition must have a zero tangential component
of electric field at its surface. Then ^P^ [Poynting vector]
can have no component normal to the conductor and there can
be no power flow through the perfect conductor."
--
73, Cecil http://www.w5dxp.com

1475. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 06:18:18 UTC
From: HRBE <hrbe@bigpond.net.au>
Message-ID: <Kafmj.6851$421.1551@news-server.bigpond.net.au>
Source record: 28895

Yeah,
Bought a new GM sedan last June and its hasn't got an external antenna, the
rear window heater is the antenna.
KCE
"John Smith" <assemblywizard@gmail.com> wrote in message
news:fn69si$31n$3@news.albasani.net...
> http://ap.google.com/article/ALeqM5joJW4F4GzD3zCLGLLbJvYJfMqIFAD8UB50RO1
>
> JS
>

1476. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 11:53:48 UTC
From: David J Windisch <davidjw@cinci.rr.com>
Message-ID: <4799cded$0$31779$4c368faf@roadrunner.com>
Source record: 28896

While we're proving things beyond shadows of doubt, can we have a round of *cites* on the martyrdom of Galileo?

73 Dave N3HE

"Jim Kelley" <jwkelley@uci.edu> wrote in message news:fn8cfg$4bs$1@news.service.uci.edu...
> Cecil Moore wrote:
>
> guaranteed martyrdom on scale not seen since Galileo. :-)
>
> ac6xg
>
>
>

1477. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 14:01:00 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <wYlmj.489927$kj1.367076@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28897

Cecil Moore wrote:
> Gene Fuller wrote:

>
>> I think you must be confusing me with someone else. I just went back
>> to look at the messages I sent over the past three months. I could not
>> find a single case where I called you any name at all, much less every
>> name in the book.
>
> Here are some of your strictly technical terms for
> me from just the past couple of weeks:
>
> "Fractured Fairytale Physics"
> "complete nonsense"
> "truly sad"
> "hoodwinked by the nonsense"
> "trying to pull a fast one"
> "such magic"
> "no technical value"
> "truly bizarre"
> "utter nonsense"
> "utter lie"
> "baloney"
> "sadly amusing"
> "your tricks"

Not a single one of these is "name calling". I never once called you a "guru" or "spoiled brat" or anything else. As someone so accustomed to nit-picking, (oops, excuse me, I should have said so accustomed to examining the fine details) I am sure you readily understand the difference.

73,
Gene
W4SZ

1478. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 14:06:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <u1mmj.1598$Ej5.1202@newssvr29.news.prodigy.net>
Source record: 28898

Jim Kelley wrote:
> Any field generated by s11*a1 would at any time negate a field
> generated by s12*a2, and vice versa.

The key point is that any field generated by s11*a1 contains joules as one of its dimensions. Any field generated by s12*a2 contains joules as one of its dimensions. Those joules cannot be canceled out of existence and can only be redistributed in the only other direction possible in a transmission line as what we hams label "a reflection". Your "negation of fields" is the same phenomenon that I have been calling "wave cancellation". You cannot have a "negation of fields" without the existence of fields and those fields contain energy that must obey the conservation of energy and momentum principles.

You are very slowly coming to the same conclusion that I came to three years ago, just in different words that mean the same thing and have the same result. In fact, instead of "wave cancellation", I probably should have been using the term, "wavefront cancellation", which would make it identical to your "negation of fields".
--
73, Cecil http://www.w5dxp.com

1479. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 14:09:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <L4mmj.3059$nK5.1454@nlpi069.nbdc.sbc.com>
Source record: 28899

Gene Fuller wrote:
> Cecil Moore wrote:
>> "Fractured Fairytale Physics"
>> "complete nonsense"
>> "truly sad"
>> "hoodwinked by the nonsense"
>> "trying to pull a fast one"
>> "such magic"
>> "no technical value"
>> "truly bizarre"
>> "utter nonsense"
>> "utter lie"
>> "baloney"
>> "sadly amusing"
>> "your tricks"
>
> Not a single one of these is "name calling".

:-) You are a piece of work, Gene. According to you,
I am a nonsense peddler, a sad person, a hoodwinker,
a puller of fast ones, a peddler of magic, a liar, and
a tricky person. That sure sounds like name-calling
to me.
--
73, Cecil http://www.w5dxp.com

1480. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 14:14:45 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <p9mmj.165405$MJ6.57185@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28700

Cecil Moore wrote:
> Gene Fuller wrote:
>> There is little mystery about what happens *outside* the discontinuity.
>
> There is no "inside" to an impedance discontinuity.
> The plane is two dimensional. Everything that happens
> at an impedance discontinuity is "outside" of that
> plane. There is no place to hide the technical facts.
>
>
>> The irradiance equations work fine for detailing the external effects,
>> but they don't give any hint of what happens inside the interface.
>
> There is no "inside" to a plane. There is no black box
> into which you can sweep the technical facts.

Cecil,

You got it right. There is no "inside" to a plane. There is also nothing that happens exactly in that "plane". The real world does not exist in a "plane". You continue to use ordinary external models to try to determine how the "in-plane" action really occurs. Waves go into the interface (plane, discontinuity, whatever) and they come back out. There is nothing in these ordinary wave models, including the optical irradiance models, that tells exactly what goes on inside the interface. Even the vaunted s-parameters don't say anything about what happens to cause reflections or other properties. They only say what one would find from measurements made external to the "black box". (Yes, that is a term used by H-P in AN 95-1.) Of course those external measurements are exactly what most people would care about, and that is the main reason for creating s-parameter formulation in the first place.

What do you suppose your ol' pal Occam would say about a model that requires waves to be created and then immediately canceled?

73,
Gene
W4SZ

1481. Re: Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 14:41:32 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <wymmj.165462$MJ6.32223@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28701

Richard Clark wrote:
> On Fri, 25 Jan 2008 04:13:56 GMT, Gene Fuller <W4SZzzzzzz@att.net>
> wrote:
>
>> The irradiance equations
>> work fine for detailing the external effects, but they don't give any
>> hint of what happens inside the interface. Think Thevenin.
>
> Hi Gene,
>
> Cecil isn't going to rise far enough to catch a breath of air on this
> one. You may as well drop the shoe for lurkers (and me).
>
> I don't see the connection to Thevenin (specifically); but, for me,
> inside the interface we can draw the correlation of TIR failure (the
> chapter that Cecil hasn't drug across the Xerox yet) to evanescent
> waves to near fields to how antennas work.
>
> 73's
> Richard Clark, KB7QHC

Richard,

Perhaps I have misread the message traffic for the past 5 years or so, but it appears that most of the heat over wave reflections is about what happens during the reflections, including detailed concern about energy and momentum. The issue is never (or at least rarely) about what one would find in external measurements on the transmission line (or free space, as the case may be). This goes back at least to the battles between Steve Best and Walt Maxwell. (I pointed out that both models were correct, although they arrived at the proper conclusions in quite different manners.)

More recently, we have great battles over interferometers and cute Java demonstrations. Absolutely nobody would question the overall wave superposition principles shown in the FSU Magnet Lab Java applet. Most people know how to add sine waves, or at least they can look up the technique. The entire debate usually comes down to arguments about how that addition actually takes place physically. This is what I am calling the Thevenin equivalent. In particular, the external observations are unambiguous and non-controversial. The standard models and equations give all the correct answers for the observables. At the same time those models and equations say nothing about how the two FSU input waves suddenly jump together to superpose and interfere. Do the waves

"cancel"? Is there a requirement for auxiliary waves that are created and immediately destroyed? How does one account for missing momentum?

That attempted under-the-hood analysis with tools suitable only for external description drives my suggestion of the parallel to the Thevenin model.

73,
Gene
W4SZ

1482. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 14:48:10 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <KEmmj.165476$MJ6.16127@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28702

Cecil Moore wrote:
> Gene Fuller wrote:
>> Cecil Moore wrote:
>>> "Fractured Fairytale Physics"
>>> "complete nonsense"
>>> "truly sad"
>>> "hoodwinked by the nonsense"
>>> "trying to pull a fast one"
>>> "such magic"
>>> "no technical value"
>>> "truly bizarre"
>>> "utter nonsense"
>>> "utter lie"
>>> "baloney"
>>> "sadly amusing"
>>> "your tricks"
>>
>> Not a single one of these is "name calling".
>
> :-) You are a piece of work, Gene. According to you,
> I am a nonsense peddler, a sad person, a hoodwinker,
> a puller of fast ones, a peddler of magic, a liar, and
> a tricky person. That sure sounds like name-calling
> to me.

Did you ever get subjected to sensitivity training at work? I was taught to criticize the idea, never the person. "That is a poor idea", not, "You are an idiot". Did you note that every one of your counter examples required additional words not used by me?

8-)

73,
Gene
W4SZ

1483. Thevenin and black boxes.. WAS Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 15:09:02 UTC
From: Dave <noone@nowhere.com>
Message-ID: <iYmmj.1$8q6.0@trndny03>
Source record: 28703

"Gene Fuller" <W4SZzzzzzz@att.net> wrote in message
news:wymmj.165462$MJ6.32223@bgtnsc05-news.ops.worldnet.att.net...

> That attempted under-the-hood analysis with tools suitable only for
> external description drives my suggestion of the parallel to the Thevenin
> model.

the Thevenin (or Norton) equivalent circuits i believe are rarely used in analysing transmission lines and antennas, they are more commonly used for breaking down lumped circuits and networks. In fact Jackson doesn't even have them in the index of Classical Electrodynamics 2nd ed... It is mentioned in Ramo,Whinnery, and VanDuzer Fields and Waves in Communications Electronics in the index, but in scanning the 2 chapters it is listed for i don't see an actual reference to Thevenin... one of those chapters deals with microwave networks and components and does break them down into lumped equivalents so that is probably where the reference belongs, the other chapter wouldn't seem to be related so may be a typo.

The problem with the use of the Thevenin or Norton equivalents is that you have to exactly respect the limitations in order to use them properly... that is the part of the circuit being replaced with the 'black box' equivelent must be linear and time invariant, and the analysis is only valid for sinusoidal steady state. This last one is what gets everyone, it eliminates all the transients and makes it impossible to use to figure out what happens when that first reflection physically happens... you have to ignore all that stuff and only consider the steady state solution.

We have seen that some posters on here don't want to accept those limitations as they try to figure out 'what is in' the black box equivalent... this is of course a non-sequitar as the whole purpose of replacing a part of a circuit with the Thevenin equivalent is to simplify the problem so you don't have to know what is inside and can focus on the rest of the problem. So any attempts to measure the length of the line in the black box, or figure out if it is a lumped circuit break the rules for using it in the first place.

1484. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 15:34:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <iknmj.5392$Rg1.3662@nlpi068.nbdc.sbc.com>
Source record: 28704

Gene Fuller wrote:
> You got it right. There is no "inside" to a plane. There is also nothing
> that happens exactly in that "plane".

Conceptually, it happens exactly *at* that plane. For
instance, in the following example, a plane is drawn
through the connection points which can be made as
physically small as needed - certainly small enough that
nothing needs to be hidden inside a black box in order
to obfuscate the technical facts.

Plane
|
-----Z01-----+-----Z02-----
-----Z01-----+-----Z02-----
|

This is an example of a primitive one-dimensional
interferometer.

> What do you suppose your ol' pal Occam would say about a model that
> requires waves to be created and then immediately canceled?

He would ask you: "How can waves be canceled if they don't
exist in the first place? If they don't exist in the first
place, why are anti-reflective thin-film coatings ever
required?"

Optical physicists go to great lengths with expensive
interferometer equipment to cause the steady-state
creation and immediate cancellation of wavefronts.
It happens all the time as in the following example.

The following web page describes an interferometer that
creates wavefronts only to have them immediately canceled
at the standard output. It even captures the energy reflected
from those canceled wavefronts and routes it to the non-standard
output.

http://www.teachspin.com/instruments/moderni/experiments.shtml

"Using Dielectric Beamsplitters to find the "missing energy"
in destructive interference"

"Where is the energy of the light going in an interferometer
adjusted for destructive interference? Below is a schematic
diagram showing a way to detect the non-standard output of a

Michelson interferometerï¿½the *light heading back* toward the
laser source. ... Quantitative detection demonstrates that the
standard and non-standard outputs of the interferometer are
complementary. That is, when interference is destructive at
the standard output, it is constructive at the non-standard
output."

What is it about interferometers that you don't understand?
--
73, Cecil http://www.w5dxp.com

1485. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 15:47:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Nwnmj.5394$Rg1.4788@nlpi068.nbdc.sbc.com>
Source record: 28705

Gene Fuller wrote:
> Did you ever get subjected to sensitivity training at work? I was taught
> to criticize the idea, never the person.

If you assert that a statement by a person is a lie,
you are calling that person a liar. Most likely, he
is not a liar but is merely mistaken. I have been and
will be mistaken again.

The fact that your "sensitivity training" taught you
a more politically correct method of calling a person
a liar is just one more way to create a diversion from
the technical subject matter.

I can just see you drinking at a bar in the old wild
west and trying to explain to an armed and angry
cowpoke that when you said what he uttered was a lie,
you weren't calling him a liar. :-)

I treat people the way they treat me, Gene. Cool your
ad hominem attacks and I won't have to retaliate.
--
73, Cecil http://www.w5dxp.com

1486. Re: Thevenin and black boxes.. WAS Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 15:52:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <rBnmj.5395$Rg1.1842@nlpi068.nbdc.sbc.com>
Source record: 28706

Dave wrote:
> So any attempts to measure the length of the line in
> the black box, or figure out if it is a lumped circuit break the rules for
> using it in the first place.

Ramo and Whinnery warn against even trying to calculate
the power dissipation inside the black box - something
that is regularly attempted on this newsgroup. The
calculated power dissipation inside a Thevenin equivalent
and a Norton equivalent can result in an infinite difference
even though they are both "equivalent".
--
73, Cecil http://www.w5dxp.com

1487. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 15:54:37 UTC
From: "John, N9JG" <john@Xremove.MeYgotwals.com>
Message-ID: <1Dnmj.41916$G23.31819@newsreading01.news.tds.net>
Source record: 28707

What are the "kids" going to do if they can't break off your antenna? Will
they use a brick to get at the antenna embedded in the rear-window glass?

"HRBE" <hrbe@bigpond.net.au> wrote in message
news:Kafmj.6851$421.1551@news-server.bigpond.net.au...
> Yeah,
> Bought a new GM sedan last June and its hasn't got an external antenna,
> the rear window heater is the antenna.
> KCE
> "John Smith" <assemblywizard@gmail.com> wrote in message
> news:fn69si$31n$3@news.albasani.net...
>> http://ap.google.com/article/ALeqM5joJW4F4GzD3zCLGLLbJvYJfMqIFAD8UB50RO1
>>
>> JS
>>
>
>

1488. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 15:58:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <oGnmj.5396$Rg1.2672@nlpi068.nbdc.sbc.com>
Source record: 28708

HRBE wrote:
> Yeah,
> Bought a new GM sedan last June and its hasn't got an external antenna, the
> rear window heater is the antenna.

My parents 90's Buick had the antenna embedded in
the windshield so it's nothing new.
--
73, Cecil http://www.w5dxp.com

1489. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 15:59:39 UTC
From: Fred Cameron <fmaxsc*nospam*@ix.netcom.com>
Message-ID: <4p1kp3lliefqbm5p1gl7ou923hoqj6eu5m@4ax.com>
Source record: 28709
Cross-posted to: alt.radio.amateur,news.misc.radio.amateur.antenna,rec.radio.amateur.antenna

On Fri, 18 Jan 2008 12:36:01 -0800, "Juan M."
<jdmollanNOSPAMPLEASE@juno.com> wrote:

>A problem seeking a solution.
>
>
>John,

Come on down South!

Greenville, SC is a lovely place!

Fred
W4FCM
>
>
>I live in a wooded area of the Pacific Northwest with dozens of fir trees of
>100 ft or more in height that make wonderful supports for high dipoles and
>other wire antennas. These particular trees have very few limbs at anything
>below the 60 ft level so using a crossbow or slingshot for installation is
>not practical. I have been forced to employ a professional tree climber to
>install the eyebolts and halyards. Using this system, the antennas can be
>raised and lowered for maintenance or modification.
>
>This system works fine until our winter storms kick in. Often, during those
>storms, a tree will lose a limb or two and take the antenna down with it. I
>am then left with a halyard tied to an insulator 50 ft or more above the
>ground with no way to get the insulator back down short of hiring another
>costly climber.
>
>Does anyone have any solutions to this problem?
>
>
>
>73,
>
>John
>
>AE7P
>
>
>
>
>

>
>
>
>

1490. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 16:08:22 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080125080822.075496b2.rsparks@elltel.net>
Source record: 28710

On Fri, 25 Jan 2008 05:32:33 GMT
Owen Duffy <none@no.where> wrote:

> Roy Lewallen <w7el@eznec.com> wrote in news:13pirk5h1cpt4f5
> @corp.supernews.com:
>
> > Owen Duffy wrote:
> >> Roger Sparks <rsparks@elltel.net> wrote in
> >> news:Noednf69voETxQTanZ2dnUVZ_uOmnZ2d@neonova.net:
> >>
> >>> ... The reader can
> >>> also see that more power is present on the transmission line than is
> >>> delivered to the load.
> >>
> >> The notion that "power is present" is a different one.
> >>
> >> Owen
> >>
> > It's reasonable, though. Looking at demo 4 with the TLVis1 program, you
> > can see that there's power all along the line except at specific nodal
> > points (where I or V is always zero), yet there's no power at all being
> > delivered to the load.
>
> Roy, my though was that on anything but a lossless line with VSWR=1,
> instantaneous power (being the rate of flow of energy) varies with time
> and location, so to make the statement that "power is present" and to
> quantitatively compare it with the power at a point (being the end of the
> line where the load is attached) seems to not be so reasonable.
>
> If the statement is about average power in both cases, then it is
> reasonable, obvious even, that power decreases with distance from the
> source.
>
> Perhaps "power is present" is an avoidance of the somewhat tautological
> form "power flows to the load".
>
> Owen

Nothing mysterious was hinted with the words "power is present".

As I finished writing the post, I wanted to call attention to the assumption that the reflected power is true power and adds to the amount of energy "stored" on the transmission line. But "stored" is a word that implies static conditions, and static conditions are not found on a transmission line. So I substituted "present" for "stored.

73, Roger, W7WKB

1491. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 16:15:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FWnmj.474$5K1.122@newssvr12.news.prodigy.net>
Source record: 28711

Roger Sparks wrote:
> As I finished writing the post, I wanted to call attention to the assumption that the reflected power is true power and adds to the amount of energy "stored" on the transmission line. But "stored" is a word that implies static conditions, and static conditions are not found on a transmission line. So I substituted "present" for "stored.

The amount of energy existing in a transmission
line is exactly the amount required to support
the measured forward power and reflected power.

If the steady-state forward power is 200 watts,
the reflected power is 100 watts, and the lossless
transmission line is one microsecond long, it
contains 300 microjoules of energy. I don't
think that is a sheer coincidence. :-)
--
73, Cecil http://www.w5dxp.com

1492. Re: Thevenin and black boxes.. WAS Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 18:20:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pka3gmti8ofd8@corp.supernews.com>
Source record: 28712

Dave wrote:
> . . .
> The problem with the use of the Thevenin or Norton equivalents is that you
> have to exactly respect the limitations in order to use them properly...
> that is the part of the circuit being replaced with the 'black box'
> equivelent must be linear and time invariant, and the analysis is only valid
> for sinusoidal steady state. This last one is what gets everyone, it
> eliminates all the transients and makes it impossible to use to figure out
> what happens when that first reflection physically happens... you have to
> ignore all that stuff and only consider the steady state solution.
> . . .

That's not true. A Thevenin or Norton equivalent generator can produce a voltage or current, respectively, which is any function of time. This of course includes single pulses and pulsed sinusoids, as well as an infinite number of others.

Roy Lewallen, W7EL

1493. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 18:23:02 UTC
From: richardharrison@webtv.net
Message-ID: <26840-479A2906-338@storefull-3251.bay.webtv.net>
Source record: 28714

Gene Fuller wrote:
"Waves go into the interface (plane, discontinuity, whatever) and come back out."

A conductive plane produces a reflection and a phase reversal.

Terman writes in his 1955 opus on page 92:
"(Transmission Line with Short-circuited load.) However, the reflection now takes place with reversal in phase of the voltage without change in the phase of the current. The result is that the current in each wave at the load is half the load current, while the voltages in the two waves add up at the load to a resultant of zero voltage as obviously required across a short circuit."

Best regards, Richard Harrison, KB5WZI

1494. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 18:23:06 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pka8bhd8cb951@corp.supernews.com>
Source record: 28713

Roger Sparks wrote:
>
> Nothing mysterious was hinted with the words "power is present".
>
> As I finished writing the post, I wanted to call attention to the assumption that the reflected power is true power and adds to the amount of energy "stored" on the transmission line. But "stored" is a word that implies static conditions, and static conditions are not found on a transmission line. So I substituted "present" for "stored.

A better reason to avoid "stored" is that power isn't stored at all, anywhere. Anyone who believes so should be able to tell us how many watts of power are stored in a 50 Ah, 12 volt battery.

Roy Lewallen, W7EL

1495. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 18:52:02 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fndb58$236$1@news.service.uci.edu>
Source record: 28715

AI4QJ wrote:

> If the waves that
> add (superpose to double amplitude) coexist at the same time and place, so
> do the waves that subtract (superpose to zero amplitude). These waves all
> can also coexist and superimpose with other waves of unrelated origin in the
> same place, with different frequencies and so on. Thus, you cannot assert
> that, just because there is an absence of energy, the waves never were
> permitted to coexist. You can only say they coexist at the same time and
> place but superpose to zero.

If you can find any difference at all between the case where two waves
of equal and opposite amplitude, traveling in the same direction, at
exactly the same time, in exactly the same space, in which there exist
no measureable fields of any kind, and the case where there are no
waves at all, I'd be glad to know about it. Otherwise, I'll continue
to assert the point of view expressed in physics texts on the subject.

ac6xg

1496. Plasmonics, Frustrated Total Internal Reflection, Evanescent Waves, Near Fields, and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 19:17:41 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1a8kp3provh6rblqojrita2mpangmt6978@4ax.com>
Source record: 28716

On Fri, 25 Jan 2008 14:41:32 GMT, Gene Fuller <W4SZzzzzzz@att.net>
wrote:

>Perhaps I have misread the message traffic for the past 5 years or so,
>but it appears that most of the heat over wave reflections is about what
>happens during the reflections, including detailed concern about energy
>and momentum.

Hi Gene,

This behavior exhibits the failure of rote science in the face of
experience and there are many here who flip through a book to replace
thinking or stepping up to the bench.

This harkens back to Cecil's inability to come to terms with the
failure of anti-glare glass of some years ago. As it applies to this
current debate these discussions are not found in school books, except
by parts - and even rarely there as some of the topic transcends their
derivative coverage. Putting editorialization aside (wagging fingers
at fools only fixates their gaze), let us proceed into the interface,
a dimension of greater than 2 dimensions (the so-called plane in other
correspondence).

Thumb through all the favorite "Optics" books, and I dare say none of
them really dwell on the research with Plasmonics that has been
carried out around the world at a hundred or more laboratories. I
feel full well confident in this expectation because every time I
introduce this word (Plasmonics) it is met with universal HUH? I have
no illusions that this posting will raise any but one or two reader's
consciousness on the subject - and even then I am probably
over-estimating interest, or capacity.

Thumb through all the favorite "Optics" books, and I dare say FEW
dwell on Frustrated Total Internal Reflection. Of those few, perhaps
in the appendix.

Thumb through all the favorite "Optics" books, and I dare say some
dwell on Evanescent Waves. Of those some, perhaps in other terms if
they cover the physics of it at all. The good "Optics" text will.

Thumb through all the favorite "Optics" books, and I dare say NONE
dwell on antennas. Not even in the appendix.

Plasmonics reveals the energy relationships at the interface, at each
side of it, and within the media which are separated by the interface.
This word (Plasmonics) merely applies a new label to the old wine of

other disciplines, but those who coined the label, are performing far more profound probing of the interface than those older vintners.

A Plasmon is the energy on the other side of the reflecting interface. This necessarily gives rise to the third (non-planar) dimension of depth (or a new, thick plane, which is to say, not what has been typically discussed). The fields found on the other side of the 2D plane (that is, within the second media) are what is responsible for reflection and provide the complete mechanism. This much is covered already by conventional "Optics" and "RF" teaching, so Plasmonics is not a discovery, nor is it introducing a novel concept - except to those who skimmed their assigned reading, skipped classes, and shaved points off their exams when tests revealed their shortfall of study. I won't repeat that material here. Suffice it to say that reflection mechanics are found in the boundary layer - not in the Xeroxed math from the concluding paragraph of a chapter.

When we approach the "Optics" of reflection, there, too, conventions are suggested by math that solutions are unspoiled by reality (anti reflective glass is chief among these to fail in the real world). The benchmark of reflection is found in the right angle glass prism. This standard, by math, exhibits what is so distinct as to ascend to capitalization, chapter heading, and study title: Total Internal Reflection. This standard even deserves its own acronym TIR. Every "Optics" text champions this standard, but few move on to its failure. Failures are left for advanced study, as academia has enough work to teach success. Experience that follows graduation is thoroughly acknowledged as introducing acolytes to reality and providing actual learning. I will not dwell on the material of Total Internal Reflection, as the reader to this point is undoubtedly aware of either the mechanics, or the implication.

The evidence of Frustrated Total Internal Reflection arrives by the application of the same standard: the glass prism, classically two of them (although this is not strictly required). When two prisms are joined, then light will pass through them both (there is no TIR exhibited). When both are removed a substantial distance, then light entering the first prism will be returned back to the source (offset by the geometry of internal reflections). However, when that separated, second prism is drawn closer to the first, without touching it, but within several wavelengths of that former join, then light will again transit BOTH prisms. TIR has failed, hence the term "Frustrated Total Internal Reflection."

This example, supported by evidence, finds the two prisms isolated one from the other. If the 2D plane of the reflective surface of the first prism was all that was necessary to provide reflection (that is to say, to the neglect of the 3D boundary layer); then this neighboring prism would have absolutely no effect and TIR would not fail. However, it does, and with that failure goes the notion of the 2D plane providing all the substance of reflection. Naturally, this

is already covered in conventional "Optics" books, but the demonstration is almost universally surprising. I am sure many readers who have made it this far are agog how light can leap between two prisms.

The answer (a conventional one) is that the boundary beyond the first prism face supports fields that provide the mechanics of reflection. What is more interesting, is that when a second interface inhabits the same region of waves, they couple across and provide a transmission mechanics to pass light on through the second prism.

So, we find there is a defined region of waves that first accounts for reflection, and secondly that same defined region accounts for transmission. In the study of Plasmonics, these waves are called Plasmons, or are expressed by specialized "Optics" as evanescent waves. The characteristic of these Plasmons or evanescent waves is that they do not persist beyond several wavelengths, and exhibit "zero net energy." These two are not novel concepts discussed here, but it appears that such information is not knowledge for many.

Basically, evanescent waves are what we characterize as the near field of an antenna. Those with the information, but lacking the knowledge may roll their eyes - after all, they "knew it all the time." If only professors accepted such demonstration of learning, colleges would be awash in Phi Beta Kappas.

I will provide some practical examples of this last that correlate to the nearly joined prisms. Harkening back to the work of N. Tesla in my hometown of Colorado Springs; he once set out to establish a commercial means to transmit power without wires. Same stuff. The trick to the success of this has been reported in these threads as discussion trivia (certainly no intelligent thought beyond the simple skill of browsing ever entered into the discussion). The Google topic is how in the future we can recharge our iphone/ipod/laptop by simply being in the same room as a special power antenna.

Here, again, the mechanics have been known for at least 100 years or more (and we don't even need to lean on Tesla to reveal them). Those mechanics, as in evanescent waves, as in Plasmons, as in Frustrated Total Internal Reflection, are found in proximity and the 3D boundary layer. You with your iphone/ipod/laptop are merely inhabiting that layer. The latest research demonstrates that a tuned but lossy load (the drained battery or a light bulb) can effectively absorb up to 60% of that available power from the (long wave near) field (not generally called a Plasmon, and rarely described as evanescent). This is a no more complex relationship than that between a driven element, and a director or reflector (except for the novel application of a tuned load).

I chose the iphone for another reason (rather than for the "hip" factor) because it also reveals Plasmons, evanescent waves, and the application of Frustrated Total Internal Reflection in its interface

(which is a "hip" factor). ;-)

The iphone's unique (and patented) "Optical" interface relies on the 3D boundary layer of your fingers doing multiple touch manipulations (if you are "hip" enough) of images, files, and operations with its screen. I will leave the readers to Google this.

If you are an international traveler, you may have noted a small windowed box at the border control (another interface, but I won't stretch that point) that travelers use to provide fingerprint information. Similar gizmos also are sold for security access to laptops where the user wants a single password (actually the fingerprint as proof of identity) access. These instruments, too, employ Frustrated Total Internal Reflection. I won't belabor the obvious mechanics here.

So, a discussion of the complex reflection (and refraction too) 3D interface employing examples from Plasmonics, Frustrated Total Internal Reflection, Evanescent Waves, Near Fields, and Antennas.

And now for a bit of finger wagging to mesmerize the fools once more. How is it that waves are influenced by other waves in the absence of an interface or load? How is it that numerical coincidences prove/disprove energy/power cannot migrate past lines drawn in the sand of math?

73's
Richard Clark, KB7QHC

1497. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 19:22:50 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080125112250.3887bca7.rsparks@elltel.net>
Source record: 28717

On Fri, 25 Jan 2008 16:15:33 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > As I finished writing the post, I wanted to call attention to the assumption that the reflected power is true power and adds to the amount of energy "stored" on the transmission line. But "stored" is a word that implies static conditions, and static conditions are not found on a transmission line. So I substituted "present" for "stored.
>
> The amount of energy existing in a transmission
> line is exactly the amount required to support
> the measured forward power and reflected power.
>
> If the steady-state forward power is 200 watts,
> the reflected power is 100 watts, and the lossless
> transmission line is one microsecond long, it
> contains 300 microjoules of energy. I don't
> think that is a sheer coincidence. :-)
> --
> 73, Cecil http://www.w5dxp.com

Yep, and if we quickly replaced the source with a termination having the impedance of the transmission line, 100 watts of power would continue to be delivered to the load for one microsecond, delivering 100 microjoules of energy. 100 watts of power would be delivered to the reflected wave termination for two microseconds, delivering 200 microjoules of energy.

The transmission line was a dynamic power storage device for two microseconds after the power source was disconnected.

73, Roger, W7WKB

1498. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 19:33:41 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A3142A6AC457nonenowhere@61.9.191.5>
Source record: 28718

Roger Sparks <rsparks@elltel.net> wrote in
news:20080125080822.075496b2.rsparks@elltel.net:

> On Fri, 25 Jan 2008 05:32:33 GMT
> Owen Duffy <none@no.where> wrote:
>
>> Roy Lewallen <w7el@eznec.com> wrote in news:13pirk5h1cpt4f5
>> @corp.supernews.com:
>>
>> > Owen Duffy wrote:
>> >> Roger Sparks <rsparks@elltel.net> wrote in
>> >> news:Noednf69voETxQTanZ2dnUVZ_uOmnZ2d@neonova.net:
>> >>
>> >>> ... The reader can
>> >>> also see that more power is present on the transmission line than
>> >>> is delivered to the load.
>> >>
>> >> The notion that "power is present" is a different one.
>> >>
>> >> Owen
>> >
...
> Nothing mysterious was hinted with the words "power is present".
>
> As I finished writing the post, I wanted to call attention to the
> assumption that the reflected power is true power and adds to the
> amount of energy "stored" on the transmission line. But "stored" is
> a word that implies static conditions, and static conditions are not
> found on a transmission line. So I substituted "present" for "stored.

Roger,

If you were wanting to mean "stored", perhaps it is energy that is stored (over a non-zero length of line) rather than power. In that sense, energy is "present" on the line, and the load may store energy (only if it has reactive elements, and irrespective of whether it looks resistive at its terminals).

Owen

1499. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 19:38:59 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <nVqmj.491338$kj1.146217@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28719

Cecil Moore wrote:

>
> What is it about interferometers that you don't understand?

Nothing at all.

8-)

73,
Gene
W4SZ

1500. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 19:41:13 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <tXqmj.491349$kj1.437853@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28720

Cecil Moore wrote:
> Gene Fuller wrote:
>> Did you ever get subjected to sensitivity training at work? I was
>> taught to criticize the idea, never the person.
>
> If you assert that a statement by a person is a lie,
> you are calling that person a liar. Most likely, he
> is not a liar but is merely mistaken. I have been and
> will be mistaken again.
>
> The fact that your "sensitivity training" taught you
> a more politically correct method of calling a person
> a liar is just one more way to create a diversion from
> the technical subject matter.
>
> I can just see you drinking at a bar in the old wild
> west and trying to explain to an armed and angry
> cowpoke that when you said what he uttered was a lie,
> you weren't calling him a liar. :-)
>
> I treat people the way they treat me, Gene. Cool your
> ad hominem attacks and I won't have to retaliate.

Wanna count up who has called someone a liar more often in the past year? I believe I have seen a couple from you just in the past 24 hours.

8-)

73
Gene
W4SZ

1501. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 19:47:46 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <C1rmj.491374$kj1.401974@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28721

Cecil Moore wrote:
> Gene Fuller wrote:
>> You got it right. There is no "inside" to a plane. There is also
>> nothing that happens exactly in that "plane".
>
> Conceptually, it happens exactly *at* that plane. For
> instance, in the following example, a plane is drawn
> through the connection points which can be made as
> physically small as needed - certainly small enough that
> nothing needs to be hidden inside a black box in order
> to obfuscate the technical facts.

I highly recommend the lengthy message just posted by Richard Clark. It captures quite nicely what I have been merely hinting at. In summary, "conceptually" simply doesn't cut it for resolving the fine details of reflections. Nothing happens exactly *at* a plane in the real world. And this is not just a "dx" or "dt" type issue. Real things happen over real distances.

73,
Gene
W4SZ

1502. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 19:58:30 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080125115830.2ba948bb.rsparks@elltel.net>
Source record: 28722

On Fri, 25 Jan 2008 19:33:41 GMT
Owen Duffy <none@no.where> wrote:

> Roger Sparks <rsparks@elltel.net> wrote in
> news:20080125080822.075496b2.rsparks@elltel.net:
>
> > On Fri, 25 Jan 2008 05:32:33 GMT
> > Owen Duffy <none@no.where> wrote:
> >
> >> Roy Lewallen <w7el@eznec.com> wrote in news:13pirk5h1cpt4f5
> >> @corp.supernews.com:
> >>
> >> > Owen Duffy wrote:
> >> >> Roger Sparks <rsparks@elltel.net> wrote in
> >> >> news:Noednf69voETxQTanZ2dnUVZ_uOmnZ2d@neonova.net:
> >> >>
> >> >>> ... The reader can
> >> >>> also see that more power is present on the transmission line than
> >> >>> is delivered to the load.
> >> >>
> >> >> The notion that "power is present" is a different one.
> >> >>
> >> >> Owen
> >> >
> >> ...
> >> > Nothing mysterious was hinted with the words "power is present".
> >> >
> >> > As I finished writing the post, I wanted to call attention to the
> >> > assumption that the reflected power is true power and adds to the
> >> > amount of energy "stored" on the transmission line. But "stored" is
> >> > a word that implies static conditions, and static conditions are not
> >> > found on a transmission line. So I substituted "present" for "stored.
> >>
> >> Roger,
> >>
> >> If you were wanting to mean "stored", perhaps it is energy that is stored
> >> (over a non-zero length of line) rather than power. In that sense, energy
> >> is "present" on the line, and the load may store energy (only if it has
> >> reactive elements, and irrespective of whether it looks resistive at its
> >> terminals).
> >>
> >> Owen

I think everyone agrees that energy is stored on a transmission line in the sense that energy enters at time one and does not exit until some time later at time two.

It is important to be aware that the time shape of the energy package is preserved on a transmission line. The time shape information is contained in the power term for every instant of passing time.

I can understand why many hesitate to think of power as being "stored" on a transmission line, because at best, such storage is dynamic and fleeting. Thinking of power being "present" on a transmission line is better than "stored" because the concept of a time component is not lost.

--
73, Roger, W7WKB

1503. Re: Thevenin and black boxes.. WAS Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 20:01:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pkg1dlqqhd0c1@corp.supernews.com>
Source record: 28723

One more note about Thevenin and Norton equivalent circuits:

In spite of the frequency with which this topic appears on this newsgroup, I don't recall seeing anyone actually use a Thevenin or Norton equivalent circuit in illustrating a point on this newsgroup. I don't believe I ever have.

Roy Lewallen, W7EL

1504. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 21:05:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <oasmj.1708$Ej5.729@newssvr29.news.prodigy.net>
Source record: 28724

Richard Harrison wrote:
> Gene Fuller wrote:
> "Waves go into the interface (plane, discontinuity, whatever) and come
> back out."
>
> A conductive plane produces a reflection and a phase reversal.

A plane drawn through the junction of two different
Z0 feedlines also produces a partial reflection.
The reflection coefficient at an impedance discontinuity
is (Z02-Z01)/(Z02+Z01).
--
73, Cecil http://www.w5dxp.com

1505. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 21:08:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Kdsmj.1709$Ej5.103@newssvr29.news.prodigy.net>
Source record: 28725

Jim Kelley wrote:
> If you can find any difference at all between the case where two waves
> of equal and opposite amplitude, traveling in the same direction, at
> exactly the same time, in exactly the same space, in which there exist
> no measureable fields of any kind, and the case where there are no waves
> at all, I'd be glad to know about it.

The difference in those two outcomes is the conservation of
energy principle at work.

Two waves interfere and cancel. Their combined energy
components (2*ExH) go the other direction in a feedline.

There are no waves. Their combined energy components
equal zero.

That's an infinite percentage difference.
--
73, Cecil http://www.w5dxp.com

1506. Re: Plasmonics, Frustrated Total Internal Reflection, Evanescent Waves, Near Fields, and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 21:15:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Cjsmj.1286$uE.251@newssvr22.news.prodigy.net>
Source record: 28726

Richard Clark wrote:
> This harkens back to Cecil's inability to come to terms with the
> failure of anti-glare glass of some years ago.

My failure????? You are the one who said the reflections
from an anti-reflective thin-film coating are brighter
than the surface of the sun. And you proved it by
superposing powers.

For anyone who wants to understand anti-reflective
thin-film coatings, here is an example:

http://www.w5dxp.com/thinfilm.GIF

What is the total reflected power at t3 when the
external reflection of 0.01 watts is interfered
with by the first internal reflection of 0.009801
watts. Hint: It is NOT (0.01w - 0.009801w) as
Richard C. earlier calculated it to be.
--
73, Cecil http://www.w5dxp.com

1507. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 21:18:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Emsmj.1287$uE.788@newssvr22.news.prodigy.net>
Source record: 28727

Roger Sparks wrote:
>> If the steady-state forward power is 200 watts,
>> the reflected power is 100 watts, and the lossless
>> transmission line is one microsecond long, it
>> contains 300 microjoules of energy. I don't
>> think that is a sheer coincidence. :-)
>
> Yep, and if we quickly replaced the source with a termination having the impedance of the transmission line, 100 watts of power would continue to be delivered to the load for one microsecond, delivering 100 microjoules of energy. 100 watts of power would be delivered to the reflected wave termination for two microseconds, delivering 200 microjoules of energy.

Can we consider the old wives' tale of no energy in reflected
waves to be laid to rest?
--
73, Cecil http://www.w5dxp.com

1508. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 21:20:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Yosmj.1288$uE.90@newssvr22.news.prodigy.net>
Source record: 28728

Gene Fuller wrote:
> Cecil Moore wrote:
>> What is it about interferometers that you don't understand?
>
> Nothing at all.

Well then, please explain why, in the interferometer
example, the energy rejected by the standard output
due to destructive interference, is intercepted on
its way back to the source and made available as
constructive interference at the non-standard output.
--
73, Cecil http://www.w5dxp.com

1509. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 21:23:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lrsmj.1290$uE.415@newssvr22.news.prodigy.net>
Source record: 28729

Gene Fuller wrote:
> Wanna count up who has called someone a liar more often in the past
> year? I believe I have seen a couple from you just in the past 24 hours.

A rose by any other name ... Someone said I believe in
conservation of power when he knows I don't. That makes
him a liar.
--
73, Cecil http://www.w5dxp.com

1510. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 21:26:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Wtsmj.1291$uE.34@newssvr22.news.prodigy.net>
Source record: 28730

Gene Fuller wrote:
> I highly recommend the lengthy message just posted by Richard Clark.

Do you also agree with Richard C's earlier posting where
he asserted that the reflections from an anti-reflective
thin-film coating are brighter than the surface of the
sun? Do you believe the proof he presented in which he
blatantly superposed powers?
--
73, Cecil http://www.w5dxp.com

1511. Re: Thevenin and black boxes.. WAS Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 21:30:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kysmj.1715$Ej5.998@newssvr29.news.prodigy.net>
Source record: 28731

Roy Lewallen wrote:
> I don't recall seeing anyone actually use a Thevenin or
> Norton equivalent circuit in illustrating a point on this newsgroup. I
> don't believe I ever have.

Some of your example sources walk and quack like
a Thevenin equivalent circuit. :-)
--
73, Cecil http://www.w5dxp.com

1512. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 21:53:06 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fndlop$62q$1@news.service.uci.edu>
Source record: 28732

Cecil Moore wrote:

> Two waves interfere and cancel. Their combined energy
> components (2*ExH) go the other direction in a feedline.

Right. Meaning there is no energy where the two supposed waves
supposedly are - exactly the same as when there is nothing there.

ac6xg

1513. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 22:10:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <r7tmj.1717$Ej5.1611@newssvr29.news.prodigy.net>
Source record: 28733

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> Two waves interfere and cancel. Their combined energy
>> components (2*ExH) go the other direction in a feedline.
>
> Right. Meaning there is no energy where the two supposed waves
> supposedly are - exactly the same as when there is nothing there.

If it were "exactly the same", the conservation of energy
principle would be violated. Every way you attempt to
explain it results in a contradiction. Hint: Contradictions
are only possible in a human mind - not in reality.

The total result of wave cancellation is infinitely
different from nothing.
--
73, Cecil http://www.w5dxp.com

1514. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 22:21:44 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fndneg$6ne$1@news.service.uci.edu>
Source record: 28735

Cecil Moore wrote:
> Jim Kelley wrote:
>
>>
>> Cecil Moore wrote:
>>
>>> Two waves interfere and cancel. Their combined energy
>>> components (2*ExH) go the other direction in a feedline.
>>
>>
>> Right. Meaning there is no energy where the two supposed waves
>> supposedly are - exactly the same as when there is nothing there.
>
>
> If it were "exactly the same", the conservation of energy
> principle would be violated.

Not at all, Cecil. But if energy were in two places at once i.e. in the cancelled waves AND in the non-cancelled forward waves and you describe, that would obviously violate conservation of energy.

ac6xg

1515. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 22:25:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <d6fe872a-140a-435c-b0f6-c49417703819@f10g2000hsf.googlegroups.com>
Source record: 28734

On Jan 25, 11:15 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > As I finished writing the post, I wanted to call attention to the assumption that the reflected power is true power and adds to the amount of energy "stored" on the transmission line. But "stored" is a word that implies static conditions, and static conditions are not found on a transmission line. So I substituted "present" for "stored.
>
> The amount of energy existing in a transmission
> line is exactly the amount required to support
> the measured forward power and reflected power.
>
> If the steady-state forward power is 200 watts,
> the reflected power is 100 watts, and the lossless
> transmission line is one microsecond long, it
> contains 300 microjoules of energy.

Are you sure?

Check your answer by trying 100 kHz sinusoidal
steady-state excitation.

Even easier, ignore the reflected power and
test your assertion just for the forward power.

For fun, work out the line lengths for which your
claim is true.

...Keith

1516. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 22:31:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xrtmj.3090$nK5.2421@nlpi069.nbdc.sbc.com>
Source record: 28736

Keith Dysart wrote:
> Check your answer by trying 100 kHz sinusoidal
> steady-state excitation.

Good grief, Keith, get real. I guess I forgot to
say the assertion was for an integer multiple of MHz.
--
73, Cecil http://www.w5dxp.com

1517. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 22:37:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6xtmj.1721$Ej5.269@newssvr29.news.prodigy.net>
Source record: 28737

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> If it were "exactly the same", the conservation of energy
>> principle would be violated.
>
> Not at all, Cecil.

Sorry, you are absolutely wrong. The net energy
involved in wave cancellation is infinitely greater
than a net energy of zero. If you were right,
disappearance of that 2(ExM) of joules/sec/unit-area
would surely cause a collapse of the universe
as we know it.
--
73, Cecil http://www.w5dxp.com

1518. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 22:39:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Fytmj.1722$Ej5.1523@newssvr29.news.prodigy.net>
Source record: 28738

Jim Kelley wrote:
> But if energy were in two places at once i.e. in the
> cancelled waves AND in the non-cancelled forward waves and you describe,
> that would obviously violate conservation of energy.

Sorry, Jim, I have never said the same energy was
ever in two places at once. Lying about what I
said will not help your cause.
--
73, Cecil http://www.w5dxp.com

1519. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 22:56:32 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fndpfo$7bk$1@news.service.uci.edu>
Source record: 28739

Cecil Moore wrote:
> Jim Kelley wrote:
>
>> But if energy were in two places at once i.e. in the cancelled waves
>> AND in the non-cancelled forward waves and you describe, that would
>> obviously violate conservation of energy.
>
>
> Sorry, Jim, I have never said the same energy was
> ever in two places at once. Lying about what I
> said will not help your cause.

Sorry. It seemed to me that's EXACTLY what you've been saying. So
what was it about the energy you claim is in the canceled reflected
waves *and* in the forward waves that I lied about?

ac6xg

1520. Re: Thevenin and black boxes.. WAS Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-25 23:14:17 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <d3umj.512$5K1.430@newssvr12.news.prodigy.net>
Source record: 28740

Cecil Moore wrote:
> Roy Lewallen wrote:
>> I don't recall seeing anyone actually use a Thevenin or Norton
>> equivalent circuit in illustrating a point on this newsgroup. I don't
>> believe I ever have.
>
> Some of your example sources walk and quack like
> a Thevenin equivalent circuit. :-)

While some of yours just walk and quack.
73,
Tom Donaly, KA6RUH

1521. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 01:16:56 UTC
From: smokinsteve30@webtv.net
Message-ID: <20153-479A8A08-3677@baytvnwsxa002.msntv.msn.com>
Source record: 28741

I was thinking about buying a car antenna and mounting it on the roof I bet it will work good. My old magnet cb antenna works pretty good.

1522. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 01:44:38 UTC
From: The Shadow <Cranston@CobaltClub.com>
Message-ID: <fgwmj.8525$ov5.5912@newsfe15.phx>
Source record: 28742

"aaa aaa" <smokinsteve30@webtv.net> wrote in message
news:20153-479A8A08-3677@baytvnwsxa002.msntv.msn.com...
>I was thinking about buying a car antenna and mounting it on the roof I
> bet it will work good. My old magnet cb antenna works pretty good.
>

Be careful when drilling (sawing) a hole thru a vehicle roof, it is easy to
bend the metal leaving a dimple in the roof.
Have it done professionally or check with the shops that specialize in roof
antenna installations. I have heard of a Motorola tool designed for the
task.

Lamont with a dimpled roof (Greenlee Punch)

1523. Re: Thevenin and black boxes.. WAS Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 01:54:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pl4nitmmirr85@corp.supernews.com>
Source record: 28743

Tom Donaly wrote:
> Cecil Moore wrote:
>> Roy Lewallen wrote:
>>> I don't recall seeing anyone actually use a Thevenin or Norton
>>> equivalent circuit in illustrating a point on this newsgroup. I don't
>>> believe I ever have.
>>
>> Some of your example sources walk and quack like
>> a Thevenin equivalent circuit. :-)
>
> While some of yours just walk and quack.

I need to address this, because Cecil has frequently declared all combinations of an ideal voltage source and resistor as a "Thevenin equivalent" as I see he's implied here once again. He has claimed this relieves him of the nagging problem of accounting for such things as power dissipation in a source resistance. I'll explain how this characterization and claim are false.

I often use an ideal voltage source in series with a resistance for illustration of transmission line phenomena. This very simple circuit allows complete analysis without the unnecessary clutter of more complicated circuits. You'll find this technique very widely used in elementary electrical circuits texts for the same reason, and well before the introduction of Thevenin or Norton equivalent circuits.

But these aren't Thevenin equivalent circuits. Let's review what a Thevenin equivalent is. I'll quote here from Pearson and Maler, _Introductory Circuit Analysis_, but you can find an equivalent definition in any elementary circuit analysis text.

"A theorem named after Leon Thevenin is often useful in reducing a complex circuit to a simpler one. This theorem, which is proved in Appendix E, may be stated as follows.

"Any one terminal pair (one port) network which is linear and which may have any number of independent and dependent transform sources (as long as the dependent sources are not functions of quantities outside the network) may be replaced by a transform voltage source in series with a transform impedance. The transform voltage source is the voltage across the terminal pair when these are open circuited and the transform impedance is the ratio of this transform voltage to the transform current which flows between these terminals when short circuited."

Pay particular attention to the first sentence of the quote. A Thevenin equivalent circuit is a reduction of a circuit to a simpler one. If you have a complex circuit containing multiple components and reduce it to a Thevenin equivalent, the theory says that the equivalent circuit looks just the same to the outside world as the original. Because the Thevenin equivalent could represent any number of very different original circuits, you can't determine anything at all about the internal workings of the original, such as power dissipation, by looking at the Thevenin equivalent. That's a completely valid statement which has frequently been misapplied.

A circuit consisting of a perfect voltage source and an impedance isn't a Thevenin equivalent circuit unless it's used to replace a more complex circuit. If it's used simply to represent those two circuit elements and none others, then all the conclusions we draw from the circuit, including dissipation in the source and impedance, are and must be valid. For that matter, the circuit analysis for a Thevenin equivalent must obey all rules and laws, including source and impedance voltage, current, and power. We only have to realize that any quantities within an equivalent circuit aren't necessarily the same as those of the circuit being replaced by the equivalent.

Declaring all circuits consisting of an ideal voltage or current source and impedance to be a Thevenin or Norton equivalent is wrong. Declaring that Thevenin or Norton equivalent circuits don't have to obey fundamental rules of circuit analysis is also wrong. Continuing to do so after more than ample evidence has been presented to the contrary is dishonest.

Roy Lewallen, W7EL

1524. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 02:13:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <PGwmj.547$Ch6.153@newssvr11.news.prodigy.net>
Source record: 28744

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> Sorry, Jim, I have never said the same energy was
>> ever in two places at once. Lying about what I
>> said will not help your cause.
>
> Sorry. It seemed to me that's EXACTLY what you've been saying.

Of course, you know nobody would be stupid enough to
say that. Please cease and desist with the stupid stuff
- I certainly hope you are a better person than that.

Is the energy from the sun at 12 noon the same energy
as at 1 PM? Please get real.
--
73, Cecil http://www.w5dxp.com

1525. Re: Thevenin and black boxes.. WAS Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 02:15:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <eJwmj.548$Ch6.541@newssvr11.news.prodigy.net>
Source record: 28745

Tom Donaly wrote:
> Cecil Moore wrote:
>> Some of your example sources walk and quack like
>> a Thevenin equivalent circuit. :-)
>
> While some of yours just walk and quack.

I'll admit that, Tom, but I correct my errors as I
diagnose them. That gives me a definite advantage
over anyone who thinks they already know everything
and are therefore incapable of a mistake. Sound
familiar?
--
73, Cecil http://www.w5dxp.com

1526. Re: Thevenin and black boxes.. WAS Standing-Wave Current vs Traveling-Wave Current WAS rraa three-legged race

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 02:19:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fNwmj.550$Ch6.156@newssvr11.news.prodigy.net>
Source record: 28746

Roy Lewallen wrote:
> I need to address this, because Cecil has frequently declared all
> combinations of an ideal voltage source and resistor as a "Thevenin
> equivalent" as I see he's implied here once again.

Since there is no such thing as an ideal voltage source,
my declaration seems to hold a grain of truth.

> I often use an ideal voltage source in series with a resistance for
> illustration of transmission line phenomena.

Unless you can actually demonstrate an ideal voltage source,
it still walks like a Thevenin equivalent and quacks like
a Thevenin equivalent.
--
73, Cecil http://www.w5dxp.com

1527. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 03:13:31 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b59c1117-55ca-4714-8507-58a1b4eb7361@e6g2000prf.googlegroups.com>
Source record: 28747

On Jan 24, 10:33 pm, Roger Sparks <rspa...@elltel.net> wrote:
[snip]
> By examining this derivation, the reader can see that power and energy
> is reflected when a wave encounters a discontinuity. The reader can
> also see that more power is present on the transmission line than is
> delivered to the load.

This is the conventional phraseology for describing the behaviour at
the impedance discontinuity.

Allow me to offer a specific example for which this phraseology is
inappropriate.

Consider a 50 V step function generator with an output impedance of
50 ohms driving a 50 ohm line that is 1 second long terminated in an
open circuit.

Turn on the generator. A 50 V step propagates down the line. The
generator is putting 50 J/s into the line. One second later it
reaches the open end and begins propagating backwards.
After two seconds it reaches the generator. The voltage at the
generator is now 100 V and no current is flowing from the
generator into the line. In the 2 seconds, the generator put
100 joules into the line which is now stored in the line.
The line is at a constant 100 V and the current is zero everywhere.

Computing Pf and Pr will yield 50 W forward and 50 W reflected.
And yet no current is flowing anywhere. The voltage on the line
is completely static.

And yet some will claim that 50 W is flowing forward and 50 W
is flowing backwards.

Does this seem like a reasonable claim for an open circuited
transmission line with constant voltage along its length and
no current anywhere?

I do not find it so.

...Keith

1528. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 03:19:47 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <78f6357c-1cbd-4de8-a218-ebd448f82408@m34g2000hsb.googlegroups.com>
Source record: 28748

On Jan 25, 5:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Check your answer by trying 100 kHz sinusoidal
> > steady-state excitation.
>
> Good grief, Keith, get real. I guess I forgot to
> say the assertion was for an integer multiple of MHz.

Yes, so it would seem.

And that would seem to narrow the applicability
of the original assertion rather severely.

...Keith

1529. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 03:31:40 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <wQxmj.167159$MJ6.134734@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28749

Cecil Moore wrote:
> Gene Fuller wrote:
>> Cecil Moore wrote:
>>> What is it about interferometers that you don't understand?
>>
>> Nothing at all.
>
> Well then, please explain why, in the interferometer
> example, the energy rejected by the standard output
> due to destructive interference, is intercepted on
> its way back to the source and made available as
> constructive interference at the non-standard output.

I presume by "interferometer example" you mean the experiment outlined on the following web page.

http://www.teachspin.com/instruments/moderni/experiments.shtml

Is there some mystery here? The explanation is very straightforward. No need for any philosophy, magic energy incantations, counter-balanced construction and destruction, or special short-lived created and immediately canceled waves. You can probably add as many of those elements as you like, but Occam says it isn't necessary, and they add nothing of substance.

Look carefully at the primary beam splitter in the center of the sketch. Suppose that the "standard output" is at a constructive maximum. Part of the light returning from MA1 is turned by the beam splitter toward the standard output. That light does not undergo any phase shift at the beam splitter, since in the configuration shown the reflection is internal at the "far side" of the beam splitter. Part of the light returning from MB1 travels directly through the beam splitter, and there is no phase shift. The two light beams are in phase as they leave the beam splitter heading toward the standard output. Constructive interference happens. (The mirror positions are adjusted as needed to achieve the maximum.)

What then happens to the portion of the light that heads back toward auxiliary beam splitter near the source? (Remember, these are beam *splitters*. I hope there is no question about why light might travel back toward the source.) In this case part of the light returning from MA1 travels directly through the primary beam splitter and it undergoes no phase shift. Part of the light from MB1 is turned by the beam splitter, and in this case there is a phase shift due to the external reflection. In general this phase shift would be around 180 degrees. As the web page points out, other shifts are possible, depending on the

exact details of the beam splitter. In any case, we now find two beams that are out of phase heading back toward the source. This of course leads to destructive interference and darkness.

Obviously everything shifts depending on the position of the mirrors and the length of the interferometer paths. As mirror MA1 is moved the standard output becomes dark while the auxiliary output becomes bright. I hope there is no question about that part.

As I said a day or so ago, there is nothing at all on this web page that is even remotely surprising or controversial. This is all very straightforward and well understood.

Is there something else you had in mind when you asked the question?

73,
Gene
W4SZ

1530. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 03:31:45 UTC
From: jimkelleyamps@gmail.com
Message-ID: <a7452863-c0d5-4ae1-92d2-d575d3c4057c@e25g2000prg.googlegroups.com>
Source record: 28750

Cecil Moore wrote:
> Jim Kelley wrote:
> >
> > Cecil Moore wrote:
> >> Sorry, Jim, I have never said the same energy was
> >> ever in two places at once. Lying about what I
> >> said will not help your cause.
> >
> > Sorry. It seemed to me that's EXACTLY what you've been saying.
>
> Of course, you know nobody would be stupid enough to
> say that.

Well, whether you think so or not, you do say some pretty stupid
things. So if you're not saying the energy is in the canceled
reflected waves at the same time as it is in the forward waves, we're
still left to wonder at what time you think the energy *is* in the
canceled waves.
So far we haven't been able to pin you down on that.

ac6xg

1531. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 03:32:08 UTC
From: jimkelleyamps@gmail.com
Message-ID: <8b2c45f3-58ba-4ef5-8032-12d2a3babdfe@d4g2000prg.googlegroups.com>
Source record: 28751

Cecil Moore wrote:
> Jim Kelley wrote:
> >
> > Cecil Moore wrote:
> >> Sorry, Jim, I have never said the same energy was
> >> ever in two places at once. Lying about what I
> >> said will not help your cause.
> >
> > Sorry. It seemed to me that's EXACTLY what you've been saying.
>
> Of course, you know nobody would be stupid enough to
> say that.

Well, whether you think so or not, you do say some pretty stupid
things. So if you're not saying the energy is in the canceled
reflected waves at the same time as it is in the forward waves, we're
still left to wonder at what time you think the energy *is* in the
canceled waves.
So far we haven't been able to pin you down on that.

ac6xg

1532. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 03:36:17 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <RUxmj.167170$MJ6.79476@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28752

Cecil Moore wrote:
> Gene Fuller wrote:
>> Wanna count up who has called someone a liar more often in the past
>> year? I believe I have seen a couple from you just in the past 24 hours.
>
> A rose by any other name ... Someone said I believe in
> conservation of power when he knows I don't. That makes
> him a liar.

Wow! Must be a rough day. I am going to need to remove my shoes to keep
count if you call any more people liars.

8-)

73,
Gene
W4SZ

1533. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 05:11:03 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnefd1$b25$1@news.albasani.net>
Source record: 28753

jimkelleyamps@gmail.com wrote:

> ...
> Well, whether you think so or not, you do say some pretty stupid
> things. So if you're not saying the energy is in the canceled
> reflected waves at the same time as it is in the forward waves, we're
> still left to wonder at what time you think the energy *is* in the
> canceled waves.
> So far we haven't been able to pin you down on that.
>
> ac6xg

And, your explanation is, perhaps, it "skips" the "dead zones?" You
have my full attention ...

Regards,
JS

1534. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 06:05:46 UTC
From: HRBE <hrbe@bigpond.net.au>
Message-ID: <_4Amj.7135$421.3353@news-server.bigpond.net.au>
Source record: 28754

It is unusual in an Australian made car mate, I bought a humble Holden Commodore (from the GM stable) near the bottom of the model stack, sort of an entry level car!
Car manufacturers get away with a lot over here, we are even the dumping ground for any vehicle that won't sell in Japan.

73
HRBE

"Cecil Moore" <nospam@w5dxp.com> wrote in message news:oGnmj.5396$Rg1.2672@nlpi068.nbdc.sbc.com...
> HRBE wrote:
>> Yeah,
>> Bought a new GM sedan last June and its hasn't got an external antenna,
>> the rear window heater is the antenna.
>
> My parents 90's Buick had the antenna embedded in
> the windshield so it's nothing new.
> --
> 73, Cecil http://www.w5dxp.com

1535. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 06:30:22 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnek1pmdr1@news.albasani.net>
Source record: 28755

Cecil Moore wrote:
> HRBE wrote:
>> Yeah,
>> Bought a new GM sedan last June and its hasn't got an external
>> antenna, the rear window heater is the antenna.
>
> My parents 90's Buick had the antenna embedded in
> the windshield so it's nothing new.

An antenna embedded in the windshield, which worked well--now that would be something!

My old buick had an active/amplified one--I would like to replace the one of this new buick with it (and I have no idea where the antenna is--perhaps it is the rear windows defroster!)

Regards,
JS

1536. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 14:07:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <v8Hmj.4037$J41.2355@newssvr14.news.prodigy.net>
Source record: 28756

Keith Dysart wrote:
> Computing Pf and Pr will yield 50 W forward and 50 W reflected.
> And yet no current is flowing anywhere. The voltage on the line
> is completely static.

Why would you compute Pf and Pr when no DC current is
flowing? It is an invalid thing to do and unrelated to
reality.

> And yet some will claim that 50 W is flowing forward and 50 W
> is flowing backwards.

I know of no one who will claim that for static DC.
There are obviously no photons being emitted and
therefore, no waves.

Your example is unrelated to standing waves on an
RF transmission line where energy is in motion,
photons are continuously being emitted and absorbed,
and current and voltage loops are active.

One must realize the limitations of one's model.
The wave model obviously fails where there are no
waves.
--
73, Cecil http://www.w5dxp.com

1537. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 14:12:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pdHmj.5519$Rg1.4401@nlpi068.nbdc.sbc.com>
Source record: 28807

Keith Dysart wrote:
> And that would seem to narrow the applicability
> of the original assertion rather severely.

What do you know? It narrows it to amateur radio,
the subject of this newsgroup.

To be entirely technically correct, since my assertion
was about average powers, the example transmission line
must be an integer multiple of 1/4 wavelength.
--
73, Cecil http://www.w5dxp.com

1538. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 14:21:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <YlHmj.4038$J41.2575@newssvr14.news.prodigy.net>
Source record: 28808

Gene Fuller wrote:
> Is there some mystery here? The explanation is very straightforward. No
> need for ... counter-balanced construction and destruction, ...

On the contrary, energy cannot be created or destroyed.
The "missing energy" from the destructive interference
at the standard output appears as constructive
interference at the non-standard output. Your assertion
above violates the conservation of energy principle.

> Suppose that the "standard output" is at a constructive maximum.

Contrary to what you say above, that cannot happen without
destructive interference occurring somewhere else. That
constructive maximum is going to exhibit more joules/sec
than the laser beam source. Where does the extra energy
come from?
--
73, Cecil http://www.w5dxp.com

1539. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 14:39:28 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <ACHmj.495694$kj1.301883@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28809

Cecil Moore wrote:
> Gene Fuller wrote:
>> Is there some mystery here? The explanation is very straightforward.
>> No need for ... counter-balanced construction and destruction, ...
>
> On the contrary, energy cannot be created or destroyed.
> The "missing energy" from the destructive interference
> at the standard output appears as constructive
> interference at the non-standard output. Your assertion
> above violates the conservation of energy principle.
>
>> Suppose that the "standard output" is at a constructive maximum.
>
> Contrary to what you say above, that cannot happen without
> destructive interference occurring somewhere else. That
> constructive maximum is going to exhibit more joules/sec
> than the laser beam source. Where does the extra energy
> come from?

Cecil,

I never said that energy could be created or destroyed. I never said anything about the requirements for balancing constructive and destructive interference. I never said anything about "missing energy". Those are simply your strawmen. They add absolutely nothing to the solution.

I believe my explanation is correct, and it made no use of those concepts of yours. I suspect you wanted me to stumble all over myself and end up sneaking in something about energy or constructive / destructive. Again, as I have said many times, those concepts are simply not needed beyond the realm of simple-minded hand-waving explanations.

If you want to critique my actual explanation, go right ahead. What did I say that was incorrect? Did I fail to account for all of the observables? I have no doubt that I failed to account for all of your strawmen, but that is your problem, not mine.

73,
Gene
W4SZ

1540. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 14:40:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <4DHmj.5524$Rg1.1007@nlpi068.nbdc.sbc.com>
Source record: 28810

jimkelleyamps@gmail.com wrote:
> ... we're
> still left to wonder at what time you think the energy *is* in the
> canceled waves.

No, we are not left to wonder as I have explained
it many times. You are left to be a broken record
who refuses to solve the simple problem below.
If you solve it, you will no longer be able to
make the statement above and it seems that is
exactly the reason you refuse to solve it.

http://www.w5dxp.com/thinfilm.GIF

At t3, when the first internal reflection (0.009801w)
arrives back at the thin-film surface and interferes
with the external reflection (0.01w), what is the
resultant total reflected power?

If you solve that simple problem, you will know where
the energy in the canceled waves goes. Every time you
continue your silly broken record act, I am going to
challenge you to solve this simple problem.
--
73, Cecil http://www.w5dxp.com

1541. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 14:46:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <bJHmj.4039$J41.2387@newssvr14.news.prodigy.net>
Source record: 28811

jimkelleyamps@gmail.com wrote:
> So far we haven't been able to pin you down on that.

http://www.w5dxp.com/thinfilm.GIF

What is the total reflected power at t3?
Solve the simple problem and all will become clear.
--
73, Cecil http://www.w5dxp.com

1542. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 14:51:16 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ENHmj.4040$J41.2329@newssvr14.news.prodigy.net>
Source record: 28812

Gene Fuller wrote:
> I am going to need to remove my shoes to keep
> count if you call any more people liars.

In your sensitivity training, Gene, surely they taught
you how to avoid lying.
--
73, Cecil http://www.w5dxp.com

1543. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 15:00:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_VHmj.5529$Rg1.754@nlpi068.nbdc.sbc.com>
Source record: 28813

Gene Fuller wrote:
> What did I say that was incorrect?

> Suppose that the "standard output" is at a constructive maximum.

That supposition is incorrect because it supposes that
the standard output can contain more energy than the
source is supplying. That supposition violates the
conservation of energy principle.

> ... those concepts are simply not needed ...

Of course, you could say that God can create energy
and destroy energy any time He choses. No other
concepts are needed.
--
73, Cecil http://www.w5dxp.com

1544. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 15:53:41 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <63171542-04d2-4331-89b5-b8de9d9b3262@s13g2000prd.googlegroups.com>
Source record: 28814

On Jan 26, 9:12 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > And that would seem to narrow the applicability
> > of the original assertion rather severely.
>
> What do you know? It narrows it to amateur radio,
> the subject of this newsgroup.

I was unaware that all Amateur transmission lines
were a multiple of 1 wavelength long. Are you sure?

> To be entirely technically correct, since my assertion
> was about average powers, the example transmission line
> must be an integer multiple of 1/4 wavelength.

I would suggest 1/2 wavelength. For an intuitive proof,
consider a line with only forward power. Then think
of a quarter wave section with a voltage peak in the
middle. Then consider when the voltage 0 is in the
middle. Lots more energy in the former than the latter.
At 1/2 wavelength, the total energy in the line section
is constant.

...Keith

...Keith

1545. mfj 259

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 17:01:25 UTC
From: art <aunwin@insightbb.com>
Message-ID: <8bcd0ae6-ffcc-44c9-ac4e-63ddfb24ebeb@s12g2000prg.googlegroups.com>
Source record: 28815

Using a 259 is a big help for antenna builders, but before
using it one should know that the power supply does not
always break down the oxides formed at the circuit
connections, thus showing inconclusive results.
It takes at least 20 volts to breakdown the
oxides every time with confidence (and that includes silver).
So the use of a wallplug transformer with a 20 volt secondary
to create a spark across the coax connectiori will always
breakdown the oxides prior to using the 259.
Actually, it is always good form to always break down oxides
before using hand held measuring techniques which usually are
battery driven. This is the reason that reed switches are the
contacts of choice when using 12v computor driven circuitry,
since with gold plated contacts the underlying surface
often leaches thru the gold plating.
Have a happy day
Art Unwin KB9MZ....XG (uk)

1546. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 17:15:46 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080126091546.c11c2aac.rsparks@elltel.net>
Source record: 28816

On Fri, 25 Jan 2008 19:13:31 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 24, 10:33 pm, Roger Sparks <rspa...@elltel.net> wrote:
> [snip]
> > By examining this derivation, the reader can see that power and energy
> > is reflected when a wave encounters a discontinuity. The reader can
> > also see that more power is present on the transmission line than is
> > delivered to the load.
>
> This is the conventional phraseology for describing the behaviour at
> the impedance discontinuity.
>
> Allow me to offer a specific example for which this phraseology is
> inappropriate.
>
> Consider a 50 V step function generator with an output impedance of
> 50 ohms driving a 50 ohm line that is 1 second long terminated in an
> open circuit.
>
> Turn on the generator. A 50 V step propagates down the line. The
> generator is putting 50 J/s into the line. One second later it
> reaches the open end and begins propagating backwards.
> After two seconds it reaches the generator. The voltage at the
> generator is now 100 V and no current is flowing from the
> generator into the line. In the 2 seconds, the generator put
> 100 joules into the line which is now stored in the line.
> The line is at a constant 100 V and the current is zero everywhere.
>
> Computing Pf and Pr will yield 50 W forward and 50 W reflected.
> And yet no current is flowing anywhere. The voltage on the line
> is completely static.
>
> And yet some will claim that 50 W is flowing forward and 50 W
> is flowing backwards.
>
> Does this seem like a reasonable claim for an open circuited
> transmission line with constant voltage along its length and
> no current anywhere?
>
> I do not find it so.
>
> ...Keith

This is a reasonable observation for a static situation where energy is stored on a transmission line.

If the example contained an ongoing consideration, like "Where does the power move to?", then it would be reasonable to consider that the wave continued to move, simply to avoid the complication of what EXACTLY happens when a wave starts and stops.
--
73, Roger, W7WKB

1547. Re: mfj 259

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 18:39:13 UTC
From: MTV <NoSpam_mtvew@netscape.net>
Message-ID: <479b7e57$0$22833$4c368faf@roadrunner.com>
Source record: 28817

art wrote:
> Using a 259 is a big help for antenna builders, but before
> using it one should know that the power supply does not
> always break down the oxides formed at the circuit
> connections, thus showing inconclusive results.
> It takes at least 20 volts to breakdown the
> oxides every time with confidence (and that includes silver).
> So the use of a wallplug transformer with a 20 volt secondary
> to create a spark across the coax connectiori will always
> breakdown the oxides prior to using the 259.
> Actually, it is always good form to always break down oxides
> before using hand held measuring techniques which usually are
> battery driven. This is the reason that reed switches are the
> contacts of choice when using 12v computor driven circuitry,
> since with gold plated contacts the underlying surface
> often leaches thru the gold plating.
> Have a happy day
> Art Unwin KB9MZ....XG (uk)

Or, just use the battery option.
Or better yet, get an Autek Research "RF Analyst" for easier operation.

W5MTV

--
This mail checked and found to be free of any virus.
Mozilla Thunderbird mail & Firefox browser
GO ASTROS!!!!! Yeh Dynamo MLS Champions!

1548. Technical question re 70 cm baluns

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 19:30:34 UTC
From: Suzy <not@valid>
Message-ID: <479b8a5f@dnews.tpgi.com.au>
Source record: 28818

I am building a 70 cm Yagi. I want to make a balun out of a loop of coax (yes, I know there are other methods but I prefer this one). My question is, will rg58 do. Also, comparing like losses to like losses, should it be 50 ohm or 75 ohm and why?

Thanks in advance.

1549. Re: mfj 259

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 20:10:49 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <479b93c8$0$6152$4c368faf@roadrunner.com>
Source record: 28819

"MTV" <NoSpam_mtvew@netscape.net> wrote in message
news:479b7e57$0$22833$4c368faf@roadrunner.com...
> art wrote:
>> Using a 259 is a big help for antenna builders, but before
>> using it one should know that the power supply does not
>> always break down the oxides formed at the circuit
>> connections, thus showing inconclusive results.
>> It takes at least 20 volts to breakdown the
>> oxides every time with confidence (and that includes silver).
>> So the use of a wallplug transformer with a 20 volt secondary
>> to create a spark across the coax connectiori will always
>> breakdown the oxides prior to using the 259.
>> Actually, it is always good form to always break down oxides
>> before using hand held measuring techniques which usually are
>> battery driven. This is the reason that reed switches are the
>> contacts of choice when using 12v computor driven circuitry,
>> since with gold plated contacts the underlying surface
>> often leaches thru the gold plating.
>> Have a happy day
>> Art Unwin KB9MZ....XG (uk)
>
> Or, just use the battery option.
> Or better yet, get an Autek Research "RF Analyst" for easier operation.
>
> W5MTV

Don't know about a battery option. Art is saying we need 20V to breakover the oxide resistance. In my short stint as a component engineer years ago, our research showed that zinc coating could actually take as much as 35V to break over. Art is entirely correct on the oxide problem. Gold was very low breakover, however...we had not considered the substrate leaching into the gold (a very good point) but we considered the gold "flash" coating to be totally useless and in the 35V region because the gold flash is so thin it basically rubs off the first time it is used.

AI4QJ

1550. Re: Technical question re 70 cm baluns

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 20:26:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pn5s8smskqu1e@corp.supernews.com>
Source record: 28820

Suzy wrote:
> I am building a 70 cm Yagi. I want to make a balun out of a loop of coax
> (yes, I know there are other methods but I prefer this one). My question is,
> will rg58 do.

Yes, provided that you won't be exceeding its power rating.

> Also, comparing like losses to like losses, should it be 50
> ohm or 75 ohm and why?

Only the outside diameter is significant in determining the balun operation, and the only real effect that will have is in determining the number of turns and size you'll need to get effective balun operation. You should use the same impedance of coax as you use for feeding your Yagi, unless you intentionally want a mismatch for some reason.

Roy Lewallen, W7EL

1551. Re: mfj 259

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 20:42:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pn6qkmlgd0lfd@corp.supernews.com>
Source record: 28821

AI4QJ wrote:
>
> Don't know about a battery option. Art is saying we need 20V to breakover
> the oxide resistance. In my short stint as a component engineer years ago,
> our research showed that zinc coating could actually take as much as 35V to
> break over. Art is entirely correct on the oxide problem. Gold was very low
> breakover, however...we had not considered the substrate leaching into the
> gold (a very good point) but we considered the gold "flash" coating to be
> totally useless and in the 35V region because the gold flash is so thin it
> basically rubs off the first time it is used.

Copper easily leaches into and alloys with gold, so when making a gold contact, the gold is never plated directly onto copper. A nickel barrier layer is virtually always used between the copper and gold to prevent this. When properly done, a gold contact will last a very long time. Gold is the only reliable way to do "dry circuit" (low voltage and current) switching, but a limited number of good connections can be made using other metals if sufficient contact pressure and wiping are employed.

Gold flash is much too thin to be a good contact material, as AI4QJ notes. It's sometimes used on switches designed for "hot circuit" operation, but not "dry circuit" switches. Its only purpose is to provide some protection of a base metal surface from corrosion until the first switch contact is made. After that, wiping and arcing are depended upon to keep the contact area clean.

If you rummage around in your junk box, you'll probably find miniature toggle switches rated 250 volts and others rated 20 volts. The former have silver contacts, for "hot circuit" switching. The latter have gold contacts for "dry circuit" switching. Some high quality switches have a good layer of gold (not "flash") over silver. Those can be used for either "hot" or "dry" circuit switching, but once used for hot circuit switching, the gold is rapidly eroded, so they can't later be used for dry circuits.

The design and application of electrical contacts is a discipline in itself. It's a much more complex and difficult problem than most people realize.

Roy Lewallen, W7EL

1552. Re: Technical question re 70 cm baluns

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 21:38:33 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A3257D25B249nonenowhere@61.9.191.5>
Source record: 28822

Roy Lewallen <w7el@eznec.com> wrote in
news:13pn5s8smskqu1e@corp.supernews.com:

> Suzy wrote:
>> I am building a 70 cm Yagi. I want to make a balun out of a loop of
>> coax (yes, I know there are other methods but I prefer this one). My
>> question is, will rg58 do.
>
> Yes, provided that you won't be exceeding its power rating.
>
>> Also, comparing like losses to like losses, should it be 50
>> ohm or 75 ohm and why?
>
> Only the outside diameter is significant in determining the balun
> operation, and the only real effect that will have is in determining
> the number of turns and size you'll need to get effective balun
> operation. You should use the same impedance of coax as you use for
> feeding your Yagi, unless you intentionally want a mismatch for some
> reason.
>
> Roy Lewallen, W7EL
>

Roy,

I think you have misread the context, Suzy's application is a 1:4 balun for a 70cm Yagi, formed from a half wave balun to provide the phase inverted output of the balun.

She asked this question in another place five weeks or so ago, and my response was:

=== quote

If you have designed the dipole feed point to be 200 ohms so that the balun you describe transforms it to 50 ohms, the load on the half wave section is 100 ohms and it has a VSWR of 2:1 if it is 50 ohm coax.

The loss on the half wave section will be increased by the higher VSWR. The loss on a half wave of RG213 (Zo=50) at 432MHz with a 100 ohm load is 0.136dB, whereas it is 0.104dB for RG11 (Zo=75).

Does this say 75 ohm line is best. No, it says that RG11 is better than RG213.

You can explore these and other options with the loss calculator at http://www.vk1od.net/tl/tllc.php .

If you can't talk about it in numbers, do you really understand it?

Be ware of using low loss cables with foam dielectric for the balun...
check their minimum bending radius.

Don't depend on published velocity factor in cutting the balun, measure
vf and cut to tune the balun for the desired frequency.

===end quote

Apparently this is not regarded as a recommendation with explanation.

Roy, you may have a better turn of phrase.

Owen

1553. Re: Technical question re 70 cm baluns

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 21:46:35 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <7sGJRFN7o6mHFADz@ifwtech.co.uk>
Source record: 28823

Suzy wrote:
>I am building a 70 cm Yagi. I want to make a balun out of a loop of coax
>(yes, I know there are other methods but I prefer this one). My question is,
>will rg58 do. Also, comparing like losses to like losses, should it be 50
>ohm or 75 ohm and why?

RG58 will do fine. Some constructors use small hardline such as UT141,
but mostly for mechanical convenience. At this wavelength, larger cables
are quite difficult to bend into the small loop this is required.

Since the balun loop is an electrical half-wave, any impedance will
reproduce the same voltage at the other end. (Minor details: cable loss
will have a small effect on voltage balance, but probably not enough to
be detectable; the optimum impedance for VSWR bandwidth would be 100
ohms, but that is unimportant because other parts of the yagi will
probably have a larger effect.)

In summary, choose whatever cable you can conveniently form into an
electrical half-wave loop.

--

73 from Ian GM3SEK

1554. Re: Technical question re 70 cm baluns

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 22:00:21 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A325B844EC33nonenowhere@61.9.191.5>
Source record: 28824

Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
news:7sGJRFN7o6mHFADz@ifwtech.co.uk:

...
> RG58 will do fine. Some constructors use small hardline such as UT141,
> but mostly for mechanical convenience. At this wavelength, larger
> cables are quite difficult to bend into the small loop this is
> required.

Ian, I offered that solution elsewhere:

===quote
Obsessions about loss aside, try using the calculator to explore a halfwave
of UT141/RG405 semi rigid coax on a 100 ohm load. This is just 0.141" or
4mm diameter, and you need 245mm (as the calculator will tell you). It is a
quite neat solution to a half wave balun if you are not too obsessed about
0.0xdB of loss.
===equote

The loss for UT141 is 0.03dB worse than RG58C/U in this case.

Owen

1555. Re: Technical question re 70 cm baluns

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 22:14:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pnc6pfq103ea0@corp.supernews.com>
Source record: 28825

Yes, I see I did misread the context. Please disregard my response.

Roy Lewallen, W7EL

1556. Re: Technical question re 70 cm baluns

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 22:23:06 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A325F5FC8BADnonenowhere@61.9.191.5>
Source record: 28826

Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
news:7sGJRFN7o6mHFADz@ifwtech.co.uk:

> Since the balun loop is an electrical half-wave, any impedance will
> reproduce the same voltage at the other end.

More correctly, same magnitue voltage but opposite polarity.

Owen

1557. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 22:54:39 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <PSOmj.169440$MJ6.15604@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28827

Cecil Moore wrote:
> Gene Fuller wrote:
>> What did I say that was incorrect?
>
>> Suppose that the "standard output" is at a constructive maximum.
>
> That supposition is incorrect because it supposes that
> the standard output can contain more energy than the
> source is supplying. That supposition violates the
> conservation of energy principle.
>

Why would anyone make such a supposition that violates conservation of energy? I certainly did not. I merely said the output was at a maximum. Do you think that "maximum" is an illegal concept? Does "maximum" imply some specific numerical value?

Frankly, I have no idea what your objection is, and I have even less interest. I gave a standard textbook solution in a straightforward manner that gives the correct result, violates nothing, and is not complicated by all sorts of artificial constraints. If you want something more, have at it.

73
Gene
W4SZ

1558. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 23:11:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <z6Pmj.633$5K1.343@newssvr12.news.prodigy.net>
Source record: 28828

Gene Fuller wrote:
> Why would anyone make such a supposition that violates conservation of
> energy? I certainly did not. I merely said the output was at a maximum.

No, you didn't. Here's what you said:

> Suppose that the "standard output" is at a *constructive maximum*.

Now do you remember what you said? You implied that
constructive interference is present.

> Do you think that "maximum" is an illegal concept? Does "maximum" imply
> some specific numerical value?

Sorry, you did NOT say "maximum". You said "constructive
maximum".

A "constructive maximum" is greater than the average
output of the source, by definition. If you just said
"maximum", it would have been OK. When you added
"constructive" it means that, by definition, the output
is greater than the average source power.
--
73, Cecil http://www.w5dxp.com

1559. Re: mfj 259

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-26 23:30:14 UTC
From: art <aunwin@insightbb.com>
Message-ID: <cd279eb8-bd1e-4d23-a986-b48e7bc804cb@e4g2000hsg.googlegroups.com>
Source record: 28829

On 26 Jan, 12:42, Roy Lewallen <w...@eznec.com> wrote:
> AI4QJ wrote:
>
> > Don't know about a battery option. Art is saying we need 20V to breakover
> > the oxide resistance. In my short stint as a component engineer years ago,
> > our research showed that zinc coating could actually take as much as 35V to
> > break over. Art is entirely correct on the oxide problem. Gold was very low
> > breakover, however...we had not considered the substrate leaching into the
> > gold (a very good point) but we considered the gold "flash" coating to be
> > totally useless and in the 35V region because the gold flash is so thin it
> > basically rubs off the first time it is used.
>
> Copper easily leaches into and alloys with gold, so when making a gold
> contact, the gold is never plated directly onto copper. A nickel barrier
> layer is virtually always used between the copper and gold to prevent
> this. When properly done, a gold contact will last a very long time.
> Gold is the only reliable way to do "dry circuit" (low voltage and
> current) switching, but a limited number of good connections can be made
> using other metals if sufficient contact pressure and wiping are employed.
>
> Gold flash is much too thin to be a good contact material, as AI4QJ
> notes. It's sometimes used on switches designed for "hot circuit"
> operation, but not "dry circuit" switches. Its only purpose is to
> provide some protection of a base metal surface from corrosion until the
> first switch contact is made. After that, wiping and arcing are depended
> upon to keep the contact area clean.
>
> If you rummage around in your junk box, you'll probably find miniature
> toggle switches rated 250 volts and others rated 20 volts. The former
> have silver contacts, for "hot circuit" switching. The latter have gold
> contacts for "dry circuit" switching. Some high quality switches have a
> good layer of gold (not "flash") over silver. Those can be used for
> either "hot" or "dry" circuit switching, but once used for hot circuit
> switching, the gold is rapidly eroded, so they can't later be used for
> dry circuits.
>
> The design and application of electrical contacts is a discipline in
> itself. It's a much more complex and difficult problem than most people
> realize.
>
> Roy Lewallen, W7EL

I worked as a Snr controls engineer(yes I was a trained mechanical
engineer working outside my field) for 20 years at G.E

The bottom line in all contacts is pressure and wiping/scrubbing
action
GE won a suit against it and other wiring companies when the hoo haa
started over mixed aluminum wiring in house holds.
G.E. was dropped out of the cases when it was shown that clamping
pressure
prevented exposure of the contact surfaces. Actually silver contacts
even when normally closed will build an oxide between the contacts.
Because control devices are packaged incardboard boxes for shipment it
is nigh impossibble for the customer to get clean contacts because of
the sulphides exuding from the card board.
Regards
Art Unwin KB9MZ...XG(uk)

1560. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 01:11:18 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <WSQmj.169706$MJ6.115264@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28830

Cecil Moore wrote:
> Gene Fuller wrote:
>> Why would anyone make such a supposition that violates conservation of
>> energy? I certainly did not. I merely said the output was at a maximum.
>
> No, you didn't. Here's what you said:
>
>> Suppose that the "standard output" is at a *constructive maximum*.
>
> Now do you remember what you said? You implied that
> constructive interference is present.
>
>> Do you think that "maximum" is an illegal concept? Does "maximum"
>> imply some specific numerical value?
>
> Sorry, you did NOT say "maximum". You said "constructive
> maximum".
>
> A "constructive maximum" is greater than the average
> output of the source, by definition. If you just said
> "maximum", it would have been OK. When you added
> "constructive" it means that, by definition, the output
> is greater than the average source power.

OK, remove the word "constructive" and simply leave "maximum". The same description still holds.

Feel better now?

Since you are reduced to nit-picking the exact choice of words, it appears you have nothing constructive to add (pun intended).

I gotta get one of the special dictionaries you have. The one that contains all of those "by definition" statements you like to use.

73,
Gene
W4SZ

1561. Re: Technical question re 70 cm baluns

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 01:32:54 UTC
From: Suzy <not@valid>
Message-ID: <479bdf4c@dnews.tpgi.com.au>
Source record: 28831

"Ian White GM3SEK" <gm3sek@ifwtech.co.uk> wrote in message
news:7sGJRFN7o6mHFADz@ifwtech.co.uk...
> Suzy wrote:
>>I am building a 70 cm Yagi. I want to make a balun out of a loop of coax
>>(yes, I know there are other methods but I prefer this one). My question
>>is,
>>will rg58 do. Also, comparing like losses to like losses, should it be 50
>>ohm or 75 ohm and why?
>
> RG58 will do fine. Some constructors use small hardline such as UT141, but
> mostly for mechanical convenience. At this wavelength, larger cables are
> quite difficult to bend into the small loop this is required.
>
> Since the balun loop is an electrical half-wave, any impedance will
> reproduce the same voltage at the other end. (Minor details: cable loss
> will have a small effect on voltage balance, but probably not enough to be
> detectable; the optimum impedance for VSWR bandwidth would be 100 ohms,
> but that is unimportant because other parts of the yagi will probably have
> a larger effect.)
>
> In summary, choose whatever cable you can conveniently form into an
> electrical half-wave loop.
>
>
>
> --
>
> 73 from Ian GM3SEK

Thank you so much Ian. Definitive answer at last (yes maybe the others were
too, Owen, but I am too thick to fathom them. <g>)

1562. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 01:33:32 UTC
From: smokinsteve30@webtv.net
Message-ID: <20153-479BDF6C-3940@baytvnwsxa002.msntv.msn.com>
Source record: 28832

I meant mounting it to the roof of my house and using it with my home radios.

1563. Re: So you want to build your very own HDTV antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 02:04:46 UTC
From: Nate Bargmann <n0nb.DO.NOT.SPAM@ME.networksplus.net>
Message-ID: <pan.2008.01.27.02.04.25@ME.networksplus.net>
Source record: 28833

On Wed, 23 Jan 2008 22:02:54 -0800, John Smith wrote:

> http://youtube.com/watch?v=EWQhlmJTMzw

Probably great for Wichita, but in the sticks of northeast Kansas, not so
much.

73, de Nate >>

--

"The optimist proclaims that we live in the best of all possible worlds,
the pessimist fears this is true."

1564. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 03:16:37 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <0b1caa5e-ae4d-4fbf-a3af-a5e2743b44e5@f10g2000hsf.googlegroups.com>
Source record: 28834

On Jan 26, 9:07 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Computing Pf and Pr will yield 50 W forward and 50 W reflected.
> > And yet no current is flowing anywhere. The voltage on the line
> > is completely static.
>
> Why would you compute Pf and Pr when no DC current is
> flowing?

To facilitate learning about how the equations work and
what they may mean.

> It is an invalid thing to do

Not at all. The equations don't just stop working at 0 frequency.

In their general form F(t), there is no hint at all that F can
not be a constant. Or, if you prefer, a square wave with a width
several times longer than the length of the line.

> and unrelated to reality.

Anything unreal will also be unreal for the specific case of
sinusoids.

> > And yet some will claim that 50 W is flowing forward and 50 W
> > is flowing backwards.
>
> I know of no one who will claim that for static DC.
> There are obviously no photons being emitted and
> therefore, no waves.

You really should try to stop thinking about photons
for just a short while. All the behaviours of a transmission
line can be understood and characterized without reference
to photons.

Analysis using classic circuit principles works quite fine
and has no difficulty at low frequencies.

> Your example is unrelated to standing waves on an
> RF transmission line where energy is in motion,
> photons are continuously being emitted and absorbed,
> and current and voltage loops are active.

There is no standing wave, but the example is quite
valid none-the-less. If you like, consider it as a
long pulse. And if you only want sinusoids, Fourier

will convert the pulse to sinusoids which you can,
using superposition, use to solve the problem.

The simplicity of the constant voltage makes it
easy to check your results.

> One must realize the limitations of one's model.
> The wave model obviously fails where there are no
> waves.

Think of it as a long pulse. That should satisfy your
need to have 'waves'.

...Keith

1565. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 03:24:22 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <33dcb420-1f75-4a37-9310-b5389197e37b@j78g2000hsd.googlegroups.com>
Source record: 28835

On Jan 26, 12:15 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Fri, 25 Jan 2008 19:13:31 -0800 (PST)
>
>
>
>
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Jan 24, 10:33 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > [snip]
> > > By examining this derivation, the reader can see that power and energy
> > > is reflected when a wave encounters a discontinuity. The reader can
> > > also see that more power is present on the transmission line than is
> > > delivered to the load.
>
> > This is the conventional phraseology for describing the behaviour at
> > the impedance discontinuity.
>
> > Allow me to offer a specific example for which this phraseology is
> > inappropriate.
>
> > Consider a 50 V step function generator with an output impedance of
> > 50 ohms driving a 50 ohm line that is 1 second long terminated in an
> > open circuit.
>
> > Turn on the generator. A 50 V step propagates down the line. The
> > generator is putting 50 J/s into the line. One second later it
> > reaches the open end and begins propagating backwards.
> > After two seconds it reaches the generator. The voltage at the
> > generator is now 100 V and no current is flowing from the
> > generator into the line. In the 2 seconds, the generator put
> > 100 joules into the line which is now stored in the line.
> > The line is at a constant 100 V and the current is zero everywhere.
>
> > Computing Pf and Pr will yield 50 W forward and 50 W reflected.
> > And yet no current is flowing anywhere. The voltage on the line
> > is completely static.
>
> > And yet some will claim that 50 W is flowing forward and 50 W
> > is flowing backwards.
>
> > Does this seem like a reasonable claim for an open circuited
> > transmission line with constant voltage along its length and
> > no current anywhere?

>
> > I do not find it so.
>
> > ...Keith
>
> This is a reasonable observation for a static situation where energy is stored on a transmission line.
>
> If the example contained an ongoing consideration, like "Where does the power move to?", then it would be reasonable to consider that the wave continued to move, simply to avoid the complication of what EXACTLY happens when a wave starts and stops.

So have you thought about "where does the power go?"

When the generator is matched to the line so that
the reflected wave does not encounter an impedance
discontinuity when it arrives back at the generator
(and therefore is not reflected), where does the
reflected power go?
Does it enter the generator?
Is it dissipated somewhere?

Answers to these questions will quickly lead to
doubts about the *reality* of "reflected power".

...Keith

1566. Antenna Stirs Up Controversy: How to beat the HOA?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 03:54:35 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <479c0078$0$22629$4c368faf@roadrunner.com>
Source record: 28836

Antenna Stirs Up Controversy

http://www.youtube.com/watch?v=aC_EeWSKJII

1567. Sorry, subject line is "A Small 160m loop"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 04:03:29 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <479c0291$0$22657$4c368faf@roadrunner.com>
Source record: 28837

A small 160m Loop

http://www.youtube.com/watch?v=GtEiA28HmIA&NR=1

1568. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 14:45:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <mO0nj.4140$J41.257@newssvr14.news.prodigy.net>
Source record: 28838

Keith Dysart wrote:
> Not at all. The equations don't just stop working at 0 frequency.

As a matter of fact, EM waves cannot exist without
photons. There is zero wave activity at DC. Therefore,
the forward power and reflected power is zero at DC
steady-state.

> You really should try to stop thinking about photons
> for just a short while.

Yep, you guys would like to sweep the technical knowledge
from the field of optical physics and quantum electro-
dynamics under the rug. One wonders why.

> Think of it as a long pulse. That should satisfy your
> need to have 'waves'.

No, only photons will satisfy the definition of EM
waves. There are no photons. There are no waves. There
are no forward and reflected powers. There are no
changing E-fields or H-fields. There is not even any
movement of electrons associated with the source
voltage.
--
73, Cecil http://www.w5dxp.com

1569. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 15:26:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Bo1nj.2715$hI1.1221@nlpi061.nbdc.sbc.com>
Source record: 28839

Keith Dysart wrote:
> When the generator is matched to the line so that
> the reflected wave does not encounter an impedance
> discontinuity when it arrives back at the generator
> (and therefore is not reflected), ...

On the contrary, it is redistributed back toward
the load in the process of destructive interference
and becomes constructive interference associated
with the forward wave. Whether you call that a
reflection or not, the fact that the forward
power equals the source power plus the reflected
power tells us that reflected power being dissipated
in the source would violate the conservation of
energy principle.

> where does the reflected power go?

Power doesn't flow so
reflected power doesn't "go" anywhere. It is the
reflected energy that is flowing, i.e. going
somewhere. If the power were flowing, its
dimensions would be joules/sec/sec. Maybe
you would like to try to explain the physical
meaning of those dimensions?

> Does it enter the generator?

forward power = source power + reflected power

A component of the forward energy is equal in
magnitude to the reflected energy so no, it
doesn't enter the source.

> Is it dissipated somewhere?

Not during steady-state. During steady-state it
is being used for impedance transformation. After
steady-state, it is dissipated either in the
source or in the load as a traveling wave.

> Answers to these questions will quickly lead to
> doubts about the *reality* of "reflected power".

Reflected power is the Poynting vector associated
with the reflected wave. It exists at a point. It's
average magnitude (indirectly measured by a Bird) is

Re(ExH*)/2. It's direction is the direction of the
flow of reflected energy.

If you don't believe in reflected energy, let your
fingers become the circulator load resistor for
an open-circuit stub being driven by a KW source.
--
73, Cecil http://www.w5dxp.com

1570. Re: Standing-Wave Current vs Traveling-Wave Current

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 15:32:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Gu1nj.1609$0w.404@newssvr27.news.prodigy.net>
Source record: 28840

Gene Fuller wrote:
> OK, remove the word "constructive" and simply leave "maximum".
> Feel better now?

Correcting conceptual violations of the conservation
of energy principle always makes me feel better.
Thank you for your rational response.
--
73, Cecil http://www.w5dxp.com

1571. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 15:57:52 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080127075752.54280ab5.rsparks@elltel.net>
Source record: 28841

On Sat, 26 Jan 2008 19:24:22 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 26, 12:15 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > On Fri, 25 Jan 2008 19:13:31 -0800 (PST)
> >
> >
> >
> >
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Jan 24, 10:33 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > [snip]
> > > > By examining this derivation, the reader can see that power and energy
> > > > is reflected when a wave encounters a discontinuity. The reader can
> > > > also see that more power is present on the transmission line than is
> > > > delivered to the load.
> >
> > > This is the conventional phraseology for describing the behaviour at
> > > the impedance discontinuity.
> >
> > > Allow me to offer a specific example for which this phraseology is
> > > inappropriate.
> >
> > > Consider a 50 V step function generator with an output impedance of
> > > 50 ohms driving a 50 ohm line that is 1 second long terminated in an
> > > open circuit.
> >
> > > Turn on the generator. A 50 V step propagates down the line. The
> > > generator is putting 50 J/s into the line. One second later it
> > > reaches the open end and begins propagating backwards.
> > > After two seconds it reaches the generator. The voltage at the
> > > generator is now 100 V and no current is flowing from the
> > > generator into the line. In the 2 seconds, the generator put
> > > 100 joules into the line which is now stored in the line.
> > > The line is at a constant 100 V and the current is zero everywhere.
> >
> > > Computing Pf and Pr will yield 50 W forward and 50 W reflected.
> > > And yet no current is flowing anywhere. The voltage on the line
> > > is completely static.
> >
> > > And yet some will claim that 50 W is flowing forward and 50 W
> > > is flowing backwards.
> >

> > > Does this seem like a reasonable claim for an open circuited
> > > transmission line with constant voltage along its length and
> > > no current anywhere?
> >
> > > I do not find it so.
> >
> > > ...Keith
> >
> > This is a reasonable observation for a static situation where energy is stored on a transmission line.
> >
> > If the example contained an ongoing consideration, like "Where does the power move to?", then it would be reasonable to consider that the wave continued to move, simply to avoid the complication of what EXACTLY happens when a wave starts and stops.
>
> So have you thought about "where does the power go?"

Yes, only the model I use substitutes a battery for the signal generator that you are using. The returning wave can recharge the battery, but how does the current stop? Or does it ever stop? From a practical aspect, the current must stop, but I can not explain how except by resistance that absorbs the circulating power.

We must keep the limitations of our models in mind.

>
> When the generator is matched to the line so that
> the reflected wave does not encounter an impedance
> discontinuity when it arrives back at the generator
> (and therefore is not reflected), where does the
> reflected power go?
> Does it enter the generator?
> Is it dissipated somewhere?
>
> Answers to these questions will quickly lead to
> doubts about the *reality* of "reflected power".
>
> ...Keith

The reflected wave that does not encounter an impedance at the generator must be on an infinitely long line, and therefore the conditions must have changed between the time of launch and return.

It makes more sense to think that the reflected voltage of (using your example) 50v meets 50v of forward voltage, and therefore finds an infinite resistance, coming to a stop.

If that happens, doesn't the same condition occur as soon as the reflected wave is first generated at the line end? The current really stops as soon as the end is reached, with the energy contained in the magnetic field converted to electric field energy visible as voltage. If this happened, the reflected wave could be better described as an electric "jump", similar to a hydraulic jump found in open channel flow of liquids, where kinetic energy is converted to potential energy.

This idea of an electric "jump" requires not a reflection occuring without a discontinuity, but a moving wave front that absorbs the traveling wave, bringing it to a stop (in this case).

--
73, Roger, W7WKB

1572. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 16:10:05 UTC
From: JOHN PASSANEAU <jxp16@psu.edu>
Message-ID: <Xns9A32719C52569JXP16PSUEDU@216.196.97.136>
Source record: 28842

Cecil Moore <nospam@w5dxp.com> wrote in news:mO0nj.4140$J41.257
@newssvr14.news.prodigy.net:

> Keith Dysart wrote:
>> Not at all. The equations don't just stop working at 0 frequency.
>
> As a matter of fact, EM waves cannot exist without
> photons. There is zero wave activity at DC. Therefore,
> the forward power and reflected power is zero at DC
> steady-state.
>
>> You really should try to stop thinking about photons
>> for just a short while.
>
> Yep, you guys would like to sweep the technical knowledge
> from the field of optical physics and quantum electro-
> dynamics under the rug. One wonders why.
>
>> Think of it as a long pulse. That should satisfy your
>> need to have 'waves'.
>
> No, only photons will satisfy the definition of EM
> waves. There are no photons. There are no waves. There
> are no forward and reflected powers. There are no
> changing E-fields or H-fields. There is not even any
> movement of electrons associated with the source
> voltage.

Food for thought!

There is no such thing as DC! How's that you say? You have to turn it on sometime and someday you may turn it off. There for, DC is just very low frequency AC.

As another example of physics over thinking, I once had a physics professor describe in detail how an electric motor works using Quark physics. Very interesting but it has no practical value in using electric motors. Much like this long thread has nothing much to do with antennas.

John Passaneau W3JXP

1573. Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 17:40:36 UTC
From: Walt <waltriley@hotmail.com>
Message-ID: <479cc214$0$26114$88260bb3@free.teranews.com>
Source record: 28845

I need to purchase some good coax cable and some connectors.
Can someone suggest the best place to get these items from?
I am open to any and all suggestions.
TIA

Walt

--
Posted via a free Usenet account from http://www.teranews.com

1574. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 17:54:32 UTC
From: richardharrison@webtv.net
Message-ID: <6518-479CC558-14@storefull-3255.bay.webtv.net>
Source record: 28843

Roy Lewallen wrote:
"A better reason to avoid "stored" is that power isn`t stored at all, anywhere. Anyone who believes so should be able to tell us how many watts are stored in a 50 Ah, 12 volt battery."

The 50 Ah of energy stored in a battery may be withdrawn at a rate determined by the load, so it is a variable.

Velocity in a transmission line is a constant determined by constructtion of the line. Thus, energy stored in the line is determined by its length, voltage, current, and phase angle. These predict the rate of energy transfer (power).

Best regards, Richard Harrison, KB5WZI

1575. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 18:06:36 UTC
From: Suzy <not@valid>
Message-ID: <479cc830@dnews.tpgi.com.au>
Source record: 28844

"JOHN PASSANEAU" <jxp16@psu.edu> wrote in message
news:Xns9A32719C52569JXP16PSUEDU@216.196.97.136...
>
> There is no such thing as DC! How's that you say? You have to turn it on
> sometime and someday you may turn it off. There for, DC is just very low
> frequency AC.
>

> John Passaneau W3JXP

That's false reasoning OM! Alternating current is not the same as discontinuous current. In the example you provide, a DC supply is either off or on; it does not reverse polarity! You do not make AC by switching on and off DC, even at 50 Hz (or your 60 Hz)

1576. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 18:46:06 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13ppkbcmvlv0q54@corp.supernews.com>
Source record: 28846

"Walt" <waltriley@hotmail.com> wrote in message
news:479cc214$0$26114$88260bb3@free.teranews.com...
>I need to purchase some good coax cable and some connectors.
> Can someone suggest the best place to get these items from?
> I am open to any and all suggestions.
> TIA
>
> Walt

What type of coax and what is it going to be used for ?

Here is where I got 500 feet from a while back. Bury-flex. It might be
overkill for some applications, but I was using most of it on 50 mhz and up.

http://www.davisrf.com/ham1/coax.htm

Another place is :

http://thewireman.com/index.shtml

I usually pick up coax from him at the hamfests.

1577. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 18:46:59 UTC
From: richardharrison@webtv.net
Message-ID: <29563-479CD1A3-764@storefull-3254.bay.webtv.net>
Source record: 28847

Suzy wrote:
"You do not make AC by switching on and off DC, even at 50 Hz (or your 60 Hz)"

Not without inductance to provide the missing half cycle. Remember vibrator supplies and their solid-state equivalents?

Best regards, Richard Harrison, KB5WZI

1578. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 18:51:09 UTC
From: Tony Giacometti <Tony-Giacometti@hotmail.com>
Message-ID: <CZadnRjaQr_wTwHanZ2dnUVZ_oPinZ2d@hawaiiantel.net>
Source record: 28848

Ralph Mowery wrote:

>
> "Walt" <waltriley@hotmail.com> wrote in message
> news:479cc214$0$26114$88260bb3@free.teranews.com...
>>I need to purchase some good coax cable and some connectors.
>> Can someone suggest the best place to get these items from?
>> I am open to any and all suggestions.
>> TIA
>>
>> Walt
>
> What type of coax and what is it going to be used for ?

I will be running high power to a couple of phased verticals.
Don't need to be buried I guess.

>
> Here is where I got 500 feet from a while back. Bury-flex. It might be
> overkill for some applications, but I was using most of it on 50 mhz and
> up.
>
> http://www.davisrf.com/ham1/coax.htm
>
> Another place is :
>
> http://thewireman.com/index.shtml
>
> I usually pick up coax from him at the hamfests.

--
Only a FOOL would believe in the FOLLY of Global Warming
Al Gore's movie IS an opinion (or more accurately a political device), and
there's very little 'scientific evidence' in it.
http://www.nytimes.com/2008/01/06/us/07stormcnd.html?ei=5065&en=1bb1732aba749ac9&ex=1200286800&adxnnl=1&partner=MYWAY&pagewanted=print&adxnnlx=1199718180-11vT1Os9DH52pB43B/S+vg
http://www.boston.com/bostonglobe/editorial_opinion/oped/articles/2008/01/06/br_r_r_where_did_global_warming_go/
http://www.bloomberg.com/apps/news?pid=20601088&sid=aVvwX1RTVGr8&refer=muse
http://www.newstatesman.com/200712190004
http://www.msnbc.msn.com/id/19619301/
http://www.dailymail.co.uk/pages/live/articles/news/worldnews.html?in_article_id=485336&in_page_id=1811
http://www.telegraph.co.uk/earth/main.jhtml?xml=/earth/2007/11/04/eaclimate104.xml

1579. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 20:36:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ppqpl43010pff@corp.supernews.com>
Source record: 28849

I highly recommend The Wireman, http://thewireman.com.

Roy Lewallen, W7EL

Walt wrote:
> I need to purchase some good coax cable and some connectors.
> Can someone suggest the best place to get these items from?
> I am open to any and all suggestions.
> TIA
>
> Walt
>

1580. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 20:41:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ppr3birllpv1c@corp.supernews.com>
Source record: 28757

Richard Harrison wrote:
> Roy Lewallen wrote:
> "A better reason to avoid "stored" is that power isn`t stored at all,
> anywhere. Anyone who believes so should be able to tell us how many
> watts are stored in a 50 Ah, 12 volt battery."
>
> The 50 Ah of energy stored in a battery may be withdrawn at a rate
> determined by the load, so it is a variable.

Ah is a unit of charge, not energy. The battery, making the simplifying (and invalid) assumption of constant voltage during discharge, contains 2.16 Mj of energy.

>
> Velocity in a transmission line is a constant determined by
> constructtion of the line. Thus, energy stored in the line is determined
> by its length, voltage, current, and phase angle. These predict the rate
> of energy transfer (power).

So the rate at which a transmission line transfers energy depends on its length? If I put 100 watts into a one wavelength cable and get 100 watts out, will I get 200 watts out if I extend the cable to two wavelengths?

Roy Lewallen, W7EL

1581. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 20:45:53 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pprc2rkhqje14@corp.supernews.com>
Source record: 28758

Suzy wrote:
> "JOHN PASSANEAU" <jxp16@psu.edu> wrote in message
> news:Xns9A32719C52569JXP16PSUEDU@216.196.97.136...
>> There is no such thing as DC! How's that you say? You have to turn it on
>> sometime and someday you may turn it off. There for, DC is just very low
>> frequency AC.
>>
>
>> John Passaneau W3JXP
>
> That's false reasoning OM! Alternating current is not the same as
> discontinuous current. In the example you provide, a DC supply is either off
> or on; it does not reverse polarity! You do not make AC by switching on and
> off DC, even at 50 Hz (or your 60 Hz)

But through the techniques of linear circuit analysis, we can split the pulsed DC into two components, a pure steady DC component and a symmetrical AC component. We can do two separate analyses with the two (AC and DC) excitations, and sum the results. The answer will be exactly the same as if we had done the calculations directly. One can then reasonably claim that the switched DC is the sum of an AC waveform and a pure DC component.

Roy Lewallen, W7EL

1582. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 20:54:31 UTC
From: hayseed <hayseed@rainmaker.com>
Message-ID: <479cef74$0$9064$a82e2bb9@reader.athenanews.com>
Source record: 28759

Try :
http://www.air802.com/product.php?productid=17152&cat=433&page=1

This is LMR-400 equivalent and is cheaper.

Good folks and quick delivery.
73
-Bob
AD7OT

1583. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 21:38:17 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13ppue7t8sami72@corp.supernews.com>
Source record: 28760

"hayseed" <hayseed@rainmaker.com> wrote in message
news:479cef74$0$9064$a82e2bb9@reader.athenanews.com...
> Try :
> http://www.air802.com/product.php?productid=17152&cat=433&page=1
>
> This is LMR-400 equivalent and is cheaper.
>
> Good folks and quick delivery.
> 73
> -Bob
> AD7OT

While it is probably not an issue for many, this and the lmr-400 has a center conductor that is aluminum covered in copper. I just like the 100% copper for the center conductor.

I don' t think the origional post was about a rotator on a tower, but the stranded seems to be the perferred coax for that. I did have some of the origional 9913 up with a rotator for about 10 years before I moved. It seemed ok, but I like the stranded center conductor and fully filled center dialectric.

For anything below 30 mhz and low power the rg-8x is ok. I am running some on 40 and 80 meters but with only 700 watts. This is just about the max for that coax , especially if sstv or rtty is being used .

A good grade of any of the rg-8 size has low enough loss below 30 mhz and the weather proffing is more of the issue.

1584. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 23:06:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <V78nj.3492$nK5.1410@nlpi069.nbdc.sbc.com>
Source record: 28761

Ralph Mowery wrote:
> While it is probably not an issue for many, this and the lmr-400 has a
> center conductor that is aluminum covered in copper.

How do they avoid the dissimilar metal problem? If I
need to connect copper to aluminum, can I use that
center conductor with copper on one end and copper
scraped off the other end to avoid the dissimilar
metal problems?
--
73, Cecil http://www.w5dxp.com

1585. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 23:24:31 UTC
From: Eric Oyen - N7ZZT <n7zzt@hotmail.com>
Message-ID: <fnj3r7$sk2$1@aioe.org>
Source record: 28762

Walt wrote:

> I need to purchase some good coax cable and some connectors.
> Can someone suggest the best place to get these items from?
> I am open to any and all suggestions.
> TIA
>
> Walt
>
www.thewireman.com

its the best place on the net at relatively good prices.

--
Sometimes, you just gotta come right out and say whats on your mind and be
damned those who would ridicule you for it!

1586. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 23:26:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pq4pbncptrja7@corp.supernews.com>
Source record: 28763

Arrgh! I did it again!

Roy Lewallen wrote:
>
> Ah is a unit of charge, not energy. The battery, making the simplifying
> (and invalid) assumption of constant voltage during discharge, contains
> 2.16 Mj of energy.

That's 2.16 MJ, not Mj.

It'll sink in eventually . . .I hope.

Roy Lewallen, W7EL

1587. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-27 23:33:59 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A336B63B1FD1nonenowhere@61.9.191.5>
Source record: 28764

"Ralph Mowery" <rmowery28146@earthlink.net> wrote in
news:13ppkbcmvlv0q54@corp.supernews.com:

> http://www.davisrf.com/ham1/coax.htm

Greg's notes on Buryflex at http://www.seed-solutions.com/gregordy/Amateur%
20Radio/Experimentation/buryflex.htm are also interesting.

Owen

1588. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 01:43:19 UTC
From: dplatt@radagast.org
Message-ID: <niov65-7em.ln1@radagast.org>
Source record: 28765

In article <V78nj.3492$nK5.1410@nlpi069.nbdc.sbc.com>,
Cecil Moore <nospam@w5dxp.com> wrote:

>How do they avoid the dissimilar metal problem? If I
>need to connect copper to aluminum, can I use that
>center conductor with copper on one end and copper
>scraped off the other end to avoid the dissimilar
>metal problems?

My understanding is that the copper/aluminum issue is only a problem in the presence of oxygen and an electrolyte. A bond between the metals, which excludes these factors doesn't have galvanic corrosion problems. There's apparently a high-pressure crimping system which creates a cold weld between aluminum and copper wire which is considered permanent and corrosion-free. I suspect that for LMR-400 and similar cables, the copper layer is deposited on the aluminum via electrolysis.

LMR-400 is usually terminated to an N connector, using a pressure crimper to attach the center pin... soldering is also used sometimes. The recommended connectors come with heat-shrink tubing to seal the coax-to-connnector junction. When properly assembled, these connectors are moistureproof. The copper/aluminum junctions should thus be well sealed away from anything which would cause them to corrode.

LMR-400 does have another characteristic which some people feel make it unsuitable for certain applications - its foil-and-braid shield. It's nigh-on impossible to guarantee a good electrical bond to the foil itself, since it's aluminum and cannot be soldered easily... you have to depend on the pressure of the crimp, and on contact between the foil and the braid. People who build repeaters seem to consider this construction prone to become noisy over time.. Allegedly, current flow between the braid and shield can create micro-arcing and increases the transmitter's broadband-noise output, especially if the cable is moving e.g. due to wind hitting the tower. This can apparently result in enough broadband noise at the repeater's input frequency to cause desense problems or scratching sounds when the cable moves.

This doesn't seem to be a significant issue for simplex applications, though.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior

I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1589. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 03:04:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pqhioj3vles0d@corp.supernews.com>
Source record: 28766

Owen Duffy wrote:
> "Ralph Mowery" <rmowery28146@earthlink.net> wrote in
> news:13ppkbcmvlv0q54@corp.supernews.com:
>
>> http://www.davisrf.com/ham1/coax.htm
>
> Greg's notes on Buryflex at http://www.seed-solutions.com/gregordy/Amateur%
> 20Radio/Experimentation/buryflex.htm are also interesting.

I have a 100 foot piece of Davis Bury-Flex I bought new and measured on a network analyzer. At around 200 MHz and above, it acts very strangely. The loss is 3 or more dB/100 feet above its spec. But if I take its natural two foot or so diameter coil and flex it a bit, the attenuation increases another couple of dB and stays there. When I check again some days later, I find that it's returned to its lower but still way out of spec value. It seems to be ok for HF, but I sure wouldn't use it above 2 meters. The genuine LMR400 I have is within its spec and doesn't exhibit this strange behavior when flexing.

Roy Lewallen, W7EL

1590. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 03:33:19 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13pqj7skf43p06e@corp.supernews.com>
Source record: 28767

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13pqhioj3vles0d@corp.supernews.com...
> Owen Duffy wrote:
>> "Ralph Mowery" <rmowery28146@earthlink.net> wrote in
>> news:13ppkbcmvlv0q54@corp.supernews.com:
>>> http://www.davisrf.com/ham1/coax.htm
>>
>> Greg's notes on Buryflex at
>> http://www.seed-solutions.com/gregordy/Amateur%
>> 20Radio/Experimentation/buryflex.htm are also interesting.
>
> I have a 100 foot piece of Davis Bury-Flex I bought new and measured on a
> network analyzer. At around 200 MHz and above, it acts very strangely. The
> loss is 3 or more dB/100 feet above its spec. But if I take its natural
> two foot or so diameter coil and flex it a bit, the attenuation increases
> another couple of dB and stays there. When I check again some days later,
> I find that it's returned to its lower but still way out of spec value. It
> seems to be ok for HF, but I sure wouldn't use it above 2 meters. The
> genuine LMR400 I have is within its spec and doesn't exhibit this strange
> behavior when flexing.
>
> Roy Lewallen, W7EL

That is interisting. I bought 500 feet and cut it into 4 lengths from about
120 to 140 feet each. They were then rolled into coils about 2 or 3 feet in
diameter. Two of them had pl 259 plugs on them and the other two had N
connectors installed. I did not use any high teck equipment, just about 100
watts at 440 mhz, a bird wattmeter, and a good dummy load. The losses in
each piece was within the specificiations of the coax. The same meter was
moved from one end to the other to see how much power was lost.
This was done mainly to see if the connectors were installed correctly as
it would have been difficult to change it out after the antennas were
installed.
It has been up almost a year. Wish I could pull it down and recheck it to
see if it was acting up.

1591. DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 04:23:16 UTC
From: Tom Horne <hornetd@veriqrmzon.net>
Message-ID: <UMcnj.1296$e46.992@trnddc04>
Source record: 28768

I am a RACES / ARES member who is trying to actually prepare for deployment with the ability to carry on effective communications from anywhere. I'm here in the antenna forum to get advice on a portable antenna system. I'm not here to join anyones particular theoretical antenna behavior cult. If you have real world experience with a portable multi band antenna system that actually worked for you please share that experience with me.

Ive seen a couple of folded dipole antennas advertised that appear to have some sort of fifty ohm dummy load at the center of the fold. Do those things do more then provide a heat source for fleeing birds?

There are several compact vertical and horizontal antennas being sold complete with stands or tripods are any of them worth their freight?

The so called spiderweb beams look interesting can anyone offer real world experience on those?

I'm honestly looking for advice that is based on experience rather than a particular theory of what should work. I want to know what does work from real world users.
--
Tom Horne, W3TDH K

"This alternating current stuff is just a fad. It is much too dangerous for general use." Thomas Alva Edison

1592. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 05:41:43 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <Q%dnj.2819$hI1.1598@nlpi061.nbdc.sbc.com>
Source record: 28770

Tom Horne wrote:
> I am a RACES / ARES member who is trying to actually prepare for
> deployment with the ability to carry on effective communications from
> anywhere. I'm here in the antenna forum to get advice on a portable
> antenna system. I'm not here to join anyones particular theoretical
> antenna behavior cult. If you have real world experience with a
> portable multi band antenna system that actually worked for you please
> share that experience with me.
>
> Ive seen a couple of folded dipole antennas advertised that appear to
> have some sort of fifty ohm dummy load at the center of the fold. Do
> those things do more then provide a heat source for fleeing birds?
>
> There are several compact vertical and horizontal antennas being sold
> complete with stands or tripods are any of them worth their freight?
>
> The so called spiderweb beams look interesting can anyone offer real
> world experience on those?
>
> I'm honestly looking for advice that is based on experience rather than
> a particular theory of what should work. I want to know what does work
> from real world users.

Tom;

A friend of mine had a multi band dipole sometime ago. This ant had a separate dipole for each band all connected to one balun. It took us all afternoon to tune it for optimum operation. Each time we tuned one dipole the others needed work. YMMV.

I have a B&W folded dipole all frequency folded dipole that does what I want it to do. When operated in NVIS I was able to contact stations over 400 miles away. I most likely could have done better but that was all I need for the application.

The connection at the ends of the dipole consisted of a non inductive resistor of either 600 or 1200 ohms (I disremember which). This does swamp the reflected energy when the wire is non resonant. There are those who claim the antenna is the work of the devil and those who sing the praises of the thing. All I can say is that it did the job I wanted it for. My problem now is I can't string it up at my new QTH. Lot to short and no place for the sky hooks. :^(

I also have a screwdriver antenna on my vehicle that also does the job it's designed for. It is not the most efficient antenna in the world either. However, I learned long ago that whatever answers the question

no matter how inefficient is a success.

Screwdriver's can be mounted on a tripod and will perform.

Dave WD9BDZ

Remember YMMV

1593. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 05:43:17 UTC
From: Sum Ting Wong <sumtingwong@privacy.net>
Message-ID: <ggqqp3laee0l3d0mj0lmlql93bgrjp0cit@4ax.com>
Source record: 28769

On Mon, 28 Jan 2008 04:23:16 GMT, Tom Horne <hornetd@veriqrmzon.net>
wrote:

>I want to know what does work from real world users.

Tom,

Used to provide checkpoint communications for the Baja offroad races.
Best antennas we found for consistent regional communications were low
horizontal dipoles fed with balanced line. You could tune them on any
band and the radiation pattern was UP. Google NVIS antennas, or start
here:

http://www.qsl.net/wb5ude/nvis/

S.T.W.

1594. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 07:05:29 UTC
From: richardharrison@webtv.net
Message-ID: <24762-479D7EB9-685@storefull-3257.bay.webtv.net>
Source record: 28771

Roy Lewallen wrote:
"Ah is a unit of charge, not energy."

The most common 12-volt battery is the lead-acid storage battery used in automobiles. It should not be allowed to become completely discharged nor to remain less than fully charged for a long time. The battery`s capacity is rated in amperes x hours. The discharge rate is assumed to be 8 hours. Slower discharges can be supported for more ampere-hours and faster discharges likely won`t meet the rated ampere-hour product.

A 50 Ah battery would be expected to deliver about 6.25 A for a period of 8 hours provided its electrolyte does not rise to more than 110 degrees F. 2-volt cells can be discharged down to 1.75 volts per cell or a voltage of 10.5 volts for the 6 cells of a 12-volt battery.

Best regards, Richard Harrison, KB5WZI

1595. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 07:15:29 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <348cc796-a4e6-46dd-aaf2-88bf0f740926@1g2000hsl.googlegroups.com>
Source record: 28772

On Jan 27, 12:40 pm, "Walt" <waltri...@hotmail.com> wrote:
> I need to purchase some good coax cable and some connectors.
> Can someone suggest the best place to get these items from?
> I am open to any and all suggestions.
> TIA

I heartily agree with Roy and Eric. The Wireman is as good as coax
suppliers get. Followed very closely by Davis RF.

> Walt

Brian w3rv

1596. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 07:31:26 UTC
From: richardharrison@webtv.net
Message-ID: <24762-479D84CE-687@storefull-3257.bay.webtv.net>
Source record: 28773

Roy Lewallen wrote:
"So the rate at which a transmission line transfers energy depends on its length?"

No, it depends on the power fed into the line.

Storage in the line depends on its length, plus the incident and reflected energies per unit length of the line. Velocity is fixed by construction of the line so a slow velocity factor allows more energy storage as the source energy output is constant and independent of the line`s velocity factor.

Best regards, Richard Harrison, KB5WZI

1597. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 12:31:59 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f27688bf-d903-429a-817a-ffd66dae6e42@e10g2000prf.googlegroups.com>
Source record: 28774

On Jan 27, 9:45 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Not at all. The equations don't just stop working at 0 frequency.
>
> As a matter of fact, EM waves cannot exist without
> photons. There is zero wave activity at DC. Therefore,
> the forward power and reflected power is zero at DC
> steady-state.

And yet all the circuit theory derivations of reflection
coefficient, power, voltage and current distributions
work just fine for DC (or, if you prefer, low rate pulses).

Digital designers use exactly that for solving real world
problems. They do not refuse to solve problems when the
conditions approach DC. The equations all work.

> > You really should try to stop thinking about photons
> > for just a short while.
>
> Yep, you guys would like to sweep the technical knowledge
> from the field of optical physics and quantum electro-
> dynamics under the rug. One wonders why.

An intriguing accusation. Transmission lines can be
understood well, and real world problems solved without
reference to photons and EM waves. Just use the well
known circuit theory based equations. And they extend
all the way to DC.

For those who like EM waves and photons... Why do you
want to limit yourselves? Why won't you use the circuit
theory bases equations to solve problems for which they
work? Just because EM waves and photons do not?

> > Think of it as a long pulse. That should satisfy your
> > need to have 'waves'.
>
> No, only photons will satisfy the definition of EM
> waves. There are no photons. There are no waves. There
> are no forward and reflected powers. There are no
> changing E-fields or H-fields. There is not even any
> movement of electrons associated with the source
> voltage.

May be true. But why do you want to use that as an excuse
not to solve solveable problems?

...Keith

1598. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 12:45:03 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <9585f3ef-d81f-4fec-9601-3d5b5a1dc8ac@n20g2000hsh.googlegroups.com>
Source record: 28775

On Jan 27, 10:26 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > When the generator is matched to the line so that
> > the reflected wave does not encounter an impedance
> > discontinuity when it arrives back at the generator
> > (and therefore is not reflected), ...
>
> On the contrary, it is redistributed back toward
> the load in the process of destructive interference
> and becomes constructive interference associated
> with the forward wave. Whether you call that a
> reflection or not, the fact that the forward
> power equals the source power plus the reflected
> power tells us that reflected power being dissipated
> in the source would violate the conservation of
> energy principle.

Unfortunately, this is quite wrong. And I continue to
be surprised that you argue that there is a reflection
where there is not an impedance discontinuity.

Some parts of the rest of your post are correct by
coincidence, but since the underlying premise of
reflections where there is no discontinuity is
incorrect, I have snipped it.

But this debate has been had before. You do not want
to understand how the output impedance of a generator
affects a returning signal. I have offerred references
and you have refused to look. I have offerred spice
simulations, and you have refused to look. When the
discussion moves to simpler generators so that the
behaviour can be studied, you will declare them
uninteresting because they do not represent "real
ham transmitters". You will make jokes about 10 cent
resistors, not realizing that is how real test
equipment prevents re-reflection. (How well would
a TDR work, if any substantial amount of the return
was reflected?)

When you decide that you do not want to argue that
reflections occur where there is no impedance
discontinuity, and are willing to study output
immpedance, the learning can begin.

...Keith

1599. Re: Where to buy coax cable

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 13:28:11 UTC
From: Topaz305RK <k7sam@arrl.net>
Message-ID: <c4GdnZlkucHzRQDanZ2dnUVZ_oesnZ2d@vnet-inc.com>
Source record: 28776

Have been buying for many years and have always used "The Wireman"
http://thewireman.com/index.shtml
Fair prices, fast shipping. If something is not on hand they let you know.
Not connected in any way with them, just a satisfied customer.

K7SAM

1600. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 15:05:46 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fnkr0a$18us$1@f04n12.cac.psu.edu>
Source record: 28777

John Smith wrote:
> Cecil Moore wrote:
>> HRBE wrote:
>>> Yeah,
>>> Bought a new GM sedan last June and its hasn't got an external
>>> antenna, the rear window heater is the antenna.
>>
>> My parents 90's Buick had the antenna embedded in
>> the windshield so it's nothing new.
>
> An antenna embedded in the windshield, which worked well--now that would
> be something!
>
> My old buick had an active/amplified one--I would like to replace the
> one of this new buick with it (and I have no idea where the antenna
> is--perhaps it is the rear windows defroster!)

I had an 87 Pulsar and a 99 Windstar that both had windshield antennas.
They both worked well. Crikeys, that's over 20 years ago!

GM may have had problems, but that is likely due to something other
than inherent flaws of that type antenna.

I wonder if the writer is going to follow up with a story about
transistors replacing tubes? hehe.....

- 73 de Mike N3LI -

1601. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 15:18:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2nmnj.899$R84.714@newssvr25.news.prodigy.net>
Source record: 28778

Tom Horne wrote:
> I'm honestly looking for advice that is based on experience rather than
> a particular theory of what should work. I want to know what does work
> from real world users.

What are you limitations? Supports? Size? Power?
--
73, Cecil http://www.w5dxp.com

1602. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 15:48:26 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fnktg5$l3e$1@news.albasani.net>
Source record: 28779

Michael Coslo wrote:

> ...
>
> I had an 87 Pulsar and a 99 Windstar that both had windshield
> antennas. They both worked well. Crikeys, that's over 20 years ago!
>
> GM may have had problems, but that is likely due to something other
> than inherent flaws of that type antenna.
>
> I wonder if the writer is going to follow up with a story about
> transistors replacing tubes? hehe.....
>
> - 73 de Mike N3LI -

With the auto antennas, you know some people will accept a level of
performance from antennas which others won't--I certainly should not
have to explain that to you after you have been a participant in this
newsgroup for the length of time you have.

There is just no accounting for "taste", but then, you already knew that ...

Regards,
JS

1603. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 15:56:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <CWmnj.800$xq2.281@newssvr21.news.prodigy.net>
Source record: 28780

Keith Dysart wrote:
> Transmission lines can be
> understood well, and real world problems solved without
> reference to photons and EM waves.

If that were true, we would not be having this
argument. The real world problem is - where does
the reflected EM energy go? Since you have not "solved
that real world problem", your methods are suspect.

OTOH, optical physicists solved that same problem
long before any of us were born.

> Why won't you use the circuit
> theory bases equations to solve problems for which they
> work?

The main reason not to use your methods is that you use
them to arrive at wrong concepts. EM waves cannot exist
without energy. If there exists no EM wave energy, there
are no EM waves. If EM waves exist, they are necessarily
associated with energy and momentum, both of which must
be conserved. The amount of that energy flowing past a
measurement point/plane in a unit-time is the power
(density) associated with the reflected wave. Even the
energy and momentum of a single photon can be calculated.

Any length of transmission line with reflections contains
exactly the amount of energy necessary to support the
forward and reflected waves. That amount of energy exists
in the transmission line and is not delivered to the load
during steady-state.

Because your model doesn't tell you where the reflected
energy goes, you assume there is zero energy in reflected
waves. Again, I challenge you to use your fingers to
replace the reflected power circulator load in a system
with a KW source driving an open-circuit. That shock therapy
will, no doubt, change your mind about the non-existence of
reflected power.
--
73, Cecil http://www.w5dxp.com

1604. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 16:30:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hqnnj.903$R84.848@newssvr25.news.prodigy.net>
Source record: 28781

Keith Dysart wrote:
> Unfortunately, this is quite wrong. And I continue to
> be surprised that you argue that there is a reflection
> where there is not an impedance discontinuity.

Since an absence of reflections violates the conservation
of energy principle, there is something wrong with your
assertion and your earlier example was proved to contain
a contradiction.

Psource = Pfor - Pref = Pload

Pfor = Psource + Pref = Pload + Pref

Those equations are true only if reflected energy
does not flow back into the source. I suspect that,
contrary to your assertions, the actual real-world
source presents an infinite impedance to reflected
waves.

> When you decide that you do not want to argue that
> reflections occur where there is no impedance
> discontinuity, ...

You simply fail to recognize the impedance
discontinuity.

Please perform the following experiment to prove
there is no impedance discontinuity and no distortion
and get back to us.

zero ohm
TV RCVR--+--TV source--+--Z0 stub----------open
|
Z0 source impedance resistor
|
GND

The source output goes into the stub. Reflections
occur at the open end of the stub and flow back
through the zero impedance source to be dissipated
in the Z0 source resistor and displayed without
distortion on the TV RCVR. If what you say is true,
it should be duck soup for you to prove.
--
73, Cecil http://www.w5dxp.com

1605. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 16:50:08 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <501sp3pu72kh5ftog8khdfvh3hm8sud5io@4ax.com>
Source record: 28782

On Mon, 28 Jan 2008 04:23:16 GMT, Tom Horne <hornetd@veriqrmzon.net>
wrote:

>I am a RACES / ARES member who is trying to actually prepare for
>deployment with the ability to carry on effective communications from
>anywhere. I'm here in the antenna forum to get advice on a portable
>antenna system. I'm not here to join anyones particular theoretical
>antenna behavior cult. If you have real world experience with a
>portable multi band antenna system that actually worked for you please
>share that experience with me.
>
>Ive seen a couple of folded dipole antennas advertised that appear to
>have some sort of fifty ohm dummy load at the center of the fold. Do
>those things do more then provide a heat source for fleeing birds?
>
>There are several compact vertical and horizontal antennas being sold
>complete with stands or tripods are any of them worth their freight?
>
>The so called spiderweb beams look interesting can anyone offer real
>world experience on those?
>
>I'm honestly looking for advice that is based on experience rather than
>a particular theory of what should work. I want to know what does work
>from real world users.
There are a multitude of answers for this question.

I know my solution will annoy the purists, but I offer it anyway...
I would recommend using the SGC-237 tuner (not cheap)! If it cannot
load what ever antenna you can get up or improvise it probably cannot
be done. With this device, a ground and 28 feet of vertical wire you
can work to 160 meters. Of course the better the ground, the better
the performance. A quarter wave on frequency might work better, but
whatever you have will work.

If the conditions permit a more elaborate antenna, the SGC-237 will
make the matching an non issue.

I am aware that a pi-network and skilled operator can out perform the
tuner but the tuner takes the problem out of the field and into the
planning stage.

John Ferrell W8CCW
"Life is easier if you learn to
plow around the stumps"

1606. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 16:58:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <CQnnj.907$R84.300@newssvr25.news.prodigy.net>
Source record: 28783

John Ferrell wrote:
> I know my solution will annoy the purists, but I offer it anyway...
> I would recommend using the SGC-237 tuner (not cheap)! If it cannot
> load what ever antenna you can get up or improvise it probably cannot
> be done. With this device, a ground and 28 feet of vertical wire you
> can work to 160 meters. Of course the better the ground, the better
> the performance. A quarter wave on frequency might work better, but
> whatever you have will work.

I have used a 22 foot vertical with 22 foot radials
fed by an SG-230 for effective 40m-10m operation.
--
73, Cecil http://www.w5dxp.com

1607. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 17:45:36 UTC
From: richardharrison@webtv.net
Message-ID: <22896-479E14C0-991@storefull-3258.bay.webtv.net>
Source record: 28784

Keith Dysert wrote:
"(How well would a TDR worh, if any substantial amount of return was reflected?)"

A properly terminated line does not make reflections. I would imagine multiple reflections on an oscilloscope produce the same smear as as they do on TV.

TDR is suggested for monitoring bridge integrity and performance. Where was it when we needed it? TDRs are likely cheaper than replacing all the questionable bridges.

TDR is used to determine the characteristics of electrical lines by observing reflected waveforms.Tektronnix is a leader with its "I Connect" software. Roy can likely describe it. Agilent suggests TDR is the most general approach to evaluating the time domain response of any electromagnetic system is to solve Maxwell`s equations in the time domain. The foregoing is courtesy of Wikipedia. The incoherent structure of the last sentence was theirs too.

Best regards, Richard Harrison, KB5WZI

1608. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 18:10:32 UTC
From: Tom Horne <hornetd@veriqrmzon.net>
Message-ID: <sUonj.6321$v86.4884@trnddc08>
Source record: 28785

Cecil Moore wrote:
> Tom Horne wrote:
>> I'm honestly looking for advice that is based on experience rather
>> than a particular theory of what should work. I want to know what
>> does work from real world users.
>
> What are you limitations? Supports? Size? Power?

Supports are an open question. I expect to have at least a forty eight foot, two inch, aluminum, mast to use because that is what I'm buying to support a directional or omni antenna array for the six, two, and three quarter meter bands. That mast is available in eight foot long sections. The six sections, couplers, guy rings, and the rest of the mast assembly will live in one of those long air luggage carriers with two built in wheels on one end that people use for things like skis. I can certainly include one or more of the surplus GI plastic or aluminum masts in the mobile equipment set, but three masts would be too much for deployments involving commercial airline flights. Depending on how heavy all of that is I could put one or two of the forty one foot Jackite(r) poles or equivalent in that same kit.

The power would be the one hundred watts that can be gotten from one of the DC to daylight mobile transceivers such as my Yaesu FT-857D. I expect to build my lugable station into an air transport case with the internal shelves and the removable front and back covers. That station will have 1200/9600 packet for Winlink 2000 radio Email composed of a laptop, TNC, and data radio. A dual bander for VHF / UHF voice and the Yaesu FT-857D for HF. If the Kenwood TM-D710A continues to get high reviews I'll use it for both voice and data on VHF / UHF and leave the separate TNC for a ground mobile deployment. The rest of the weight will be the power supply and rechargeable AGM battery up to the weight limit prescribed for a single piece of airline passenger baggage. If that ends up being impractical from a weight standpoint I might break it up into two air transport cases. If I remember correctly they simply won't transport an overweight item but they just charge you extra for having an extra piece of baggage.

My reason for wanting to identify the antennas first is that they sort of govern what else is possible.
--
Tom Horne

"This alternating current stuff is just a fad. It is much too dangerous for general use." Thomas Alva Edison

1609. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 18:20:13 UTC
From: Tom Horne <hornetd@veriqrmzon.net>
Message-ID: <x1pnj.6322$v86.3509@trnddc08>
Source record: 28786

John Ferrell wrote:
> On Mon, 28 Jan 2008 04:23:16 GMT, Tom Horne <hornetd@veriqrmzon.net>
> wrote:
>
>> I am a RACES / ARES member who is trying to actually prepare for
>> deployment with the ability to carry on effective communications from
>> anywhere. I'm here in the antenna forum to get advice on a portable
>> antenna system. I'm not here to join anyones particular theoretical
>> antenna behavior cult. If you have real world experience with a
>> portable multi band antenna system that actually worked for you please
>> share that experience with me.
>>
>> Ive seen a couple of folded dipole antennas advertised that appear to
>> have some sort of fifty ohm dummy load at the center of the fold. Do
>> those things do more then provide a heat source for fleeing birds?
>>
>> There are several compact vertical and horizontal antennas being sold
>> complete with stands or tripods are any of them worth their freight?
>>
>> The so called spiderweb beams look interesting can anyone offer real
>> world experience on those?
>>
>> I'm honestly looking for advice that is based on experience rather than
>> a particular theory of what should work. I want to know what does work
>>from real world users.
> There are a multitude of answers for this question.
>
> I know my solution will annoy the purists, but I offer it anyway...
> I would recommend using the SGC-237 tuner (not cheap)! If it cannot
> load what ever antenna you can get up or improvise it probably cannot
> be done. With this device, a ground and 28 feet of vertical wire you
> can work to 160 meters. Of course the better the ground, the better
> the performance. A quarter wave on frequency might work better, but
> whatever you have will work.
>
> If the conditions permit a more elaborate antenna, the SGC-237 will
> make the matching an non issue.
>
> I am aware that a pi-network and skilled operator can out perform the
> tuner but the tuner takes the problem out of the field and into the
> planning stage.
>
> John Ferrell W8CCW
> "Life is easier if you learn to

> plow around the stumps"

I didn't mention the issue of antenna tuners it but I was thinking of including the Yaesu FC-30 tuner in the HF set but I wanted to get some advice first. I was considering that tuner because it can be directly controlled by the transceiver and even bolted right to it. If that's a bad idea I have not bought one yet.

I take it you are not a fan of the diesel fuel and ammonium nitrate fertilizer solution to stumps. {;<)
--
Tom Horne

"This alternating current stuff is just a fad. It is much too dangerous for general use." Thomas Alva Edison

1610. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 18:56:09 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-027F5E.09575828012008@netnews.worldnet.att.net>
Source record: 28787

In article <2nmnj.899$R84.714@newssvr25.news.prodigy.net>,
Cecil Moore <nospam@w5dxp.com> wrote:

> Tom Horne wrote:
> > I'm honestly looking for advice that is based on experience rather than
> > a particular theory of what should work. I want to know what does work
> > from real world users.
>
> What are you limitations? Supports? Size? Power?

As far as Autotuners, especially the Motorola based, Stepped, Binary,
Lumped, Incremental Component Tuners, (SEA, SGC, etc) they have some
inherent problems that are a function of the design criteria. First,
they can't tune ANYWHERE (50 Khz or more) near the natural 1/2 wave
point of the attached antenna, where impedances head for infinity.
Second, they MUST have a very good RF Ground to work against, in order
to function properly. Don't even "think" the word "Counterpoise", but do
demand the phrase, LOW Impedance RF Ground, when engineering an
effective use of such an Autotuner. There have been some, that have used
these type tuners, as a Tuned Element in the center of a Dipole, but
again, these are severely compromised antenna systems, and not likely to
out preform a Dipole or Inverted Vee, Tuned for the Operating Frequency.

--
Bruce in alaska
add <path> after <fast> to reply

1611. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 18:58:03 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <j39sp390tciojge969sj4ja0bo5d1od5ak@4ax.com>
Source record: 28788

On Mon, 28 Jan 2008 18:10:32 GMT, Tom Horne <hornetd@veriqrmzon.net>
wrote:

>The six sections, couplers, guy rings, and the rest of the
>mast assembly will live in one of those long air luggage carriers with
>two built in wheels on one end that people use for things like skis.

Hi Tom,

With some care in isolating the VHF antennas you hoist aloft, you
could turn the mast and guys into a thick radiator capable of covering
80 through 30 Meters omni. With some effort in trap building (into
the conducting guys) you could extend that higher. The more radial
guys, the easier the broad band match; however, this can become an
issue of diminishing returns and increasing complexity.

73's
Richard Clark, KB7QHC

1612. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 19:26:05 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnla9r$3sd$1@news.service.uci.edu>
Source record: 28789

Cecil Moore wrote:

> If you solve that simple problem, you will know where
> the energy in the canceled waves goes.

Cecil, everyone knows (and agrees) where the energy actually is. It's not controversial. The problem is you want to believe it is also somewhere else, and that is impossible.

ac6xg

1613. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 20:20:56 UTC
From: Radio_Dick <rspost@mail.com>
Message-ID: <e4ad7e79-04ba-4193-8799-d1741e378845@v29g2000hsf.googlegroups.com>
Source record: 28790

I've had good luck with a portable antenna system that I use QRP with an FT817, on 80-10m. I use a High Sierra Sidekick short screwdriver antenna (other "shorter" brands would also work) with a modified BuddiPole mast and tripod. WIth my 5 watts I can work many stations that I can hear as long as there are no pileups - if so you need some patience!

I modified this by making a bracket for the mast that holds 4 , 10-12 ft MFJ telescoping antennas horizonatally to form the counterpoise. I use a 10 ft telescoping antenna on the screwdriver to make it more efficient on HF. All of this fits in a medium suitcase and when folded is only 24 inches long. To power the screwdriver motor I use a 9 volt, yes 9 volt, standard battery with a manual up/down switch. I use multiple Mix 31 ferrite beads on the coax and antenna motor wires at the antenna. I prefer the screwdriver type antenna as it is remotely tunable and most of them work well on 9-12 volts and don't require heavy duty batteries - I like to switch bands a lot but don't like to manually tune antennas "every 10 minutes". This setup puts the base of the antenna 7 to 8 feet above the ground so you have a bit less ground loss than if you put the ground counterpoise on the ground or a few feet above the ground.

The angle of radiation on this is probably at the horizon so if you're looking for short range HF then this would not be the configuration to use.

I've thought about making the bracket commerically available if anyone was interested, to augment my mobile antenna supplies (www.repDesign.us). If interested let me know.

73,
Dick Post, N7EMW

On Jan 27, 11:23 pm, Tom Horne <horn...@veriqrmzon.net> wrote:
> I am a RACES / ARES member who is trying to actually prepare for
> deployment with the ability to carry on effective communications from
> anywhere. I'm here in the antenna forum to get advice on a portable
> antenna system. I'm not here to join anyones particular theoretical
> antenna behavior cult. If you have real world experience with a
> portable multi band antenna system that actually worked for you please
> share that experience with me.
>
> Ive seen a couple of folded dipole antennas advertised that appear to
> have some sort of fifty ohm dummy load at the center of the fold. Do
> those things do more then provide a heat source for fleeing birds?
>

> There are several compact vertical and horizontal antennas being sold
> complete with stands or tripods are any of them worth their freight?
>
> The so called spiderweb beams look interesting can anyone offer real
> world experience on those?
>
> I'm honestly looking for advice that is based on experience rather than
> a particular theory of what should work. I want to know what does work
> from real world users.
> --
> Tom Horne, W3TDH K
>
> "This alternating current stuff is just a fad. It is much too dangerous
> for general use." Thomas Alva Edison

1614. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 20:37:07 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A339F45A6333mcoslocomcastnet@216.196.97.136>
Source record: 28791

dfinn1@nc.rr.com wrote in
news:a122edc0-c01b-4e1d-9ae5-01508fcad7dd@j78g2000hsd.googlegroups.com:

> On Jan 23, 1:01 pm, Michael Coslo <m...@psu.edu> wrote:
>> Roy Lewallen wrote:
>> >AI4QJwrote:
>> >> We're not the only ones arguing about this. I read that 2 lasers
>> >> pointed at each other 180 degrees out of phase causes darkeness
>> >> (cancellation). What happens to the energy? I have found no simple
>> >> answer, yet. We may need to rely on the 'dark physics' for an
>> >> explanation. . .
>>
>> > Yes, you'll have to look beyond normal science, perhaps deep into
>> > the realm of X files and poltergeists, for an explanation of the
>> > darkness, since that's not what you get when you point two lasers
>> > at each other. Write the simple equation describing the sum of
>> > out-of-phase waves moving in opposite directions. You'll find you
>> > get a classical standing wave pattern, not "darkness".
>>
>> Did they say what the speed of that dark is?
>>
>> - 73 de Mike N3LI -
>
> I guess you haven't been following. A standing wave has no speed. It
> just stands there.

There's something inherently funny when a person makes a joke, and
another person doesn't know it's a joke, and then lambastes the guy for
"not following".

- 73 de Mike N3LI -

1615. 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 21:52:33 UTC
From: Suzy <not@valid>
Message-ID: <479e4ea5@dnews.tpgi.com.au>
Source record: 28792

Can anyone point me to a website where a home built 70 cm reflectometer or 70 cm field strength meter can be built -- not using surface mount components. Thanks.

1616. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 21:53:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <n9snj.8512$Ej5.4920@newssvr29.news.prodigy.net>
Source record: 28793

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> If you solve that simple problem, you will know where
>> the energy in the canceled waves goes.
>
> Cecil, everyone knows (and agrees) where the energy actually is. It's
> not controversial. The problem is you want to believe it is also
> somewhere else, and that is impossible.

No, you would like people to believe what you say
is true about what I want to believe even though
it is false. I am not stupid enough to believe
the same energy can be in two places at once. What
I believe is that water can be in a pipeline
from beginning to end. I believe the same thing
is true for energy. Steady-state conditions in
a transmission line are a continuous energy pipeline,
not a snapshot in time.

Please solve that simple problem so we can discuss
your answer. When the external reflected wave of
0.01 watts encounters the internal reflected wave
of 0.009801 watts at t3, what is the total reflected
power toward the load between t3 and t4. If you solve
that simple problem any confusion about "what I want
to believe" will be lifted.

http://www.w5dxp.com/thinfilm.GIF
--
73, Cecil http://www.w5dxp.com

1617. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 22:12:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <idksp3968k40npj4nkm8acbfo7q2ctm1og@4ax.com>
Source record: 28794

On Mon, 28 Jan 2008 21:53:23 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>If you solve
>that simple problem any confusion about "what I want
>to believe" will be lifted.

Still stuck in confusion?

>http://www.w5dxp.com/thinfilm.GIF

oh, yes, of course, the source of confusion.
The Xerographic form of "leave no engineer behind" is, likewise, a
step backwards in understanding.

1618. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 22:18:14 UTC
From: richardharrison@webtv.net
Message-ID: <24762-479E54A6-770@storefull-3257.bay.webtv.net>
Source record: 28795

Roger Sparks wrote:
"It is not too hard to use the concept of traveling waves to derive the familiar reflection coefficient to SWR relationship."

Yes. Terman has done it for us in his 1955 opus. He just uses the letter S to represent SWR.

On page 86:
"The voltage and current of the incident wave at the load must satisfy Eq. (4-8) =
Eprime / Iprime = Zo."

And at the top of page 86:
"The reflected wave.----is identical with the incident wave except that it is traveling toward the generator. Eq. (4-11) =
Edouble prime / Idouble prime = -Zo."

"The load voltage is the sum of the voltages of the incident and reflected waves at the load,....
The load current is the sum of the currents of the incident and reflected waves at the load,....
The vector ratio EL / IL must equal the load impedance ZL."

"The vector ratio E2 / E1 of the voltage of the reflected wave to the voltage of the incident wave at the load is termed the reflection coefficient of the load.

Reflection coefficient = rho = E2/E1 =
(ZL/Zo)-1 / (ZL/Zo)+1."

And on page 97:
"Standing-wave ratio = S = Emax/Emin, Eq.(4-20)
And: S= [E1] + [E2] / [E1] - [E2], Eq. (4-21)"

The standing-wave ratio S is one means of expressing the magnitude of the reflection coefficient; the exact relation between the two is S = 1+[rho] / 1- [rho]

or [rho] = S-1 / S +1
This relationship is illustrated graphically in Fig. 4-9.

Best regards, Richard Harrrison, KB5WZI

1619. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 23:22:31 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <b5a3922d-4c4a-422a-8101-d9c91e006d79@v4g2000hsf.googlegroups.com>
Source record: 28796

On Jan 28, 1:52 pm, "Suzy" <not@valid> wrote:
> Can anyone point me to a website where a home built 70 cm reflectometer or
> 70 cm field strength meter can be built -- not using surface mount
> components. Thanks.

Are you willing to use a printed circuit board? If so, a directional coupler is pretty easy to make, microstrip style. You can even use a knife to score the copper and then peel away the unwanted copper. It's common to have one through-line and two coupled lines, one for "forward" and one for "reverse" measurements. You terminate each coupled line with Z0 (50 ohms, commonly) at one end and put a diode rectifier (or other power measuring device) at the other end. Although it's probably easiest to get a pretty good 50 ohm termination at 450MHz using surface mount parts, you can do OK with a couple 1/4 watt metal-film axial resistors. If you used 1206 size surface mount resistors, you should be able to solder them down with a decent standard iron -- they aren't all that small.

If you really can't find any construction articles on making one, maybe I could put something together and post it somewhere. They're far easier to make than many people seem to think.

Cheers,
Tom

1620. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-28 23:59:35 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <479e6c6a$0$17334$4c368faf@roadrunner.com>
Source record: 28797

"Mike Coslo" <mcoslo@youknow.comcast.net> wrote in message
news:Xns9A339F45A6333mcoslocomcastnet@216.196.97.136...
> dfinn1@nc.rr.com wrote in
> news:a122edc0-c01b-4e1d-9ae5-01508fcad7dd@j78g2000hsd.googlegroups.com:
>
>> On Jan 23, 1:01 pm, Michael Coslo <m...@psu.edu> wrote:
>>> Roy Lewallen wrote:
>>> >AI4QJwrote:
>>> >> We're not the only ones arguing about this. I read that 2 lasers
>>> >> pointed at each other 180 degrees out of phase causes darkeness
>>> >> (cancellation). What happens to the energy? I have found no simple
>>> >> answer, yet. We may need to rely on the 'dark physics' for an
>>> >> explanation. . .
>>>
>>> > Yes, you'll have to look beyond normal science, perhaps deep into
>>> > the realm of X files and poltergeists, for an explanation of the
>>> > darkness, since that's not what you get when you point two lasers
>>> > at each other. Write the simple equation describing the sum of
>>> > out-of-phase waves moving in opposite directions. You'll find you
>>> > get a classical standing wave pattern, not "darkness".
>>>
>>> Did they say what the speed of that dark is?
>>>
>>> - 73 de Mike N3LI -
>>
>> I guess you haven't been following. A standing wave has no speed. It
>> just stands there.
>
> There's something inherently funny when a person makes a joke, and
> another person doesn't know it's a joke, and then lambastes the guy for
> "not following".

I didn't take it as a joke any more than I would take as a joke the concept of holes moving in a semiconductor. One is the speed of the absence of negative charge, the other is the speed of the absence of photons, both of which are valid parameters that could be measured. But nothing moves transversly in a standing wave which is what we were speaking of.. When you encounter a standing wave, it is appropriate to suggest "Don't just do something, stand there!". That, to me, is a joke. :-)

1621. Magnetic Longwire Balun Question !!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 00:15:44 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <Qeunj.3627$801.28@fe1.news.blueyonder.co.uk>
Source record: 28798

Hi !.......

I`ve just purchased a WiMo MTFT Multi impedance transformer
with three taps at 4:1, 9:1 and 16:1 ratios.
Is anyone familiar with this device and can suggest a suitable wire
length to start with?? ......the instructions suggest a minimum of 6m
around 20ft....

Tried a 33 foot and pruned that back to about 30 feet to get a
very good to middling SWR on most bands.......thinking inverted `L`...
Garden 35x15feet......

Cheers...

Len.......G6ZSG.......

1622. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 00:45:13 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <Z7-dnRufmvaK6gPanZ2dnUVZ_g2dnZ2d@bright.net>
Source record: 28799

Dear Group:
The embedding of antenna in the windshield (windscreen) must go back to
before 1982. I am sure that I had a student thesis on the topic before
1982. As I recall, the designs worked quite well. The student's
experimental antennas were embedded (expensive) until someone allowed a
bunch to fall over and shatter. Then the student found that the same
measured results were obtained by placing the antenna against and outside of
the windshield. Heck, in the real old days antennas were sometimes run
under the car.
73, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Michael Coslo" <mjc5@psu.edu> wrote in message
news:fnkr0a$18us$1@f04n12.cac.psu.edu...
> John Smith wrote:
>> Cecil Moore wrote:
>>> HRBE wrote:
>>>> Yeah,
>>>> Bought a new GM sedan last June and its hasn't got an external antenna,
>>>> the rear window heater is the antenna.
>>>
>>> My parents 90's Buick had the antenna embedded in
>>> the windshield so it's nothing new.
>>
>> An antenna embedded in the windshield, which worked well--now that would
>> be something!
>>
>> My old buick had an active/amplified one--I would like to replace the one
>> of this new buick with it (and I have no idea where the antenna
>> is--perhaps it is the rear windows defroster!)
>
>
> I had an 87 Pulsar and a 99 Windstar that both had windshield antennas.
> They both worked well. Crikeys, that's over 20 years ago!
>
> GM may have had problems, but that is likely due to something other than
> inherent flaws of that type antenna.
>
> I wonder if the writer is going to follow up with a story about
> transistors replacing tubes? hehe.....
>
> - 73 de Mike N3LI -

1623. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 02:11:58 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnm230cig1@news.service.uci.edu>
Source record: 28800

Cecil Moore wrote:

> Please solve that simple problem so we can discuss
> your answer. When the external reflected wave of
> 0.01 watts encounters the internal reflected wave
> of 0.009801 watts at t3, what is the total reflected
> power toward the load between t3 and t4. If you solve
> that simple problem any confusion about "what I want
> to believe" will be lifted.

I don't suppose this will have much of an impact on you, but power doesn't 'interfere with other power', Cecil. (Physicists have known that since before you were born.) They know that fields interfere - voltages superpose. As I explained before, the equations you're using are correct shortcuts. They are NOT physical analogs of the phenomena.

http://www.w5dxp.com/thinfilm.GIF

I worked problems similar to yours with Walt Maxwell about two years ago. In fact I talked with you about it here on the newsgroup. You haven't really done this one correctly, but I do like the picture. You claim to know that power doesn't reflect, yet you insist on showing power reflecting, and canceling and doing all sorts of presumptuous things in your drawing. Furthermore you neither indicate nor do you consider whether the laser continues to irradiate the front surface at t3. Which, if it does, would make your number at t3 obviously incorrect.

It is apparent that you hope your answer and your correspondents answer are not the same. Without going further, I'll concede (happily) that my answer would not be the same as yours. For one thing I wouldn't express the answer in units of watts. And of course the solution cannot have energy flowing in the form of canceled waves. The only energy flowing is in the form of waves which do not cancel.

Electromagnetism isn't just like water - even though water conservation is also very important. :-)

If at some point you decide to discuss an RF problem of this type using transmission lines and voltages, we might be able to arrive at the correct solution using a more tenable process. But it might only come out the way you want if we do it your way. :-)

ac6xg

1624. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 03:11:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <e45tp35mc5tc9g7hsjeh9mrtgkf8gs3ech@4ax.com>
Source record: 28801

On Mon, 28 Jan 2008 18:11:58 -0800, Jim Kelley <jwkelley@uci.edu>
wrote:

> For one
>thing I wouldn't express the answer in units of watts.

Hi Jim,

Once again, I will align with Cecil - even though he previously took me to task for doing exactly what he does in his gif file, namely add/subtract power, watts, what-have-you. I have long ago discarded his contrarian responses with a smile noting this long tradition of Cecil impeaching his own data.

However, returning to the division/substitution/addition/subtraction of power, watts, what-have-you; the power (explicit and implicit) of light has a long-standing tradition in science. For whoever's purpose, a simple correlative has long been observed that the sun's irradiance upon a square meter of earth, on the solstice, at noon, on the equator, through the atmosphere is ~1000 Watts.

That is, there are 1000 Watts available IFF you can extract it, or harness it. The solar power conversion industry has built a market on this one characteristic.

It thus follows there is some percentage that is not available due to any number of mechanisms, reflection being principle among them. So, it follows an interface will refract some portion and reflect some portion. Cecil would variously demand this be expressed in energy when he was losing the power rhetoric, or demanding it be expressed in power when he was losing the energy rhetoric. We can all agree that rhetoric is "powering the debate" not the science.

The "proof" of his non-glare glass is a museum piece of mathematics that bears no relationship to actual life - but that is fine and well; unfortunately it also failed in the purity of mathematics where you take him to task for:
>Furthermore you neither indicate
>nor do you consider whether the laser continues to irradiate the front
>surface at t3. Which, if it does, would make your number at t3
>obviously incorrect.
So much of Cecil's "proofs" accumulate their proof through Retro Cognition - which is performed rather sloppily.

So, I see no problem, at the conceptual level, of working with portions of power within the context of illustrating an argument; and I am not even sure it matters in the long run, but then this has never

run the full course to test that "matter."

73's
Richard Clark, KB7QHC

1625. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 03:31:37 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <t6xnj.4508$J41.2713@newssvr14.news.prodigy.net>
Source record: 28802

Jim Kelley wrote:
> I don't suppose this will have much of an impact on you, but power
> doesn't 'interfere with other power', Cecil.

And I didn't say that powers interfere with other powers.
I said the external wave interferes with the internal
reflected wave. Waves certainly do interfere. The watt
values are the respective irradiances of the two waves.
Here's a quote from my years old "Worldradio" article.

"Likewise, the EM fields in the waves do the interfering.
Powers, treated as scalars, are incapable of interference."

As you well know, I have been on record for a number of
years saying powers are incapable of interference.

I do wish you would stop bearing false witness about
what I have said. You will never win the argument
using unethical tactics.

> You
> claim to know that power doesn't reflect, yet you insist on showing
> power reflecting, ...

Sorry, you are confused. I do not show power reflecting. I
show waves reflecting with the Poynting vectors as indicated.

Exactly how do you explain your refusal to work through
this simple problem?

> It is apparent that you hope your answer and your correspondents answer
> are not the same. Without going further, I'll concede (happily) that my
> answer would not be the same as yours.

Then one of us would be wrong but you will never win the
argument by refusing to solve the problem. Richard C.
attempted it in the past and, through power superposition,
came to the conclusion that the reflections would be
brighter than the surface of the sun. Hopefully, your
solution would not be the same as his.

> For one thing I wouldn't express the answer in units of watts.

Sorry, Irradiance is in watts/unit-area. Since the laser
beam is considered to be of constant area, the units of
watts simply indicate the power in the laser beam area
quite like watts indicate the power in a transmission
line of constant area.

--
73, Cecil http://www.w5dxp.com

1626. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 03:35:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <O9xnj.1723$uE.758@newssvr22.news.prodigy.net>
Source record: 28803

Richard Clark wrote:
> Once again, I will align with Cecil - even though he previously took
> me to task for doing exactly what he does in his gif file, namely
> add/subtract power, watts, what-have-you.

Please point out where I added or subtracted power in that
diagram. I don't see an addition or subtraction of any kind.
In fact, the last time I offered this example, you were the
one who superposed powers, not I.
--
73, Cecil http://www.w5dxp.com

1627. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 04:49:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jc9tp3d3q3s2k1rof4i5ru3brl02l6ulm8@4ax.com>
Source record: 28804

On Mon, 28 Jan 2008 21:35:10 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Please point out where I added or subtracted power in that
>diagram. I don't see an addition or subtraction of any kind.

The ultimate impeachment of one's own work. How I could be called upon to testify for or against it is amusing however, and goes to how rhetoric is what the game is all about. But it is still vastly more amusing by the challenge to skip the rhetoric and simply drill a hole in his own work:
1 WATT applied at t1
yields
0.99 WATT transmitted
0.01 WATT reflected

To the casual observer with normal powers of sight (and by Cecil's frequent admission, he is not listed among those numbers):
1 = 0.99 - -0.01
some time later, t3 we find 0.009801 WATT added (in the same direction as the reflected) t2 component. The number, of course, is wrong, but even more wrong is it being the product/quotient/sum/difference of any physical operation. This, will reveal in an admission from Cecil about his being human, prone to errors, and being especially human that it proves he was right.

To the casual observe having once observed the normal linear math applied at t1, and repeated at t2, that it would be a novel experience to discover that Physics had shifted such that at t3 the additive/subtractive associations once exhibited at t1 and t2 had been replaced by -um- something else (Cecil's Universal Law of Whatever?).

Discarding the obvious math error, the logical error follows that the point was that 0.01 - 0.009981 was structured to prove something (sorry "Whatever") through phase? All vectors are labeled with POWER and there is no suggestion of DOT or CROSS products being intended. So now human error has compounded across math and logic.

Discarding the math and logical error, that is all fine and well as any further examination at any other interface yields the same linear addition/subtraction directly expressed within the graphic (it would take a clown to insist that the operators were missing when the vectors are so evident).

Discarding these errors changes nothing as it takes very little mathematical skill to observe the failure of the "anti-reflective"

glass. At t1 0.01 WATT is reflected and with ALL subsequent internal reflections the TOTAL power available to cancellation is found in the reflection at t2 (0.0099 WATT) which is obviously less. The sum of all those internal reflections could never exceed what is available - and what is available is less than the first reflection:
0.01 WATT > 0.0099 WATT

I am, as already expressed to Jim, quite content to treat interfaces as power splitters. Hardly remarkable stuff and yet I suspect some will trounce me and it will be heartily amusing coming from Cecil - so I dare to plunge myself into this abyss ;-)

Convert the powers to ergs, dynes, sheckles, or any other metric, and the imbalance still defeats the proposition of total elimination. Arbitrage traders make billions of Euros in the stock market with less margin.... except for one fellow in Paris who must have been following Cecil's theories of conservation.

As the prophet Douglas Adams once wrote
"any event that is infinitely improbable will,
by definition, occur almost immediately"

That's why it takes so little effort to demolish Cecil's logic.

73's
Richard Clark, KB7QHC

1628. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 05:53:35 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <479ebf60$0$24096$4c368faf@roadrunner.com>
Source record: 28805

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:jc9tp3d3q3s2k1rof4i5ru3brl02l6ulm8@4ax.com...
> On Mon, 28 Jan 2008 21:35:10 -0600, Cecil Moore <nospam@w5dxp.com>
> wrote:
>
>>Please point out where I added or subtracted power in that
>>diagram. I don't see an addition or subtraction of any kind.
>
> The ultimate impeachment of one's own work. How I could be called
> upon to testify for or against it is amusing however, and goes to how
> rhetoric is what the game is all about. But it is still vastly more
> amusing by the challenge to skip the rhetoric and simply drill a hole
> in his own work:
> 1 WATT applied at t1
> yields
> 0.99 WATT transmitted
> 0.01 WATT reflected
>
> To the casual observer with normal powers of sight (and by Cecil's
> frequent admission, he is not listed among those numbers):
> 1 = 0.99 - -0.01
> some time later, t3 we find 0.009801 WATT added (in the same direction
> as the reflected) t2 component. The number, of course, is wrong, but
> even more wrong is it being the product/quotient/sum/difference of any
> physical operation. This, will reveal in an admission from Cecil
> about his being human, prone to errors, and being especially human
> that it proves he was right.
>
> To the casual observe having once observed the normal linear math
> applied at t1, and repeated at t2, that it would be a novel experience
> to discover that Physics had shifted such that at t3 the
> additive/subtractive associations once exhibited at t1 and t2 had been
> replaced by -um- something else (Cecil's Universal Law of Whatever?).
>
> Discarding the obvious math error, the logical error follows that the
> point was that 0.01 - 0.009981 was structured to prove something
> (sorry "Whatever") through phase? All vectors are labeled with POWER
> and there is no suggestion of DOT or CROSS products being intended. So
> now human error has compounded across math and logic.
>
> Discarding the math and logical error, that is all fine and well as
> any further examination at any other interface yields the same linear
> addition/subtraction directly expressed within the graphic (it would
> take a clown to insist that the operators were missing when the

> vectors are so evident).
>
> Discarding these errors changes nothing as it takes very little
> mathematical skill to observe the failure of the "anti-reflective"
> glass. At t1 0.01 WATT is reflected and with ALL subsequent internal
> reflections the TOTAL power available to cancellation is found in the
> reflection at t2 (0.0099 WATT) which is obviously less. The sum of
> all those internal reflections could never exceed what is available -
> and what is available is less than the first reflection:
> 0.01 WATT > 0.0099 WATT
>
> I am, as already expressed to Jim, quite content to treat interfaces
> as power splitters. Hardly remarkable stuff and yet I suspect some
> will trounce me and it will be heartily amusing coming from Cecil - so
> I dare to plunge myself into this abyss ;-)
>
> Convert the powers to ergs, dynes, sheckles, or any other metric, and
> the imbalance still defeats the proposition of total elimination.
> Arbitrage traders make billions of Euros in the stock market with less
> margin.... except for one fellow in Paris who must have been
> following Cecil's theories of conservation.
>
> As the prophet Douglas Adams once wrote
> "any event that is infinitely improbable will,
> by definition, occur almost immediately"
>
> That's why it takes so little effort to demolish Cecil's logic.
>
> 73's
> Richard Clark, KB7QHC

Richard, to muddy up this discussion of adding powers one might insist that we define which "power" we are talking about. Is is peak power, RMS power, PEP power, average power, 5% THD power? Is it real power or reactive power? For arithmetic functions like addition and subtraction, all we can do is superimpose waves of E and/or M. In doing do, we are performing an additive property of fields which can only imply a squared function on power which is a scalar and not a vector with an arrow tip at one end. I see where you are coming from, i.e. that power can sort of conceptually be dealt with this way but some sections of the derivations have been skipped, that is, the important sections transforming the arithmetically added/subtracted waves and converting them (by geometric 'squared' function) to power of no vector direction and only a positive, scalar value (the square of any wave is positive). Power cannot be negative nor can it be directional. EM waves can. This is not an example of what I think you might consider to be my normal nitpicking. Powers cannot be treated like this. I know you yourself are trying to make a concession here but I think it will not work in this case due to the scalar nature of power; it just isn't that flexible a property for you to allow that. True, if my stereo puts out 100W of 5% THD power per channel, I can say that my 2 channel stereo is 200W 5%THD. My friends will

understand. But that is not what we are dealing with on the non-reflective coating examples where power is attempted to by vectored, added/subtracted in various directions etc..

73, AI4QJ Dan

1629. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 07:20:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ptkuv34mcb790@corp.supernews.com>
Source record: 28806

AI4QJ wrote:
>
> Richard, to muddy up this discussion of adding powers one might insist that
> we define which "power" we are talking about. Is is peak power, RMS power,
> PEP power, average power, 5% THD power? Is it real power or reactive power?
> For arithmetic functions like addition and subtraction, all we can do is
> superimpose waves of E and/or M. In doing do, we are performing an additive
> property of fields which can only imply a squared function on power which is
> a scalar and not a vector with an arrow tip at one end. I see where you are
> coming from, i.e. that power can sort of conceptually be dealt with this way
> but some sections of the derivations have been skipped, that is, the
> important sections transforming the arithmetically added/subtracted waves
> and converting them (by geometric 'squared' function) to power of no vector
> direction and only a positive, scalar value (the square of any wave is
> positive). Power cannot be negative nor can it be directional. EM waves can.
> This is not an example of what I think you might consider to be my normal
> nitpicking. Powers cannot be treated like this. I know you yourself are
> trying to make a concession here but I think it will not work in this case
> due to the scalar nature of power; it just isn't that flexible a property
> for you to allow that. True, if my stereo puts out 100W of 5% THD power per
> channel, I can say that my 2 channel stereo is 200W 5%THD. My friends will
> understand. But that is not what we are dealing with on the non-reflective
> coating examples where power is attempted to by vectored, added/subtracted
> in various directions etc..
>
> 73, AI4QJ Dan

Sure power can be negative or be directional. Power is the time rate of energy movement or use. If energy is moving up at some rate, the direction of power is up. If energy is moving to the left, the direction of power is to the left. And in a transmission line, where energy can move in either of two directions, we must define one direction as being positive. Power representing energy moving in the other direction is negative. Power is the product of v(t) and i(t), both of which can be positive or negative, so the product can be positive or negative. Without the constrictions of a transmission line, power is more generally E X H, where E, H, and E X H are all vectors with a magnitude and direction.

Run the little TLVis1 program and look at demo 4. Notice that the power trace goes both above and below the center line. Energy movement to the right is defined there as positive, so negative power represents energy movement to the left. If power couldn't be negative, it wouldn't be possible for the average power to be zero. But the average power calculated at any point along a transmission line terminated in a short,

open, or pure reactance is zero at all times in steady state, while the instantaneous power alternates between positive and negative.

It's absolutely essential to get a grasp of some of these very fundamental concepts and units before tackling problems such as reflections or energy movement.

Roy Lewallen, W7EL

1630. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 09:37:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GtCnj.5087$so6.3419@newssvr19.news.prodigy.net>
Source record: 28601

Richard Clark wrote:
> 1 WATT applied at t1
> yields
> 0.99 WATT transmitted
> 0.01 WATT reflected
>
> To the casual observer with normal powers of sight (and by Cecil's
> frequent admission, he is not listed among those numbers):
> 1 = 0.99 - -0.01

Reflectance = 0.01, Transmittance = (1 - 0.01) = 0.99
Reflectance + Transmittance = 1.0. This is really basic
optical physics 201.

> some time later, t3 we find 0.009801 WATT added (in the same direction
> as the reflected) t2 component. The number, of course, is wrong, ...

We can ignore the rest of your posting until you prove this
assertion. The indexes of refraction were carefully chosen
to obtain a Reflectance (R) at each boundary of 0.01. The
Transmittance (T) is therefore 0.99. Please prove that the
0.009801 watt value is wrong.

first internal reflection = (((1w*T)*R)*T) = 0.009801w

The terms in the irradiance equation are in watts/unit-area,
i.e. power density. What I have done is multiply both sides
of the irradiance equation by the area of the laser beam
which is assumed to be ideally constant. Thus the power
densities are converted to powers.
--
73, Cecil http://www.w5dxp.com

1631. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 10:14:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <m0Dnj.1760$uE.359@newssvr22.news.prodigy.net>
Source record: 28602

Jim Kelley wrote:
> If at some point you decide to discuss an RF problem of this type using
> transmission lines and voltages, we might be able to arrive at the
> correct solution using a more tenable process.

If you remember, that's what we started with. But
there are too many rugs inside a transmission line
under which the technical truth can be swept. With
a laser beam, there is nowhere to hide the truth.

One elementary thing we need to get straight about
voltages is when destructive interference or
constructive interference is occurring. If two
coherent voltages traveling in the same direction
in a transmission line are superposed in the same
Z0 environment, is there destructive interference,
constructive interference, or no interference.
Here are three simple examples:

1. V1 = 100v at 0 deg., V2 = 100v at 45 deg.

2. V1 = 100v at 0 deg., V2 = 100v at 135 deg.

3. V1 = 100v at 0 deg., V2 = 100v at 90 deg.

If (V1+V2)^2 > (V1^2 + V2^2), then constructive
If (V1+V2)^2 < (V1^2 + V2^2), then destructive
If (V1+V2)^2 = (V1^2 + V2^2), then no interference
--
73, Cecil http://www.w5dxp.com

1632. WILSON 5000 HiPower TRUNK Mount CB Antenna NEW

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 14:23:06 UTC
From: KC8QJP <kc8qjp@lycos.com>
Message-ID: <fnncstdhb1@registered.motzarella.org>
Source record: 28604
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

http://cgi.ebay.com/WILSON-5000-HiPower-TRUNK-Mount-CB-Ham-Antenna-NEW_W0QQitemZ120214276177QQihZ002QQcategoryZ48692QQssPageNameZWDVWQQrdZ1QQcmdZViewItem

--
the quack shack
http://thequackshack.com/forums/radio/index.php

1633. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 14:25:15 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <b9cup3d639mf749hivto5ftk9ghpc8dk23@4ax.com>
Source record: 28603

>
>I didn't mention the issue of antenna tuners it but I was thinking of
>including the Yaesu FC-30 tuner in the HF set but I wanted to get some
>advice first. I was considering that tuner because it can be directly
>controlled by the transceiver and even bolted right to it. If that's a
>bad idea I have not bought one yet.
>
>I take it you are not a fan of the diesel fuel and ammonium nitrate
>fertilizer solution to stumps. {;<)
RE: Stumps....
I try to resist the urge to experiment in that direction. I continue
to look for a mentor that has gray hair, and a complete inventory of
eyes & limbs. I sure miss the days when every hardware store carried
Calcium Carbide.

Can you recommend any fuses or detonators?

RE: tuners
I like built in tuners but I like having the tuner at the antenna even
better. In days past a big mismatch was just an inconvenience. Today
RF at the operating position means the only equipment that does work
is the radio.

I use only two HF antennas at this time. The 28 foot vertical with the
SGC-237 which works fine 10-160m with no Shack RF and A Cushcraft A3S
40-10 beam with the tuner in the TenTec Jupiter. Both meet my
expectations.

A vertical MAY NOT meet your mission profile for short range
communications. A low dipole (High enough not to present a safety
hazard) may be more useful.

As an earlier poster pointed out, it would be best to select a length
that is NOT a half wave on a desired operating frequency.

Once again, a clever technician can beat any tuner but I find it
difficult to be clever when it is dark, cold, wet and hungry.

John Ferrell W8CCW
"Life is easier if you learn to
plow around the stumps"

1634. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 15:45:29 UTC
From: jimkelleyamps@gmail.com
Message-ID: <4a68cecd-df1a-47af-9056-26cd86805d77@i3g2000hsf.googlegroups.com>
Source record: 28605

On Jan 29, 2:14 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Jim Kelley wrote:
> > If at some point you decide to discuss an RF problem of this type using
> > transmission lines and voltages, we might be able to arrive at the
> > correct solution using a more tenable process.
>
> If you remember, that's what we started with. But
> there are too many rugs inside a transmission line
> under which the technical truth can be swept. With
> a laser beam, there is nowhere to hide the truth.

100% absolute nonsense. You express light intensity in terms of
watts, completely neglect the incoming beam in your calculation,
completely ignore the fact that 'power' doesn't phase cancel, and then
claim that the most valid approach isn't as good. Unbelievable.

ac6xg

1635. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 16:29:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FvInj.901$Ch6.811@newssvr11.news.prodigy.net>
Source record: 28606

jimkelleyamps@gmail.com wrote:
> On Jan 29, 2:14 am, Cecil Moore <nos...@w5dxp.com> wrote:
>> Jim Kelley wrote:
>>> If at some point you decide to discuss an RF problem of this type using
>>> transmission lines and voltages, we might be able to arrive at the
>>> correct solution using a more tenable process.
>> If you remember, that's what we started with. But
>> there are too many rugs inside a transmission line
>> under which the technical truth can be swept. With
>> a laser beam, there is nowhere to hide the truth.
>
> 100% absolute nonsense. You express light intensity in terms of
> watts, ...

What do you get when you multiply both sides of the
irradiance equation by a constant unit-area? I get watts.

> completely neglect the incoming beam in your calculation, ...

Now there's some magic invisible beam that exists only
in your mind? Please explain.

> completely ignore the fact that 'power' doesn't phase cancel, ...

The phase cancellation angle in the irradiance equation
is between E-fields, not between powers, so your objection
is just a straw man. When the two interfering waves are
180 degrees out of phase, the total irradiance diminishes.
I'm surprised you don't know that fact of physics.

> and then claim that the most valid approach isn't as good.

Both approaches are equally valid but one wonders why a
laser beam in air is so objectionable that you absolutely
refuse to perform a simple calculation. Guess I will have
to do it for you. The power density of the external reflection
is 0.01 watts/unit-area. The E-field of the internal reflection
undergoes a 180 degree phase shift and the power density is
0.009801 watts/unit-area.

http://www.w5dxp.com/thinfilm.GIF

Multiplying the irradiance equation by a constant
unit-area yields:

Ptot = P1 + P2 - 2*SQRT(P1*P2)

Ptot = 0.01 + 0.009801 - 2*SQRT(0.01*0.009801)

Ptot = 0.019801 - 0.0198 = 0.000001 watts

The total reflected power from t3 to t5 is one microwatt.

What happens to the rest of the energy? It is redistributed in the opposite direction as constructive interference. It is a continuous steady-state process that continues until the laser is shut off.
--
73, Cecil http://www.w5dxp.com

1636. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 16:55:11 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <c74d343a-122a-4842-a6f2-4242f305805b@s12g2000prg.googlegroups.com>
Source record: 28607

K7ITM wrote:
> On Jan 28, 1:52 pm, "Suzy" <not@valid> wrote:
> > Can anyone point me to a website where a home built 70 cm reflectometer or
> > 70 cm field strength meter can be built -- not using surface mount
> > components. Thanks.
>
> Are you willing to use a printed circuit board? If so, a directional
> coupler is pretty easy to make, microstrip style. You can even use a
> knife to score the copper and then peel away the unwanted copper.
> It's common to have one through-line and two coupled lines, one for
> "forward" and one for "reverse" measurements. You terminate each
> coupled line with Z0 (50 ohms, commonly) at one end and put a diode
> rectifier (or other power measuring device) at the other end.
> Although it's probably easiest to get a pretty good 50 ohm termination
> at 450MHz using surface mount parts, you can do OK with a couple 1/4
> watt metal-film axial resistors. If you used 1206 size surface mount
> resistors, you should be able to solder them down with a decent
> standard iron -- they aren't all that small.
>
> If you really can't find any construction articles on making one,
> maybe I could put something together and post it somewhere. They're
> far easier to make than many people seem to think.
>
> Cheers,
> Tom

Don't let the surface mount parts intimidate you. Its not that
difficult especially when you are doing just a few componets. I must
admit that I had a heck of a headache after building a little
microphone preamp. I glue the part I am going to install to a
toothpick to give me something to hold it with.

Jimmie

1637. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 17:08:19 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <74Jnj.512605$kj1.297060@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28608

Cecil Moore wrote:

>
> One elementary thing we need to get straight about
> voltages is when destructive interference or
> constructive interference is occurring. If two
> coherent voltages traveling in the same direction
> in a transmission line are superposed in the same
> Z0 environment, is there destructive interference,
> constructive interference, or no interference.
> Here are three simple examples:
>
> 1. V1 = 100v at 0 deg., V2 = 100v at 45 deg.
>
> 2. V1 = 100v at 0 deg., V2 = 100v at 135 deg.
>
> 3. V1 = 100v at 0 deg., V2 = 100v at 90 deg.
>
> If (V1+V2)^2 > (V1^2 + V2^2), then constructive
> If (V1+V2)^2 < (V1^2 + V2^2), then destructive
> If (V1+V2)^2 = (V1^2 + V2^2), then no interference

Cecil,

Why do you feel so compelled to worry about the precise definitions of constructive and destructive? They don't help with a numerical solution to any problem. Can't we simply survive with the ordinary everyday meaning of these qualitative terms, various Popular Science style websites notwithstanding.

As I pointed out some time ago, more advanced treatments such as Born and Wolf "Principles of Optics" or Jackson "Classical Electrodynamics" don't use these qualitative terms at all.

As a side note, if you want to see what your pal Hecht thinks of Born and Wolf, take a look at

http://www.aip.org/pt/vol-53/iss-10/p77a.html

73,
Gene
W4SZ

1638. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 17:09:18 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <aamup35e2922km000783ksanb5rf6s6dh4@4ax.com>
Source record: 28609

On Tue, 29 Jan 2008 03:37:43 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>Please prove that the 0.009801 watt value is wrong.

What a hoot! I gave you that and MORE and you still come up short.
This is like demanding the bank to correct their repossession notice
because you want them to acknowledge you owe them more. ;-)

The infinite summation from 0.0099 WATT available internal reflections
will NEVER exceed 0.0099 WATT and
0.01 WATT > 0.0099 WATT
remains true throughout all time.

To repeat the obvious, your argument of total elimination has been
debunked.

1639. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 18:23:41 UTC
From: Suzy <not@valid>
Message-ID: <479f6f31@dnews.tpgi.com.au>
Source record: 28610

"K7ITM" <k7itm@msn.com> wrote in message
news:b5a3922d-4c4a-422a-8101-d9c91e006d79@v4g2000hsf.googlegroups.com...
> On Jan 28, 1:52 pm, "Suzy" <not@valid> wrote:
>> Can anyone point me to a website where a home built 70 cm reflectometer
>> or
>> 70 cm field strength meter can be built -- not using surface mount
>> components. Thanks.
>
> Are you willing to use a printed circuit board? If so, a directional
> coupler is pretty easy to make, microstrip style. You can even use a
> knife to score the copper and then peel away the unwanted copper.
> It's common to have one through-line and two coupled lines, one for
> "forward" and one for "reverse" measurements. You terminate each
> coupled line with Z0 (50 ohms, commonly) at one end and put a diode
> rectifier (or other power measuring device) at the other end.
> Although it's probably easiest to get a pretty good 50 ohm termination
> at 450MHz using surface mount parts, you can do OK with a couple 1/4
> watt metal-film axial resistors. If you used 1206 size surface mount
> resistors, you should be able to solder them down with a decent
> standard iron -- they aren't all that small.
>
> If you really can't find any construction articles on making one,
> maybe I could put something together and post it somewhere. They're
> far easier to make than many people seem to think.
>
> Cheers,
> Tom

Thanks very much Tom. Yes I'm certainly OK with PCBs and I was aware of the
basic circuitry. But I felt that the stripline would have to be special in
some way for the 435 MHz that I need. Perhaps a special length?

1640. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 19:14:14 UTC
From: dfinn1@nc.rr.com
Message-ID: <93dc3ceb-2055-4225-8b13-7e1715027c62@p69g2000hsa.googlegroups.com>
Source record: 28611

On Jan 29, 2:20 am, Roy Lewallen <w...@eznec.com> wrote:
> AI4QJwrote:
>
> > Richard, to muddy up this discussion of adding powers one might insist that
> > we define which "power" we are talking about. Is is peak power, RMS power,
> > PEP power, average power, 5% THD power? Is it real power or reactive power?
> > For arithmetic functions like addition and subtraction, all we can do is
> > superimpose waves of E and/or M. In doing do, we are performing an additive
> > property of fields which can only imply a squared function on power which is
> > a scalar and not a vector with an arrow tip at one end. I see where you are
> > coming from, i.e. that power can sort of conceptually be dealt with this way
> > but some sections of the derivations have been skipped, that is, the
> > important sections transforming the arithmetically added/subtracted waves
> > and converting them (by geometric 'squared' function) to power of no vector
> > direction and only a positive, scalar value (the square of any wave is
> > positive). Power cannot be negative nor can it be directional. EM waves can.
> > This is not an example of what I think you might consider to be my normal
> > nitpicking. Powers cannot be treated like this. I know you yourself are
> > trying to make a concession here but I think it will not work in this case
> > due to the scalar nature of power; it just isn't that flexible a property
> > for you to allow that. True, if my stereo puts out 100W of 5% THD power per
> > channel, I can say that my 2 channel stereo is 200W 5%THD. My friends will
> > understand. But that is not what we are dealing with on the non-reflective
> > coating examples where power is attempted to by vectored, added/subtracted
> > in various directions etc..
>
> > 73,AI4QJDan
>
> Sure power can be negative or be directional. Power is the time rate of
> energy movement or use. If energy is moving up at some rate, the
> direction of power is up. If energy is moving to the left, the direction
> of power is to the left. And in a transmission line, where energy can
> move in either of two directions, we must define one direction as being
> positive. Power representing energy moving in the other direction is
> negative. Power is the product of v(t) and i(t), both of which can be
> positive or negative, so the product can be positive or negative.
> Without the constrictions of a transmission line, power is more
> generally E X H, where E, H, and E X H are all vectors with a magnitude
> and direction.
>
> Run the little TLVis1 program and look at demo 4. Notice that the power
> trace goes both above and below the center line. Energy movement to the
> right is defined there as positive, so negative power represents energy
> movement to the left. If power couldn't be negative, it wouldn't be

> possible for the average power to be zero. But the average power
> calculated at any point along a transmission line terminated in a short,
> open, or pure reactance is zero at all times in steady state, while the
> instantaneous power alternates between positive and negative.
>
> It's absolutely essential to get a grasp of some of these very
> fundamental concepts and units before tackling problems such as
> reflections or energy movement.
>
> Roy Lewallen, W7EL- Hide quoted text -
>
> - Show quoted text -

From the mathematical perspective, we are dealing with conservative fields that have polarities. This is where the concept of "vectors" resides. Basically the arrowhead of the vector points towards a positive polarity of a boundary that is negative on one side and positive on the other.

Power is not a conservative field, neither is energy. It is not a field at all. Furthermore, there does not exist in absolute terms either negative energy or negative power UNLESS you decide to venture into the newer fields of exotic physics to which I believe you refer to as "poltergiests". You can assign relative "polarities" to power if you which to to talk about more power or less power but you can never superimpose or cancel power of different polarities.
There is no -12 watts heat to cancel out +12 watts heat. Heat is heat
You can take 0 watts heat over time and average it out to +12 watts if you also have +24 watts with time but nothing is cancelled out. For superposition and cancellation, you must reduce down to the components of power (voltage and current).

You can speak about positive power moving along a transmission line in terms of distance. Yes it does move over distance, but not as a vector. It is carried by the fields which *are* vector quanities. Power is merely an expression that is always positive because it is a squared quantity although it may be multiplied by SQRT(-1) when defined as a reactive term. The following terms are valid: Assuming power is integer N,

P = N watts
P = jN watts

The following terms are not valid:

P = -N watts
P = -jN watts

1641. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 20:48:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pv49i42n10v46@corp.supernews.com>
Source record: 28612

dfinn1@nc.rr.com wrote:
>
> From the mathematical perspective, we are dealing with conservative
> fields that have polarities. This is where the concept of "vectors"
> resides. Basically the arrowhead of the vector points towards a
> positive polarity of a boundary that is negative on one side and
> positive on the other.
>
> Power is not a conservative field, neither is energy. It is not a
> field at all. Furthermore, there does not exist in absolute terms
> either negative energy or negative power UNLESS you decide to venture
> into the newer fields of exotic physics to which I believe you refer
> to as "poltergiests". You can assign relative "polarities" to power if
> you which to to talk about more power or less power but you can never
> superimpose or cancel power of different polarities.
> There is no -12 watts heat to cancel out +12 watts heat. Heat is heat
> You can take 0 watts heat over time and average it out to +12 watts if
> you also have +24 watts with time but nothing is cancelled out. For
> superposition and cancellation, you must reduce down to the components
> of power (voltage and current).
>
> You can speak about positive power moving along a transmission line in
> terms of distance. Yes it does move over distance, but not as a
> vector. It is carried by the fields which *are* vector quanities.
> Power is merely an expression that is always positive because it is a
> squared quantity although it may be multiplied by SQRT(-1) when
> defined as a reactive term. The following terms are valid: Assuming
> power is integer N,
>
> P = N watts
> P = jN watts
>
> The following terms are not valid:
>
> P = -N watts
> P = -jN watts

Sorry, I disagree.

I wasn't speaking of power moving anywhere. Energy is moving on a transmission line, and the power at any point on that transmission line is v(t) * i(t). v(t) and i(t) are sine functions in steady state, so the power at any point (except where v or i is always zero) changes sign four times during each cycle of v or i. There is no "reactive term" in v(t) * i(t). It's a simple time domain quantity.

Movement isn't required in order for quantity to have a direction. One of many examples is a static magnetic field, which most certainly has a direction but no movement.

If power can never be negative, please explain how the average power at any point can equal zero on an open circuited line. The average power at any point is the integral of v(t) * i(t) evaluated over one cycle of v or i and divided by the period. In steady state, v(t) * i(t), as I calculate it, is a sinusoid with twice the period of v or i, and centered around zero. Because it's centered around zero, its average is zero. This has been shown mathematically and quantitatively a number of times on this group.

It's no wonder that people are having so much trouble understanding energy movement, and why it's so easy to lead them astray with red herrings and pseudo-science, when there's so much misunderstanding about the underlying concepts and terminology. If you start with concepts which are fundamentally erroneous, the knowledge you build on them is bound to be wrong.

Roy Lewallen, W7EL

1642. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 20:58:41 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fno43r$6db$1@news.service.uci.edu>
Source record: 28613

Cecil Moore wrote:

> jimkelleyamps@gmail.com wrote:
>
>> On Jan 29, 2:14 am, Cecil Moore <nos...@w5dxp.com> wrote:
>>
>>> Jim Kelley wrote:
>>>
>>>> If at some point you decide to discuss an RF problem of this type using
>>>> transmission lines and voltages, we might be able to arrive at the
>>>> correct solution using a more tenable process.
>>>
>>> If you remember, that's what we started with. But
>>> there are too many rugs inside a transmission line
>>> under which the technical truth can be swept. With
>>> a laser beam, there is nowhere to hide the truth.
>>
>>
>> 100% absolute nonsense. You express light intensity in terms of
>> watts, ...
>
>
> What do you get when you multiply both sides of the
> irradiance equation by a constant unit-area? I get watts.

The point is you neglect to indicate and consider all the assumptions
you've made in arriving at your answer. Try solving the problem for
any thickness other than an odd multiple of 1/4 wavelengths - try .39
lambda for example. Then tell us about how reliable your 'let's
assume power interferes' method is.

>> completely neglect the incoming beam in your calculation, ...
>
>
> Now there's some magic invisible beam that exists only
> in your mind? Please explain.

Not much is known about it. The only indication shown in the picture
is "1 watt laser". Unless it is only producing light for the time it
takes light to travel a half wavelength, it continues to irradiate the
first surface at t3, producing additional reflected light which
superposes with "from 1st internal reflection". And there is also the
transmitted portion which sums with the internally reflected light at
t4. And so on....

>> completely ignore the fact that 'power' doesn't phase cancel, ...
>
>
> The phase cancellation angle in the irradiance equation
> is between E-fields, not between powers, so your objection
> is just a straw man.

:-) You've restated my objection perfectly.

>> and then claim that the most valid approach isn't as good.

> Both approaches are equally valid but one wonders why a
> laser beam in air is so objectionable that you absolutely
> refuse to perform a simple calculation. Guess I will have
> to do it for you. The power density of the external reflection
> is 0.01 watts/unit-area. The E-field of the internal reflection
> undergoes a 180 degree phase shift and the power density is
> 0.009801 watts/unit-area.

The efield does not have units of watts/"unit-area". In fact neither
does anything else, to be precise.

http://www.w5dxp.com/thinfilm.GIF
>
> Multiplying the irradiance equation by a constant
> unit-area yields:
>
> Ptot = P1 + P2 - 2*SQRT(P1*P2)

Well, at least you didn't decide to multiply by the gravitational
constant. :-)

> Ptot = 0.01 + 0.009801 - 2*SQRT(0.01*0.009801)
>
> Ptot = 0.019801 - 0.0198 = 0.000001 watts

> The total reflected power from t3 to t5 is one microwatt.

Probably not one microwatt (for reasons I already stated and you
evidently didn't understand.) You are to be commended on your use of
a calculator (or your times tables, whichever).

> What happens to the rest of the energy?
> It is redistributed
> in the opposite direction as constructive interference.

In an alegorical sense, perhaps. It's where you extend the idea
beyond alegory into actual physical phenomena that you go wrong.

ac6xg

1643. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 21:23:26 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fno5i9$6su$1@news.service.uci.edu>
Source record: 28614

Richard Clark wrote:

> To the casual observe having once observed the normal linear math
> applied at t1, and repeated at t2, that it would be a novel experience
> to discover that Physics had shifted such that at t3 the
> additive/subtractive associations once exhibited at t1 and t2 had been
> replaced by -um- something else (Cecil's Universal Law of Whatever?).

First rule of creative bookkeeping: You can do anything you want as
the numbers come out right.

> The sum of
> all those internal reflections could never exceed what is available -
> and what is available is less than the first reflection:
> 0.01 WATT > 0.0099 WATT

The sum of the internal reflections must always equal the energy from
the source that has neither been reflected from the front surface nor
transmitted to the load up to that time.

ac6xg

1644. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 21:45:06 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fno6qs$7b7$1@news.service.uci.edu>
Source record: 28615

Richard Clark wrote:

> To the casual observe having once observed the normal linear math
> applied at t1, and repeated at t2, that it would be a novel experience
> to discover that Physics had shifted such that at t3 the
> additive/subtractive associations once exhibited at t1 and t2 had been
> replaced by -um- something else (Cecil's Universal Law of Whatever?).

First rule of creative bookkeeping: You can do anything you want as
long as the numbers come out right.

> The sum of
> all those internal reflections could never exceed what is available -
> and what is available is less than the first reflection:
> 0.01 WATT > 0.0099 WATT

The sum of the internal reflections must always equal the energy from
the source that has neither been reflected from the front surface nor
transmitted to the load up to that time.

ac6xg

1645. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 22:48:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <e3Onj.878$0o7.230@newssvr13.news.prodigy.net>
Source record: 28616

Gene Fuller wrote:
> Why do you feel so compelled to worry about the precise definitions of
> constructive and destructive? They don't help with a numerical solution
> to any problem.

Of course they do, Gene. That is the whole reason for presenting them. Being able to spot the destructive interference and the necessary equal amount of constructive interference explains a host of the problems presented here which are a lot like the problems faced by optical physicists over the past couple of centuries - which they have already solved for us. Optical physicists know exactly where all of the energy goes because they were forced to deal with power densities, something that a lot of hams have yet to learn to deal with.

Setting aside the cause of interference, the results of interference explains in simple terms why a Z0-match with a reflection coefficient of 0.5 can manage to eliminate 100% of the reflections. When we tune our antenna systems for a Z0-match to 50 ohms, we are causing *total destructive interference* toward the source as defined by Hecht in "Optics".

Here's an example:

```
100w
XMTR--50 ohm line--+--1/2WL 300 ohm line---50 ohm load
Pfor1=100w-->|-->Pfor2=???
Pref1=0w<--|<--Pref2=???
```

What are the magnitudes of Pfor2 and Pref2? Hint: no need to resort to voltages and currents. Optical physicists couldn't measure voltage and current in light and yet they did just fine. The above power values in a transmission line are very much like irradiance (intensity) in optical physics. Why not avail ourselves of that free knowledge even if only for reasons of *knowledge for knowledge's sake*?
--
73, Cecil http://www.w5dxp.com

1646. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 23:01:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <TeOnj.47761$Pv2.44549@newssvr23.news.prodigy.net>
Source record: 28617

Richard Clark wrote:
> On Tue, 29 Jan 2008 03:37:43 -0600, Cecil Moore <nospam@w5dxp.com>
> wrote:
>
>> Please prove that the 0.009801 watt value is wrong.
>
> What a hoot! I gave you that and MORE and you still come up short.
> This is like demanding the bank to correct their repossession notice
> because you want them to acknowledge you owe them more. ;-)
>
> The infinite summation from 0.0099 WATT available internal reflections
> will NEVER exceed 0.0099 WATT and
> 0.01 WATT > 0.0099 WATT
> remains true throughout all time.

Obviously false as any textbook will attest. All reflections
toward the source are eventually eliminated thus forcing all
the energy to wind up flowing into the glass. And you really
missed badly on what happens in the thin-film.

The *forward power* within the thin-film is *1.010101 watts*
during steady-state. The *reflected power* in the thin-film is
0.010101 watts during steady-state. Such is the nature of
total destructive interference at the air to thin-film surface.

Your strange assertions are exactly why hams need to learn
this readily available knowledge from the field of optical
physics. It remains to be seen whether the "experts" will
side with you or with me or choose to remain silent.
--
73, Cecil http://www.w5dxp.com

1647. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 23:11:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <woOnj.47869$Pv2.31393@newssvr23.news.prodigy.net>
Source record: 28618

Jim Kelley wrote:
> Then tell us about how reliable your 'let's assume power
> interferes' method is.

I've said it 100 times - power doesn't interfere. You
are hoping to win by innuendo and falsification what you
cannot win with a rational ethical argument.

> The efield does not have units of watts/"unit-area".

I didn't say it did. The units being used are the number
of degrees of phase angle between one E-field and another.
You are hoping to win by innuendo what you cannot win with
an ethical argument.

You have not disproved anything I have said. You have just
set up straw men of your own design and knocked them down.
When you stop your unethical tactics I will resume the
discussion.
--
73, Cecil http://www.w5dxp.com

1648. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-29 23:55:14 UTC
From: Suzy <not@valid>
Message-ID: <479fbcea@dnews.tpgi.com.au>
Source record: 28619

"John KD5YI" <groups1_dot_jocjo@xoxy.net> wrote in message
news:jFOnj.10273$fs4.5137@trnddc02...
> "Suzy" <not@valid> wrote in message news:479e4ea5@dnews.tpgi.com.au...
>> Can anyone point me to a website where a home built 70 cm reflectometer
>> or 70 cm field strength meter can be built -- not using surface mount
>> components. Thanks.
>
>
> How about an SWR meter with no surface mount components? See:
>
> http://www.qsl.net/xq2fod/Electron/swr/swr.html
>
> Have fun!
>
> John
Thanks for that. I really want to emulate a throughline (like the Bird 43 I
once had) and am thinking more in the terms of a stripline on PCB (using
BNC), with parallel lines to sniff the RF and diodes to convert for the
meters. But what I'm usure of is the sort of dimensions I should use for 70
cms, and wther these are critical. How long should the stripline be, what
spacing and so on, so that it doesn't in itself introduce errors and
misleading results. The sort of thing I would imagine would be in the ARRL
handbook, but I want to avoid the expense of buying the book if it's not in
there at all. BTW, most of the designs I've seen are HF or for up to 2
meters at the highest. I specifically want 70 cms, 435 MHz to be exact.

1649. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 00:16:41 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnofn9agf1@news.service.uci.edu>
Source record: 28621

Cecil Moore wrote:

> What do you get when you multiply both sides of the
> irradiance equation by a constant unit-area? I get watts.

The point is you neglect to indicate and consider all the assumptions you've made in arriving at your answer. Try solving the problem for any thickness other than an odd multiple of 1/4 wavelengths - try .39 lambda for example. Then tell us about how reliable your 'let's assume power interferes' method is.

>> completely neglect the incoming beam in your calculation, ...
>
>
> Now there's some magic invisible beam that exists only
> in your mind? Please explain.

Not much is known about it. The only indication shown in the picture is "1 watt laser". Unless it is only producing light for the time it takes light to travel a half wavelength, it continues to irradiate the first surface at t3, producing additional reflected light which superposes with "from 1st internal reflection". And there is also the transmitted portion which sums with the internally reflected light at t4. And so on....

>> completely ignore the fact that 'power' doesn't phase cancel, ...
>
>
> The phase cancellation angle in the irradiance equation
> is between E-fields, not between powers, so your objection
> is just a straw man.

:-) You've restated my objection perfectly.

>> and then claim that the most valid approach isn't as good.

> Both approaches are equally valid but one wonders why a
> laser beam in air is so objectionable that you absolutely
> refuse to perform a simple calculation.

Do you honestly believe that I don't know how to add, subtract, divide, and multiply, Cecil?

> Multiplying the irradiance equation by a constant
> unit-area yields:
>
> Ptot = P1 + P2 - 2*SQRT(P1*P2)

Well, at least you didn't decide to multiply by the gravitational constant. :-)

> Ptot = 0.01 + 0.009801 - 2*SQRT(0.01*0.009801)
>
> Ptot = 0.019801 - 0.0198 = 0.000001 watts

> The total reflected power from t3 to t5 is one microwatt.

Probably not one microwatt (for reasons I already stated and you evidently didn't understand.) You are to be commended on your use of a calculator (or your times tables, whichever).

> What happens to the rest of the energy?
> It is redistributed
> in the opposite direction as constructive interference.

In an allegorical sense, perhaps. It's where you extend the idea beyond allegory into actual physical phenomena that you go wrong.

ac6xg

1650. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 00:18:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hnPnj.1405$xq2.459@newssvr21.news.prodigy.net>
Source record: 28620

Suzy wrote:
> I specifically want 70 cms, 435 MHz to be exact.

I have a Micronta SWR/POWER METER speced for 440 MHz.
I suspect it uses a small ferrite core rated for 440 MHz
for the current pickup and a capacitive divider for
voltage. Seems all you need is a ferrite core rated
up to 440 MHz and you would be in business. Seems to
me that even a ferrite core not rated for 440 MHz
could be used and calibrated on a one to one basis.
--
73, Cecil http://www.w5dxp.com

1651. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 00:26:23 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <a11f0fb1-f41c-44e8-ad92-39bbfe532cb5@i12g2000prf.googlegroups.com>
Source record: 28622

On Jan 29, 10:23 am, "Suzy" <not@valid> wrote:
> "K7ITM" <k7...@msn.com> wrote in message
>
> news:b5a3922d-4c4a-422a-8101-d9c91e006d79@v4g2000hsf.googlegroups.com...
>
>
>
> > On Jan 28, 1:52 pm, "Suzy" <not@valid> wrote:
> >> Can anyone point me to a website where a home built 70 cm reflectometer
> >> or
> >> 70 cm field strength meter can be built -- not using surface mount
> >> components. Thanks.
>
> > Are you willing to use a printed circuit board? If so, a directional
> > coupler is pretty easy to make, microstrip style. You can even use a
> > knife to score the copper and then peel away the unwanted copper.
> > It's common to have one through-line and two coupled lines, one for
> > "forward" and one for "reverse" measurements. You terminate each
> > coupled line with Z0 (50 ohms, commonly) at one end and put a diode
> > rectifier (or other power measuring device) at the other end.
> > Although it's probably easiest to get a pretty good 50 ohm termination
> > at 450MHz using surface mount parts, you can do OK with a couple 1/4
> > watt metal-film axial resistors. If you used 1206 size surface mount
> > resistors, you should be able to solder them down with a decent
> > standard iron -- they aren't all that small.
>
> > If you really can't find any construction articles on making one,
> > maybe I could put something together and post it somewhere. They're
> > far easier to make than many people seem to think.
>
> > Cheers,
> > Tom
>
> Thanks very much Tom. Yes I'm certainly OK with PCBs and I was aware of the
> basic circuitry. But I felt that the stripline would have to be special in
> some way for the 435 MHz that I need. Perhaps a special length?

The stripline (microstrip, really, if it's on one side with
groundplane on the other, which is the easiest to do) can be almost
any length. It will have zero coupling if it's an electrical halfwave
or integral multiple of a halfwave, but otherwise, it will work. It
will have the maximum coupling if it's an electrical quarter wave
long, and the change in coupling versus frequency is minimum at that
length, but it's usable even if it is very short. I'm using one

that's about half an inch long down as low as 1MHz; the directionality is fine, and the coupling is simply very small. You can use the free-to-download RFSim99 program to get a microstrip design for a particular coupling, but what the program doesn't tell you is that the coupling they list is for a coupler an electrical quarter wave long. To a pretty close approximation, the coupling will go as the sine of the electrical length, so for example if you use the design for a 20dB coupler but make it only 1/8 wave long, the response will be about sin(45 degrees) or .707 times as much, or 3dB lower: it will be about a 23dB coupler at that length. That means the coupled port power will be 23dB lower than the input power, so if you had 10 watts going in, the coupled port would receive about 0.05 watts, which is 1.6V rms. That likely is a bit more than you need to drive a diode detector. There can be some advantage to keeping the voltage low enough, if you're using a diode detector, so that the detector is in the "square law" region: DC output _voltage_ is proportional to RF input _power_. On normal FR4 board stock 1/16" thick, leaving one side as a ground plane, a pair of traces 1/8" wide, separated by a 1/8" space, will give you about a 25dB coupler and pretty close to 50 ohms. It does depend on the particular dielectric constant of your FR4 substrate, which varies from manufacturer to manufacturer and by particular material type. In that microstrip environment, the wavelength of 450MHz signals will be on the order of 40cm, or about 4 inches for 1/4 wavelength, so you can see that your coupler doesn't have to be very long, physically.

If you don't mind working with SMA connectors, you can get SMA jacks that mount directly on the edge of a 1/16" thick PC board, and that makes it very easy to make a connectorized version of a coupler. You can get SMA-to-BNC (or to other series) adapters--mpja.com have them at reasonable prices, for example--to get to other environments.

If I wanted a coupler for a power/SWR meter for 450MHz, and assuming I was going to use Schottky diode detectors, I'd first think about the range of powers I wanted to handle, then select a coupling to give me perhaps 0.2V RMS at max power at the coupled port. If space permitted, I'd make the coupler an electrical quarter wave long, since its sensitivity would then be least affected by frequency (the very flat top of the sine curve). I'd use a DVM to read out the detected DC voltage (and make sure my DVM or digital panel meter or whatever wasn't affected by the 450MHz signal directly!). A 200mV full-scale 3.5 digit meter would then cover to very low SWR at full scale, and to fairly low power. The one other thing I'd want to do is insure that the meter--the directional coupler part, specifically--was optimized to 50 ohms, which would require a known good 50 ohm (assuming I wanted it to be 50 ohms) load to test. Likely I'd make some pretty accurate measurements of the board substrate thickness and relative dielectric constant before starting, so I got the trace widths and spacings right from the start. It's possible to trim the coupler up in impedance by carefully narrowing the traces, and down by adding a grounded plane above the board--adjusting the spacing to trim the impedance. Be

aware that each of those will also change the coupling slightly,
however.

Hope that helps some!

Cheers,
Tom

1652. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 00:54:02 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <KUPnj.514390$kj1.25328@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28623

Cecil Moore wrote:
> Richard Clark wrote:
>> On Tue, 29 Jan 2008 03:37:43 -0600, Cecil Moore <nospam@w5dxp.com>
>> wrote:
>>
>>> Please prove that the 0.009801 watt value is wrong.
>>
>> What a hoot! I gave you that and MORE and you still come up short.
>> This is like demanding the bank to correct their repossession notice
>> because you want them to acknowledge you owe them more. ;-)
>>
>> The infinite summation from 0.0099 WATT available internal reflections
>> will NEVER exceed 0.0099 WATT and
>> 0.01 WATT > 0.0099 WATT
>> remains true throughout all time.
>
> Obviously false as any textbook will attest. All reflections
> toward the source are eventually eliminated thus forcing all
> the energy to wind up flowing into the glass. And you really
> missed badly on what happens in the thin-film.
>
> The *forward power* within the thin-film is *1.010101 watts*
> during steady-state. The *reflected power* in the thin-film is
> *0.010101 watts* during steady-state. Such is the nature of
> *total destructive interference* at the air to thin-film surface.
>
> Your strange assertions are exactly why hams need to learn
> this readily available knowledge from the field of optical
> physics. It remains to be seen whether the "experts" will
> side with you or with me or choose to remain silent.

Cecil,

I don't claim to be an expert, but since you called me a "guru" I will
respond.

I would never attempt to solve this problem in such a clumsy manner. As
Jim pointed out, your bouncing wave lattice technique might work when
the phase of the moon is correct, but otherwise it is useless.

All that is necessary is to set up the standard wave equations, apply
the appropriate material parameters and boundary conditions, and voila!,
the answer is there. No muss, no fuss, no worries about the exact
definition of "constructive". Many textbooks show exactly how to do this.

73,
Gene
W4SZ

1653. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 00:55:00 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A34CA82862A0Noemailadr@208.49.80.251>
Source record: 28624

Roy Lewallen <w7el@eznec.com> wrote:

[..]

> And you're right. I apologize. "Orthogonal" usually refers to
> spatial orientation, so when you said that he said they're
> orthogonal, my reaction was that it's correct. But I didn't look
> at the web page. I see by looking at it that he also says the two
> are in time quadrature, which of course is incorrect as you say.

> His "fundamental laws of physics" are certainly different from
> everyone else's. Thanks for providing a good example of the
> pitfalls of relying on the web for information.

> Again my apology. You do indeed have it right. Incidentally, it's
> not possible for a medium to have a purely reactive (imaginary) Z0
> at any non-zero frequency.

> Roy Lewallen, W7EL

Thanks very much, Roy. It was probably my mistake, using the word "Orthogonal" when quadrature would probably have worked better.

Can you explain your last sentence? Why does this happen?

I have been following these threads with some interest, and I very much appreciate your analysis, as it adds greatly to my understanding. Thank you very much for taking the time to write so clearly.

There is one point I still have trouble with. The concept of power flowing in standing waves where the superposition goes to zero, and yet the energy flow is unaffected and continues in opposite directions on either side of the null point.

Anyway, I have googled until my fingers get sore, and I haven't found a good explanation of why this happens. Everyone says it is well understood from basic undergraduate theory, but the only references I can find are from graduate studies in Quantum Electrodynamics. This is not much help.

So I have to form some image in my mind of why these waves do not interact. Here is a partial picture:

1. Electromagnetic waves travel at the speed of light in whatever medium they are in. For them to interact, there must be some advance information they are about to collide. But that would require transferring information faster than the speed of light, which is

forbidden.

2. The fields in electromagnetic waves are at right angles to the direction of propagation. There is no longitudinal component, and therefore the waves have no advance warning they are about to collide. There is no vector component that is common to both that would allow any interaction, so there is no way this can happen.

3. Photons carry no charge. They are not deflected by electrostatic or electromagnetic fields, and do not interact with other photons. Electromagnetic waves are made up of photons. Since photons do not interact, EM waves also do not interact with each other.

The above concepts seem to make sense, and allow me to get some sleep at night. Can you tell me if they are valid, and if there are other ways of explaining this phenomenon?

Regards,

Mike Monett

1654. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 01:09:03 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <P6Qnj.178082$MJ6.50854@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28625

Cecil Moore wrote:
> Gene Fuller wrote:
>> Why do you feel so compelled to worry about the precise definitions of
>> constructive and destructive? They don't help with a numerical
>> solution to any problem.
>
> Of course they do, Gene. That is the whole reason for
> presenting them. Being able to spot the destructive
> interference and the necessary equal amount of
> constructive interference explains a host of
> the problems presented here which are a lot like
> the problems faced by optical physicists over the
> past couple of centuries - which they have already
> solved for us. Optical physicists know exactly
> where all of the energy goes because they were
> forced to deal with power densities, something
> that a lot of hams have yet to learn to deal
> with.
>
> Setting aside the cause of interference, the results
> of interference explains in simple terms why a Z0-
> match with a reflection coefficient of 0.5 can manage
> to eliminate 100% of the reflections. When we tune
> our antenna systems for a Z0-match to 50 ohms, we
> are causing *total destructive interference* toward
> the source as defined by Hecht in "Optics".
>
> Here's an example:
>
> 100w
> XMTR--50 ohm line--+--1/2WL 300 ohm line---50 ohm load
> Pfor1=100w-->|-->Pfor2=???
> Pref1=0w<--|<--Pref2=???
>
> What are the magnitudes of Pfor2 and Pref2? Hint: no
> need to resort to voltages and currents. Optical
> physicists couldn't measure voltage and current in
> light and yet they did just fine. The above power
> values in a transmission line are very much like
> irradiance (intensity) in optical physics. Why not
> avail ourselves of that free knowledge even if only
> for reasons of *knowledge for knowledge's sake*?

Your long, pointless answer demonstrates exactly what I said. (Oops, I guess there was a point after all.) With the possible exception of the extremes of completely in-phase or completely out of phase, the terms constructive and destructive are qualitative and of little value for numerical calculations. Your previous message, the target of my response above, noted precise limits for the transition from destructive to constructive, as if it were important.

I am curious about one thing, however. You make frequent comments about the long history of "optical physicists". Do you know any "optical physicists"? Have you read any books on the history of "optical physicists"? Have you ever been employed as an "optical physicist"? Is there some particular reason why you feel the need to lecture me about "optical physicists"? I have about 40 years experience as a genuine physicist working in the field of optics, although I am not sure if that makes me an "optical physicist". I don't believe I have ever heard the terminology before you started throwing it around.

8-)

73,
Gene
W4SZ

1655. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 01:47:15 UTC
From: Mike Monett <No@email.adr>
Message-ID: <Xns9A34D35DF5F4BNoemailadr@208.49.80.251>
Source record: 28626

"Tom Donaly" <dtdonaly@sbcglobal.net> wrote:

> When you pluck a string, you are exciting the whole string at
> once.

> If a sound wave of the right frequency impinges on a string
> perpendicular to the string's axis, the string will vibrate
> sympathetically. In that case, it's hard to justify saying that
> two waves are traveling in opposite directions up and down the
> string.

OK, lets change the string. Now it's the top guy wire for a 1/4 wave vertical at 560KHz. When you pluck it, you can hear it pinging as the waves are reflected. Maybe it would be difficult to take that to a symphony performance, but hey, true art is art no matter where you find it:)

> Nevertheless, the solution of the partial differential equation
> describing the motion of the string, as proposed and solved by the
> French mathematician D'Alembert, in 1747, is consistent with the
> idea of two waves of arbitrary function traveling in opposite
> directions on the string. If I were you, I'd find a copy of the
> differential equation of a wave on a string and compare it to the
> same equation describing an electromagnetic wave on a transmission
> line. How similar are the two?

We may have lost the validity of the comparison to EM waves.

> 73,
> Tom Donaly, KA6RUH

Regards,

Mike Monett

1656. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 02:01:53 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A35847567C80nonenowhere@61.9.191.5>
Source record: 28627

"Suzy" <not@valid> wrote in news:479fbcea@dnews.tpgi.com.au:

...
> Thanks for that. I really want to emulate a throughline (like the Bird
> 43 I once had) and am thinking more in the terms of a stripline on PCB
> (using BNC), with parallel lines to sniff the RF and diodes to convert
> for the meters. But what I'm usure of is the sort of dimensions I
> should use for 70 cms, and wther these are critical. How long should

If you make the coupling line very short wrt wavelength, you can analyse it with a lumped constant approximation.

You can think of the coupled line as located in the electric field of the main line, and it will have a voltage difference to ground.

Similarly, the coupled line will be cut by magnetic flux due the the current in the main line, and so a voltage will be induced end to end in the coupled line.

By adjusting the resistor at one end of the coupled line, you adjust the contibution of these current and voltage derived samples, and can adjust them so balance each other (ie no meter deflection) when V/I on the main line is 50.

When the coupled line is short, the characteristic impedance of the coupled line is not very critical.

You should be able to achieve sufficient sensitivity for 5W pwr on 70cm with 20mm of coupled line.

The Zo of the though line is more important, it is the main determinant of the insertion VSWR of the instrument, so you need to strive to achieve close to the desired Zo, presumably 50 ohms.

Next, don't put the coupled line to close as it will load the main line and degrade the insertion VSWR.

Then adjust the R at the end of the coupled line to null the DC output on a 50 ohm load.

Repeat for the other coupled line (if you use one).

Check for symmetry, ie that reversing the instrument gives exactly the same readings on the dummy load.

Tom suggested Schottky diodes. Dick Smith has 1N5711 Shottky diodes (at exhorbitant prices), or you could get 1N34 germainium diodes from Jaycar.

BTW, you did mention the Bird 43, the above is not frequency compensated like the Bird slugs, deflection will be frequency dependent.

Owen

PS: I have only met one VK YL ham named Susan, I sometimes wonder what happened to her, haven't heard her on air in decades.

1657. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 03:35:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <HfSnj.5202$so6.3941@newssvr19.news.prodigy.net>
Source record: 28628

Gene Fuller wrote:
> I would never attempt to solve this problem in such a clumsy manner. As
> Jim pointed out, your bouncing wave lattice technique might work when
> the phase of the moon is correct, but otherwise it is useless.

How is your assertion different from hand waving?

> All that is necessary is to set up the standard wave equations, apply
> the appropriate material parameters and boundary conditions, and voila!,
> the answer is there.

Well, do it and see if it agrees with my results.
If it does, are you going to keep waving your hands?
--
73, Cecil http://www.w5dxp.com

1658. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 03:40:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MkSnj.5203$so6.1820@newssvr19.news.prodigy.net>
Source record: 28629

Mike Monett wrote:
> Since photons do not
> interact, EM waves also do not interact with each other.

The following quote sounds like an interaction of photons to me.

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index.html

"... when two waves of equal amplitude and wavelength that are
180-degrees ... out of phase with each other meet, they are not
actually annihilated, ... All of the photon energy present in
these waves must somehow be recovered or redistributed in a new
direction, according to the law of energy conservation ... Instead,
upon meeting, the photons are redistributed to regions that permit
constructive interference, so the effect should be considered as
a redistribution of light waves and photon energy rather than
the spontaneous construction or destruction of light."

I suspect that coherent photons can interact at an impedance
discontinuity which causes reflections.
--
73, Cecil http://www.w5dxp.com

1659. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 03:54:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3ySnj.5206$so6.2315@newssvr19.news.prodigy.net>
Source record: 28630

Gene Fuller wrote:
> With the possible exception of the
> extremes of completely in-phase or completely out of phase, the terms
> constructive and destructive are qualitative and of little value for
> numerical calculations.

That's a false statement. In the field of "Optics" as presented
by Hecht, they are entirely quantitative. In addition, when an
amateur radio antenna system is matched it is indeed completely
in-phase. Thus the concepts work well for the most common
condition in amateur radio, i.e. a matched system.

> Have you read any books on the history of "optical physicists"?

Of course I have. "The History of Modern Science" is a good one.
Another is "The Great Physicists from Galileo to Einstein".
How many centuries has that irradiance equation been around?
You know, the one that you have yet to understand.
--
73, Cecil http://www.w5dxp.com

1660. Re: Where's the energy? (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 03:58:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13pvtef1v4rpg31@corp.supernews.com>
Source record: 28631

Mike Monett wrote:
> Roy Lewallen <w7el@eznec.com> wrote:
> . . .
> > Again my apology. You do indeed have it right. Incidentally, it's
> > not possible for a medium to have a purely reactive (imaginary) Z0
> > at any non-zero frequency.
>
> > Roy Lewallen, W7EL
>
> Thanks very much, Roy. It was probably my mistake, using the word
> "Orthogonal" when quadrature would probably have worked better.
>
> Can you explain your last sentence? Why does this happen?

The "non-zero" was unnecessary, and a result of a too-quick evaluation of an equation, although the meaning of Z0 at DC isn't clear anyway.

There are at least two related ways to show that a medium can't have a purely imaginary Z0 (more correctly, intrinsic impedance). One is to use the telegrapher's equation for a transmission line immersed in the medium:

Z0 = sqrt((R + jwL)/(G + jwC)) (w = omega, the rotational frequency)

For Z0 to be purely imaginary, the quantity under the radical has to be purely real and negative. A little algebraic manipulation shows that this requires that RG + w^2LC < 0. All the quantities are positive, so it can't happen.

You can also use

Zc = sqrt(mu/ceps) where ceps = the complex permittivity, mu = the permeability of the medium, and Zc the intrinsic impedance.

The complex permittivity ceps = eps - j*sigma/w

where eps = the real (DC) permittivity
sigma = the conductivity of the material

You end up with the same situation, where for Zc to be purely imaginary, the quantity under the radical has to be purely real and negative, which requires that mu * eps < 0. Remember that mu and eps here are the actual permeability and permittivity, not the relative values we often use.

A little further research reveals that there are some fairly recently created man-made materials which have a negative permeability. Those could presumably have a purely imaginary intrinsic impedance, provided that they have a positive permittivity. So there might be an exception

to my statement, although it isn't something you're likely to encounter
for some time to come.

> I have been following these threads with some interest, and I very
> much appreciate your analysis, as it adds greatly to my
> understanding. Thank you very much for taking the time to write so
> clearly.
>
> There is one point I still have trouble with. The concept of power
> flowing in standing waves where the superposition goes to zero, and
> yet the energy flow is unaffected and continues in opposite
> directions on either side of the null point.
>
> Anyway, I have googled until my fingers get sore, and I haven't
> found a good explanation of why this happens. Everyone says it is
> well understood from basic undergraduate theory, but the only
> references I can find are from graduate studies in Quantum
> Electrodynamics. This is not much help.

Please exclude me from the "everyone" in "everyone says". I don't say
that power flows, period. We've seen the serious traps people have
fallen into by making this assumption and trying to build from it.
That's why you won't find it in texts.

> So I have to form some image in my mind of why these waves do not
> interact. Here is a partial picture:
>
> 1. Electromagnetic waves travel at the speed of light in whatever
> medium they are in. For them to interact, there must be some advance
> information they are about to collide. But that would require
> transferring information faster than the speed of light, which is
> forbidden.

You don't need a reason for them to not interact, you need a reason for
them to do so. In a linear medium, there is none.

> 2. The fields in electromagnetic waves are at right angles to the
> direction of propagation. There is no longitudinal component, and
> therefore the waves have no advance warning they are about to
> collide. There is no vector component that is common to both that
> would allow any interaction, so there is no way this can happen.
>
> 3. Photons carry no charge. They are not deflected by electrostatic
> or electromagnetic fields, and do not interact with other photons.
> Electromagnetic waves are made up of photons. Since photons do not
> interact, EM waves also do not interact with each other.
>
> The above concepts seem to make sense, and allow me to get some
> sleep at night. Can you tell me if they are valid, and if there are
> other ways of explaining this phenomenon?

I'm glad they work for you. I'll have to leave it to others to comment on their validity, since I don't buy into the notion of flowing power in the first place.

Roy Lewallen, W7EL

1661. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 04:23:45 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <cbuvp3ht5g192cu6girn7loutrfnncujrb@4ax.com>
Source record: 28632

On Tue, 29 Jan 2008 17:01:08 -0600, Cecil Moore <nospam@w5dxp.com>
wrote:

>And you really
>missed badly on what happens in the thin-film.

I am not responsible for the graphics you supplied, the numbers you labeled, the units you describe them as, the math presented, nor the failure of the presentation.

Aside from that (could there be any mistakes left?), yeh, I may have missed something - but it certainly has nothing to do with Optics or Power, or Energy and it lacks a punch line so it fails as a joke too (but it gives me the grins each time you stumble it out with this three card Monty conservation of your invention).

>The *forward power* within the thin-film is *1.010101 watts*
>during steady-state.
which, of course, was entirely missing from this string of desperation as Retro Cognito slowly winds into spin control. Two more rounds and you will lay claim to proving Cold Fusion.

In the meantime, I will settle back to wait for you to trot this dog out in the future to newbies so you can bolster your Celebrity status.

1662. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 04:44:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <chTnj.2000$0w.845@newssvr27.news.prodigy.net>
Source record: 28633

Richard Clark wrote:
> Cecil Moore <nospam@w5dxp.com> wrote:
>> The *forward power* within the thin-film is *1.010101 watts*
>> during steady-state.

> which, of course, was entirely missing from this string ...

That was the problem you were supposed to solve and
you blew it once again.
--
73, Cecil http://www.w5dxp.com

1663. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 05:20:19 UTC
From: Suzy <not@valid>
Message-ID: <47a0091d$1@dnews.tpgi.com.au>
Source record: 28634

YAWN!!

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:chTnj.2000$0w.845@newssvr27.news.prodigy.net...
> Richard Clark wrote:
>> Cecil Moore <nospam@w5dxp.com> wrote:
>>> The *forward power* within the thin-film is *1.010101 watts*
>>> during steady-state.
>
>> which, of course, was entirely missing from this string ...
>
> That was the problem you were supposed to solve and
> you blew it once again.
> --
> 73, Cecil http://www.w5dxp.com

1664. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 05:23:50 UTC
From: Suzy <not@valid>
Message-ID: <47a009f0$1@dnews.tpgi.com.au>
Source record: 28635

Very impressive website however Cecil!

"Suzy" <not@valid> wrote in message news:47a0091d$1@dnews.tpgi.com.au...
> YAWN!!
>
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:chTnj.2000$0w.845@newssvr27.news.prodigy.net...
>> Richard Clark wrote:
>>> Cecil Moore <nospam@w5dxp.com> wrote:
>>>> The *forward power* within the thin-film is *1.010101 watts*
>>>> during steady-state.
>>
>>> which, of course, was entirely missing from this string ...
>>
>> That was the problem you were supposed to solve and
>> you blew it once again.
>> --
>> 73, Cecil http://www.w5dxp.com
>
>

1665. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 07:26:03 UTC
From: Tom Horne <hornetd@veriqrmzon.net>
Message-ID: <fEVnj.7601$v86.1406@trnddc08>
Source record: 28636

John Ferrell wrote:
>> I didn't mention the issue of antenna tuners it but I was thinking of
>> including the Yaesu FC-30 tuner in the HF set but I wanted to get some
>> advice first. I was considering that tuner because it can be directly
>> controlled by the transceiver and even bolted right to it. If that's a
>> bad idea I have not bought one yet.
>>
>> I take it you are not a fan of the diesel fuel and ammonium nitrate
>> fertilizer solution to stumps. {;<)
> RE: Stumps....
> I try to resist the urge to experiment in that direction. I continue
> to look for a mentor that has gray hair, and a complete inventory of
> eyes & limbs. I sure miss the days when every hardware store carried
> Calcium Carbide.
>
> Can you recommend any fuses or detonators?
>
A common 1/4 stick fire cracker as the detonator and model rocket engine
nichrome wire igniters wired to energize from a safe distance away. You
have to pack the mixture pretty tight with the fire cracker in the
middle. Wrap the nichrome igniter wire around the firecracker's fuse,
run your wire out a safe distance, connect wires to battery terminal and
key operated switch / covered push button combination, make the needed
safety announcement, when all check points report all clear insert and
operate the keyed switch, begin countdown, press button.
--
Tom Horne

"This alternating current stuff is just a fad. It is much too dangerous
for general use." Thomas Alva Edison

> RE: tuners
> I like built in tuners but I like having the tuner at the antenna even
> better. In days past a big mismatch was just an inconvenience. Today
> RF at the operating position means the only equipment that does work
> is the radio.
>
> I use only two HF antennas at this time. The 28 foot vertical with the
> SGC-237 which works fine 10-160m with no Shack RF and A Cushcraft A3S
> 40-10 beam with the tuner in the TenTec Jupiter. Both meet my
> expectations.
>
> A vertical MAY NOT meet your mission profile for short range
> communications. A low dipole (High enough not to present a safety
> hazard) may be more useful.

>
> As an earlier poster pointed out, it would be best to select a length
> that is NOT a half wave on a desired operating frequency.
>
> Once again, a clever technician can beat any tuner but I find it
> difficult to be clever when it is dark, cold, wet and hungry.
>
> John Ferrell W8CCW
> "Life is easier if you learn to
> plow around the stumps"

1666. Re: WILSON 5000 HiPower TRUNK Mount CB Antenna NEW

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 08:49:27 UTC
From: Anti-Keyclown <keyklownzrnutjobs@yahoo.com>
Message-ID: <1b8149ea-a05e-4e57-b25e-3038dbedacea@i7g2000prf.googlegroups.com>
Source record: 28637
Cross-posted to: rec.radio.amateur.antenna, rec.radio.amateur.equipment

On Jan 29, 9:23 am, "KC8QJP" <kc8...@lycos.com> wrote:
> http://cgi.ebay.com/WILSON-5000-HiPower-TRUNK-Mount-CB-Ham-Antenna-NE...
>
> --
> the quack shackhttp://thequackshack.com/forums/radio/index.php

forge by moparholic at hotmail dot com

1667. Download wallpapers Hot Hot Sania Mirza

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 10:33:04 UTC
From: somanzameer29@gmail.com
Message-ID: <49fe35f0-5f2d-41f7-ac26-47ff5984a3ab@q21g2000hsa.googlegroups.com>
Source record: 28638

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1668. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 14:19:36 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <hk11q3hfob5v5fm2gin3oonp0bkoltpn27@4ax.com>
Source record: 28639

>>
>A common 1/4 stick fire cracker as the detonator and model rocket engine
>nichrome wire igniters wired to energize from a safe distance away. You
>have to pack the mixture pretty tight with the fire cracker in the
>middle. Wrap the nichrome igniter wire around the firecracker's fuse,
>run your wire out a safe distance, connect wires to battery terminal and
>key operated switch / covered push button combination, make the needed
>safety announcement, when all check points report all clear insert and
>operate the keyed switch, begin countdown, press button.

Firecrackers are not readily available here but I will give it some
thought. Knee replacement is on the schedule for next week so the lab
work will have to wait...

John Ferrell W8CCW
"Life is easier if you learn to
plow around the stumps"

1669. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 14:44:43 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <e1856e5d-7f8a-4c9f-9c66-24b6feab6b90@s37g2000prg.googlegroups.com>
Source record: 28640

On Jan 29, 6:01 pm, Owen Duffy <n...@no.where> wrote:
> "Suzy" <not@valid> wrote innews:479fbcea@dnews.tpgi.com.au:
>
> ...
>
> > Thanks for that. I really want to emulate a throughline (like the Bird
> > 43 I once had) and am thinking more in the terms of a stripline on PCB
> > (using BNC), with parallel lines to sniff the RF and diodes to convert
> > for the meters. But what I'm usure of is the sort of dimensions I
> > should use for 70 cms, and wther these are critical. How long should
>
> If you make the coupling line very short wrt wavelength, you can analyse
> it with a lumped constant approximation.
>
> You can think of the coupled line as located in the electric field of the
> main line, and it will have a voltage difference to ground.
>
> Similarly, the coupled line will be cut by magnetic flux due the the
> current in the main line, and so a voltage will be induced end to end in
> the coupled line.
>
> By adjusting the resistor at one end of the coupled line, you adjust the
> contibution of these current and voltage derived samples, and can adjust
> them so balance each other (ie no meter deflection) when V/I on the main
> line is 50.
>
> When the coupled line is short, the characteristic impedance of the
> coupled line is not very critical.
>
> You should be able to achieve sufficient sensitivity for 5W pwr on 70cm
> with 20mm of coupled line.
>
> The Zo of the though line is more important, it is the main determinant
> of the insertion VSWR of the instrument, so you need to strive to achieve
> close to the desired Zo, presumably 50 ohms.
>
> Next, don't put the coupled line to close as it will load the main line
> and degrade the insertion VSWR.
>
> Then adjust the R at the end of the coupled line to null the DC output on
> a 50 ohm load.
>
> Repeat for the other coupled line (if you use one).
>

> Check for symmetry, ie that reversing the instrument gives exactly the
> same readings on the dummy load.
>
> Tom suggested Schottky diodes. Dick Smith has 1N5711 Shottky diodes (at
> exhorbitant prices), or you could get 1N34 germainium diodes from Jaycar.
>
> BTW, you did mention the Bird 43, the above is not frequency compensated
> like the Bird slugs, deflection will be frequency dependent.
>
> Owen
>
> PS: I have only met one VK YL ham named Susan, I sometimes wonder what
> happened to her, haven't heard her on air in decades.

Owen's comments reminded me that I always used to think of coupled-line hybrids as sampling the magnetic and electric fields at a point, and of course you can adjust the ratio by adjusting the load as he suggests. But then something began nagging me: his example of a 20mm (2cm) line isn't exactly short compared with a "full length" quarter wave coupled line. Because of the relatively slow propagation in stripline over FR4 PC board material, a quarter wave is only about 10 cm for 450MHz signals. But thinking of it in terms of a distributed line system, you're just terminating the coupled line in the proper impedance to not get reflections off that end; so this same thing works even with full 1/4 wave lines to adjust the directivity.

However, if you have one through line and one coupled line, and you've made them very symmetric so you can swap the two and not see a difference, then if you have to terminate the coupled line in other than 50 ohms to get perfect directivity (no reflection from that port), it also says that the through line is not 50 ohms. As Owen points out, you'd really like that through line to look like 50 ohms (or other system Z0 if you wish), so it doesn't disturb the system it's installed in. There's the incentive to make the coupler symmetrical and tuned so the coupled line terminates properly in 50 ohms, to get best directivity.

I'll readily admit that the details of coupled lines from a fields perspective is a bit beyond my full understanding, so there may be an error in my thinking about this, but I believe it's pretty accurate. The thing that comes first to my mind is that for stripline, the propagation velocity for even and odd modes is different, but still, I think if the lines are lightly coupled, the paragraphs I wrote above are a valid way to look at the situation.

Geez, Schottky diodes should be dirt cheap these days. It's germanium that are hard to find around here, unless they are old stock.

Cheers,
Tom

1670. Balun vs reactance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 14:45:27 UTC
From: ve2pid <ve2pid@videotron.ca>
Message-ID: <c94b3a67-14f6-4ef6-9c2e-13e6fdcc9da1@s13g2000prd.googlegroups.com>
Source record: 28641

Hi to all..

How does a 4:1 or 1:1 balun affects reactance? For example, what would be the new value Z=a +/-Jb of, say, Z=3000 - J4500 Ohms after transformation by the 4:1 or 1:1 balun ?

Thanks de Pierre VE2PID

1671. Re: Balun vs reactance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 15:27:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <gH0oj.8719$Ej5.4674@newssvr29.news.prodigy.net>
Source record: 28642

ve2pid wrote:
> How does a 4:1 or 1:1 balun affects reactance? For example, what would
> be the new value Z=a +/-Jb of, say, Z=3000 - J4500 Ohms after
> transformation by the 4:1 or 1:1 balun ?

Depends upon the design of the balun and needs to be
measured under operating conditions. That's one reason
a lot of us prefer 1:1 chokes. *If* the choking impedance
is high enough, it will perform the balun function.

What I do with impedances like 3000-j4500, with a 16.4:1
SWR on the 600 ohm open-wire line, is to extend the
feedline until that impedance is transformed to
600/16.4 = 36.6+j0 ohms and install my 1:1 choke at
that current maximum point. Here's how I do that.

http://www.w5dxp.com/notuner.htm
--
73, Cecil http://www.w5dxp.com

1672. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 16:02:50 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fnq73b$15oi$1@f04n12.cac.psu.edu>
Source record: 28643

Tom Horne wrote:
> I am a RACES / ARES member who is trying to actually prepare for
> deployment with the ability to carry on effective communications from
> anywhere. I'm here in the antenna forum to get advice on a portable
> antenna system. I'm not here to join anyones particular theoretical
> antenna behavior cult. If you have real world experience with a
> portable multi band antenna system that actually worked for you please
> share that experience with me.

Hi Tom.

First things first - Are you willing to learn anything? This isn't as rude as it may first appear. I've had a good bit of experience with folks in emergency ops who don't want to learn about HF, they just want a one size fits all answer.

>
> Ive seen a couple of folded dipole antennas advertised that appear to
> have some sort of fifty ohm dummy load at the center of the fold. Do
> those things do more then provide a heat source for fleeing birds?

They are not particularly good antennas. But they might just be good for your purpose. They are very wideband, and that may be important if you don't want to run a tuner. Many of their limitations can be overcome with applying more power.

Before I get beat up by the antenna purists, the folded dipoles do serve a purpose of being antennas that you don't have to mess around with. I'd never own one, but for this purpose, maybe so.

> There are several compact vertical and horizontal antennas being sold
> complete with stands or tripods are any of them worth their freight?

I suspect that the folded dipole would work a bit better.

> The so called spiderweb beams look interesting can anyone offer real
> world experience on those?

No experience here, but under emergency condx, it seems like a nuisance.

> I'm honestly looking for advice that is based on experience rather than
> a particular theory of what should work. I want to know what does work
> from real world users.

And yet you came here! Just a joke son...

a few questions might be in order:

Are you looking for rapid setup, or are you going to be in a regular location with the antenna already in position? You noted deployment, so I'll assume the former.

For speed of deployment and flexibility, it is hard to beat a general purpose dipole, ladder line, and a tuner.

It is inexpensive, inherently all HF band, and performs pretty darn well. You do have to run a tuner, which is pretty simple, but that goes along with my how much do you want to learn schtick.

All you need is a couple of trees, or even masts, and you can be set up and running in a short time.

Length of the antenna can be adjusted according to how much space you have at deployment. Of course, the shorter you make it, the less well it performs on the lower bands.

I've used these for years, and have talked and buzzed the world over.

I tend to shy away from beams for emergency use, unless I have an omni or near omni antenna to complement them.

The much maligned Folded dipole would be next on my list. Simple to set up and use. It isn't as forgiving on length as the general purpose dipole however.

Those shorty verticals work pretty fair on the higher frequencies, but are a real b***h on 80 meters. The bandwidth is quite sharp, and can give you fits.

I use a bugcatcher on 80 in the car because there isn't much alternative, and I have to have multiple taps to tune 80/75 meters.

Screwdrivers tune more easily on 80/75, but their performance is down a little from the bugcatcher. I'd steer away from short verticals if you think you're going to be doing work in that neighborhood.

Hope this helps.

- 73 de Mike N3LI -

1673. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 16:06:15 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fnq79n$15oi$2@f04n12.cac.psu.edu>
Source record: 28644

John Ferrell wrote:

> I know my solution will annoy the purists, but I offer it anyway...
> I would recommend using the SGC-237 tuner (not cheap)! If it cannot
> load what ever antenna you can get up or improvise it probably cannot
> be done. With this device, a ground and 28 feet of vertical wire you
> can work to 160 meters. Of course the better the ground, the better
> the performance. A quarter wave on frequency might work better, but
> whatever you have will work.

Performance probably won't be that great, but hey, it's an option.

And the purists would be arguing and wouldn't geth the antenna up until
after the emergency is over, if then! ;^)

- 73 de Mike N3LI -

1674. Re: Death of the auto antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 16:12:33 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fnq7li$15ok$1@f04n12.cac.psu.edu>
Source record: 28645

J. Mc Laughlin wrote:
> Dear Group:
> The embedding of antenna in the windshield (windscreen) must go back to
> before 1982. I am sure that I had a student thesis on the topic before
> 1982. As I recall, the designs worked quite well.

There is nothing inherently sub par in performance for a windshield mounted antenna. I wouldn't doubt that potential performance can be better, since you can get more length in the area that no one is going to put up with in a fender mount antenna.

The student's
> experimental antennas were embedded (expensive) until someone allowed a
> bunch to fall over and shatter. Then the student found that the same
> measured results were obtained by placing the antenna against and outside of
> the windshield. Heck, in the real old days antennas were sometimes run
> under the car.

Early police mobile antennas were sometimes run on the running boards, IIRC.

- 73 de Mike N3LI -

1675. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 16:22:34 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fnq88a$107e$1@f04n12.cac.psu.edu>
Source record: 28646

AI4QJ wrote:
> "Mike Coslo" <mcoslo@youknow.comcast.net> wrote in message
>
>> There's something inherently funny when a person makes a joke, and
>> another person doesn't know it's a joke, and then lambastes the guy for
>> "not following".
>
> I didn't take it as a joke any more than I would take as a joke the concept
> of holes moving in a semiconductor. One is the speed of the absence of
> negative charge, the other is the speed of the absence of photons, both of
> which are valid parameters that could be measured. But nothing moves
> transversly in a standing wave which is what we were speaking of.. When you
> encounter a standing wave, it is appropriate to suggest "Don't just do
> something, stand there!". That, to me, is a joke. :-)

I guess we'll never find out the speed of dark then!

That's another quip. Lambaste it if you wish. 8^)

On a more serious note, perhaps some people with the courage of their
convictions would say, place their hands in that "dark spot"?

100 percent cancellation should equal no energy at that point, so it
should be perfectly safe.

- 73 de Mike N3LI -

1676. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 17:57:45 UTC
From: Suzy <not@valid>
Message-ID: <47a0ba9b@dnews.tpgi.com.au>
Source record: 28647

"K7ITM" <k7itm@msn.com> wrote in message
news:e1856e5d-7f8a-4c9f-9c66-24b6feab6b90@s37g2000prg.googlegroups.com...
> On Jan 29, 6:01 pm, Owen Duffy <n...@no.where> wrote:
>> "Suzy" <not@valid> wrote innews:479fbcea@dnews.tpgi.com.au:
>>
>> ...
>>
>> > Thanks for that. I really want to emulate a throughline (like the Bird
>> > 43 I once had) and am thinking more in the terms of a stripline on PCB
>> > (using BNC), with parallel lines to sniff the RF and diodes to convert
>> > for the meters. But what I'm usure of is the sort of dimensions I
>> > should use for 70 cms, and wther these are critical. How long should
>>
>> If you make the coupling line very short wrt wavelength, you can analyse
>> it with a lumped constant approximation.
>>
>> You can think of the coupled line as located in the electric field of the
>> main line, and it will have a voltage difference to ground.
>>
>> Similarly, the coupled line will be cut by magnetic flux due the the
>> current in the main line, and so a voltage will be induced end to end in
>> the coupled line.
>>
>> By adjusting the resistor at one end of the coupled line, you adjust the
>> contibution of these current and voltage derived samples, and can adjust
>> them so balance each other (ie no meter deflection) when V/I on the main
>> line is 50.
>>
>> When the coupled line is short, the characteristic impedance of the
>> coupled line is not very critical.
>>
>> You should be able to achieve sufficient sensitivity for 5W pwr on 70cm
>> with 20mm of coupled line.
>>
>> The Zo of the though line is more important, it is the main determinant
>> of the insertion VSWR of the instrument, so you need to strive to achieve
>> close to the desired Zo, presumably 50 ohms.
>>
>> Next, don't put the coupled line to close as it will load the main line
>> and degrade the insertion VSWR.
>>
>> Then adjust the R at the end of the coupled line to null the DC output on
>> a 50 ohm load.
>>

>> Repeat for the other coupled line (if you use one).
>>
>> Check for symmetry, ie that reversing the instrument gives exactly the
>> same readings on the dummy load.
>>
>> Tom suggested Schottky diodes. Dick Smith has 1N5711 Shottky diodes (at
>> exhorbitant prices), or you could get 1N34 germainium diodes from Jaycar.
>>
>> BTW, you did mention the Bird 43, the above is not frequency compensated
>> like the Bird slugs, deflection will be frequency dependent.
>>
>> Owen
>>
>> PS: I have only met one VK YL ham named Susan, I sometimes wonder what
>> happened to her, haven't heard her on air in decades.
>
> Owen's comments reminded me that I always used to think of coupled-
> line hybrids as sampling the magnetic and electric fields at a point,
> and of course you can adjust the ratio by adjusting the load as he
> suggests. But then something began nagging me: his example of a 20mm
> (2cm) line isn't exactly short compared with a "full length" quarter
> wave coupled line. Because of the relatively slow propagation in
> stripline over FR4 PC board material, a quarter wave is only about 10
> cm for 450MHz signals. But thinking of it in terms of a distributed
> line system, you're just terminating the coupled line in the proper
> impedance to not get reflections off that end; so this same thing
> works even with full 1/4 wave lines to adjust the directivity.
>
> However, if you have one through line and one coupled line, and you've
> made them very symmetric so you can swap the two and not see a
> difference, then if you have to terminate the coupled line in other
> than 50 ohms to get perfect directivity (no reflection from that
> port), it also says that the through line is not 50 ohms. As Owen
> points out, you'd really like that through line to look like 50 ohms
> (or other system Z0 if you wish), so it doesn't disturb the system
> it's installed in. There's the incentive to make the coupler
> symmetrical and tuned so the coupled line terminates properly in 50
> ohms, to get best directivity.
>
> I'll readily admit that the details of coupled lines from a fields
> perspective is a bit beyond my full understanding, so there may be an
> error in my thinking about this, but I believe it's pretty accurate.
> The thing that comes first to my mind is that for stripline, the
> propagation velocity for even and odd modes is different, but still, I
> think if the lines are lightly coupled, the paragraphs I wrote above
> are a valid way to look at the situation.
>
> Geez, Schottky diodes should be dirt cheap these days. It's germanium
> that are hard to find around here, unless they are old stock.
>

> Cheers,
> Tom

I'd like to thank all you kind fellows for your assistance, but unfortunately a lot of it is rather above my head. I need to be pointed at an article that spells out exactly what dimensions, how to build etc. (eg is there one in the ARRL handbook?) And Owen, no in this case Suzy if not short for Susan, so I'm not the person you knew.

1677. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 18:27:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <1k3oj.5939$Rg1.3312@nlpi068.nbdc.sbc.com>
Source record: 28648

Gene Fuller wrote:
> I would never attempt to solve this problem in such a clumsy manner.

Some people feel exactly the same way about a Smith Chart.
One is certainly free to use other methods. I'm going to
stick with the Smith Chart and continue explaining examples
in terms of the Smith Chart.
--
73, Cecil http://www.w5dxp.com

1678. Make Money working Online. I Make $850 in 7 Days....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 18:29:43 UTC
From: bhavnas332@gmail.com
Message-ID: <269141cf-c061-4dd3-ba6b-80f97ae8937e@e6g2000prf.googlegroups.com>
Source record: 28649

Make Money working Online. I Make $850 in 7 Days....
Only because of www.rcash.uni.cc The Only Source where i can make
money without investment.

http://www.rcash.uni.cc

1679. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 19:14:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <q04oj.4768$J41.524@newssvr14.news.prodigy.net>
Source record: 28650

Suzy wrote:
> YAWN!!
>
> "Cecil Moore" <nospam@w5dxp.com> wrote:
>> That was the problem you were supposed to solve and
>> you blew it once again.

Suzy, we have all these "experts" on this newsgroup
who already know everything about everything. Every
once in awhile, I give them enough rope to hang
themselves. How many people do you think already
knew that the forward power was 1.010101 watts?
--
73, Cecil http://www.w5dxp.com

1680. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 19:15:13 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <bed95710-4606-4c9b-8e71-170223ac284a@v29g2000hsf.googlegroups.com>
Source record: 28651

On Jan 30, 9:57 am, "Suzy" <not@valid> wrote:
...
>
> I'd like to thank all you kind fellows for your assistance, but
> unfortunately a lot of it is rather above my head. I need to be pointed at
> an article that spells out exactly what dimensions, how to build etc. (eg is
> there one in the ARRL handbook?) And Owen, no in this case Suzy if not
> short for Susan, so I'm not the person you knew.

OK, back to the first posting I made here. How about if I build one,
test it, and post the design and results somewhere? As I noted in one
of my postings, if I were to make one, I'd first consider how much
power I wanted to read, full scale, so if my offer is appealing, let
me know how much power you want to measure, max. Don't tell me a
kilowatt if you really are going to use it at 10 watts, because if I
design for a kilowatt, 10 watts will be low enough that you won't be
able to read it very well. In fact, I'd propose 10 watts as a
reasonable full scale for a lot of ham uses.

Cheers,
Tom

1681. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 19:43:16 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnqk2u$597$1@news.service.uci.edu>
Source record: 28652

Cecil Moore wrote:

> One elementary thing we need to get straight about
> voltages is when destructive interference or
> constructive interference is occurring. If two
> coherent voltages traveling in the same direction
> in a transmission line are superposed in the same
> Z0 environment, is there destructive interference,
> constructive interference, or no interference.
> Here are three simple examples:
>
> 1. V1 = 100v at 0 deg., V2 = 100v at 45 deg.
>
> 2. V1 = 100v at 0 deg., V2 = 100v at 135 deg.
>
> 3. V1 = 100v at 0 deg., V2 = 100v at 90 deg.
>
> If (V1+V2)^2 > (V1^2 + V2^2), then constructive
> If (V1+V2)^2 < (V1^2 + V2^2), then destructive
> If (V1+V2)^2 = (V1^2 + V2^2), then no interference

Here's the thing about all this that you don't appear to understand. Whenever waves occupy the same space, their amplitudes superpose.* It doesn't matter whether they're traveling different directions or the same direction; at the given point in time and space their amplitudes superpose. It doesn't matter if they happen to be at the same frequency or at different frequencies; their amplitudes superpose. It doesn't matter that names have been given for particular special cases of superposition. It is still the same phenomenon. Whether the waves sum to zero when they're equal in amplitude and out of phase, or double when they're equal and in phase; whether they're traveling the same direction or not, it's exactly the same phenomenon in any case you might cite. It's simply the superposition of waves. The particular end result isn't what determines the type of phenomena involved.

In no case do the fields from one wave affect the fields of another wave. Only matter can have an effect on waves. Waves do not reflect, bounce, refract, or diffract other waves. Only matter can do those things. You should to believe Maxwell's equations if you don't want to believe me.

ac6xg

*There are exceptions of course. The waves must exhibit the same kind of behavior in order to superpose. Sound waves do not superpose with

radio waves for example.

1682. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 19:58:17 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <389e5f33-27d7-41e9-9615-5d39ed245b88@p69g2000hsa.googlegroups.com>
Source record: 28653

On Jan 29, 4:26 pm, K7ITM <k7...@msn.com> wrote:
...
> To a pretty close approximation, the coupling will go as the sine of
> the electrical length, so for example if you use the design for a 20dB
> coupler but make it only 1/8 wave long, the response will be about
> sin(45 degrees) or .707 times as much, or 3dB lower: it will be about
> a 23dB coupler at that length.

Actually, the sine approximation isn't all that good. Since it's not
been easy for me to find on the web and others may have similar
trouble finding it, I'll reproduce a better equation here:

coupling = (Zeven-Zodd)*sin(theta) / [2*Z0*cos(theta) + j*(Zeven
+Zodd)*sin(theta)]

where:
Zeven and Zodd are the even-mode and odd-mode impedances of the
coupled line pair:
Zeven is the impedance seen when testing one line of the pair,
when both lines are driven by the same voltage.
Zodd is the impedance seen when testing one line of the pair,
when the two lines are driven by equal-amplitude but 180
degree out of phase voltages.
Z0 = sqrt(Zeven*Zodd)
theta = electrical length of the coupled line section

To find the coupling in dB, just take 20*log10(coupling).

You can get the even and odd mode impedances from a program like altc,
available at http://altc.sourceforge.net/. You may also be able to
find formulas that give them to you for common structures like
stripline and microstrip just from the dimensions and relative
dielectric constant of the substrate.

In the hopes this may be valuable info for one or more of the
lurkers...

Cheers,
Tom

1683. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 21:21:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <4T5oj.5004$0o7.683@newssvr13.news.prodigy.net>
Source record: 28654

Jim Kelley wrote:
> It's simply the superposition of waves. The particular end result isn't
> what determines the type of phenomena involved.

I agree with everything you said up until the last sentence.
The end result is exactly the clue that tells us what
happened.

Waves can superpose with or without interference.

Waves can interfere with or without wave cancellation.

Wave cancellation cannot occur except at an impedance
discontinuity (a change in mediums). Given that, wave
cancellation indeed involves one wave's effect on the
other wave. What is it about "redistribution of energy"
that you don't understand?

> In no case do the fields from one wave affect the fields of another
> wave.

There are certainly cases where that statement is true.
But there are many cases where the statement is false.

How can wave cancellation occur without the waves affecting
one another? Here are a couple of quotations from Ramo and
Whinnery: "... the reflections from the front and back
surfaces exactly cancel under these conditions. ... reflections
may be eliminated by canceling the reflected wave from one
slab by that from another placed a proper distance from it."

Yours is a false statement according to these two references.
Please contact Melles-Groit and Florida State University.

http://www.mellesgriot.com/products/optics/oc_2_1.htm

"Clearly, if the wavelength of the incident light and
the thickness of the film are such that a phase difference
exists between reflections of p, then reflected wavefronts
interfere destructively, and overall reflected intensity is
a minimum. If the two reflections are of equal amplitude,
then this amplitude (and hence intensity) minimum will be
zero." (Referring to 1/4 wavelength thin films.)

"In the absence of absorption or scatter, the principle of
conservation of energy indicates all 'lost' reflected intensity
will appear as enhanced intensity in the transmitted beam.
The sum of the reflected and transmitted beam intensities is

always equal to the incident intensity. This important fact
has been confirmed experimentally."

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

"... when two waves of equal amplitude and wavelength that are
180-degrees ... out of phase with each other meet, they are not
actually annihilated, ... All of the photon energy present in
these waves must somehow be recovered or redistributed in a new
direction, according to the law of energy conservation ... Instead,
upon meeting, the photons are redistributed to regions that permit
constructive interference, so the effect should be considered as
a redistribution of light waves and photon energy rather than
the spontaneous construction or destruction of light."
--
73, Cecil http://www.w5dxp.com

1684. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 21:33:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <V26oj.5008$0o7.4071@newssvr13.news.prodigy.net>
Source record: 28655

Jim Kelley wrote:
> In no case do the fields from one wave affect the fields of another
> wave.

Also please tell that to the designers of this
interferometer.

http://www.teachspin.com/instruments/moderni/experiments.shtml

Using Dielectric Beamsplitters to find the "missing energy"
in destructive interference

Are you saying the two waves engaging in total destructive
interference have no effect on each other?
--
73, Cecil http://www.w5dxp.com

1685. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 21:56:10 UTC
From: Suzy <not@valid>
Message-ID: <47a0f27b$1@dnews.tpgi.com.au>
Source record: 28656

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:q04oj.4768$J41.524@newssvr14.news.prodigy.net...
> Suzy wrote:
>> YAWN!!
>>
>> "Cecil Moore" <nospam@w5dxp.com> wrote:
>>> That was the problem you were supposed to solve and
>>> you blew it once again.
>
> Suzy, we have all these "experts" on this newsgroup
> who already know everything about everything. Every
> once in awhile, I give them enough rope to hang
> themselves. How many people do you think already
> knew that the forward power was 1.010101 watts?
> --
> 73, Cecil http://www.w5dxp.com

Hi Cecil, having been to your website and read your article, I am in some
awe!

1686. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 22:08:50 UTC
From: Suzy <not@valid>
Message-ID: <47a0f575@dnews.tpgi.com.au>
Source record: 28657

"K7ITM" <k7itm@msn.com> wrote in message
news:bed95710-4606-4c9b-8e71-170223ac284a@v29g2000hsf.googlegroups.com...
> On Jan 30, 9:57 am, "Suzy" <not@valid> wrote:
> ...
>>
>> I'd like to thank all you kind fellows for your assistance, but
>> unfortunately a lot of it is rather above my head. I need to be pointed
>> at
>> an article that spells out exactly what dimensions, how to build etc. (eg
>> is
>> there one in the ARRL handbook?) And Owen, no in this case Suzy if not
>> short for Susan, so I'm not the person you knew.
>
> OK, back to the first posting I made here. How about if I build one,
> test it, and post the design and results somewhere? As I noted in one
> of my postings, if I were to make one, I'd first consider how much
> power I wanted to read, full scale, so if my offer is appealing, let
> me know how much power you want to measure, max. Don't tell me a
> kilowatt if you really are going to use it at 10 watts, because if I
> design for a kilowatt, 10 watts will be low enough that you won't be
> able to read it very well. In fact, I'd propose 10 watts as a
> reasonable full scale for a lot of ham uses.
>
> Cheers,
> Tom
>
Hi Tom

That's a kind offer, but you needn't go to all the trouble of building it.
Just a pointer at the practical design will do (but no complex theory --
over my head!).

I want to investigate various 70 cm antennas (central frequency in Australia
435 MHz). TX is switchable 5 10 20 watts. I want to standardise on BNC, and
have readouts on analogue meters (probably 1 mA movements)

1687. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 22:11:20 UTC
From: Suzy <not@valid>
Message-ID: <47a0f60d@dnews.tpgi.com.au>
Source record: 28658

"Suzy" <not@valid> wrote in message news:47a0f575@dnews.tpgi.com.au...
>
> "K7ITM" <k7itm@msn.com> wrote in message
> news:bed95710-4606-4c9b-8e71-170223ac284a@v29g2000hsf.googlegroups.com...
>> On Jan 30, 9:57 am, "Suzy" <not@valid> wrote:
>> ...
>>>
>>> I'd like to thank all you kind fellows for your assistance, but
>>> unfortunately a lot of it is rather above my head. I need to be pointed
>>> at
>>> an article that spells out exactly what dimensions, how to build etc.
>>> (eg is
>>> there one in the ARRL handbook?) And Owen, no in this case Suzy if not
>>> short for Susan, so I'm not the person you knew.
>>
>> OK, back to the first posting I made here. How about if I build one,
>> test it, and post the design and results somewhere? As I noted in one
>> of my postings, if I were to make one, I'd first consider how much
>> power I wanted to read, full scale, so if my offer is appealing, let
>> me know how much power you want to measure, max. Don't tell me a
>> kilowatt if you really are going to use it at 10 watts, because if I
>> design for a kilowatt, 10 watts will be low enough that you won't be
>> able to read it very well. In fact, I'd propose 10 watts as a
>> reasonable full scale for a lot of ham uses.
>>
>> Cheers,
>> Tom
>>
> Hi Tom
>
> That's a kind offer, but you needn't go to all the trouble of building it.
> Just a pointer at the practical design will do (but no complex theory --
> over my head!).
>
> I want to investigate various 70 cm antennas (central frequency in
> Australia 435 MHz). TX is switchable 5 10 20 watts. I want to standardise
> on BNC, and have readouts on analogue meters (probably 1 mA movements)
Oh, and no surface mount components. Eyes not good enough!

1688. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 22:23:20 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnqtf5$8l5$1@news.service.uci.edu>
Source record: 28659

Cecil Moore wrote:
> Jim Kelley wrote:
>
>> In no case do the fields from one wave affect the fields of another wave.
>
>
> Also please tell that to the designers of this
> interferometer.

pssst - they already know. They've known since before you were born.
We're just trying to get you up to speed on it. Thanks though.

ac6xg

1689. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 23:11:20 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnr097$9ip$1@news.service.uci.edu>
Source record: 28660

Cecil Moore wrote:
> Jim Kelley wrote:.

> Waves can superpose with or without interference.

What you don't understand is the only difference between superposition
and interference is one uses squared terms.

> Wave cancellation cannot occur except at an impedance
> discontinuity (a change in mediums).

What??

> Given that,

'That' is certainly not a given.

> wave
> cancellation indeed involves one wave's effect on the
> other wave.

The fact that a superposition of waves results in a null, either in
certain regions, or everywhere does not mean that one wave had an
effect on another.

> What is it about "redistribution of energy"
> that you don't understand?

Not a thing. We're just attempting to clear up a couple things that
you misunderstand about it.

ac6xg

1690. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-30 23:36:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13q22frlg64461c@corp.supernews.com>
Source record: 28661

Jim Kelley wrote:
> . . .
> *There are exceptions of course. The waves must exhibit the same kind
> of behavior in order to superpose. Sound waves do not superpose with
> radio waves for example.

Actually, I don't see any reason why sound and radio waves can't be superposed. Superposition means that we can solve the problem separately with either one and get the same answer as we do if we solve it for the combination. That would be true of sound and radio waves -- we get the same sound whether or not the radio wave is present, and vice versa.

An exception to superposition is when the medium isn't linear, such as, for example, typical ferromagnetic materials. In that case you get a different result when solving for each component if the other is there or absent, so superposition doesn't hold. Also, of course, some quantities, such as power in a lossy medium, can't be superposed because the sum of the individually calculated results isn't equal to the result calculated from the sum of individual components.

Roy Lewallen, W7EL

1691. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 00:30:53 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnr4ud$b8r$1@news.service.uci.edu>
Source record: 28663

Roy Lewallen wrote:

> Jim Kelley wrote:
>
>> . . .
>> *There are exceptions of course. The waves must exhibit the same kind
>> of behavior in order to superpose. Sound waves do not superpose with
>> radio waves for example.
>
>
> Actually, I don't see any reason why sound and radio waves can't be
> superposed. Superposition means that we can solve the problem separately
> with either one and get the same answer as we do if we solve it for the
> combination. That would be true of sound and radio waves -- we get the
> same sound whether or not the radio wave is present, and vice versa.

Well, it's certainly a simple matter to superpose graphical
representations of the amplitude and phase of any two (or more) waves.
It's just that I'm not sure what kind of unit conversion to make in
order to superpose longitudinal sound pressure waves in SPL units and
transverse electromagnetic waves in volts per meter in any meaningful
way. ;-)

Thanks,

ac6xg

1692. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 00:34:25 UTC
From: Suzy <not@valid>
Message-ID: <47a117a4@dnews.tpgi.com.au>
Source record: 28662

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13q22frlg64461c@corp.supernews.com...
> Jim Kelley wrote:
>> . . .
>> *There are exceptions of course. The waves must exhibit the same kind of
>> behavior in order to superpose. Sound waves do not superpose with radio
>> waves for example.
>
> Actually, I don't see any reason why sound and radio waves can't be
> superposed. Superposition means that we can solve the problem separately
> with either one and get the same answer as we do if we solve it for the
> combination. That would be true of sound and radio waves -- we get the
> same sound whether or not the radio wave is present, and vice versa.
>
> An exception to superposition is when the medium isn't linear, such as,
> for example, typical ferromagnetic materials. In that case you get a
> different result when solving for each component if the other is there or
> absent, so superposition doesn't hold. Also, of course, some quantities,
> such as power in a lossy medium, can't be superposed because the sum of
> the individually calculated results isn't equal to the result calculated
> from the sum of individual components.
>
> Roy Lewallen, W7EL

If as a mere beginner (and female to boot) I may butt in here, surely a sound wave is a totally dissimilar thing to a radio wave. A sound wave is an air pressure wave (it does not propagate in a vacuum)and is in no way comparable to a radio wave, which is electromagnetic and does. I don't believe the two interact in any way.

1693. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 01:14:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13q288ao8r502b8@corp.supernews.com>
Source record: 28664

Suzy wrote:
>
> If as a mere beginner (and female to boot) I may butt in here, surely a
> sound wave is a totally dissimilar thing to a radio wave. A sound wave is an
> air pressure wave (it does not propagate in a vacuum)and is in no way
> comparable to a radio wave, which is electromagnetic and does. I don't
> believe the two interact in any way.

You're absolutely correct. Superposition requires that the two don't
interact.

"Superpose" shouldn't really be used to describe waves, even though I've
admittedly been guilty of misusing it myself. Superposition doesn't
represent any physical property, characteristic, or interaction at all.
So two waves which "superpose" do nothing. Superposition is only an
analytical technique, and the way we do an analysis has no effect on the
physical reality. It's a shortcut we can use to simplify complex
problems. When the requirements(*) are met, we can solve a complex
problem by turning on one excitation at a time, solving the problem as
though that excitation was the only one present, and adding the
responses we get from the individual excitations. This is often easier
than having all the excitations on at once and solving for the total
response. When superposition applies, we get exactly the same result by
either method. So two waves don't "superpose" -- they do what they do
regardless of the analytical technique we use. But we can solve some
problems by applying superposition.

(*) If y1 is the response to excitation x1 (y1 = f(x1)), and
y2 is the response to excitation x2 (y2 = f(x2)), then
Superposition can be used if y1 + y2 = f(x1 + x2).
In other words, the sum of the responses to individual excitations has
to be the same as the response to the sum of the individual excitations.

Roy Lewallen, W7EL

1694. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 01:15:04 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a12130$0$29957$4c368faf@roadrunner.com>
Source record: 28665

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13q22frlg64461c@corp.supernews.com...
> Jim Kelley wrote:
>> . . .
>> *There are exceptions of course. The waves must exhibit the same kind of
>> behavior in order to superpose. Sound waves do not superpose with radio
>> waves for example.
>
> Actually, I don't see any reason why sound and radio waves can't be
> superposed.

I do. One cannoy superpose a vibtation of air molecules with a vibration of alectromagnetic fields. Each is independent of the other. Independent phenomena cannot be superposed.

>Superposition means that we can solve the problem separately

Only if the situation involves 2 or more waves upon which the silution is dependent.

> with either one and get the same answer as we do if we solve it for the
> combination. That would be true of sound and radio waves -- we get the
> same sound whether or not the radio wave is present, and vice versa.

Deiagree. Superposition obviously requires that the final output wave is dependent upon the 2 or more input waves.
>
> An exception to superposition is when the medium isn't linear, such as,
> for example, typical ferromagnetic materials. In that case you get a
> different result when solving for each component if the other is there or
> absent, so superposition doesn't hold.

A non-linear medium simply changes the shape of the contributing waveforms, usually dissipated into heat that is easily accounted for and not related to the superposition.

> quantities, such as power in a lossy medium, can't be superposed because
> the sum of the individually calculated results isn't equal to the result
> calculated from the sum of individual components.

You have seen the light! Thank you Roy.

Finally you admit that power cannot be superposed. It can be reflected and it can interact but not in the same way that vectored "waves" in a conservative or non-conservative field can interact.

1695. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 01:21:51 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a122c8$0$30045$4c368faf@roadrunner.com>
Source record: 28666

"Suzy" <not@valid> wrote in message news:47a117a4@dnews.tpgi.com.au...
>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13q22frlg64461c@corp.supernews.com...
>> Jim Kelley wrote:
>>> . . .
>>> *There are exceptions of course. The waves must exhibit the same kind
>>> of behavior in order to superpose. Sound waves do not superpose with
>>> radio waves for example.
>>
>> Actually, I don't see any reason why sound and radio waves can't be
>> superposed. Superposition means that we can solve the problem separately
>> with either one and get the same answer as we do if we solve it for the
>> combination. That would be true of sound and radio waves -- we get the
>> same sound whether or not the radio wave is present, and vice versa.
>>
>> An exception to superposition is when the medium isn't linear, such as,
>> for example, typical ferromagnetic materials. In that case you get a
>> different result when solving for each component if the other is there or
>> absent, so superposition doesn't hold. Also, of course, some quantities,
>> such as power in a lossy medium, can't be superposed because the sum of
>> the individually calculated results isn't equal to the result calculated
>> from the sum of individual components.
>>
>> Roy Lewallen, W7EL
>
> If as a mere beginner (and female to boot) I may butt in here, surely a
> sound wave is a totally dissimilar thing to a radio wave. A sound wave is
> an air pressure wave (it does not propagate in a vacuum)and is in no way
> comparable to a radio wave, which is electromagnetic and does. I don't
> believe the two interact in any way.

Ah, the wisdom herein is noted. The gurus should please take note that the
readership uses actual intellectual thought in their world view. Such is the
bane of the experts here. In every case, in rraa truth is most recognizable
when it is reduced to the crisp simplicity of common sense.

1696. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 01:55:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ko92q3ttv0om53acg97e0opjigj3joi6ao@4ax.com>
Source record: 28667

On Wed, 30 Jan 2008 20:21:51 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>> If as a mere beginner (and female to boot) I may butt in here, surely a
>> sound wave is a totally dissimilar thing to a radio wave. A sound wave is
>> an air pressure wave (it does not propagate in a vacuum)and is in no way
>> comparable to a radio wave, which is electromagnetic and does. I don't
>> believe the two interact in any way.
>
>Ah, the wisdom herein is noted. The gurus should please take note that the
>readership uses actual intellectual thought in their world view. Such is the
>bane of the experts here. In every case, in rraa truth is most recognizable
>when it is reduced to the crisp simplicity of common sense.

TRUTH?

The quote you respond to harbors some correct statements, but only
some and already hedged by the OP with qualification. If we are to
discard qualification and elevate supposition to truth, TRUTH becomes
cheaper by the pound.

Radio waves and sound DO interact. The question is by degree, and at
what frequency. Of course, it does require that you know what sound
is, and what radiation (RF) is. The OP has already demurred, but Dan,
you are always quick to pick up the banner and wave it. This can only
make you a target of course. BANG!

73's
Richard Clark, KB7QHC

1697. G5RV antenna feed line balance.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 02:28:45 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <47a1325a$1@clear.net.nz>
Source record: 28668

Hi!
Anyone had any experience with a G5RV which is NOT symetrical relative to ground?
Mine is on a sloping section and varies from 3.2 metres AGL at the western end to 7.5 metres at the Eastern. Although I get a reasonable match with a single coil Z match tuner I have reason to believe that there is quite a large electrical imbalance in the system, notably in the poor rejection of local noise signals.
I came across a Z match circuit on optushome.com.au by VK3YSF which has a 25 pF variable capacitor from one side of the open wire feeder to ground. However the article gives no further information about this component except to call it a "Balance" capacitor.
Has anyone else come across this problem? If so was it a question of "cut and try" or is there a proper technical approach one can use?
Hoping for some "feedback".
73"s Cliff Wright ZL1BDA

1698. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 02:57:55 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a1394b$0$30022$4c368faf@roadrunner.com>
Source record: 28669

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:ko92q3ttv0om53acg97e0opjigj3joi6ao@4ax.com...
> On Wed, 30 Jan 2008 20:21:51 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>> If as a mere beginner (and female to boot) I may butt in here, surely a
>>> sound wave is a totally dissimilar thing to a radio wave. A sound wave
>>> is
>>> an air pressure wave (it does not propagate in a vacuum)and is in no way
>>> comparable to a radio wave, which is electromagnetic and does. I don't
>>> believe the two interact in any way.
>>
>>Ah, the wisdom herein is noted. The gurus should please take note that the
>>readership uses actual intellectual thought in their world view. Such is
>>the
>>bane of the experts here. In every case, in rraa truth is most
>>recognizable
>>when it is reduced to the crisp simplicity of common sense.
>
> TRUTH?
>
> The quote you respond to harbors some correct statements, but only
> some and already hedged by the OP with qualification. If we are to
> discard qualification and elevate supposition to truth, TRUTH becomes
> cheaper by the pound.
>
> Radio waves and sound DO interact. The question is by degree, and at
> what frequency.

Sure they interact Richard. The gravitons that bind the air molecules to the
space time continuum, along with the galactic particles levitated by Art's
160m antenna interact with the RF photons in accordance with the unified
field theory.

>Of course, it does require that you know what sound
> is,

This implies that the mystery of sound can only be comprehended by
practitioners of the arts and certainly not by a mere electrical engineer.

> and what radiation (RF) is.

I am glad you were able to clarify that radiation is "RF".

> The OP has already demurred, but Dan,
> you are always quick to pick up the banner and wave it.

Only on the rare occasions that I recognize truth.

> This can only
> make you a target of course. BANG!

I will await you guitar string standing wave antenna that couples 20KHz kinetic vibration energy with 20KHz RF. But you say it depends on frequency and of course the RF and sound wavelengths are too dissimilar here. At which frequency might they interact, given that the velocity of RF is 3 X 10E8 m/sec and the velocity of sound is 4 x 10E2 m/sec? particularly, as the OP indicated, in a vacuum?

BANG (800 Hz)!

1699. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 03:06:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FWaoj.1538$xq2.692@newssvr21.news.prodigy.net>
Source record: 28670

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> Also please tell that to the designers of this
>> interferometer.
>
> pssst - they already know. They've known since before you were born.
> We're just trying to get you up to speed on it. Thanks though.

You didn't answer the question, Jim. How do two EM
waves cancel each other in that interferometer
without having an affect on each other?
--
73, Cecil http://www.w5dxp.com

1700. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 03:25:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%cboj.1957$uE.460@newssvr22.news.prodigy.net>
Source record: 28671

Jim Kelley wrote:
> What you don't understand is the only difference between superposition
> and interference is one uses squared terms.

Then we are not using the same definition for "interference".
I am using Hecht's definition for "interference" quoting:
"Optical interference corresponds to the interaction of two
or more light waves yielding a resultant irradiance that
deviates from the sum of the component irradiances. ...
Interference effects occur when two or more coherent waves
overlap. If two coherent waves of the same amplitude are
superposed, *total destructive interference* (cancellation,
or in the case of light, darkness) occurs when the waves are
180 degrees out of phase. *total constructive interference*
(reinforcement, or in the case of light, brightness) occurs
when they are in-phase." emphasis is Hecht's, not mine.

"Cancellation of two coherent waves" sure sounds like they
have an effect on each other.

> The fact that a superposition of waves results in a null, either in
> certain regions, or everywhere does not mean that one wave had an effect
> on another.

Sometimes it does and sometimes it doesn't. If the waves
disappear from existence, they had an effect on each other.
If they don't disappear, they had no effect on each other.
--
73, Cecil http://www.w5dxp.com

1701. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 04:37:23 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a1509b$0$30001$4c368faf@roadrunner.com>
Source record: 28672

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13pv49i42n10v46@corp.supernews.com...
> dfinn1@nc.rr.com wrote:
>>
>> From the mathematical perspective, we are dealing with conservative
>> fields that have polarities. This is where the concept of "vectors"
>> resides. Basically the arrowhead of the vector points towards a
>> positive polarity of a boundary that is negative on one side and
>> positive on the other.
>>
>> Power is not a conservative field, neither is energy. It is not a
>> field at all. Furthermore, there does not exist in absolute terms
>> either negative energy or negative power UNLESS you decide to venture
>> into the newer fields of exotic physics to which I believe you refer
>> to as "poltergiests". You can assign relative "polarities" to power if
>> you which to to talk about more power or less power but you can never
>> superimpose or cancel power of different polarities.
>> There is no -12 watts heat to cancel out +12 watts heat. Heat is heat
>> You can take 0 watts heat over time and average it out to +12 watts if
>> you also have +24 watts with time but nothing is cancelled out. For
>> superposition and cancellation, you must reduce down to the components
>> of power (voltage and current).
>>
>> You can speak about positive power moving along a transmission line in
>> terms of distance. Yes it does move over distance, but not as a
>> vector. It is carried by the fields which *are* vector quanities.
>> Power is merely an expression that is always positive because it is a
>> squared quantity although it may be multiplied by SQRT(-1) when
>> defined as a reactive term. The following terms are valid: Assuming
>> power is integer N,
>>
>> P = N watts
>> P = jN watts
>>
>> The following terms are not valid:
>>
>> P = -N watts
>> P = -jN watts
>
> Sorry, I disagree.
>
> I wasn't speaking of power moving anywhere. Energy is moving on a
> transmission line, and the power at any point on that transmission line is
> v(t) * i(t). v(t) and i(t) are sine functions in steady state, so the

> power at any point (except where v or i is always zero) changes sign four
> times during each cycle of v or i. There is no "reactive term" in v(t) *
> i(t). It's a simple time domain quantity.
>
> Movement isn't required in order for quantity to have a direction. One of
> many examples is a static magnetic field, which most certainly has a
> direction but no movement.
>
> If power can never be negative, please explain how the average power at
> any point can equal zero on an open circuited line. The average power at
> any point is the integral of v(t) * i(t) evaluated over one cycle of v or
> i and divided by the period. In steady state, v(t) * i(t), as I calculate
> it, is a sinusoid with twice the period of v or i, and centered around
> zero. Because it's centered around zero, its average is zero. This has
> been shown mathematically and quantitatively a number of times on this
> group.

Wow, what a lack of misunderstanding!

Of course anyone can assign a relative sign in front of a power quantity. For example, it might be convenient to assign a minus sing to reflected power to distinguish it from forward power. But in no way does assigning a minus sign as a means to signify "reflected power" also mean that the power is "negative". It simply means positive power moving in the negative direction! This as opposed to negative voltage which truly is negative with respect to an absolute reference point of earth ground.

Here is a simple question: Real power = I**2/R

How can real power be negative?

I assume you will not tell me to use negative resistance or jI.

How can the energy in the power ever be negative? I assume you will not tell me to consider negative time.

Give me ONE example of how real power expressed this way can EVER be negative. Every time you give me a v(t)*i(t) and assign a sign to indicate direction of current flow -i(t), I will ask you to calculate i(t)**2/R and tell you to make that a negative number.

This is straight from EE101.

>
> It's no wonder that people are having so much trouble understanding energy
> movement, and why it's so easy to lead them astray with red herrings and
> pseudo-science,

OMG, give me a break. Tell me about the law of conservation of negative energy.

> when there's so much misunderstanding about the underlying concepts and
> terminology. If you start with concepts which are fundamentally erroneous,
> the knowledge you build on them is bound to be wrong.

Tell me how to make I**2/R a negative number that generates negative heat
and which is not fundamentally erroneous.

Yes, thuis truly is fundamental. I am rather surprized at this diatribe and
how it exposed *your* lack of understanding of fundamental concepts.

AI4QJ

1702. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 07:23:12 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <eqp2q3hf171uto4f73brrfvosg6mo2vamt@4ax.com>
Source record: 28673

On Wed, 30 Jan 2008 21:57:55 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>> Radio waves and sound DO interact. The question is by degree, and at
>> what frequency.
>
>Sure they interact Richard. The gravitons that bind the air molecules to the
>space time continuum, along with the galactic particles levitated by Art's
>160m antenna interact with the RF photons in accordance with the unified
>field theory.

Ah, the standard babble substitution.

>>Of course, it does require that you know what sound
>> is,
>
>This implies that the mystery of sound can only be comprehended by
>practitioners of the arts and certainly not by a mere electrical engineer.

Hi Dan,

And yet you validate this perception by your own response. I don't
agree with it, but lacking others' replies, you set the standard.

The simple observation here is that you supplied a response that does
not reveal what sound is - taking such phenomenon as sound for granted
frequently attends a lack of definition. Sound, like light, arrives
through our senses such that we take them for granted and assign them
very limited characteristics based on perception. Everyone believes
in what they see and hear, and as it is a personal experience, it must
be TRUE!

It takes very little effort to show otherwise, and this is often
followed by outrage and denial; again, because of the personal
attachment.

>> and what radiation (RF) is.
>
>I am glad you were able to clarify that radiation is "RF".

It wasn't necessary.

>> The OP has already demurred, but Dan,
>> you are always quick to pick up the banner and wave it.
>
>Only on the rare occasions that I recognize truth.

Ah yes, TRUTH and snuggly warm personal recognition. :-)

>I will await you guitar string standing wave antenna that couples 20KHz
>kinetic vibration energy with 20KHz RF.

Now why would it do that?

>But you say it depends on frequency
>and of course the RF and sound wavelengths are too dissimilar here.

Similarity of wavelength scale is immaterial. Sound wavelength can be shorter, longer, or the same size as radiation wavelengths; but your first have to know the what sound is. Even RF changes wavelength entering into dielectrics or waveguides.

Radiation passing into a dielectric can engender sound, which in turn can engender radiation emerging from the dielectric. Wavelength may come to bare on problems of distance within it, but this is not an issue of radiation nor sound, but rather material.

>At which
>frequency might they interact, given that the velocity of RF is 3 X 10E8
>m/sec and the velocity of sound is 4 x 10E2 m/sec? particularly, as the OP
>indicated, in a vacuum?

A guitar string in a vacuum may not transmit sound through the vacuum, but sound is why the string vibrates. Application of radiation is perfectly capable of setting the string into vibration (but you still don't know by what frequency or by what degree).

You first have to be able to distinguish what sound is to relate it to radiation (RF is one way, but not the only way of expressing it).

The correlation is extremely common - but largely immaterial to the topics of discussion typically encountered here.

73's
Richard Clark, KB7QHC

1703. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 08:26:27 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13q31hnesek7v12@corp.supernews.com>
Source record: 28674

AI4QJ wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13pv49i42n10v46@corp.supernews.com...
>
> Wow, what a lack of misunderstanding!
>
> Of course anyone can assign a relative sign in front of a power quantity.
> For example, it might be convenient to assign a minus sing to reflected
> power to distinguish it from forward power. But in no way does assigning a
> minus sign as a means to signify "reflected power" also mean that the power
> is "negative". It simply means positive power moving in the negative
> direction! This as opposed to negative voltage which truly is negative with
> respect to an absolute reference point of earth ground.

No, negative power means that *energy* is moving in the direction we've declared to be negative. This follows directly from the definition of power as the time derivative of energy. No movement of power is necessary.

> Here is a simple question: Real power = I**2/R
>
> How can real power be negative?

The use of "real" indicates that you're referring to *average* power. I'm not. If when I say "power" you read "average power", then misunderstanding is certain to occur.

> I assume you will not tell me to use negative resistance or jI.
>
> How can the energy in the power ever be negative? I assume you will not tell
> me to consider negative time.
>
> Give me ONE example of how real power expressed this way can EVER be
> negative. Every time you give me a v(t)*i(t) and assign a sign to indicate
> direction of current flow -i(t), I will ask you to calculate i(t)**2/R and
> tell you to make that a negative number.
>
> This is straight from EE101.

You apparently took a different curriculum than I did. The references I have (see the end of this posting) support what I learned, that power = v(t) * i(t), which obviously (I hope it's obvious anyway) can be negative as well as positive. Let's look at a simple circuit consisting of a series resistor, capacitor, inductor, and voltage source. The equation relating i(t) and v(t) looks like this (I don't recall the course number, but the problem appears less than half way into my elementary circuits text, so it was probably first semester circuit

analysis):

L*di/dt + Ri + 1/C * Integral(i dt) = v

If you multiply both sides by i, you have v * i on the right, which is power, and on the left you have i^2 * R for the central term, but two more terms to deal with. So it's hopefully obvious that power isn't i^2 * R. Or if not, it should at least show you that v(t) * i(t) isn't equal to i^2(t)/R. And all this without having to introduce negative time. Incidentally, the above equation is correct regardless of the nature of v(t) -- it doesn't need to be sinusoidal or even periodic. So it's as basic as they come.

If you plot the power (v * i) at some point in this circuit, you'll find that it's positive for part of each cycle and negative for the remainder of the cycle. If you do the integration of this over a cycle and divide by the period in order to get the average power, you'll find that the average power (what you've called "real power") is indeed I(RMS)^2 * R, which is positive.

If a circuit has only resistance and no way to store energy, then v(t) = i(t) * R, power is i^2 * R, and power is always positive. Negative power occurs when energy is stored for part of a cycle, then returned during the rest of the cycle, as in the series RLC circuit. Or a transmission line which isn't perfectly terminated.

A recurring problem is confusion between power, which is v(t) * i(t), and average power, which is the integral of this over one cycle divided by the period. Anyone confused by this can easily find ample study material in any elementary electrical circuits text book. The discussion of RMS at http://www.eznec.com/Amateur/RMS_Power.pdf might also be helpful in understanding the relationship between power and average power, although it doesn't deal with energy storage.

Many people learn only about average power because it's adequate for most everyday applications, and the math involved with calculating instantaneous power is considerably more involved. But anyone trying to understand the movement of energy in a system capable of storing energy really needs to understand power on a more fundamental level, as the time derivative of energy movement. And I hope it's still being taught in engineering schools!

>> It's no wonder that people are having so much trouble understanding energy
>> movement, and why it's so easy to lead them astray with red herrings and
>> pseudo-science,
>
> OMG, give me a break. Tell me about the law of conservation of negative
> energy.

If you'll look in a basic physics text you'll find plenty of references to negative potential energy. That concept, however, isn't necessary in order to use and understand the directional property of power.

>> when there's so much misunderstanding about the underlying concepts and
>> terminology. If you start with concepts which are fundamentally erroneous,
>> the knowledge you build on them is bound to be wrong.
>
> Tell me how to make I**2/R a negative number that generates negative heat
> and which is not fundamentally erroneous.

I^2*R is one expression of average power, which has never been what I've
been discussing. So I'll gladly leave this proof to you.

> Yes, thuis truly is fundamental. I am rather surprized at this diatribe and
> how it exposed *your* lack of understanding of fundamental concepts.
>
> AI4QJ

I plead guilty to not knowing everything, and to always striving to
learn more. I am comforted, however, by the number of respected
professors and textbook writers who share my lack of understanding of
these concepts. For example,

1. Pearson and Maler, _Introductory Circuit Analysis_, p. 251:

"For our conventions the power to the right is p = vi. . ."
"The capital letter P is used to designate average power, whereas the
lower case letter p is a function of time. Figure 5.14 shows voltage,
current, and power as a function of time. At those instants of time at
which power is negative, energy is flowing to the left in Fig. 5.13."
The little program TLVis1 I introduced a while ago generates waveforms
for voltage, current, and power very much like fig. 5.14.

2. Van Valkenburg, _Network Analysis_, 3rd Edition, p. 420:

"The rate at which energy is being absorbed [by a one port network] is
the power given by p = dw/dt = v(t)i(t) W (watts)" Figures 14-4 and 14-5
on the following pages show graphs of the power for an inductor and
capacitor respectively which are sinusoidal and centered around zero. On
p. 424: "Energy is the integral of power. Using the convention for sign
illustrated by Fig. 14-2, we see that, for positive p, energy is being
supplied to the inductor and capacitor for storage. When p is negative,
energy is being returned to the source. We know that no more energy can
be returned than supplied, of course, and the fact that w [the energy]
returns to zero value for every cycle of the voltage and current implies
that the energy supplied ins returned entirely every cycle for the
inductor and capacitor."

I'm curious. What text did you use for your EE101 course which says
otherwise?

Roy Lewallen, W7EL

1704. Re: Balun vs reactance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 08:40:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13q32ci3mpehod1@corp.supernews.com>
Source record: 28675

ve2pid wrote:
> Hi to all..
>
> How does a 4:1 or 1:1 balun affects reactance? For example, what would
> be the new value Z=a +/-Jb of, say, Z=3000 - J4500 Ohms after
> transformation by the 4:1 or 1:1 balun ?
>
> Thanks de Pierre VE2PID

The impedance that your transmitter or matching network has to deal with is the differential impedance, that is, the impedance between the two conductors. A properly designed, constructed, and applied 1:1 balun will effect no transformation at all of the differential impedance. A 4:1 balun will make it either four times greater or four times less. Both types of baluns, again if properly designed, constructed, and applied, will greatly increase the common mode impedance, that is, the impedance you'd see if you connected the two feedline conductors together and measured the impedance to ground.

In reality, any transformer will usually behave reasonably well only when terminated in an impedance near its design impedance. For example, a 4:1 balun or transformer designed to transform 200 to 50 ohms will work well only if the high-Z end is connected to around 200 + j0 ohms. (Such a transformer might have a high-Z winding impedance of 1000 - 2000 ohms, and it might well be resistive as well as reactive.) If you get very far from 200 + j0, you'll find that the transformation ratio changes and the transformer adds reactance and sometimes resistance. The error can get dramatic with even moderate excursions from the design Z, depending on the transformer design. It would be a difficult job to make a transformer other than air core with a resonant winding which would do a decent job of transforming the impedance you quote. So the short answer is that it's anyone's guess what a 4:1 balun would do to that impedance. A 1:1 current balun can be made from a section of transmission line made into a coil, wound on a core, or with cores put around it. The impedance will be transformed according to well known transmission line effects, which depend on the length and Z0 of the line used for making the balun.

Roy Lewallen, W7EL

1705. Re: Magnetic Longwire Balun Question !!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 08:57:42 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <a4goj.44279$Kt4.38737@fe3.news.blueyonder.co.uk>
Source record: 28676

"Lee" <lo012a4519@blueyonder.co.uk> wrote in message
news:Qeunj.3627$801.28@fe1.news.blueyonder.co.uk...
> Hi !.......
>
> I`ve just purchased a WiMo MTFT Multi impedance transformer
> with three taps at 4:1, 9:1 and 16:1 ratios.
> Is anyone familiar with this device and can suggest a suitable wire
> length to start with?? ......the instructions suggest a minimum of 6m
> around 20ft....
>
> Tried a 33 foot and pruned that back to about 30 feet to get a
> very good to middling SWR on most bands.......thinking inverted `L`...
> Garden 35x15feet......
>
> Cheers...
>
UPDATE......

Sorry for the silly question about aerial lengths but it transpired that the
impedance transformer was faulty !!! ...... it wasn`t responding too well,
the replacement works very well down to 100kcs as a receive ant and
covers 160m to 10m with an average 2:1 swr ......
The aerial is an inverted `L` 63 feet long with multiband counterpoise.....

Cheers...

Len.........G6ZSG.......

1706. Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 14:34:35 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <ad249018-4a2f-41b7-b11d-0a6e57c5220c@f47g2000hsd.googlegroups.com>
Source record: 28677

I've got a 130-foot doublet hanging 90 feet up in the air between two trees. A pulley and a counterweight (a gallon of sand) keeps 20-some pounds of tension on the line. Not a lot of tension but works great on non-windy days. If the trees were stronger up at the top I might try a heavier counterweight, but I'm not sure I'd be comfortable doing this because I am really hanging from the treetops right now.

The feeder is approx 70 feet of 450-ohm window line (like twin-lead but with little gaps every so often) to a standoff on the side of the house. Yesterday when we were having 50MPH gusts this was billowing out like a sail. I had twisted the window line a while back after the last big windstorm, and that seemed to mitigate the sailing-ship kind of effect, but not by a lot.

The counterweight and pulley did a great job of absorbing the wind gusts. It was really impressive - when the big gusts came up, the feeder billows out, and the gallon of sand shoots up in the air 30 or 40 feet above its usual position. I'm pretty confident that as long as the trees didn't fall over in a hurricane, this antenna would stay up. I even put a real stainless pulley with bronze bearings in, replacing the one-dollar hardware store pulley, and am happy that I did. I have seen the one-dollar pulleys get visibly corroded in a year or so on a previous antenna.

But I'm thinking... if I just used two conductors of #16 copperweld and some spacers to get true ladder line as opposed to window line, would this billowing completely disappear, or drop to a tiny tiny fraction of what it is now? Or would it just continue billowing the same way?

What's preferable for such homebrew ladder line: solid copperweld, stranded copperweld, solid copper, stranded copper, ???.

Tim N3QE

1707. Re: G5RV antenna feed line balance.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 15:18:22 UTC
From: MTV <NoSpam_mtvew@netscape.net>
Message-ID: <47a1e6db$0$30036$4c368faf@roadrunner.com>
Source record: 28678

cliff wright wrote:
> Hi!
> Anyone had any experience with a G5RV which is NOT symetrical relative
> to ground?
> Mine is on a sloping section and varies from 3.2 metres AGL at the
> western end to 7.5 metres at the Eastern. Although I get a reasonable
> match with a single coil Z match tuner I have reason to believe that
> there is quite a large electrical imbalance in the system, notably in
> the poor rejection of local noise signals.
> I came across a Z match circuit on optushome.com.au by VK3YSF which has
> a 25 pF variable capacitor from one side of the open wire feeder to
> ground. However the article gives no further information about this
> component except to call it a "Balance" capacitor.
> Has anyone else come across this problem? If so was it a question of
> "cut and try" or is there a proper technical approach one can use?
> Hoping for some "feedback".
> 73"s Cliff Wright ZL1BDA

Just finished putting up the antenna and included an air wound balun at the end of the ladder line per instructions. Maybe the capacitor was a shortcut to a balun? The impedance on the line in my shack varies from about 50 ohms on 75M up to about 450 on 10M. Not hard to match with my tuner.

The antenna BTW is like an inverted V, with a center on a mast up 40'. It also bends at the feed point about 30 degrees.

Marv
W5MTV

--
This mail checked and found to be free of any virus.
Mozilla Thunderbird mail & Firefox browser
GO ASTROS!!!!! Yeh Dynamo MLS Champions!

1708. Re: Magnetic Longwire Balun Question !!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 15:33:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <fiq3q313kbv1f7bhl9j5fgjd9f2j4vpvpb@4ax.com>
Source record: 28679

On Thu, 31 Jan 2008 08:57:42 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
wrote:

>UPDATE......
>
>Sorry for the silly question about aerial lengths but it transpired that the
>impedance transformer was faulty !!! ..... it wasn`t responding too well,
>the replacement works very well down to 100kcs as a receive ant and
>covers 160m to 10m with an average 2:1 swr ......
>The aerial is an inverted `L` 63 feet long with multiband counterpoise.....

Hi Len,

How did you make the SWR determination?

73's
Richard Clark, KB7QHC

1709. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 16:12:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <5smoj.5325$so6.1794@newssvr19.news.prodigy.net>
Source record: 28680

Roy Lewallen wrote:
> I^2*R is one expression of average power, which has never been what I've
> been discussing. So I'll gladly leave this proof to you.

Most of use agree that Pload = Pfor - Pref (at the load).
There's a negative sign on average power. In fact, Ramo
and Whinnery designate Pfor as 'P+' and Pref as 'P-'.
This is simply an engineering convention concerning
direction of the Poynting vector.
--
73, Cecil http://www.w5dxp.com

1710. Re: Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 16:24:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cDmoj.5327$so6.3599@newssvr19.news.prodigy.net>
Source record: 28681

Tim Shoppa wrote:
> But I'm thinking... if I just used two conductors of #16 copperweld
> and some spacers to get true ladder line as opposed to window line,
> would this billowing completely disappear, or drop to a tiny tiny
> fraction of what it is now? Or would it just continue billowing the
> same way?

The billowing depends upon the total surface area exposed
to the wind. It is akin to the wind loading specs for an
antenna. The way I solved the problem with 440 ohm ladder-
line (actually measured 380 ohms) is to buy The Wireman's
#14 stranded copper-clad steel, ladder-line product code
#554. With proper strain relief, that stuff is virtually
indestructible. It even put dents in my wire cutters. :-(

http://thewireman.com/antennap.html#balanced
--
73, Cecil http://www.w5dxp.com

1711. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 16:39:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fRmoj.5332$so6.1296@newssvr19.news.prodigy.net>
Source record: 28682

Roy Lewallen wrote:
> Superposition requires that the two don't interact.

From "Optics", 4th edition by Hecht, page 385:
"Optical interference corresponds to the interaction of two or more light waves yielding a resultant irradiance that deviates from the sum of the component irradiances."

From Schaum's "College Physics" 10th edition by Bueche and Hecht, page 381: "Interference effects occur when two or more coherent waves overlap. If two coherent waves of the same amplitude are superposed, *total destructive interference* (cancellation, or in the case of light, darkness) occurs when the waves are 180 degrees out of phase. *Total constructive interference* (reinforcement, or in the case of light, brightness) occurs when they are in-phase." emphasis is the authors.

Hecht says that interfering waves interact. Bueche and Hecht say that the two coherent waves interfere during the act of superposition. I think you will find that wave cancellation requires interaction between two waves during superposition.

Let's paraphrase Hecht's words into RF lingo.

RF interference corresponds to the interaction of two (or more) RF waves yielding a resultant average Poynting vector that deviates from the sum of the component average Poynting vectors.
--
73, Cecil http://www.w5dxp.com

1712. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 16:50:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <o%moj.8857$Ej5.6001@newssvr29.news.prodigy.net>
Source record: 28683

Roy Lewallen wrote:
> I^2*R is one expression of average power, which has never been what I've
> been discussing. So I'll gladly leave this proof to you.

Most of use agree that Pload = Pfor - Pref (at the load).
There's a negative sign on average power. In fact, Ramo
and Whinnery designate Pfor as 'Pz+' and Pref as 'Pz-'.
Quoting: "... the Poynting vector for the negatively
traveling wave is always in the negative z direction
except where it is zero."

This is simply an engineering convention concerning
direction of the Poynting vector. Away from the source
is usually considered to be positive while toward the
source is usually considered to be negative.
--
73, Cecil http://www.w5dxp.com

1713. Re: Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 17:52:32 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A36647018D46Huckleberrybigvalley@198.186.192.196>
Source record: 28684

I had a nearly identical antenna to yours, but had instead used W7FG's 600 ohm ladder line. Apparently this has a lot less wind surface area than your 450 ohm stuff with all that flat plastic between the wires because I never had the "sailing" effect you had, even in some 75mph storms recently on the Oregon coast. My stuff just doesn't have ANY flat surfaces for the wind.

You might consider switching your feedline type.

Ed K7AAT

1714. Re: Balun vs reactance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 18:17:01 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <bd7a0b56-1012-4488-be5b-227607421702@e23g2000prf.googlegroups.com>
Source record: 28685

On Jan 31, 12:40 am, Roy Lewallen <w...@eznec.com> wrote:

...

> In reality, any transformer will usually behave reasonably well only
> when terminated in an impedance near its design impedance.

And, I might add, in the frequency range for which it's designed.
That may be obvious for something like trying to apply an audio
transformer to RF balun service, but it may not be so obvious if you
just pick up a "ham" 4:1 balun and think it's going to work for your
particular frequency range, if it's not designed for that range.

You'll _probably_ have better luck using a balun designed for, say,
50:200 ohms over 1-50MHz with a 3000-j4500 load at 20MHz than if you
try the same load impedance at 2MHz. That's because the transformer
reactance must be high enough at 1MHz to work at 50:200 OK, so there's
at least some hope the reactance will be enough larger at 20MHz to not
screw things up too badly. You will also want to watch out for core
saturation: run at lower power if the load is higher impedance. You
wouldn't want to push the balun too far toward the high end of its
frequency range, either, because there may be stray capacitances
limiting the response at the high end.

As Roy says, it's hard to say what your particular balun will do when
presented with a load so far away from the (presumed) 50:200
impedances it was designed for, unless you measure it with that load.

Cheers,
Tom

1715. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 18:32:03 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <Duooj.524003$kj1.468196@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28686

Cecil Moore wrote:
> Roy Lewallen wrote:
>> Superposition requires that the two don't interact.
>
> From "Optics", 4th edition by Hecht, page 385:
> "Optical interference corresponds to the interaction of two or more
> light waves yielding a resultant irradiance that deviates from the
> sum of the component irradiances."
>
> From Schaum's "College Physics" 10th edition by Bueche and Hecht,
> page 381: "Interference effects occur when two or more coherent
> waves overlap. If two coherent waves of the same amplitude are
> superposed, *total destructive interference* (cancellation, or in
> the case of light, darkness) occurs when the waves are 180 degrees
> out of phase. *Total constructive interference* (reinforcement, or
> in the case of light, brightness) occurs when they are in-phase."
> emphasis is the authors.
>
> Hecht says that interfering waves interact. Bueche and Hecht
> say that the two coherent waves interfere during the act of
> superposition. I think you will find that wave cancellation
> requires interaction between two waves during superposition.
>
> Let's paraphrase Hecht's words into RF lingo.
>
> RF interference corresponds to the interaction of two (or
> more) RF waves yielding a resultant average Poynting vector
> that deviates from the sum of the component average Poynting
> vectors.

Cecil,

Unfortunately it appears that Hecht was writing for ordinary people, not RRAA nit-pickers.

OK, lets suppose waves interact, or by the dual nature, that photons interact. What are the equations that govern such interactions? I believe we generally understand gravitational force between masses, electromagnetic force between charged particles, and even various nuclear forces. There may not be a Grand Unified Theory yet, but we have quite a good set of tools to work with the known interactions. At the same time, as far as we know, photons have no mass, no charge, and none of those strange or colorful sub-nuclear parameters.

If we cross two laser beams it appears that the photons pass right by each other and continue on with no apparent interaction. You often claim that the interaction occurs only when the photons are traveling in exactly parallel paths or anti-parallel paths. OK, that is a bit unusual compared to the other forces in nature, but perhaps it happens. Even so, one should be able to describe this interaction in some specific and quantitative manner.

As a self-proclaimed scholar of quantum electrodynamics you should be able to readily identify the forces and other relationships between photons. I do not claim to be a scholar of QED, but I have looked at a few Feynman diagrams. I cannot recall every seeing one in which two of the wiggly lines representing photons simply bounce off of each other. There is always an electron or some other particle involved when the photon wiggly line changes direction

Hint: You keep ignoring the role of the materials at the impedance discontinuity, or whatever you want to call it. I have no doubt that Hecht is fully aware of the correct description, but it would be a bit pedantic to include it in an introductory level optics text or Schaum's Outline.

73,
Gene
W4SZ

1716. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 18:33:45 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnt4d8$4ab$1@news.service.uci.edu>
Source record: 28687

Cecil Moore wrote:

> "Cancellation of two coherent waves" sure sounds like they
> have an effect on each other.

I heard a guy on TV the other day who 'sounds like' an electronic drum
machine. Therefore, what?

>> The fact that a superposition of waves results in a null, either in
>> certain regions, or everywhere does not mean that one wave had an
>> effect on another.
>
>
> Sometimes it does and sometimes it doesn't.

No. Nature doesn't work that way.

> If the waves
> disappear from existence, they had an effect on each other.
> If they don't disappear, they had no effect on each other.

But sometimes they 'seem' make each other partially disappear, Cecil.
What about then? Sometimes they 'seem' to make each other bigger.
Doesn't that also 'sound' like they're having an effect on each other?
All equally convincing evidence that waves make other waves do things.

ac6xg

1717. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 18:44:11 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnt50r$4h1$1@news.service.uci.edu>
Source record: 28688

Cecil Moore wrote:

> How do two EM
> waves cancel each other in that interferometer
> without having an affect on each other?

It's obvious. Two waves may cancel without affecting each other in exactly the same way that A + B can equal 0 without making A = 0 and/or B = 0.

ac6xg

1718. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 18:50:11 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnt5c2$4h1$2@news.service.uci.edu>
Source record: 28690

Cecil Moore wrote:

> "Cancellation of two coherent waves" sure sounds like they
> have an effect on each other.

I heard a guy on TV the other day who 'sounds like' an electronic drum machine. Therefore, what?

>> The fact that a superposition of waves results in a null, either in
>> certain regions, or everywhere does not mean that one wave had an
>> effect on another.
>
>
> Sometimes it does and sometimes it doesn't.

No. Nature doesn't work that way.

> If the waves
> disappear from existence, they had an effect on each other.
> If they don't disappear, they had no effect on each other.

But sometimes they 'seem' to make each other partially disappear, Cecil. What about then? Sometimes they 'seem' to make each other bigger. Doesn't that also 'sound' like they're having an effect on each other? According to your logic, these are all equally convincing evidence that waves make other waves do things.

ac6xg

1719. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 18:59:01 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <5ab713e4-1597-4b6d-941b-a02907953b52@d70g2000hsb.googlegroups.com>
Source record: 28689

On Jan 30, 2:08 pm, "Suzy" <not@valid> wrote:
> "K7ITM" <k7...@msn.com> wrote in message
>
> news:bed95710-4606-4c9b-8e71-170223ac284a@v29g2000hsf.googlegroups.com...
>
> > On Jan 30, 9:57 am, "Suzy" <not@valid> wrote:
> > ...
>
> >> I'd like to thank all you kind fellows for your assistance, but
> >> unfortunately a lot of it is rather above my head. I need to be pointed
> >> at
> >> an article that spells out exactly what dimensions, how to build etc. (eg
> >> is
> >> there one in the ARRL handbook?) And Owen, no in this case Suzy if not
> >> short for Susan, so I'm not the person you knew.
>
> > OK, back to the first posting I made here. How about if I build one,
> > test it, and post the design and results somewhere? As I noted in one
> > of my postings, if I were to make one, I'd first consider how much
> > power I wanted to read, full scale, so if my offer is appealing, let
> > me know how much power you want to measure, max. Don't tell me a
> > kilowatt if you really are going to use it at 10 watts, because if I
> > design for a kilowatt, 10 watts will be low enough that you won't be
> > able to read it very well. In fact, I'd propose 10 watts as a
> > reasonable full scale for a lot of ham uses.
>
> > Cheers,
> > Tom
>
> Hi Tom
>
> That's a kind offer, but you needn't go to all the trouble of building it.
> Just a pointer at the practical design will do (but no complex theory --
> over my head!).
>
> I want to investigate various 70 cm antennas (central frequency in Australia
> 435 MHz). TX is switchable 5 10 20 watts. I want to standardise on BNC, and
> have readouts on analogue meters (probably 1 mA movements)

OK, I gave this some thought last night. I see a couple problems...

Though you could use 1mA meter movements, that puts you at a detected
power level high enough that the meter scale won't be linear in power,
assuming Schottky or germanium diode detectors. To me, having a
linear power scale is a big advantage, because then you can reasonably

accurately figure SWR without having to worry about temperature compensation of the detectors. There's a reason that Bird power meters use a sensitive microammeter movement. (I think I've heard 30uA full scale, but I'm not sure about that.) Anyway, that's why I suggested using a DVM for readout.

The second problem is, if you want to implement a microstrip design, how do you get the trace width right? If you're afraid of surface mount parts, how will you control the trace width to +/- a fraction of a millimeter? On 1.6mm thick PC board, assuming FR4 with a relative dielectric constant of 4.75, you'd like to have a trace width about 2.78mm to get a 50 ohm line. If your trace is 3.5mm wide, you get a bit under 44 ohms, and if your trace comes out 2.0mm wide, you get a line that's almost 60 ohms. If you can do the PC board photographically and have confidence that you can control the trace width to within 0.1mm, that would work. If you're doing it by scribing the copper and pulling up unwanted copper, I think you'll have to be working under a pretty good microscope to get to much closer than a mm of the desired width-- or maybe cut it on a milling machine.

I suppose there's still the possibility of cutting the trace a bit narrow on purpose and adjusting the impedance by adding a grounded plate above the board. It could be spaced an adjustable distance away by mounting it with threaded rods (long screws), and adjusted to make the traces 50 ohms. But there's still the problem of making the two (or three) all the same width. Not knowing how you might be able to do this, I'm rather discouraged about how this would come out. Maybe there's a better way to make the coupled lines that's easier for a typical ham with minimal shop facilities to handle. Or maybe if there was enough interest, someone could make some boards with guaranteed performance.

On the positive side, I did find BNC jacks that edge-mount on PC boards, so that part of it becomes easy at least.

Cheers,
Tom

1720. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 19:12:14 UTC
From: Suzy <not@valid>
Message-ID: <47a21d9a@dnews.tpgi.com.au>
Source record: 28691

Hello Tom

My responses**

"K7ITM" <k7itm@msn.com> wrote in message
news:5ab713e4-1597-4b6d-941b-a02907953b52@d70g2000hsb.googlegroups.com...
> On Jan 30, 2:08 pm, "Suzy" <not@valid> wrote:
>> "K7ITM" <k7...@msn.com> wrote in message
>>
>> news:bed95710-4606-4c9b-8e71-170223ac284a@v29g2000hsf.googlegroups.com...
>>
>> > On Jan 30, 9:57 am, "Suzy" <not@valid> wrote:
>> > ...
>>
>> >> I'd like to thank all you kind fellows for your assistance, but
>> >> unfortunately a lot of it is rather above my head. I need to be
>> >> pointed
>> >> at
>> >> an article that spells out exactly what dimensions, how to build etc.
>> >> (eg
>> >> is
>> >> there one in the ARRL handbook?) And Owen, no in this case Suzy if
>> >> not
>> >> short for Susan, so I'm not the person you knew.
>>
>> > OK, back to the first posting I made here. How about if I build one,
>> > test it, and post the design and results somewhere? As I noted in one
>> > of my postings, if I were to make one, I'd first consider how much
>> > power I wanted to read, full scale, so if my offer is appealing, let
>> > me know how much power you want to measure, max. Don't tell me a
>> > kilowatt if you really are going to use it at 10 watts, because if I
>> > design for a kilowatt, 10 watts will be low enough that you won't be
>> > able to read it very well. In fact, I'd propose 10 watts as a
>> > reasonable full scale for a lot of ham uses.
>>
>> > Cheers,
>> > Tom
>>
>> Hi Tom
>>
>> That's a kind offer, but you needn't go to all the trouble of building
>> it.
>> Just a pointer at the practical design will do (but no complex theory --
>> over my head!).
>>

>> I want to investigate various 70 cm antennas (central frequency in
>> Australia
>> 435 MHz). TX is switchable 5 10 20 watts. I want to standardise on BNC,
>> and
>> have readouts on analogue meters (probably 1 mA movements)
>
> OK, I gave this some thought last night. I see a couple problems...
>
> Though you could use 1mA meter movements, that puts you at a detected
> power level high enough that the meter scale won't be linear in power,
> assuming Schottky or germanium diode detectors.

**Pardon my ignorance, but isn't it just a case of using an op amp or whatever to suit whatever meter movement I have? ANyway, I have now sourced a 100 microamp meter (MU65) with a 3.9K resistance (sounds strange as the 1 mA one has a 210 ohm resistance.

BTW, I'n not bothered about the linear issue. I will be having two meters to show forward and relected powers simultaneously. I don't want to clculate actual SWR.

To me, having a
> linear power scale is a big advantage, because then you can reasonably
> accurately figure SWR without having to worry about temperature
> compensation of the detectors. There's a reason that Bird power
> meters use a sensitive microammeter movement. (I think I've heard
> 30uA full scale, but I'm not sure about that.) Anyway, that's why I
> suggested using a DVM for readout.
>
> The second problem is, if you want to implement a microstrip design,
> how do you get the trace width right? If you're afraid of surface
> mount parts, how will you control the trace width to +/- a fraction of
> a millimeter? On 1.6mm thick PC board, assuming FR4 with a relative
> dielectric constant of 4.75, you'd like to have a trace width about
> 2.78mm to get a 50 ohm line. If your trace is 3.5mm wide, you get a
> bit under 44 ohms, and if your trace comes out 2.0mm wide, you get a
> line that's almost 60 ohms. If you can do the PC board
> photographically and have confidence that you can control the trace
> width to within 0.1mm, that would work. If you're doing it by
> scribing the copper and pulling up unwanted copper, I think you'll
> have to be working under a pretty good microscope to get to much
> closer than a mm of the desired width-- or maybe cut it on a milling
> machine.
>
> I suppose there's still the possibility of cutting the trace a bit
> narrow on purpose and adjusting the impedance by adding a grounded
> plate above the board. It could be spaced an adjustable distance away
> by mounting it with threaded rods (long screws), and adjusted to make
> the traces 50 ohms.

**But how do you check that in a workshop with no test gear?

But there's still the problem of making the two
> (or three) all the same width. Not knowing how you might be able to
> do this, I'm rather discouraged about how this would come out. Maybe
> there's a better way to make the coupled lines that's easier for a
> typical ham with minimal shop facilities to handle. Or maybe if there
> was enough interest, someone could make some boards with guaranteed
> performance.
>
> On the positive side, I did find BNC jacks that edge-mount on PC
> boards, so that part of it becomes easy at least.
>
> Cheers,
> Tom
>
Cheers

1721. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 19:27:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bq74q3pb6ntrq211ps82g5857j78jcds0u@4ax.com>
Source record: 28692

On Fri, 1 Feb 2008 06:12:14 +1100, "Suzy" <not@valid> wrote:

>> I suppose there's still the possibility of cutting the trace a bit
>> narrow on purpose and adjusting the impedance by adding a grounded
>> plate above the board. It could be spaced an adjustable distance away
>> by mounting it with threaded rods (long screws), and adjusted to make
>> the traces 50 ohms.
>
>**But how do you check that in a workshop with no test gear?

This is called residual SWR in a reflectometer. You load it with a known good load, and what SWR you find (or what is exhibited by the two meters) inhabits the reflectometer itself. Then you flip it over and apply your source into the goesoutta with the known load on the comesinna. You then proceed to reduce the residual SWR in both directions.

Finding a good load is another matter, and I reported one (a precision RF resistor) with specific characteristics here last week. Consult the thread "RF Power Resistors from Caddock."

All of $10-$20 to accomplish.

73's
Richard Clark, KB7QHC

1722. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 19:47:26 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <50c7b6af-a2da-4413-a179-dab2017f6387@i12g2000prf.googlegroups.com>
Source record: 28693

On Jan 31, 11:12 am, "Suzy" <not@valid> wrote:
> Hello Tom
>
> My responses**
>
> "K7ITM" <k7...@msn.com> wrote in message
...
> > OK, I gave this some thought last night. I see a couple problems...
>
> > Though you could use 1mA meter movements, that puts you at a detected
> > power level high enough that the meter scale won't be linear in power,
> > assuming Schottky or germanium diode detectors.
>
> **Pardon my ignorance, but isn't it just a case of using an op amp or
> whatever to suit whatever meter movement I have? ANyway, I have now sourced
> a 100 microamp meter (MU65) with a 3.9K resistance (sounds strange as the 1
> mA one has a 210 ohm resistance.

Ah, OK. I had assumed you wanted to use just the meters, with no
amplifier. With amplifiers, the 1mA meters will be fine. But we need
op amps that have very low offset voltage and drift--I would prefer to
set the meter full scale to correspond to around a millivolt or two of
detected DC. I suppose if you have a way to zero the offset and it
doesn't drift, that'll be OK. Then we need to make sure the amplifier
is reasonably immune to 450MHz signals floating around... This is all
"do-able" but there are some details you'll have to pay attention to.
I'd suggest using a couple of the RF power detector ICs available from
Analog Devices or Linear Technology, but we're back to surface mount
stuff again at that point.

>
> BTW, I'n not bothered about the linear issue. I will be having two meters to
> show forward and relected powers simultaneously. I don't want to clculate
> actual SWR.

Well, yes, but wouldn't you want to know whether "0.1" on the meter
represented 1/10 the power of "1.0" on the meter, rather than 1/100 of
the power?? If you don't pay a little attention to the level of RF
the detector is actually detecting, you're liable to have that
problem.

...
> > I suppose there's still the possibility of cutting the trace a bit
> > narrow on purpose and adjusting the impedance by adding a grounded
> > plate above the board. It could be spaced an adjustable distance away

> > by mounting it with threaded rods (long screws), and adjusted to make
> > the traces 50 ohms.
>
> **But how do you check that in a workshop with no test gear?

What do you mean "no" test gear? You'll have the directional coupler with meters itself, and a power source. The only other thing you need is a 50 ohm load to put on the coupler output. Is it not worth having at least a load you can trust? With a known good load, you feed some power through the coupler and adjust for zero indicated return; turn the coupler around and make sure the other port also reads zero. With an open or short load you should get equal readings on the forward and reverse meters. (I suppose you need two couplers and a good load to insure that the through line of the coupler is also the same impedance as the load...) I have a good network analyzer on my bench at work, but without a calibration load to test and calibrate it with, I don't know how good its readings really are.

Cheers,
Tom

1723. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 19:54:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vHpoj.2183$0w.562@newssvr27.news.prodigy.net>
Source record: 28694

Gene Fuller wrote:

> Unfortunately it appears that Hecht was writing for ordinary people, not RRAA
nit-pickers.

That's not my problem, but it appears that you have made it
yours. Seems one of the .science.physics newsgroups would be
the appropriate place to argue that Eugene Hecht is/was wrong.

> OK, lets suppose waves interact, or by the dual nature, that photons
> interact. What are the equations that govern such interactions?

The FSU web page explains it thusly: "Instead, upon meeting, the
photons are redistributed to regions that permit constructive
interference, ..."

The irradiance equation explains where the quantized energy
goes in joules/sec/unit-area. I will try to ascertain what
quantum physics says about "interaction of photons".

Here is an interesting quote from Feynman. "e - the amplitude
for a real electron to emit or absorb a real photon. ...
It's one of the *greatest* damn mysteries of physics: a
magic number that comes to us with no understanding by man.
You might say the 'hand of God' wrote that number, and 'we
don't know how He pushed His pencil'." emphasis Feynman's

Assuming that two photons interact (with an electron as the
'middle-man') I doubt that you or I can ever understand it
better than Feynman. I would make a W*A*G that if two coherent
photons with opposite phases and equal momentum are absorbed
by an electron, then two coherent in-phase electrons are emitted
in the *opposite direction* in a transmission line. It's only
slightly more complicated than ordinary quantum reflections.

> If we cross two laser beams it appears that the photons pass right by
> each other and continue on with no apparent interaction.

Yes, that is true. I have said that superposition can occur
with or without interference and that interference can occur
with or without wave "cancellation" or "reinforcement" (to
put it in Hecht's words). Proving that wave cancellation does
not occur for ten examples is obviously not good enough. You
must prove that it is impossible for wave cancellation to
ever occur. Since it occurs every time I tune my antenna
tuner to cancel reflected waves toward the transceiver,
good luck on that one.

> You often claim that the interaction occurs only when the photons are traveling in
> exactly parallel paths or anti-parallel paths. OK, that is a bit unusual
> compared to the other forces in nature, but perhaps it happens. Even so,
> one should be able to describe this interaction in some specific and
> quantitative manner.

A forward wave normal to a surface (where the index of
refraction changes) results in a reflected wave that is
also normal to that surface and traveling in the opposite
direction. That fact of physics is explained in every
optics textbook that I have ever seen. There is no easily
measurable voltage associated with a light wave, so irradiance
is used to measure the intensity of the light wave.
Superposition allows us to introduce a second light wave.
The interference term in the total irradiance equation
describes things in a quantitative manner when two coherent
waves are superposed.

> As a self-proclaimed scholar of quantum electrodynamics you ...

I am afraid you have me confused with someone else.
It was you, not I, who paraded your credentials in
front of this newsgroup so everyone could see how
omniscient you therefore must be. I am but a
grasshopper, trying to learn something new in the
process of correcting my mistakes.

> I cannot recall every seeing one in which two of
> the wiggly lines representing photons simply bounce off of each other.
> There is always an electron or some other particle involved when the
> photon wiggly line changes direction

The wave reflection model is compatible with quantum
physics. Since wave cancellation can only occur at
an impedance discontinuity (a changing medium interface)
there are always electrons around to act as "middle-men"
especially in a copper transmission line.

> Hint: You keep ignoring the role of the materials at the impedance
> discontinuity, ...

NO! I DO NOT! You guys seem to have an obsessive-compulsive
tendency to falsify what I have said. I have said numerous
times that wave cancellation can *ONLY* occur at an impedance
discontinuity, i.e. a change in mediums, where materials do
exist.

Who is forcing you into ad hominem attacks and innuendo in
order to present your case?
--
73, Cecil http://www.w5dxp.com

1724. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 20:15:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <c%poj.1634$xq2.580@newssvr21.news.prodigy.net>
Source record: 28695

Jim Kelley wrote:
> Cecil Moore wrote:
>
>> "Cancellation of two coherent waves" sure sounds like they
>> have an effect on each other.
>
> I heard a guy on TV the other day who 'sounds like' an electronic drum
> machine. Therefore, what?

Therefore, you have no rational answer to my assertion.

>>> The fact that a superposition of waves results in a null, either in
>>> certain regions, or everywhere does not mean that one wave had an
>>> effect on another.
>>
>> Sometimes it does and sometimes it doesn't.
>
> No. Nature doesn't work that way.

Sometimes when I shoot at a target I hit it and sometimes
I miss it. I guess nature doesn't work that way either?

This discussion reminds me of Dr. Best's phantom waves
that keep on traveling and existing forever while both
E-fields and H-fields are equal to zero for all space-time.

>> If the waves
>> disappear from existence, they had an effect on each other.
>> If they don't disappear, they had no effect on each other.
>
> But sometimes they 'seem' make each other partially disappear, Cecil.
> What about then?

More information that "seem" is required to answer your
question. A magician "seems" to make the rabbit disappear.

Sometimes they actually do make each other partially disappear.

If P1 = P2 = 100w and the wave E-fields are 135 degrees
out of phase, the resultant wave contains:

100w + 100w + 2*SQRT(100w*100w)cos(135) = 58.6 watts

Assuming steady-state and multiplying both sides of the
equation by one second:

Where did the other 141.4 joules go?
--

73, Cecil http://www.w5dxp.com

1725. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 20:23:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <c7qoj.5352$so6.887@newssvr19.news.prodigy.net>
Source record: 28696

Jim Kelley wrote:
>
> Cecil Moore wrote:
>> How do two EM
>> waves cancel each other in that interferometer
>> without having an affect on each other?
>
> It's obvious. Two waves may cancel without affecting each other in
> exactly the same way that A + B can equal 0 without making A = 0 and/or
> B = 0.

In the interferometer example, the two waves cancel
for all of steady-state at the standard output and
the reflected energy back toward the source due to
that cancellation is intercepted and presented at
the non-standard output. If the two canceled waves
don't affect each other, why do their combined
energy components appear later at the non-standard
output? What reversed their momentum at the standard
output?
--
73, Cecil http://www.w5dxp.com

1726. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 20:31:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Aeqoj.5353$so6.2326@newssvr19.news.prodigy.net>
Source record: 28697

K7ITM wrote:
> To me, having a
> linear power scale is a big advantage, because then you can reasonably
> accurately figure SWR without having to worry about temperature
> compensation of the detectors.

Can you define what you mean by linear? Straight line?
Since we can only measure voltage and current, in order
to obtain a linear power scale from a linear meter, it
is necessary to supply some pre-display computing
ability (microcomputer).
--
73, Cecil http://www.w5dxp.com

1727. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 20:43:04 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fntbvq$72e$1@news.service.uci.edu>
Source record: 28698

Cecil Moore wrote:

> Jim Kelley wrote:
>
>> Cecil Moore wrote:
>>
>>> "Cancellation of two coherent waves" sure sounds like they
>>> have an effect on each other.
>>
>>
>> I heard a guy on TV the other day who 'sounds like' an electronic drum
>> machine. Therefore, what?
>
>
> Therefore, you have no rational answer to my assertion.

Therefore, what something "sounds like" to you is irrelevant.

>
>>>> The fact that a superposition of waves results in a null, either in
>>>> certain regions, or everywhere does not mean that one wave had an
>>>> effect on another.
>>>
>>>
>>> Sometimes it does and sometimes it doesn't.
>>
>>
>> No. Nature doesn't work that way.
>
>
> Sometimes when I shoot at a target I hit it and sometimes
> I miss it. I guess nature doesn't work that way either?

Ah, so to you electromagnetism is a hit or miss proposition.

> This discussion reminds me of Dr. Best's phantom waves
> that keep on traveling and existing forever while both
> E-fields and H-fields are equal to zero for all space-time.

If I'm not mistaken, Dr. Best has a PhD in the field. Unlike you,
he's probably actually worked the problems in Hecht - not to mention,
Jackson.

> Sometimes they actually do make each other partially disappear.

But before you said that waves only make other waves do things when
they cancel. One might get the feeling that you're making this stuff

up as you go along.

> If P1 = P2 = 100w and the wave E-fields are 135 degrees
> out of phase, the resultant wave contains:
>
> 100w + 100w + 2*SQRT(100w*100w)cos(135) = 58.6 watts

> Assuming steady-state and multiplying both sides of the
> equation by one second:
>
> Where did the other 141.4 joules go?

The fact that you would even pose that question in the first place indicates that you have made a false assumption. What did you assume about the 200 Joules/sec that turned out not to be at all true?

ac6xg

1728. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:02:50 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <_Hqoj.5134$0o7.365@newssvr13.news.prodigy.net>
Source record: 28699

Cecil Moore wrote:
> Roy Lewallen wrote:
>> I^2*R is one expression of average power, which has never been what
>> I've been discussing. So I'll gladly leave this proof to you.
>
> Most of use agree that Pload = Pfor - Pref (at the load).
> There's a negative sign on average power. In fact, Ramo
> and Whinnery designate Pfor as 'P+' and Pref as 'P-'.
> This is simply an engineering convention concerning
> direction of the Poynting vector.

What is a Poynting vector, Cecil?
73,
Tom Donaly, KA6RUH

1729. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:04:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vJqoj.5356$so6.110@newssvr19.news.prodigy.net>
Source record: 28551

Jim Kelley wrote:

> w5dxp wrote:
>> Sometimes they actually do make each other partially disappear.
>
> But before you said that waves only make other waves do things when they cancel.

Sorry, that is a false statement and just another one of
your numerous straw man diversions. If waves interact enough
to cancel either entirely or partially, they have interacted
100%.

> One might get the feeling that you're making this stuff up as you go along.

No, I have been consistent. You, OTOH, appear to be engaging
in your usual obfuscation, e.g. "disappearing" doesn't mean
mean the same thing as "cancellation".

>> If P1 = P2 = 100w and the wave E-fields are 135 degrees
>> out of phase, the resultant wave contains:
>>
>> 100w + 100w + 2*SQRT(100w*100w)cos(135) = 58.6 watts
>
>> Assuming steady-state and multiplying both sides of the
>> equation by one second:
>>
>> Where did the other 141.4 joules go?
>
> The fact that you would even pose that question in the first place
> indicates that you have made a false assumption. What did you assume
> about the 200 Joules/sec that turned out not to be at all true?

Absolutely nothing. Is English your second language?
--
73, Cecil http://www.w5dxp.com

1730. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:22:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <w_qoj.5358$so6.5052@newssvr19.news.prodigy.net>
Source record: 28552

Tom Donaly wrote:
> What is a Poynting vector, Cecil?

Hopefully this will work in ASCII fixed font (but not
in proportional font).

According to The IEEE Dictionary:

_ _ _
s = Re(ExH*)/2

When I say, "Poynting vector", that is what I mean. It
is the same magnitude as Vrms*Irms for traveling waves.
--
73, Cecil http://www.w5dxp.com

1731. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:25:32 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <9e844e58-a673-4ec0-9a0b-ec15f8cc8f30@c4g2000hsg.googlegroups.com>
Source record: 28553

On Jan 31, 12:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> K7ITM wrote:
> > To me, having a
> > linear power scale is a big advantage, because then you can reasonably
> > accurately figure SWR without having to worry about temperature
> > compensation of the detectors.
>
> Can you define what you mean by linear? Straight line?
> Since we can only measure voltage and current, in order
> to obtain a linear power scale from a linear meter, it
> is necessary to supply some pre-display computing
> ability (microcomputer).
> --
> 73, Cecil http://www.w5dxp.com

See earlier posting in this thread. See various Avago ap notes, such as AN 969. A diode detector run at low input provides an output DC voltage that's a constant times the square of the input RF voltage. If the input voltage is, or is assumed to be, at some constant resistive load impedance, the DC output is linear with RF power input. The proportionality is temperature dependent, but if two detectors are constructed the same and run at the same temperature, and run in the signal level region where that relationship holds, then the ratio of the output DC voltages is a very good approximation of the ratio of the input RF power levels, and thus is useful for finding the SWR if the detectors are attached to the forward and reverse ports of a good directional coupler. Top end of the useful "linear power" range using an HSMS-2850 single diode detector is about 10mV DC output. If you can measure the DC accurately down to 1uV (a bit tough, given thermal emfs, but possible), that gives you about a 10000:1 power range, or 100:1 RF input voltage range -- or about 1.02:1 SWR. Chances are very good that a home-built coupler won't be accurately enough matched to 50+j0 ohms to worry about anything that low anyway, even if you had a reason to care about it.

Cheers,
Tom

1732. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:33:39 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fnteul$842$1@news.service.uci.edu>
Source record: 28554

Cecil Moore wrote:

> If the two canceled waves
> don't affect each other, why do their combined
> energy components appear later at the non-standard
> output? What reversed their momentum at the standard
> output?

Hi Cecil -

An interferometer uses partially reflective mirrors. Assuming perfectly flat mirrors, perfectly collimated, monochromatic, coherent light that is normal to the surface, when the separation between mirrors is an integer number of half wavelengths of that light, light is canceled in the reverse direction, and all the light from the illuminating source (less losses) passes through the mirrors. Some of that light passes directly through them, and the rest passes through after multiple internal reflections.

The two books that I have purchased on this subject are "Fabry-Perot Interferometers", by G. Hernandez and "The Fabry-Perot Interferometer" by JM Vaughan. Both of the texts are well in excess of 300 pages, so any explanation one might give here would lack significant detail. There's nothing in them about waves causing other waves to do things. The books do however describe in great detail how interferometers do things to waves.

ac6xg

1733. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:41:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0groj.5362$so6.3112@newssvr19.news.prodigy.net>
Source record: 28555

Jim Kelley wrote:
> Ah, so to you electromagnetism is a hit or miss proposition.

Apparently, you are not familiar with the uncertainty
principle. Email me and I will provide references. :-)
--
73, Cecil http://www.w5dxp.com

1734. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:43:30 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <jiroj.2046$uE.819@newssvr22.news.prodigy.net>
Source record: 28556

Cecil Moore wrote:
> Tom Donaly wrote:
>> What is a Poynting vector, Cecil?
>
> Hopefully this will work in ASCII fixed font (but not
> in proportional font).
>
> According to The IEEE Dictionary:
> _ _ _
> s = Re(ExH*)/2
>
> When I say, "Poynting vector", that is what I mean. It
> is the same magnitude as Vrms*Irms for traveling waves.

Does the dash over the letter indicate a vector, or does it
just indicate an average value? What does your dictionary say
about Poynting's Theorem?
73,
Tom Donaly, KA6RUH

1735. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:46:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3lroj.1696$Ch6.250@newssvr11.news.prodigy.net>
Source record: 28557

K7ITM wrote:
> See earlier posting in this thread.

Thanks Tom, when I said "linear power scale", I meant
e.g. a meter reading where 2000 watts is full scale
and 1000 watts is half scale. I have seen such meters
but not without a digital or analog computer on the
front end.
--
73, Cecil http://www.w5dxp.com

1736. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:51:53 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A375A12C5FDnonenowhere@61.9.191.5>
Source record: 28559

K7ITM <k7itm@msn.com> wrote in news:9e844e58-a673-4ec0-9a0b-ec15f8cc8f30
@c4g2000hsg.googlegroups.com:

> On Jan 31, 12:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> K7ITM wrote:
>> > To me, having a
>> > linear power scale is a big advantage, because then you can
reasonably
>> > accurately figure SWR without having to worry about temperature
>> > compensation of the detectors.
>>
>> Can you define what you mean by linear? Straight line?
>> Since we can only measure voltage and current, in order
>> to obtain a linear power scale from a linear meter, it
>> is necessary to supply some pre-display computing
>> ability (microcomputer).
>> --
>> 73, Cecil http://www.w5dxp.com
>
> See earlier posting in this thread. See various Avago ap notes, such
> as AN 969. A diode detector run at low input provides an output DC
> voltage that's a constant times the square of the input RF voltage.
> If the input voltage is, or is assumed to be, at some constant
> resistive load impedance, the DC output is linear with RF power
> input. The proportionality is temperature dependent, but if two
> detectors are constructed the same and run at the same temperature,
> and run in the signal level region where that relationship holds, then
> the ratio of the output DC voltages is a very good approximation of
> the ratio of the input RF power levels, and thus is useful for finding
> the SWR if the detectors are attached to the forward and reverse ports
> of a good directional coupler. Top end of the useful "linear power"
> range using an HSMS-2850 single diode detector is about 10mV DC
> output. If you can measure the DC accurately down to 1uV (a bit
> tough, given thermal emfs, but possible), that gives you about a
> 10000:1 power range, or 100:1 RF input voltage range -- or about
> 1.02:1 SWR. Chances are very good that a home-built coupler won't be
> accurately enough matched to 50+j0 ohms to worry about anything that
> low anyway, even if you had a reason to care about it.
>
> Cheers,
> Tom
>

Tom,

This is further from Suzy's needs, but...

Operation of a diode detector in the square law region isn't out of the question, but it takes some serious gain to drive a meter. There are some good chopper stabilised op amps out there that have uV offset levels and single supply rail and input to below the negative rail eg LTC1050.

Another alternative is the AD8307AN log amps for a linear dBW scale. You could even use one on FWD and REF detectors and difference the outputs in an op amp for a direct indicating VSWR or RL scale. I have thought of getting one of these chips and seeing whether its response is fast enough to drive a PEP amplifier for SSB telephony.

Back to Suzy's problem...

The instrument downstream of the sampler is not so much the issue as building and calibrating a sampler when you have no test gear.

Suzy, if you see a Revex W560 going on VKHAM for $100 or so, it is a good buy. It has HF to 70cm (two independent couplers, ie four coax connectors), and works pretty well.

For a dummy load, the market was flooded with terminations from 25W to about 60W that had been scrapped from AMPS base station equipment, and they were sold at hamfests for $20 or so, you may find them if you look around.

Owen

1737. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:53:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <crroj.5363$so6.2499@newssvr19.news.prodigy.net>
Source record: 28558

Jim Kelley wrote:
> There's nothing in them about waves causing other waves to do things.

They probably assume that nobody would be stupid enough
to think otherwise. If two coherent photons with opposite
phases are absorbed by the same electron, are you telling
us that the same thing happens to those individual photons
whether the other photon exists or not? Get real!
--
73, Cecil http://www.w5dxp.com

1738. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 21:54:07 UTC
From: dfinn1@nc.rr.com
Message-ID: <6ceab393-8dae-4eeb-8ac6-a97bdc18145e@j20g2000hsi.googlegroups.com>
Source record: 28560

On Jan 31, 3:26 am, Roy Lewallen <w...@eznec.com> wrote:
> AI4QJwrote:
> > "Roy Lewallen" <w...@eznec.com> wrote in message
> >news:13pv49i42n10v46@corp.supernews.com...
>
> > Wow, what a lack of misunderstanding!
>
> > Of course anyone can assign a relative sign in front of a power quantity.
> > For example, it might be convenient to assign a minus sing to reflected
> > power to distinguish it from forward power. But in no way does assigning a
> > minus sign as a means to signify "reflected power" also mean that the power
> > is "negative". It simply means positive power moving in the negative
> > direction! This as opposed to negative voltage which truly is negative with
> > respect to an absolute reference point of earth ground.
>
> No, negative power means that *energy* is moving in the direction we've
> declared to be negative. This follows directly from the definition of
> power as the time derivative of energy. No movement of power is necessary.
>
> > Here is a simple question: Real power = I**2/R
>
> > How can real power be negative?
>
> The use of "real" indicates that you're referring to *average* power.
> I'm not. If when I say "power" you read "average power", then
> misunderstanding is certain to occur.
>
>
>
> > I assume you will not tell me to use negative resistance or jI.
>
> > How can the energy in the power ever be negative? I assume you will not tell
> > me to consider negative time.
>
> > Give me ONE example of how real power expressed this way can EVER be
> > negative. Every time you give me a v(t)*i(t) and assign a sign to indicate
> > direction of current flow -i(t), I will ask you to calculate i(t)**2/R and
> > tell you to make that a negative number.
>
> > This is straight from EE101.
>
> You apparently took a different curriculum than I did. The references I
> have (see the end of this posting) support what I learned, that power =
> v(t) * i(t), which obviously (I hope it's obvious anyway) can be

> negative as well as positive. Let's look at a simple circuit consisting
> of a series resistor, capacitor, inductor, and voltage source. The
> equation relating i(t) and v(t) looks like this (I don't recall the
> course number, but the problem appears less than half way into my
> elementary circuits text, so it was probably first semester circuit
> analysis):
>
> L*di/dt + Ri + 1/C * Integral(i dt) = v
>
> If you multiply both sides by i, you have v * i on the right, which is
> power, and on the left you have i^2 * R for the central term, but two
> more terms to deal with. So it's hopefully obvious that power isn't i^2
> * R. Or if not, it should at least show you that v(t) * i(t) isn't equal
> to i^2(t)/R. And all this without having to introduce negative time.
> Incidentally, the above equation is correct regardless of the nature of
> v(t) -- it doesn't need to be sinusoidal or even periodic. So it's as
> basic as they come.
>
> If you plot the power (v * i) at some point in this circuit, you'll find
> that it's positive for part of each cycle and negative for the remainder
> of the cycle. If you do the integration of this over a cycle and divide
> by the period in order to get the average power, you'll find that the
> average power (what you've called "real power") is indeed I(RMS)^2 * R,
> which is positive.
>
> If a circuit has only resistance and no way to store energy, then v(t) =
> i(t) * R, power is i^2 * R, and power is always positive. Negative power
> occurs when energy is stored for part of a cycle, then returned during
> the rest of the cycle, as in the series RLC circuit. Or a transmission
> line which isn't perfectly terminated.
>
> A recurring problem is confusion between power, which is v(t) * i(t),
> and average power, which is the integral of this over one cycle divided
> by the period. Anyone confused by this can easily find ample study
> material in any elementary electrical circuits text book. The discussion
> of RMS athttp://www.eznec.com/Amateur/RMS_Power.pdfmight also be
> helpful in understanding the relationship between power and average
> power, although it doesn't deal with energy storage.
>
> Many people learn only about average power because it's adequate for
> most everyday applications, and the math involved with calculating
> instantaneous power is considerably more involved. But anyone trying to
> understand the movement of energy in a system capable of storing energy
> really needs to understand power on a more fundamental level, as the
> time derivative of energy movement. And I hope it's still being taught
> in engineering schools!
>
> >> It's no wonder that people are having so much trouble understanding energy
> >> movement, and why it's so easy to lead them astray with red herrings and
> >> pseudo-science,

>
> > OMG, give me a break. Tell me about the law of conservation of negative
> > energy.
>
> If you'll look in a basic physics text you'll find plenty of references
> to negative potential energy. That concept, however, isn't necessary in
> order to use and understand the directional property of power.
>
> >> when there's so much misunderstanding about the underlying concepts and
> >> terminology. If you start with concepts which are fundamentally erroneous,
> >> the knowledge you build on them is bound to be wrong.
>
> > Tell me how to make I**2/R a negative number that generates negative heat
> > and which is not fundamentally erroneous.
>
> I^2*R is one expression of average power, which has never been what I've
> been discussing. So I'll gladly leave this proof to you.
>
> > Yes, thuis truly is fundamental. I am rather surprized at this diatribe and
> > how it exposed *your* lack of understanding of fundamental concepts.
>
> >AI4QJ
>
> I plead guilty to not knowing everything, and to always striving to
> learn more. I am comforted, however, by the number of respected
> professors and textbook writers who share my lack of understanding of
> these concepts. For example,
>
> 1. Pearson and Maler, _Introductory Circuit Analysis_, p. 251:
>
> "For our conventions the power to the right is p = vi. . ."
> "The capital letter P is used to designate average power, whereas the
> lower case letter p is a function of time. Figure 5.14 shows voltage,
> current, and power as a function of time. At those instants of time at
> which power is negative, energy is flowing to the left in Fig. 5.13."
> The little program TLVis1 I introduced a while ago generates waveforms
> for voltage, current, and power very much like fig. 5.14.
>
> 2. Van Valkenburg, _Network Analysis_, 3rd Edition, p. 420:
>
> "The rate at which energy is being absorbed [by a one port network] is
> the power given by p = dw/dt = v(t)i(t) W (watts)" Figures 14-4 and 14-5
> on the following pages show graphs of the power for an inductor and
> capacitor respectively which are sinusoidal and centered around zero. On
> p. 424: "Energy is the integral of power. Using the convention for sign
> illustrated by Fig. 14-2, we see that, for positive p, energy is being
> supplied to the inductor and capacitor for storage. When p is negative,
> energy is being returned to the source. We know that no more energy can
> be returned than supplied, of course, and the fact that w [the energy]
> returns to zero value for every cycle of the voltage and current implies

> that the energy supplied ins returned entirely every cycle for the
> inductor and capacitor."
>
> I'm curious. What text did you use for your EE101 course which says
> otherwise?
>
> Roy Lewallen, W7EL

Roy, your references and your own statements are only saying that, yes, it can be or usually is an engineering conevntion to put a minus sign in front of P to indicate direction. I violently agree! As you know, quoting from my preceding post:

"Of course anyone can assign a relative sign in front of a power quantity.
For example, it might be convenient to assign a minus sing to reflected
power to distinguish it from forward power. But in no way does assigning a
minus sign as a means to signify "reflected power" also mean that the power
is "negative". It simply means positive power moving in the negative direction!"

Then you proceeded to go through all the trouble to cite beginner engineering textbooks (I guess that's an insult or something) in which this was, in fact, being done. Fine. Obviously I agree because I said the same thing in the preceding post.

What you originally disagreed with me on was my statement that there is no such thing as "negative power". On a relative scale, there obviously is such a thing as positive power going in a direction that we define as positive and also the opposite direction that we define as negative. But in terms of an absolute scale or reference there is *no such thing* as negative power. We cannot remove heat by passing current through a resistor. Why is this important? Because in this discussion people were getting confused and started adding and subtracting powers as if they were conservative field vectors (such as voltage). Power can only be vectored by it's direction of movement. It is not a field vector. The point is (pardon the pun), to superimpose waves you must do so only with field vectors, not directional vectors, or in the very least you cannot mix the two. There is no power "vector" which can reduce to zero by adding a positive power to a negative power. At the point where you add the positive and negative powers, does it cancel to zero? No, it quadruples! I can assign a negative sign to all money that is no longer in my bank account; that does not mean it is negative money, it is still positive money but it exists elsewhere. This is extremely fundamental. It is like I am saying there is no such thing as negative temperature, that is, below the reference of absolute zero. Then Roy comes back and says "Oh yes there is, the temperature outside was -15F last night. My Textbook

says that, for the purposes of this book, all references to degrees shall be in Fahrenheit. There obviously is a temperature below 0F which is negative, thus negative temperatures must exist." If you can just bridge the gap between relative to absolute, then you will partially understand why you cannot add power "vectors" like you can add vectors from a conservative field.

AI4QJ

1739. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 22:08:00 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <fntgv3$8p0$1@news.service.uci.edu>
Source record: 28562

Cecil Moore wrote:
> Jim Kelley wrote:
>
> > w5dxp wrote:
>
>>> Sometimes they actually do make each other partially disappear.
>>
>>
>> But before you said that waves only make other waves do things when
>> they cancel.
>
>
> Sorry, that is a false statement and just another one of
> your numerous straw man diversions.

You really should seek help. What was this supposed to mean?

"If the waves disappear from existence, they had an effect on each other.
If they don't disappear, they had no effect on each other."

You can't just make things up as you go along, Cecil.

>>> Where did the other 141.4 joules go?
>>
>>
>> The fact that you would even pose that question in the first place
>> indicates that you have made a false assumption. What did you assume
>> about the 200 Joules/sec that turned out not to be at all true?
>
>
> Absolutely nothing. Is English your second language?

So first you claim that you made absolutely no assumptions in solving
the problem, and then for good measure you throw another insult.

So. In posing the question are you not assuming some energy is
missing? Are you not assuming that power has a phase angle? Are you
not assuming there is a physical discontinuity? Are you not assuming
a one dimensional system? I already know the answer, so you needn't
bother.

I'm done.

ac6xg

1740. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 22:09:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FGroj.1706$Ch6.1651@newssvr11.news.prodigy.net>
Source record: 28561

Tom Donaly wrote:
> Cecil Moore wrote:
>> s = Re(ExH*)/2
>>
> Does the dash over the letter indicate a vector, or does it
> just indicate an average value? What does your dictionary say
> about Poynting's Theorem?

The dash indeed does indicate a vector which is an average
value. It says, "E and H are the electric and magnetic field
vectors in phasor notation." My dictionary does not define
"Poynting's Theorem" but it does define the instantaneous
Poynting vector, as opposed to the average Poynting vector,
as ExH. (I have never found the instantaneous Poynting vector
to be of much usefulness in ham radio).

The average Poynting vector matches up well with RMS values
of voltage and current with which we all are familiar.
Obviously, Vrms*Irms = (Vmax*Imax)/2 = Re(ExH*)/2
for traveling waves.
--
73, Cecil http://www.w5dxp.com

1741. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 22:12:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <jJroj.1707$Ch6.1582@newssvr11.news.prodigy.net>
Source record: 28563

Owen Duffy wrote:
> Operation of a diode detector in the square law region isn't out of the
> question, but it takes some serious gain to drive a meter. There are some
> good chopper stabilised op amps out there that have uV offset levels and
> single supply rail and input to below the negative rail eg LTC1050.

If the diode is DC-biased and the bias subtracted out
during calibration, doesn't that improve the low power
accuracy considerably?
--
73, Cecil http://www.w5dxp.com

1742. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 22:36:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <L3soj.5364$so6.1234@newssvr19.news.prodigy.net>
Source record: 28564

Jim Kelley wrote:
> You really should seek help. What was this supposed to mean?
>
> "If the waves disappear from existence, they had an effect on each other.
> If they don't disappear, they had no effect on each other."
>
> You can't just make things up as you go along, Cecil.

Let me rephrase that statement so even you can understand it.
If the waves disappear from existence in their original
direction of travel, they had to have an effect on each other.
If they have no effect on each other, they cannot disappear
in their original direction of travel. (Of course, you knew
exactly what I meant and did your usual nit-picking, word-
twisting act hoping to hoodwink the uninitiated.)

> So first you claim that you made absolutely no assumptions in solving
> the problem, and then for good measure you throw another insult.

No, I claim that I made absolutely no *false* assumptions
and then questioned your more-than-obvious lack of proficiency
in the English language.

> In posing the question are you not assuming some energy is
> missing?

Absolutely not! You are the one who keeps introducing missing
energy - so you must believe in it.

> Are you not assuming that power has a phase angle?

No, the E-fields of the two waves have a phase angle.
Quoting my years old "Worldradio" article:

"Powers, treated as scalars, are incapable of interference.
Any sign associated with a power in this paper is the sign
of the cosine of the phase angle between two voltage phasors."

But since that statement is a result of your suggestions
years ago, you already knew that your above accusation
was just bafflegab-obfuscation on your part.

> Are you not assuming there is a physical discontinuity?

AFAIK, wave cancellation is not possible without a physical
discontinuity. If you can prove wave interaction at a point
removed from a physical discontinuity, please present it.

> Are you not assuming a one dimensional system?

An RF transmission line is essentially a one-dimensional
system - or a 1.1 dimensional fractal system if you prefer.
--
73, Cecil http://www.w5dxp.com

1743. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 23:14:00 UTC
From: Suzy <not@valid>
Message-ID: <47a2563a$1@dnews.tpgi.com.au>
Source record: 28565

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:bq74q3pb6ntrq211ps82g5857j78jcds0u@4ax.com...
> On Fri, 1 Feb 2008 06:12:14 +1100, "Suzy" <not@valid> wrote:
>
>>> I suppose there's still the possibility of cutting the trace a bit
>>> narrow on purpose and adjusting the impedance by adding a grounded
>>> plate above the board. It could be spaced an adjustable distance away
>>> by mounting it with threaded rods (long screws), and adjusted to make
>>> the traces 50 ohms.
>>
>>**But how do you check that in a workshop with no test gear?
>
> This is called residual SWR in a reflectometer. You load it with a
> known good load, and what SWR you find (or what is exhibited by the
> two meters) inhabits the reflectometer itself. Then you flip it over
> and apply your source into the goesoutta with the known load on the
> comesinna. You then proceed to reduce the residual SWR in both
> directions.
>
> Finding a good load is another matter, and I reported one (a precision
> RF resistor) with specific characteristics here last week. Consult
> the thread "RF Power Resistors from Caddock."
>
> All of $10-$20 to accomplish.
>
> 73's
> Richard Clark, KB7QHC

I'm in Australia!

1744. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 23:16:21 UTC
From: Suzy <not@valid>
Message-ID: <47a256c8@dnews.tpgi.com.au>
Source record: 28566

"K7ITM" <k7itm@msn.com> wrote in message
news:50c7b6af-a2da-4413-a179-dab2017f6387@i12g2000prf.googlegroups.com...
> On Jan 31, 11:12 am, "Suzy" <not@valid> wrote:
>> Hello Tom
>>
>> My responses**
>>
>> "K7ITM" <k7...@msn.com> wrote in message
> ...
>> > OK, I gave this some thought last night. I see a couple problems...
>>
>> > Though you could use 1mA meter movements, that puts you at a detected
>> > power level high enough that the meter scale won't be linear in power,
>> > assuming Schottky or germanium diode detectors.
>>
>> **Pardon my ignorance, but isn't it just a case of using an op amp or
>> whatever to suit whatever meter movement I have? ANyway, I have now
>> sourced
>> a 100 microamp meter (MU65) with a 3.9K resistance (sounds strange as the
>> 1
>> mA one has a 210 ohm resistance.
>
> Ah, OK. I had assumed you wanted to use just the meters, with no
> amplifier. With amplifiers, the 1mA meters will be fine. But we need
> op amps that have very low offset voltage and drift--I would prefer to
> set the meter full scale to correspond to around a millivolt or two of
> detected DC. I suppose if you have a way to zero the offset and it
> doesn't drift, that'll be OK. Then we need to make sure the amplifier
> is reasonably immune to 450MHz signals floating around... This is all
> "do-able" but there are some details you'll have to pay attention to.
> I'd suggest using a couple of the RF power detector ICs available from
> Analog Devices or Linear Technology, but we're back to surface mount
> stuff again at that point.
>
>>
>> BTW, I'n not bothered about the linear issue. I will be having two meters
>> to
>> show forward and relected powers simultaneously. I don't want to clculate
>> actual SWR.
>
> Well, yes, but wouldn't you want to know whether "0.1" on the meter
> represented 1/10 the power of "1.0" on the meter, rather than 1/100 of
> the power?? If you don't pay a little attention to the level of RF
> the detector is actually detecting, you're liable to have that

> problem.
>
>
> ...
>> > I suppose there's still the possibility of cutting the trace a bit
>> > narrow on purpose and adjusting the impedance by adding a grounded
>> > plate above the board. It could be spaced an adjustable distance away
>> > by mounting it with threaded rods (long screws), and adjusted to make
>> > the traces 50 ohms.
>>
>> **But how do you check that in a workshop with no test gear?
>
> What do you mean "no" test gear? You'll have the directional coupler
> with meters itself, and a power source. The only other thing you need
> is a 50 ohm load to put on the coupler output. Is it not worth having
> at least a load you can trust? With a known good load, you feed some
> power through the coupler and adjust for zero indicated return; turn
> the coupler around and make sure the other port also reads zero. With
> an open or short load you should get equal readings on the forward and
> reverse meters. (I suppose you need two couplers and a good load to
> insure that the through line of the coupler is also the same impedance
> as the load...) I have a good network analyzer on my bench at work,
> but without a calibration load to test and calibrate it with, I don't
> know how good its readings really are.
>
> Cheers,
> Tom

Having been told so by two of you, looks like I'll have to trade a rolling pin for a "known good load". Trouble is, there's probably no source here in Australia.

1745. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 23:18:02 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fntkva$d4k$1@news.jpl.nasa.gov>
Source record: 28571

K7ITM wrote:
> On Jan 31, 12:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>
>>K7ITM wrote:
>>
>>>To me, having a
>>>linear power scale is a big advantage, because then you can reasonably
>>>accurately figure SWR without having to worry about temperature
>>>compensation of the detectors.
>>
>>Can you define what you mean by linear? Straight line?
>>Since we can only measure voltage and current, in order
>>to obtain a linear power scale from a linear meter, it
>>is necessary to supply some pre-display computing
>>ability (microcomputer).
>>--
>>73, Cecil http://www.w5dxp.com
>
>
And what makes one think that a standard meter is linear (unless your
standards are +/- 10%)

> See earlier posting in this thread. See various Avago ap notes, such
> as AN 969. A diode detector run at low input provides an output DC
> voltage that's a constant times the square of the input RF voltage.
> If the input voltage is, or is assumed to be, at some constant
> resistive load impedance, the DC output is linear with RF power
> input.

Not necessarily true for a coupler..

The proportionality is temperature dependent, but if two
> detectors are constructed the same and run at the same temperature,
> and run in the signal level region where that relationship holds, then
> the ratio of the output DC voltages is a very good approximation of
> the ratio of the input RF power levels, and thus is useful for finding
> the SWR if the detectors are attached to the forward and reverse ports
> of a good directional coupler.

where "good" is the operative word

Top end of the useful "linear power"
> range using an HSMS-2850 single diode detector is about 10mV DC
> output. If you can measure the DC accurately down to 1uV (a bit
> tough, given thermal emfs, but possible), that gives you about a
> 10000:1 power range, or 100:1 RF input voltage range -- or about

> 1.02:1 SWR. Chances are very good that a home-built coupler won't be
> accurately enough matched to 50+j0 ohms to worry about anything that
> low anyway, even if you had a reason to care about it.

Which is why "real instruments" have some form of calibration. With
today's technology, there's really no excuse for not putting some form
of calibration into the logic between measurement and display, unless
all you're looking for is the RF equivalent of a battery and test lamp.

Heck, if you MUST use all analog designs and you're at less than 3GHz,
don't fool with diodes, use the less expensive, more sensitive, and more
accurate power measuring chips from Analog Devices.

Example: AD8310, DC-440MHz, 90+dB dynamic range (-91 to +4dBm) linear to
0.4dB, stable over temp(-40 to +85) +/-1 dB

or the 8319, 1MHz to 10GHz, 40dB range, similar accuracy

they also come in dual versions and versions with phase comparators..

These days, there's relatively few applications where a straight diode
detector would be better:
1) Absolute lowest cost in mass manufacturing with relaxed performance
requirements(so you can use a really cheap silicon diode)
(0.10 for a diode vs $3 for a chip is a $30 difference in the retail
list price)

2) very fast rise time requirements
The chips have response times in the 10 nS and slower range. The right
diode in the right mount can get sub nanoseconds.

3) frequencies >10 GHz
The chips don't go there yet.

>
> Cheers,
> Tom

1746. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 23:19:44 UTC
From: Suzy <not@valid>
Message-ID: <47a25793@dnews.tpgi.com.au>
Source record: 28567

"K7ITM" <k7itm@msn.com> wrote in message
news:9e844e58-a673-4ec0-9a0b-ec15f8cc8f30@c4g2000hsg.googlegroups.com...
> On Jan 31, 12:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> K7ITM wrote:
>> > To me, having a
>> > linear power scale is a big advantage, because then you can reasonably
>> > accurately figure SWR without having to worry about temperature
>> > compensation of the detectors.
>>
>> Can you define what you mean by linear? Straight line?
>> Since we can only measure voltage and current, in order
>> to obtain a linear power scale from a linear meter, it
>> is necessary to supply some pre-display computing
>> ability (microcomputer).
>> --
>> 73, Cecil http://www.w5dxp.com
>
> See earlier posting in this thread. See various Avago ap notes, such
> as AN 969. A diode detector run at low input provides an output DC
> voltage that's a constant times the square of the input RF voltage.
> If the input voltage is, or is assumed to be, at some constant
> resistive load impedance, the DC output is linear with RF power
> input. The proportionality is temperature dependent, but if two
> detectors are constructed the same and run at the same temperature,
> and run in the signal level region where that relationship holds, then
> the ratio of the output DC voltages is a very good approximation of
> the ratio of the input RF power levels, and thus is useful for finding
> the SWR if the detectors are attached to the forward and reverse ports
> of a good directional coupler. Top end of the useful "linear power"
> range using an HSMS-2850 single diode detector is about 10mV DC
> output. If you can measure the DC accurately down to 1uV (a bit
> tough, given thermal emfs, but possible), that gives you about a
> 10000:1 power range, or 100:1 RF input voltage range -- or about
> 1.02:1 SWR. Chances are very good that a home-built coupler won't be
> accurately enough matched to 50+j0 ohms to worry about anything that
> low anyway, even if you had a reason to care about it.
>
> Cheers,
> Tom

Much too theoretical for me!

Like Cecil's posts in that other longgoing thread, it leaves me glazed!

1747. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 23:21:34 UTC
From: Suzy <not@valid>
Message-ID: <47a25801@dnews.tpgi.com.au>
Source record: 28568

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A375A12C5FDnonenowhere@61.9.191.5...
> K7ITM <k7itm@msn.com> wrote in news:9e844e58-a673-4ec0-9a0b-ec15f8cc8f30
> @c4g2000hsg.googlegroups.com:
>
>> On Jan 31, 12:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>>> K7ITM wrote:
>>> > To me, having a
>>> > linear power scale is a big advantage, because then you can
> reasonably
>>> > accurately figure SWR without having to worry about temperature
>>> > compensation of the detectors.
>>>
>>> Can you define what you mean by linear? Straight line?
>>> Since we can only measure voltage and current, in order
>>> to obtain a linear power scale from a linear meter, it
>>> is necessary to supply some pre-display computing
>>> ability (microcomputer).
>>> --
>>> 73, Cecil http://www.w5dxp.com
>>
>> See earlier posting in this thread. See various Avago ap notes, such
>> as AN 969. A diode detector run at low input provides an output DC
>> voltage that's a constant times the square of the input RF voltage.
>> If the input voltage is, or is assumed to be, at some constant
>> resistive load impedance, the DC output is linear with RF power
>> input. The proportionality is temperature dependent, but if two
>> detectors are constructed the same and run at the same temperature,
>> and run in the signal level region where that relationship holds, then
>> the ratio of the output DC voltages is a very good approximation of
>> the ratio of the input RF power levels, and thus is useful for finding
>> the SWR if the detectors are attached to the forward and reverse ports
>> of a good directional coupler. Top end of the useful "linear power"
>> range using an HSMS-2850 single diode detector is about 10mV DC
>> output. If you can measure the DC accurately down to 1uV (a bit
>> tough, given thermal emfs, but possible), that gives you about a
>> 10000:1 power range, or 100:1 RF input voltage range -- or about
>> 1.02:1 SWR. Chances are very good that a home-built coupler won't be
>> accurately enough matched to 50+j0 ohms to worry about anything that
>> low anyway, even if you had a reason to care about it.
>>
>> Cheers,
>> Tom
>>

>
> Tom,
>
> This is further from Suzy's needs, but...
>
> Operation of a diode detector in the square law region isn't out of the
> question, but it takes some serious gain to drive a meter. There are some
> good chopper stabilised op amps out there that have uV offset levels and
> single supply rail and input to below the negative rail eg LTC1050.
>
> Another alternative is the AD8307AN log amps for a linear dBW scale. You
> could even use one on FWD and REF detectors and difference the outputs in
> an op amp for a direct indicating VSWR or RL scale. I have thought of
> getting one of these chips and seeing whether its response is fast enough
> to drive a PEP amplifier for SSB telephony.
>
> Back to Suzy's problem...
>
> The instrument downstream of the sampler is not so much the issue as
> building and calibrating a sampler when you have no test gear.
>
> Suzy, if you see a Revex W560 going on VKHAM for $100 or so, it is a good
> buy. It has HF to 70cm (two independent couplers, ie four coax
> connectors), and works pretty well.
>
> For a dummy load, the market was flooded with terminations from 25W to
> about 60W that had been scrapped from AMPS base station equipment, and
> they were sold at hamfests for $20 or so, you may find them if you look
> around.
>
> Owen

Thanks Owen. BTW, what type of coax connector? Not PAL surely!

1748. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-01-31 23:25:02 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fntlce$h96$1@news.jpl.nasa.gov>
Source record: 28570

Suzy wrote:
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:bq74q3pb6ntrq211ps82g5857j78jcds0u@4ax.com...
>
>>On Fri, 1 Feb 2008 06:12:14 +1100, "Suzy" <not@valid> wrote:
>>
>>
>>>>I suppose there's still the possibility of cutting the trace a bit
>>>>narrow on purpose and adjusting the impedance by adding a grounded
>>>>plate above the board. It could be spaced an adjustable distance away
>>>>by mounting it with threaded rods (long screws), and adjusted to make
>>>>the traces 50 ohms.
>>>
>>>>But how do you check that in a workshop with no test gear?
>>
>>This is called residual SWR in a reflectometer. You load it with a
>>known good load, and what SWR you find (or what is exhibited by the
>>two meters) inhabits the reflectometer itself. Then you flip it over
>>and apply your source into the goesoutta with the known load on the
>>comesinna. You then proceed to reduce the residual SWR in both
>>directions.
>>
>>Finding a good load is another matter, and I reported one (a precision
>>RF resistor) with specific characteristics here last week. Consult
>>the thread "RF Power Resistors from Caddock."
>>
>>All of $10-$20 to accomplish.
>>
>>73's
>>Richard Clark, KB7QHC
>
>
> I'm in Australia!

http://www.caddock.com/ has a link to their Australian distributor
(granted, they may have some punitive minimum order).

A begging letter to Caddock for a sample might work?

Or, do the big mailorder companies ship to Australia (the parts are in
the few bucks range.. postage and shipping could be more)
>
>

1749. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 00:00:14 UTC
From: Suzy <not@valid>
Message-ID: <47a26115$1@dnews.tpgi.com.au>
Source record: 28569

At the risk of thoroughly boring you all, I'll summarize the position to date. I have a good workshop with power tools and I like metal bashing and am quite happy with PCBs. I even have an electronic calliper so can measure thickness accurately. However, my eyes will not allow very fine work like SMD. I am looking to build an SWR meter using two 1 mA meters, one for forward and one for reverse. I am looking for a practical (non-theoretical) article on how to build one. I am wondering if there is one the ARRL handboook before I go to the exp-ense of buying one here in Australia. Most of the beautifully argued theory on here is way way beyond me. Any pointers to a suitable article?

1750. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 00:16:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13q4p69idjb6m72@corp.supernews.com>
Source record: 28572

I don't think I can make any more positive contributions to this discussion, except to remind readers that I have never, ever promoted the idea of adding powers, vectorially or otherwise, or to treat them with superposition. In fact, I've shown mathematically several times why this can't legitimately be done.

Roy Lewallen, W7EL

1751. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 00:17:46 UTC
From: Suzy <not@valid>
Message-ID: <47a26533@dnews.tpgi.com.au>
Source record: 28573

"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:fntlce$h96$1@news.jpl.nasa.gov...
> Suzy wrote:
>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> news:bq74q3pb6ntrq211ps82g5857j78jcds0u@4ax.com...
>>
>>>On Fri, 1 Feb 2008 06:12:14 +1100, "Suzy" <not@valid> wrote:
>>>
>>>
>>>>>>I suppose there's still the possibility of cutting the trace a bit
>>>>>narrow on purpose and adjusting the impedance by adding a grounded
>>>>>plate above the board. It could be spaced an adjustable distance away
>>>>>by mounting it with threaded rods (long screws), and adjusted to make
>>>>>the traces 50 ohms.
>>>>
>>>>>>**But how do you check that in a workshop with no test gear?
>>>
>>>This is called residual SWR in a reflectometer. You load it with a
>>>known good load, and what SWR you find (or what is exhibited by the
>>>two meters) inhabits the reflectometer itself. Then you flip it over
>>>and apply your source into the goesoutta with the known load on the
>>>comesinna. You then proceed to reduce the residual SWR in both
>>>directions.
>>>
>>>Finding a good load is another matter, and I reported one (a precision
>>>RF resistor) with specific characteristics here last week. Consult
>>>the thread "RF Power Resistors from Caddock."
>>>
>>>All of $10-$20 to accomplish.
>>>
>>>73's
>>>Richard Clark, KB7QHC
>>
>>
>> I'm in Australia!
>
> http://www.caddock.com/ has a link to their Australian distributor
> (granted, they may have some punitive minimum order).
>
> A begging letter to Caddock for a sample might work?
>
> Or, do the big mailorder companies ship to Australia (the parts are in the
> few bucks range.. postage and shipping could be more)
>>

Thanks very much for that, but I am hoping to get a Bird Termaline 50W dummy load, which I hope will enable me to progress. Thank you all for holding this floury (not flowery!) hand.

1752. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 00:19:35 UTC
From: Suzy <not@valid>
Message-ID: <47a265a0$1@dnews.tpgi.com.au>
Source record: 28574

"Suzy" <not@valid> wrote in message news:47a26115$1@dnews.tpgi.com.au...
> At the risk of thoroughly boring you all, I'll summarize the position to
> date. I have a good workshop with power tools and I like metal bashing and
> am quite happy with PCBs. I even have an electronic calliper so can
> measure thickness accurately. However, my eyes will not allow very fine
> work like SMD. I am looking to build an SWR meter using two 1 mA meters,
> one for forward and one for reverse. I am looking for a practical
> (non-theoretical) article on how to build one. I am wondering if there is
> one the ARRL handboook before I go to the exp-ense of buying one here in
> Australia. Most of the beautifully argued theory on here is way way beyond
> me. Any pointers to a suitable article?
And further to that, I am hoping to shortly get a Bird Termaline 50W dummy
load, so I'll have something to work with!

1753. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 00:23:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <eEtoj.5388$so6.2741@newssvr19.news.prodigy.net>
Source record: 28575

Roy Lewallen wrote:
> I don't think I can make any more positive contributions to this
> discussion, except to remind readers that I have never, ever promoted
> the idea of adding powers, vectorially or otherwise, or to treat them
> with superposition. In fact, I've shown mathematically several times why
> this can't legitimately be done.

We have two completely separate experiments running with one
amp flowing through a one ohm resistor. Each experiment is
dissipating one watt. Roy is telling us that two experiments
taken together do not dissipate two watts. I, for one, would
like to see proof of that assertion.
--
73, Cecil http://www.w5dxp.com

1754. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 00:26:24 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A37744501A10nonenowhere@61.9.191.5>
Source record: 28576

"Suzy" <not@valid> wrote in news:47a25801@dnews.tpgi.com.au:

>> Suzy, if you see a Revex W560 going on VKHAM for $100 or so, it is a
>> good buy. It has HF to 70cm (two independent couplers, ie four coax
>> connectors), and works pretty well.

N type on the VHF/UHF coupler, UHF type on the other coupler.
>>
>> For a dummy load, the market was flooded with terminations from 25W
>> to about 60W that had been scrapped from AMPS base station equipment,
>> and they were sold at hamfests for $20 or so, you may find them if
>> you look around.

N type.

>>
>> Owen
>
> Thanks Owen. BTW, what type of coax connector? Not PAL surely!

No, but they are not all that bad. Almost no one manufactured VHF land
mobiles here with UHF connectors, but they did use PAL (Belling & Lee)
once (Pye Reporters for instance).

Owen

1755. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 00:31:17 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A37751883EB6nonenowhere@61.9.191.5>
Source record: 28577

Jim Lux <james.p.lux@jpl.nasa.gov> wrote in news:fntlce$h96$1
@news.jpl.nasa.gov:

> http://www.caddock.com/ has a link to their Australian distributor
> (granted, they may have some punitive minimum order).
>
> A begging letter to Caddock for a sample might work?
>
> Or, do the big mailorder companies ship to Australia (the parts are in
> the few bucks range.. postage and shipping could be more)
>>
>>
>

Suzy,

I had a look at Farnell (au) for these type of resistors recently
(Caddock are not the only maker).

My recollection is that a 100W resistor is likely to be good for 50W -
60W in a practical application, and they were about $28 ea + $12
shipping, and IIRC minimum order quantity was one.

That is not to recommend them for a simple accurate load for 70cm.

Owen

1756. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 00:52:50 UTC
From: Suzy <not@valid>
Message-ID: <47a26d6e$1@dnews.tpgi.com.au>
Source record: 28578

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A37751883EB6nonenowhere@61.9.191.5...
> Jim Lux <james.p.lux@jpl.nasa.gov> wrote in news:fntlce$h96$1
> @news.jpl.nasa.gov:
>
>> http://www.caddock.com/ has a link to their Australian distributor
>> (granted, they may have some punitive minimum order).
>>
>> A begging letter to Caddock for a sample might work?
>>
>> Or, do the big mailorder companies ship to Australia (the parts are in
>> the few bucks range.. postage and shipping could be more)
>>>
>>>
>>
>
> Suzy,
>
> I had a look at Farnell (au) for these type of resistors recently
> (Caddock are not the only maker).
>
> My recollection is that a 100W resistor is likely to be good for 50W -
> 60W in a practical application, and they were about $28 ea + $12
> shipping, and IIRC minimum order quantity was one.
>
> That is not to recommend them for a simple accurate load for 70cm.
>
> Owen

But hopefully the Bird Termaline 50W model 8085 will do the job?

1757. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 01:01:54 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fntr22$7u8$1@news.jpl.nasa.gov>
Source record: 28584

Suzy wrote:
> At the risk of thoroughly boring you all, I'll summarize the position to
> date. I have a good workshop with power tools and I like metal bashing and
> am quite happy with PCBs. I even have an electronic calliper so can measure
> thickness accurately. However, my eyes will not allow very fine work like
> SMD. I am looking to build an SWR meter using two 1 mA meters, one for
> forward and one for reverse. I am looking for a practical (non-theoretical)
> article on how to build one. I am wondering if there is one the ARRL
> handboook before I go to the exp-ense of buying one here in Australia. Most
> of the beautifully argued theory on here is way way beyond me. Any pointers
> to a suitable article?
>
>

One might find that you can BUY a surplus directional coupler for 440MHz
fairly cheaply. Check Ebay, etc.

Then it's just a matter of wiring up electronics to the coupled ports.

1758. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 01:09:20 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fntrg0emq1@news.jpl.nasa.gov>
Source record: 28585

Suzy wrote:
> "Owen Duffy" <none@no.where> wrote in message
> news:Xns9A37751883EB6nonenowhere@61.9.191.5...
>
>>Jim Lux <james.p.lux@jpl.nasa.gov> wrote in news:fntlce$h96$1
>>@news.jpl.nasa.gov:
>>
>>
>>>http://www.caddock.com/ has a link to their Australian distributor
>>>(granted, they may have some punitive minimum order).
>>>
>>>A begging letter to Caddock for a sample might work?
>>>
>>>Or, do the big mailorder companies ship to Australia (the parts are in
>>>the few bucks range.. postage and shipping could be more)
>>>
>>>>
>>Suzy,
>>
>>I had a look at Farnell (au) for these type of resistors recently
>>(Caddock are not the only maker).
>>
>>My recollection is that a 100W resistor is likely to be good for 50W -
>>60W in a practical application, and they were about $28 ea + $12
>>shipping, and IIRC minimum order quantity was one.
>>
>>That is not to recommend them for a simple accurate load for 70cm.
>>
>>Owen
>
>
> But hopefully the Bird Termaline 50W model 8085 will do the job?
>
>

in AU, have you checked surplus places like
http://www.users.bigpond.com/alandevlin/forsale.html

Indeed, it shows a HP 774D as being sold, but perhaps he'd have other stuff.

1759. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 01:12:32 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A377C1769AA0nonenowhere@61.9.191.5>
Source record: 28579

"Suzy" <not@valid> wrote in news:47a26d6e$1@dnews.tpgi.com.au:

>
> But hopefully the Bird Termaline 50W model 8085 will do the job?

I think it is rated to 3GHz, look after it and it will be very useful.

People tend to overlook the value of a known dummy load, it is a very useful piece of test equipment, and one of the first you should own.

If it is used, take the opportunity to test it some time.

With that in you kit, you have a chance of calibrating a VSWR meter sampler.

You might find the following article of interest, skip the maths if it gives you a headache, but the discussion towards the end is relevant to setting up / testing a VSWR meter: http://www.vk1od.net/VSWR/VSWRMeter.htm
.

Perhaps you have some trusted ham neighbours who can help you out.

Owen

1760. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 01:19:39 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <Lsuoj.183878$MJ6.99523@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28580

Cecil Moore wrote:

> In the interferometer example, the two waves cancel
> for all of steady-state at the standard output and
> the reflected energy back toward the source due to
> that cancellation is intercepted and presented at
> the non-standard output. If the two canceled waves
> don't affect each other, why do their combined
> energy components appear later at the non-standard
> output? What reversed their momentum at the standard
> output?

Cecil,

Did you ever toss a ball against a wall and observe it come back at you? By the ordinary rules of mechanics the momentum of the ball changed significantly. Also by the ordinary rules of mechanics the momentum of the wall changed just as much. Did you see the wall move? How much kinetic energy do you suppose it required for the wall to move at, say, one femtometer per second?

Concern about momentum in HF waves is pointless. There is virtually unlimited capacity for the interface to source or sink any necessary momentum.

73,
Gene
W4SZ

1761. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 01:30:27 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <TCuoj.525569$kj1.412855@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28581

Cecil Moore wrote:
>
>
> The dash indeed does indicate a vector which is an average
> value. It says, "E and H are the electric and magnetic field
> vectors in phasor notation." My dictionary does not define
> "Poynting's Theorem" but it does define the instantaneous
> Poynting vector, as opposed to the average Poynting vector,
> as ExH. (I have never found the instantaneous Poynting vector
> to be of much usefulness in ham radio).
>
> The average Poynting vector matches up well with RMS values
> of voltage and current with which we all are familiar.
> Obviously, Vrms*Irms = (Vmax*Imax)/2 = Re(ExH*)/2
> for traveling waves.

Cecil,

I am curious why you find the Poynting vector as you described above to be useful at all for ham radio. It appears to be merely a synonym for V*I in some form.

In the standard TEM mode in a coax transmission line the H-field is represented by a set of concentric rings around the center conductor, while the E-field is a set of radial vectors from the center conductor to the outer conductor.

Do you actually calculate the cross product of those vectors to determine the Poynting vector? If so, I would be quite impressed. If not, what is the Poynt of the Poynting vector in your definition?

73,
Gene
W4SZ

1762. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 01:42:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <JNuoj.53859$Pv2.45749@newssvr23.news.prodigy.net>
Source record: 28582

Gene Fuller wrote:
> I am curious why you find the Poynting vector as you described above to
> be useful at all for ham radio. It appears to be merely a synonym for
> V*I in some form.

That's exactly why it is useful. It links the E-field
to voltage and the H-field to current.
--
73, Cecil http://www.w5dxp.com

1763. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 01:48:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <eUuoj.53861$Pv2.43711@newssvr23.news.prodigy.net>
Source record: 28583

Gene Fuller wrote:
> Did you ever toss a ball against a wall and observe it come back at you?

At the non-reflective thin-film coating on glass,
exactly what "wall" do the reflections encounter?

> Concern about momentum in HF waves is pointless.

I am content to believe Eugene Hecht over you.
He said that wave energy and momentum must be
conserved. Sorry you disagree.
--
73, Cecil http://www.w5dxp.com

1764. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 02:10:06 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <jcvoj.9996$hI1.5857@nlpi061.nbdc.sbc.com>
Source record: 28586

dfinn1@nc.rr.com wrote:
> On Jan 31, 3:26 am, Roy Lewallen <w...@eznec.com> wrote:
>> AI4QJwrote:
>>> "Roy Lewallen" <w...@eznec.com> wrote in message
>>> news:13pv49i42n10v46@corp.supernews.com...
>>> Wow, what a lack of misunderstanding!
>>> Of course anyone can assign a relative sign in front of a power quantity.
>>> For example, it might be convenient to assign a minus sing to reflected
>>> power to distinguish it from forward power. But in no way does assigning a
>>> minus sign as a means to signify "reflected power" also mean that the power
>>> is "negative". It simply means positive power moving in the negative
>>> direction! This as opposed to negative voltage which truly is negative with
>>> respect to an absolute reference point of earth ground.
>> No, negative power means that *energy* is moving in the direction we've
>> declared to be negative. This follows directly from the definition of
>> power as the time derivative of energy. No movement of power is necessary.
>>
>>> Here is a simple question: Real power = I**2/R
>>> How can real power be negative?
>> The use of "real" indicates that you're referring to *average* power.
>> I'm not. If when I say "power" you read "average power", then
>> misunderstanding is certain to occur.
>>
>>
>>
>>> I assume you will not tell me to use negative resistance or jI.
>>> How can the energy in the power ever be negative? I assume you will not tell
>>> me to consider negative time.
>>> Give me ONE example of how real power expressed this way can EVER be
>>> negative. Every time you give me a v(t)*i(t) and assign a sign to indicate
>>> direction of current flow -i(t), I will ask you to calculate i(t)**2/R and
>>> tell you to make that a negative number.
>>> This is straight from EE101.
>> You apparently took a different curriculum than I did. The references I
>> have (see the end of this posting) support what I learned, that power =
>> v(t) * i(t), which obviously (I hope it's obvious anyway) can be
>> negative as well as positive. Let's look at a simple circuit consisting
>> of a series resistor, capacitor, inductor, and voltage source. The
>> equation relating i(t) and v(t) looks like this (I don't recall the
>> course number, but the problem appears less than half way into my
>> elementary circuits text, so it was probably first semester circuit
>> analysis):
>>
>> L*di/dt + Ri + 1/C * Integral(i dt) = v

>>
>> If you multiply both sides by i, you have v * i on the right, which is
>> power, and on the left you have i^2 * R for the central term, but two
>> more terms to deal with. So it's hopefully obvious that power isn't i^2
>> * R. Or if not, it should at least show you that v(t) * i(t) isn't equal
>> to i^2(t)/R. And all this without having to introduce negative time.
>> Incidentally, the above equation is correct regardless of the nature of
>> v(t) -- it doesn't need to be sinusoidal or even periodic. So it's as
>> basic as they come.
>>
>> If you plot the power (v * i) at some point in this circuit, you'll find
>> that it's positive for part of each cycle and negative for the remainder
>> of the cycle. If you do the integration of this over a cycle and divide
>> by the period in order to get the average power, you'll find that the
>> average power (what you've called "real power") is indeed I(RMS)^2 * R,
>> which is positive.
>>
>> If a circuit has only resistance and no way to store energy, then v(t) =
>> i(t) * R, power is i^2 * R, and power is always positive. Negative power
>> occurs when energy is stored for part of a cycle, then returned during
>> the rest of the cycle, as in the series RLC circuit. Or a transmission
>> line which isn't perfectly terminated.
>>
>> A recurring problem is confusion between power, which is v(t) * i(t),
>> and average power, which is the integral of this over one cycle divided
>> by the period. Anyone confused by this can easily find ample study
>> material in any elementary electrical circuits text book. The discussion
>> of RMS athttp://www.eznec.com/Amateur/RMS_Power.pdfmight also be
>> helpful in understanding the relationship between power and average
>> power, although it doesn't deal with energy storage.
>>
>> Many people learn only about average power because it's adequate for
>> most everyday applications, and the math involved with calculating
>> instantaneous power is considerably more involved. But anyone trying to
>> understand the movement of energy in a system capable of storing energy
>> really needs to understand power on a more fundamental level, as the
>> time derivative of energy movement. And I hope it's still being taught
>> in engineering schools!
>>
>>>> It's no wonder that people are having so much trouble understanding energy
>>>> movement, and why it's so easy to lead them astray with red herrings and
>>>> pseudo-science,
>>> OMG, give me a break. Tell me about the law of conservation of negative
>>> energy.
>> If you'll look in a basic physics text you'll find plenty of references
>> to negative potential energy. That concept, however, isn't necessary in
>> order to use and understand the directional property of power.
>>
>>>> when there's so much misunderstanding about the underlying concepts and
>>>> terminology. If you start with concepts which are fundamentally erroneous,

>>>> the knowledge you build on them is bound to be wrong.
>>> Tell me how to make I**2/R a negative number that generates negative heat
>>> and which is not fundamentally erroneous.
>> I^2*R is one expression of average power, which has never been what I've
>> been discussing. So I'll gladly leave this proof to you.
>>
>>> Yes, thuis truly is fundamental. I am rather surprized at this diatribe and
>>> how it exposed *your* lack of understanding of fundamental concepts.
>>> AI4QJ
>> I plead guilty to not knowing everything, and to always striving to
>> learn more. I am comforted, however, by the number of respected
>> professors and textbook writers who share my lack of understanding of
>> these concepts. For example,
>>
>> 1. Pearson and Maler, _Introductory Circuit Analysis_, p. 251:
>>
>> "For our conventions the power to the right is p = vi. . ."
>> "The capital letter P is used to designate average power, whereas the
>> lower case letter p is a function of time. Figure 5.14 shows voltage,
>> current, and power as a function of time. At those instants of time at
>> which power is negative, energy is flowing to the left in Fig. 5.13."
>> The little program TLVis1 I introduced a while ago generates waveforms
>> for voltage, current, and power very much like fig. 5.14.
>>
>> 2. Van Valkenburg, _Network Analysis_, 3rd Edition, p. 420:
>>
>> "The rate at which energy is being absorbed [by a one port network] is
>> the power given by p = dw/dt = v(t)i(t) W (watts)" Figures 14-4 and 14-5
>> on the following pages show graphs of the power for an inductor and
>> capacitor respectively which are sinusoidal and centered around zero. On
>> p. 424: "Energy is the integral of power. Using the convention for sign
>> illustrated by Fig. 14-2, we see that, for positive p, energy is being
>> supplied to the inductor and capacitor for storage. When p is negative,
>> energy is being returned to the source. We know that no more energy can
>> be returned than supplied, of course, and the fact that w [the energy]
>> returns to zero value for every cycle of the voltage and current implies
>> that the energy supplied ins returned entirely every cycle for the
>> inductor and capacitor."
>>
>> I'm curious. What text did you use for your EE101 course which says
>> otherwise?
>>
>> Roy Lewallen, W7EL
>
> Roy, your references and your own statements are only saying that,
> yes, it can be or usually is an engineering conevntion to put a minus
> sign in front of P to indicate direction. I violently agree! As you
> know, quoting from my preceding post:
>
> "Of course anyone can assign a relative sign in front of a power

> quantity.
> For example, it might be convenient to assign a minus sing to
> reflected
> power to distinguish it from forward power. But in no way does
> assigning a
> minus sign as a means to signify "reflected power" also mean that the
> power
> is "negative". It simply means positive power moving in the negative
> direction!"
>
> Then you proceeded to go through all the trouble to cite beginner
> engineering textbooks (I guess that's an insult or something) in which
> this was, in fact, being done. Fine. Obviously I agree because I said
> the same thing in the preceding post.
>
> What you originally disagreed with me on was my statement that there
> is no such thing as "negative power". On a relative scale, there
> obviously is such a thing as positive power going in a direction that
> we define as positive and also the opposite direction that we define
> as negative. But in terms of an absolute scale or reference there is
> *no such thing* as negative power. We cannot remove heat by passing
> current through a resistor. Why is this important? Because in this
> discussion people were getting confused and started adding and
> subtracting powers as if they were conservative field vectors (such as
> voltage). Power can only be vectored by it's direction of movement. It
> is not a field vector. The point is (pardon the pun), to superimpose
> waves you must do so only with field vectors, not directional vectors,
> or in the very least you cannot mix the two. There is no power
> "vector" which can reduce to zero by adding a positive power to a
> negative power. At the point where you add the positive and negative
> powers, does it cancel to zero? No, it quadruples! I can assign a
> negative sign to all money that is no longer in my bank account; that
> does not mean it is negative money, it is still positive money but it
> exists elsewhere. This is extremely fundamental. It is like I am
> saying there is no such thing as negative temperature, that is, below
> the reference of absolute zero. Then Roy comes back and says "Oh yes
> there is, the temperature outside was -15F last night. My Textbook
> says that, for the purposes of this book, all references to degrees
> shall be in Fahrenheit. There obviously is a temperature below 0F
> which is negative, thus negative temperatures must exist." If you can
> just bridge the gap between relative to absolute, then you will
> partially understand why you cannot add power "vectors" like you can
> add vectors from a conservative field.
>
> AI4QJ
>

Even in circuit analysis, negative resistance is allowed. In that case,
negative power follows automatically. In field theory, there are such
things as Poynting vectors which, to engineers at least, represent a

power density field in space. Poynting vectors can be integrated over the surface of a volume of space, giving the total power entering or leaving the space, and the directions of the vectors are important. If you have 1 watt entering a volume, and 1 watt leaving a volume, the total amount of time rate of energy entering the volume is zero. No one is trying to use power superposition. Even Cecil knows better, now. Finally, all vectors have direction. If it doesn't have direction, it isn't a vector. There's no such thing as a "field vector" that doesn't point somewhere. An E field is a vector field. It obeys the rules of superposition, so you can add vectors to your hearts content, just as with an H field. Maybe you should go back to the books defining vectors.
73,
Tom Donaly, KA6RUH

(P.S. AI4QJ has already plonked me, so I don't expect him to read any of the above, but for everyone else, his interesting ideas need to be countered.)

1765. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 02:16:29 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <1ivoj.4900$J41.4142@newssvr14.news.prodigy.net>
Source record: 28587

Cecil Moore wrote:
> Tom Donaly wrote:
>> Cecil Moore wrote:
>>> s = Re(ExH*)/2
>>>
>> Does the dash over the letter indicate a vector, or does it
>> just indicate an average value? What does your dictionary say
>> about Poynting's Theorem?
>
> The dash indeed does indicate a vector which is an average
> value. It says, "E and H are the electric and magnetic field
> vectors in phasor notation." My dictionary does not define
> "Poynting's Theorem" but it does define the instantaneous
> Poynting vector, as opposed to the average Poynting vector,
> as ExH. (I have never found the instantaneous Poynting vector
> to be of much usefulness in ham radio).
>
> The average Poynting vector matches up well with RMS values
> of voltage and current with which we all are familiar.
> Obviously, Vrms*Irms = (Vmax*Imax)/2 = Re(ExH*)/2
> for traveling waves.

There's more to it than that. I think Born and Wolf may
be one of your Bibles, Cecil. You might want to read
section 1.1.4 "The energy law of the electromagnetic field"
for more insight. (I've got the seventh edition.)
73,
Tom Donaly, KA6RUH

1766. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 02:18:40 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <4kvoj.4901$J41.1658@newssvr14.news.prodigy.net>
Source record: 28588

Cecil Moore wrote:
> Roy Lewallen wrote:
>> I don't think I can make any more positive contributions to this
>> discussion, except to remind readers that I have never, ever promoted
>> the idea of adding powers, vectorially or otherwise, or to treat them
>> with superposition. In fact, I've shown mathematically several times
>> why this can't legitimately be done.
>
> We have two completely separate experiments running with one
> amp flowing through a one ohm resistor. Each experiment is
> dissipating one watt. Roy is telling us that two experiments
> taken together do not dissipate two watts. I, for one, would
> like to see proof of that assertion.

No one likes a wise-ass, Cecil.
73,
Tom Donaly, KA6RUH

1767. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 02:56:55 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <XTvoj.184061$MJ6.111719@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28589

Cecil Moore wrote:
> Gene Fuller wrote:
>> Did you ever toss a ball against a wall and observe it come back at you?
>
> At the non-reflective thin-film coating on glass,
> exactly what "wall" do the reflections encounter?
>
>> Concern about momentum in HF waves is pointless.
>
> I am content to believe Eugene Hecht over you.
> He said that wave energy and momentum must be
> conserved. Sorry you disagree.

The entire chunk of glass provides all the momentum source or sink
needed. Does that AR glass move every time you shine light at it? How much?

I have no disagreement with Hecht. Of course energy and momentum are
conserved. I am merely pointing out that there is not the slightest
problem in conserving momentum in any of these configurations.
Conservation of momentum in a transmission line or in a thin-film
coating on glass does not provide any useful guidance as to whether a
model is correct or not. The relative magnitudes of the numbers are such
that one could not find a momentum discrepancy even if it existed.

You continue to ignore the interface. OK, you don't actually "ignore"
the interface; rather you merely give it mention without really using
any of the properties.

73,
Gene
W4SZ

1768. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 03:10:21 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <x4woj.525940$kj1.61760@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28590

Cecil Moore wrote:
> Gene Fuller wrote:
>> I am curious why you find the Poynting vector as you described above
>> to be useful at all for ham radio. It appears to be merely a synonym
>> for V*I in some form.
>
> That's exactly why it is useful. It links the E-field
> to voltage and the H-field to current.

Yes, it links the fields. That still does not explain why it is useful for ham radio. Frankly I cannot think of a single thing that the Poynting vector provides in these simple transmission line cases that cannot be readily defined in a parallel manner using voltages and currents. (And you don't really look at the H-field and E-field in a transmission line, do you?)

The Poynting vector is useful when there are no voltages or currents, for example in free space, and in other complex configurations. I cannot see that it is anything more than high-falutin jargon when it is merely a replacement for V*I in a transmission line.

Do you have any examples where a Poynting vector provides more information or better quality information than the usual voltage and current formalisms?

73,
Gene
W4SZ

1769. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 04:34:20 UTC
From: Tom Horne <hornetd@veriqrmzon.net>
Message-ID: <gjxoj.14357$fs4.12898@trnddc02>
Source record: 28591

Michael Coslo wrote:
> Tom Horne wrote:
>> I am a RACES / ARES member who is trying to actually prepare for
>> deployment with the ability to carry on effective communications from
>> anywhere. I'm here in the antenna forum to get advice on a portable
>> antenna system. I'm not here to join anyones particular theoretical
>> antenna behavior cult. If you have real world experience with a
>> portable multi band antenna system that actually worked for you please
>> share that experience with me.
>
> Hi Tom.
>
> First things first - Are you willing to learn anything? This isn't as
> rude as it may first appear. I've had a good bit of experience with
> folks in emergency ops who don't want to learn about HF, they just want
> a one size fits all answer.
>
>>
>> Ive seen a couple of folded dipole antennas advertised that appear to
>> have some sort of fifty ohm dummy load at the center of the fold. Do
>> those things do more then provide a heat source for fleeing birds?
>
> They are not particularly good antennas. But they might just be good for
> your purpose. They are very wideband, and that may be important if you
> don't want to run a tuner. Many of their limitations can be overcome
> with applying more power.
>
> Before I get beat up by the antenna purists, the folded dipoles do serve
> a purpose of being antennas that you don't have to mess around with. I'd
> never own one, but for this purpose, maybe so.
>
>
>> There are several compact vertical and horizontal antennas being sold
>> complete with stands or tripods are any of them worth their freight?
>
> I suspect that the folded dipole would work a bit better.
>
>> The so called spiderweb beams look interesting can anyone offer real
>> world experience on those?
>
> No experience here, but under emergency condx, it seems like a
> nuisance.
>
>> I'm honestly looking for advice that is based on experience rather

>> than a particular theory of what should work. I want to know what
>> does work from real world users.
>
> And yet you came here! Just a joke son...
>
> a few questions might be in order:
>
> Are you looking for rapid setup, or are you going to be in a regular
> location with the antenna already in position? You noted deployment, so
> I'll assume the former.
>
> For speed of deployment and flexibility, it is hard to beat a
> general purpose dipole, ladder line, and a tuner.
>
> It is inexpensive, inherently all HF band, and performs pretty darn
> well. You do have to run a tuner, which is pretty simple, but that goes
> along with my how much do you want to learn schtick.
>
>
> All you need is a couple of trees, or even masts, and you can be set
> up and running in a short time.
>
> Length of the antenna can be adjusted according to how much space
> you have at deployment. Of course, the shorter you make it, the less
> well it performs on the lower bands.
>
> I've used these for years, and have talked and buzzed the world over.
>
> I tend to shy away from beams for emergency use, unless I have an omni
> or near omni antenna to complement them.
>
> The much maligned Folded dipole would be next on my list. Simple to
> set up and use. It isn't as forgiving on length as the general purpose
> dipole however.
>
> Those shorty verticals work pretty fair on the higher frequencies, but
> are a real b***h on 80 meters. The bandwidth is quite sharp, and can
> give you fits.
>
> I use a bugcatcher on 80 in the car because there isn't much
> alternative, and I have to have multiple taps to tune 80/75 meters.
>
> Screwdrivers tune more easily on 80/75, but their performance is down a
> little from the bugcatcher. I'd steer away from short verticals if you
> think you're going to be doing work in that neighborhood.
>
> Hope this helps.
>
> - 73 de Mike N3LI -

I will learn whatever I need to in order to be an effective radio operator when that is what is really needed. I've already set up a Winlink2000 gateway just to learn how. I've got a portable packet set up worked out using just an HT, a readily portable TNC, laptop computer, and a portable J-pole. I'm scheduled for my Skywarn class and I'm enrolled in the Level 1 Amateur Radio Emergency Communications course and I plan on taking all three courses and the needed exams to become a certified emergency communicator. I think I can honestly say I'm willing to learn.

What I was hoping to find was operators who have already used one or more of the antennas I was asking about who would be willing to share their experience of the effectiveness or lack of same with me.
--
Tom Horne

"This alternating current stuff is just a fad. It is much too dangerous for general use." Thomas Alva Edison

1770. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 04:43:55 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a2a38b$0$30712$4c368faf@roadrunner.com>
Source record: 28592

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:eqp2q3hf171uto4f73brrfvosg6mo2vamt@4ax.com...
> On Wed, 30 Jan 2008 21:57:55 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>> Radio waves and sound DO interact. The question is by degree, and at
>>> what frequency.
>>
>>Sure they interact Richard. The gravitons that bind the air molecules to
>>the
>>space time continuum, along with the galactic particles levitated by Art's
>>160m antenna interact with the RF photons in accordance with the unified
>>field theory.
>
> Ah, the standard babble substitution.
>
>>>Of course, it does require that you know what sound
>>> is,
>>
>>This implies that the mystery of sound can only be comprehended by
>>practitioners of the arts and certainly not by a mere electrical engineer.
>
> Hi Dan,
>
> And yet you validate this perception by your own response. I don't
> agree with it, but lacking others' replies, you set the standard.
>
> The simple observation here is that you supplied a response that does
> not reveal what sound is - taking such phenomenon as sound for granted
> frequently attends a lack of definition. Sound, like light, arrives
> through our senses such that we take them for granted and assign them
> very limited characteristics based on perception. Everyone believes
> in what they see and hear, and as it is a personal experience, it must
> be TRUE!
>
> It takes very little effort to show otherwise, and this is often
> followed by outrage and denial; again, because of the personal
> attachment.
>
>>> and what radiation (RF) is.
>>
>>I am glad you were able to clarify that radiation is "RF".
>
> It wasn't necessary.
>

>>> The OP has already demurred, but Dan,
>>> you are always quick to pick up the banner and wave it.
>>
>>Only on the rare occasions that I recognize truth.
>
> Ah yes, TRUTH and snuggly warm personal recognition. :-)
>
>>I will await you guitar string standing wave antenna that couples 20KHz
>>kinetic vibration energy with 20KHz RF.
>
> Now why would it do that?
>
>>But you say it depends on frequency
>>and of course the RF and sound wavelengths are too dissimilar here.
>
> Similarity of wavelength scale is immaterial. Sound wavelength can be
> shorter, longer, or the same size as radiation wavelengths; but your
> first have to know the what sound is. Even RF changes wavelength
> entering into dielectrics or waveguides.
>
> Radiation passing into a dielectric can engender sound, which in turn
> can engender radiation emerging from the dielectric. Wavelength may
> come to bare on problems of distance within it, but this is not an
> issue of radiation nor sound, but rather material.
>
>>At which
>>frequency might they interact, given that the velocity of RF is 3 X 10E8
>>m/sec and the velocity of sound is 4 x 10E2 m/sec? particularly, as the OP
>>indicated, in a vacuum?
>
> A guitar string in a vacuum may not transmit sound through the vacuum,
> but sound is why the string vibrates. Application of radiation is
> perfectly capable of setting the string into vibration (but you still
> don't know by what frequency or by what degree).
>
> You first have to be able to distinguish what sound is to relate it to
> radiation (RF is one way, but not the only way of expressing it).
>
> The correlation is extremely common - but largely immaterial to the
> topics of discussion typically encountered here.

You are up to your old tricks again. I have seen you do this before. You have me cornered into the position of making me prove the negative, i.e. that RF radiation has no interaction with sound (I will ignore for the moment the rather elementary side-line challenge of defining "sound" in scientific terms, particularly since you say this is not on topic). Forcing one to prove a negative is a particularly effective debating technique. Obviously I will not attempt to achieve the impossible and prove the negative using simple deductive logic. To use the more complex inductive logic and show that there is negligible probability of there ever being an

interaction is, in my opinion, much too tedious an exercize for the insignificant benefit of proving that I am right in a usenet thread. And you know that too, of course.

On the other hand, if your assertion is true, i.e. that there is an interaction, then you should be able to easily prove it through simple deductive logic using laws based on science. Your contribution would be of great interest here. However, it is perfectly understandable should you decline because I, after all, made the assertion of the negative in the first place so I am out of form turning the argument back to you. You can merely say, "I don't have to prove anything; you are the one who made the assertion in the first place". Since winner takes all, congrats!

73 de AI4QJ

1771. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 06:49:47 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <f905f82e-2bf6-4c1d-99c4-5862d55ef557@m34g2000hsb.googlegroups.com>
Source record: 28593

On Jan 31, 1:46 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> K7ITM wrote:
> > See earlier posting in this thread.
>
> Thanks Tom, when I said "linear power scale", I meant
> e.g. a meter reading where 2000 watts is full scale
> and 1000 watts is half scale. I have seen such meters
> but not without a digital or analog computer on the
> front end.
> --
> 73, Cecil http://www.w5dxp.com

Right, and I'm saying that with a coupler or sampler that picks off, say, 1e-7 of the power (0.2 milliwatts of RF out for 2000 watts in/through), a diode detector that shows that power to be full scale on a linear meter will show 1000 watts at half scale. That assumes that 0.2 milliwatts is low enough to get you into the square law region of the detector; for an HSMS-2850 diode, that's a bit high. Because the power at which the square law holds accurately is so low (and the detector output is so low) you need an electronic way to read that output; a simple meter movement isn't likely to do the trick. But there's no need for any fancy processing.

1772. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 07:01:39 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <15fbcf63-df85-4eab-9fcf-b5b2d13d7604@f10g2000hsf.googlegroups.com>
Source record: 28594

On Jan 31, 1:51 pm, Owen Duffy <n...@no.where> wrote:
> K7ITM <k7...@msn.com> wrote in news:9e844e58-a673-4ec0-9a0b-ec15f8cc8f30
> @c4g2000hsg.googlegroups.com:
>
>
>
>
>
> > On Jan 31, 12:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> >> K7ITM wrote:
> >> > To me, having a
> >> > linear power scale is a big advantage, because then you can
> reasonably
> >> > accurately figure SWR without having to worry about temperature
> >> > compensation of the detectors.
>
> >> Can you define what you mean by linear? Straight line?
> >> Since we can only measure voltage and current, in order
> >> to obtain a linear power scale from a linear meter, it
> >> is necessary to supply some pre-display computing
> >> ability (microcomputer).
> >> --
> >> 73, Cecil http://www.w5dxp.com
>
> > See earlier posting in this thread. See various Avago ap notes, such
> > as AN 969. A diode detector run at low input provides an output DC
> > voltage that's a constant times the square of the input RF voltage.
> > If the input voltage is, or is assumed to be, at some constant
> > resistive load impedance, the DC output is linear with RF power
> > input. The proportionality is temperature dependent, but if two
> > detectors are constructed the same and run at the same temperature,
> > and run in the signal level region where that relationship holds, then
> > the ratio of the output DC voltages is a very good approximation of
> > the ratio of the input RF power levels, and thus is useful for finding
> > the SWR if the detectors are attached to the forward and reverse ports
> > of a good directional coupler. Top end of the useful "linear power"
> > range using an HSMS-2850 single diode detector is about 10mV DC
> > output. If you can measure the DC accurately down to 1uV (a bit
> > tough, given thermal emfs, but possible), that gives you about a
> > 10000:1 power range, or 100:1 RF input voltage range -- or about
> > 1.02:1 SWR. Chances are very good that a home-built coupler won't be
> > accurately enough matched to 50+j0 ohms to worry about anything that
> > low anyway, even if you had a reason to care about it.
>

> > Cheers,
> > Tom
>
> Tom,
>
> This is further from Suzy's needs, but...
>
> Operation of a diode detector in the square law region isn't out of the
> question, but it takes some serious gain to drive a meter. There are some
> good chopper stabilised op amps out there that have uV offset levels and
> single supply rail and input to below the negative rail eg LTC1050.
>
> Another alternative is the AD8307AN log amps for a linear dBW scale. You
> could even use one on FWD and REF detectors and difference the outputs in
> an op amp for a direct indicating VSWR or RL scale. I have thought of
> getting one of these chips and seeing whether its response is fast enough
> to drive a PEP amplifier for SSB telephony.
>
> Back to Suzy's problem...
>
> The instrument downstream of the sampler is not so much the issue as
> building and calibrating a sampler when you have no test gear.
>
> Suzy, if you see a Revex W560 going on VKHAM for $100 or so, it is a good
> buy. It has HF to 70cm (two independent couplers, ie four coax
> connectors), and works pretty well.
>
> For a dummy load, the market was flooded with terminations from 25W to
> about 60W that had been scrapped from AMPS base station equipment, and
> they were sold at hamfests for $20 or so, you may find them if you look
> around.
>
> Owen

Yes, there are several linear-in-dB RF detectors out there. Linear Technology also have them. I really like that idea; they're typically much more temperature stable than a diode detector. But Suzy wanted to avoid SMT.

I've used a Harris chopper-stabilized op amp with HSMS-2850 zero-bias detector diodes, and it works well, but I did learn something about the need to be really careful around the chopper capacitor pins on that op amp before getting it right... But it's also not difficult to find a digital voltmeter that will go down to pretty low voltage at high impedance. A 4.5 digit meter on a 200mV scale does ten microvolts, and the simulation I ran last night suggests you could see down to about -50dBm power level with that. When you get down to 10uV, you have to get serious about avoiding thermal emfs.

I suppose it makes sense to just drive the detector hard and run it right into an analog meter movement, and then calibrate the meter.

Actually, at that level, the detector should be pretty linear in voltage. That actually makes it easier to detect down closer to 1:1 SWR anyway.

I posted not too long ago about a load I made with four 200 ohm 2 watt metal oxide resistors that shows what to me is remarkably good return loss out to well beyond 450MHz. It was very cheap to make. But there's no guarantee that some other brand of resistor would give such good results. It may have just been a fluke that the one I made turned out so good. (But I'm not about to toss it out!)

Cheers,
Tom

1773. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 07:07:33 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <6a9a4fc7-5d12-4dd0-97d5-42225d9039a9@c4g2000hsg.googlegroups.com>
Source record: 28595

On Jan 31, 5:01 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Suzy wrote:
> > At the risk of thoroughly boring you all, I'll summarize the position to
> > date. I have a good workshop with power tools and I like metal bashing and
> > am quite happy with PCBs. I even have an electronic calliper so can measure
> > thickness accurately. However, my eyes will not allow very fine work like
> > SMD. I am looking to build an SWR meter using two 1 mA meters, one for
> > forward and one for reverse. I am looking for a practical (non-theoretical)
> > article on how to build one. I am wondering if there is one the ARRL
> > handboook before I go to the exp-ense of buying one here in Australia. Most
> > of the beautifully argued theory on here is way way beyond me. Any pointers
> > to a suitable article?
>
> One might find that you can BUY a surplus directional coupler for 440MHz
> fairly cheaply. Check Ebay, etc.
>
> Then it's just a matter of wiring up electronics to the coupled ports.

:-) I've thought maybe I could just etch one next time I'm making
boards and drop it in the mail to her. Heck, I'd even toss detector
diodes and terminating resistors on it.

Cheers,
Tom

1774. Re: Magnetic Longwire Balun Question !!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 07:12:16 UTC
From: Lee <lo012a4519@blueyonder.co.uk>
Message-ID: <kDzoj.17905$801.2340@fe1.news.blueyonder.co.uk>
Source record: 28596

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:fiq3q313kbv1f7bhl9j5fgjd9f2j4vpvpb@4ax.com...
> On Thu, 31 Jan 2008 08:57:42 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
> wrote:
>
> >UPDATE......
> >
> >Sorry for the silly question about aerial lengths but it transpired that
the
> >impedance transformer was faulty !!! ..... it wasn`t responding too
well,
> >the replacement works very well down to 100kcs as a receive ant and
> >covers 160m to 10m with an average 2:1 swr ......
> >The aerial is an inverted `L` 63 feet long with multiband
counterpoise.....
>
> Hi Len,
>
> How did you make the SWR determination?
>
> 73's
> Richard Clark, KB7QHC

With a regular VSWR bridge Richard.....

Regards.

Len.....G6ZSG.....

1775. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 07:37:48 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <3DKMoVGMxsoHFAwC@ifwtech.co.uk>
Source record: 28598

Owen Duffy wrote:
>> Thanks Owen. BTW, what type of coax connector? Not PAL surely!
>
>No, but they are not all that bad. Almost no one manufactured VHF land
>mobiles here with UHF connectors, but they did use PAL (Belling & Lee)
>once (Pye Reporters for instance).
>

Do Australian TVs use "Bloody Belling Lee" connectors like we still do
in the UK? What does "PAL" stand for?

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

1776. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 07:45:41 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <a8h5q35kejvidi38eg62pk4otsjveh9utu@4ax.com>
Source record: 28597

On Thu, 31 Jan 2008 23:43:55 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>You are up to your old tricks again. I have seen you do this before. You
>have me cornered into the position of making me prove the negative, i.e.
>that RF radiation has no interaction with sound (I will ignore for the
>moment the rather elementary side-line challenge of defining "sound" in
>scientific terms, particularly since you say this is not on topic).

Hi Dan,

You've seen me do "this" before; and yet by this admission, you
entered into it with your eyes open. Are we to imagine that I am that
crafty, or that you are that gullible?

>Forcing
>one to prove a negative is a particularly effective debating technique.

Would I, by this my observation above, be "forcing" you to prove the
negative: that you are not gullible? I will not hold you to proving
the positive that I am too crafty as I have caught you again. ;-)

>Obviously I will not attempt to achieve the impossible and prove the
>negative using simple deductive logic. To use the more complex inductive
>logic and show that there is negligible probability of there ever being an
>interaction is, in my opinion, much too tedious an exercize for the
>insignificant benefit of proving that I am right in a usenet thread. And you
>know that too, of course.

Who asked for proof?

>On the other hand, if your assertion is true, i.e. that there is an
>interaction, then you should be able to easily prove it through simple
>deductive logic using laws based on science.

Deductive logic? You are walking on stilts to achieve this specter.
As I said, the interaction is so commonplace that it hardly demands
exceptional proofs and logic.

>Your contribution would be of
>great interest here. However, it is perfectly understandable should you
>decline because I, after all, made the assertion of the negative in the
>first place so I am out of form turning the argument back to you. You can
>merely say, "I don't have to prove anything; you are the one who made the
>assertion in the first place". Since winner takes all, congrats!

It's called heat.

>>>This implies that the mystery of sound can only be comprehended by
>>>practitioners of the arts and certainly not by a mere electrical engineer.

Heat is the common comprehension of the interaction between radiation
and sound that is accessible to every engineer. Now, if you want a
more elaborate answer, complete with math, logical proofs, and at
least 40 years of science (the oldest of references on my shelf); you
can invite that by further enquiry. However, it comes with its own
terminology, its own measures, its own mechanics - none of them
unfamiliar to the engineer, just not assembled in the standard canon
of engineering (it's called Physics).

And this is not the first time I've broached the topic, but it is one
that is met with a universal HUH?

Still and all, to say
>>>>A sound wave is an
>>>>air pressure wave (it does not propagate in a vacuum)and is in no way
>>>>comparable to a radio wave, which is electromagnetic and does. I don't
>>>>believe the two interact in any way.
is not the TRUTH, it is merely a limited perception. I am not
faulting anyone for TRUTH's sake (I didn't elevate it there in the
first place), I merely pointed out that such elevation without care
cheapens truth.

As marginal as my counter-argument is to the common fare here, the
original statement also bore no more relation to the common fare.
However, both bare upon the nature of waves at the extreme where few
are vested with experience. As such, then yes this topic is
comprehended only by the practitioners of the arts and as I cited in
another attenuated thread, there is probably an audience of one other
who can follow this, or who cares.

73's
Richard Clark, KB7QHC

1777. Re: Magnetic Longwire Balun Question !!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 07:54:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <7vj5q3l19oihp4luo8cpis6g0k2ap98rgr@4ax.com>
Source record: 28599

On Fri, 01 Feb 2008 07:12:16 GMT, "Lee" <lo012a4519@blueyonder.co.uk>
wrote:

>> How did you make the SWR determination?
>>
>> 73's
>> Richard Clark, KB7QHC
>
>With a regular VSWR bridge Richard.....

Hi Len,

And if you added 16 feet of line (or so) on either side of that
bridge, it would still indicate the same SWR relationships?

73's
Richard Clark, KB7QHC

1778. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 08:01:48 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <4e2195fd-c5b5-42cd-8492-d4f6122c0e3b@d70g2000hsb.googlegroups.com>
Source record: 28600

On Jan 31, 3:19 pm, "Suzy" <not@valid> wrote:

>
> > "K7ITM" <k7...@msn.com> wrote in message
...
> > See earlier posting in this thread. See various Avago ap notes, such
...

> Much too theoretical for me!

OK, here's non-theoretical, practical.

Get a piece of FR4 PC board material, copper-clad both sides, 50mm wide by 110mm long (neither of these is very critical, but should be at least that long) by 1.6 mm thick. One side will remain all copper clad, as a ground plane. On the other side, fabricate at a minimum three traces, as follows. To make it easier to describe, assume you are looking at the board with the 110mm dimension horizontal and the 50mm dimension vertical.
Trace 1: the through-line. It will run the length of the board (110mm), centered between the two sides. It will be as close as you can make it to 2.9mm wide, uniform width from board edge to board edge.
Trace 2: It will also be as close as you can make it to 2.9mm wide for its whole length. The following is the center-line of the trace. Start at the top edge of the board, 9mm from the left side. Go down to 9.0mm above the center-line of the through-line trace (Trace 1). Turn toward the right edge of the board and follow parallel to trace 1, staying 9.0mm center-to-center. Thus there should be a gap of 6.1mm between the two traces. Go a distance of 92mm. Turn toward the top of the board, and extend the trace all the way to the top.
Trace 3: It will be the mirror-image of trace 2, same 2.9mm width. It will start 9mm from the left side at the BOTTOM edge, go up till its centerline is 9.0mm from trace 1, follow trace 1 to the right for 92mm, and then return to the bottom edge of the board.

Mount an edge-mount BNC connector to each end of trace 1, shell to the ground plane and center pin to the trace. Failing that, do something equivalent with coax or connectors...if you trimmed the end of a piece of coax so the braid connected to the back side of the board and a very tiny stub of exposed center conductor could be soldered to the end of trace 1, that should be OK.

You'll need two 50 ohm load resistors. 1/4 watt is plenty. Since 50 ohms is not a common value, you may wish to use two 100 ohm resistors in parallel for each of these 50 ohm guys. Solder one of them so it

connects with vanishingly short leads between the RIGHT end of trace 2 (at the top of the board) to the back-side copper immediately opposite that point. The resistor(s) will be soldered to points immediately opposite each other, front and back side. Solder the other 50 ohm resistor between the LEFT end of trace 3 (at the bottom edge of the board) and the back side of the board. Those are the termination resistors, and they are the ones you would adjust to get the best null when feeding power through trace 1 to a good 50 ohm termination.

Now you'll need two detector diodes (maybe Owen can help out here; I'd use some surface mount schottkys, but...) and two small ceramic capacitors. 100pF would be a good value, but it's not critical. All leads should be so short you have trouble seeing that there's any lead there at all. Solder one lead of a capacitor to the LEFT end of trace 2 (at the top of the board), and one lead of the other capacitor to the RIGHT end of trace 3 (at the bottom of the board). Those are the ends without resistors. On the back of the board immediately behind where you soldered the capacitors, solder the ANODE of a diode, one for trace 2 and one for trace 3. Arrange things so that the free lead of the capacitor and the free lead of the diode (the cathode) come together off the edge of the board. OK, I lied: leave enough lead to solder another part to, there.

Now get or make a couple small RF chokes, about 100 nanohenries. The inductance isn't critical. The way I'd do it is to wind some magnet wire onto a small machine screw. For example, try about ten turns on a 4mm screw. The wire diameter should be roughly 1/2 to 3/4 the screw thread pitch. You can then unscrew the screw and if you're careful with it, the inductor will be reasonably self-supporting. Next, you'll install these two and a couple more capacitors. Small ceramic capacitors, say something in the range from 100pF to 1000pF, should do nicely. With the board turned over so the back is now facing you, solder one side of a capacitor just a bit in-board from where you soldered the diode anode for trace 2. Do the same for trace 3. Now connect an RF choke (inductor) between the diode-capacitor junction and the free lead of the new capacitor.

You can make things a bit more robust if you mount some sort of terminal or pad on the back to solder this last junction to. One very cheap but effective way to do it is to cut out some squares of PC board material, maybe 5mm on a side, and glue them down to the large board wherever you want an electrically floating terminal.

Just about done now! Just connect a wire from each of those last capacitors (where wired to the inductors of course) to the + terminals of the two 1.0mA meters, and return the meter - terminals to the board back sides. Provide a case as you see fit, though it's usable without a case; just be careful of the parts hanging off it.

After you build it, we can lead you through calibrating it, assuming the earlier descriptions here weren't clear enough.

And I trust several lurkers will proof-read this and find all my mistakes and places where I wrote LEFT when I meant RIGHT, etc. Oh, and the meter connected to trace 2 will measure the power from left to right in the original orientation; and the meter connected to trace 3 w2ill measure power from right to left.

Cheers,
Tom

1779. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 08:45:43 UTC
From: Jeff <jeff@local.host>
Message-ID: <47a2dc6b$0$1349$834e42db@reader.greatnowhere.com>
Source record: 28451

> The second problem is, if you want to implement a microstrip design,
> how do you get the trace width right? If you're afraid of surface
> mount parts, how will you control the trace width to +/- a fraction of
> a millimeter? On 1.6mm thick PC board, assuming FR4 with a relative
> dielectric constant of 4.75, you'd like to have a trace width about
> 2.78mm to get a 50 ohm line. If your trace is 3.5mm wide, you get a
> bit under 44 ohms, and if your trace comes out 2.0mm wide, you get a
> line that's almost 60 ohms. If you can do the PC board
> photographically and have confidence that you can control the trace
> width to within 0.1mm, that would work. If you're doing it by
> scribing the copper and pulling up unwanted copper, I think you'll
> have to be working under a pretty good microscope to get to much
> closer than a mm of the desired width-- or maybe cut it on a milling
> machine.

The problem that you have with FR4 is that the dielectric constant is not well defined. Your assumption of 4.75 may be ok from one manufacturer and one batch, but other examples can differ widely.

Jeff

1780. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 08:59:55 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <xxrt0xKL+toHFACa@ifwtech.co.uk>
Source record: 28452

Jim Lux wrote:
>Heck, if you MUST use all analog designs and you're at less than 3GHz,
>don't fool with diodes, use the less expensive, more sensitive, and
>more accurate power measuring chips from Analog Devices.
>
>Example: AD8310, DC-440MHz, 90+dB dynamic range (-91 to +4dBm) linear
>to 0.4dB, stable over temp(-40 to +85) +/-1 dB
>
>or the 8319, 1MHz to 10GHz, 40dB range, similar accuracy
>

N2PK has published a nice reflectometer design using two AD log chips as detectors for forward and reflected power. The output voltage of each detector is accurately proportional to log(power) over a very wide range of applied power levels. Subtract the output voltages of the two detectors in an op-amp, and you have a direct indication of return loss in dB.

Details are at www.n2pk.com (better known as the home of the N2PK Vector Network Analyser).

By the way, the Analog Devices samples service is also open to amateur experimenters (by company policy) so by all means let's make use of it. Many devices are only available in SMD - and many advanced RF devices simply wouldn't function in a larger package - so as amateur experimenters we have to bite the bullet and learn to handle SMD.

As Tom says, SMD can be the key to accurate measurements at VHF and UHF, because the smaller packages have much lower parasitic inductance.

I wouldn't presume to tell Suzy (or anyone else) what they can or cannot see and handle; but for many people, converting to SMD is mostly about having the right equipment - a small soldering-iron tip, small-gauge solder, a good pair of tweezers, and above all, some kind of optical aid.

If they work for you, one of the best bargains would be a pair of very strong half-moon reading glasses, worn as a "preamp" on top of whatever eyeglasses you already wear. It's certainly worth wandering into the drugstore to try some (pick the strongest they have). Otherwise, there are many other sources of hands-free magnifying visors. Whoever you are, see what will work for you.

For people who are acutely short-sighted, ignore most of the above and simply take off your eyeglasses. At last, your day has come.

Under the magnifier, it's amazing how most people's hands become steady and tremor-free. (That's in the absence of any medical condition that can interrupt the eye-hand feedback loop - and also in the absence of a much more common problem: too much caffeine!) We can't all be neurosurgeons, but we can become good enough to handle SMD.

And then, as with most manual skills, it takes practice to become really good at it. For occasional SMD work, it also takes practice to get back into it after a long break.

The bottom line is that most of us CAN handle SMD... and if we don't want to become stuck in the late 20th century, we're going to need to develop that skill.

>they also come in dual versions and versions with phase comparators..
>
The last time I looked, the device with the integrated phase comparator had fallen off the regular samples service ("contact AD")... does anyone know more?

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

1781. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 12:04:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lVDoj.1368$R84.160@newssvr25.news.prodigy.net>
Source record: 28453

Tom Donaly wrote:
> There's more to it than that. I think Born and Wolf may
> be one of your Bibles, Cecil. You might want to read
> section 1.1.4 "The energy law of the electromagnetic field"
> for more insight. (I've got the seventh edition.)

I've recently moved and have misplaced my Born and Wolf.
I will certainly follow your advice as soon as I locate
it. I realize that I am handicapped without it.
--
73, Cecil http://www.w5dxp.com

1782. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 12:34:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ZkEoj.2111$uE.1133@newssvr22.news.prodigy.net>
Source record: 28454

Tom Donaly wrote:
> No one likes a wise-ass, Cecil.

Tom, if I had said what Roy said, six gurus would have
jumped on me like tumblebugs on cow do-do.

Contrary to what Roy asserted, this "adding of powers"
can "legitimately be done" in many cases.

In a DC circuit with multiple parallel and series
resistances, the total power in the circuit is
simply the sum of the powers in the individual
resistors.

Some get into conceptual trouble when there
is interference present. Optical physicists solved
the problem centuries ago with the irradiance equation
containing an interference term to compensate for the
level of interference.
--
73, Cecil http://www.w5dxp.com

1783. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 12:44:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vuEoj.2227$0w.970@newssvr27.news.prodigy.net>
Source record: 28455

Gene Fuller wrote:
> The relative magnitudes of the numbers are such
> that one could not find a momentum discrepancy even if it existed.

The question is not how much momentum exists but if it
exists at all. I'm glad to see you admit that momentum
exists. If it exists, it must be conserved. What is the
mechanism that conserves the energy and momentum at a
Z0-match where 100% of the rearward traveling reflected
energy is routed back toward the load as a component of
the forward wave? This 100% redistribution occurs when
the physical reflection coefficient is, e.g. 0.7 as if
the reflection coefficient was 0 in one direction but
1.0 in the other direction. I don't believe in AC diodes.

> OK, you don't actually "ignore"
> the interface; rather you merely give it mention without really using
> any of the properties.

On the contrary, I use the properties of the interface every
time I calculate the reflection coefficient. Without the
reflection coefficient based on the properties of the
impedance discontinuity, I could not begin to solve the
problem.
--
73, Cecil http://www.w5dxp.com

1784. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 12:46:43 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13q655fv061reb@corp.supernews.com>
Source record: 28456

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:3lroj.1696$Ch6.250@newssvr11.news.prodigy.net...
> K7ITM wrote:
>> See earlier posting in this thread.
>
> Thanks Tom, when I said "linear power scale", I meant
> e.g. a meter reading where 2000 watts is full scale
> and 1000 watts is half scale. I have seen such meters
> but not without a digital or analog computer on the
> front end.
> --
> 73, Cecil http://www.w5dxp.com

Just jumping in the middle of ths, but look at this watt meter.

http://bama.edebris.com/manuals/miltest/an-urm120/

It has a linear scale. I have one and it has a linear scale. Sort of made like a Bird meter but much larger elements. It is just a diode and meter. There is no power needed to run the meter except the sampled power comming off the transmission line.

There were several versions made. One has a SWR scale on it. I am not sure how the swr scale is but the wattmeter scale is linear instead of the log looking scale of the Bird and most other meters.

1785. Re: Energy Cancellation (or conversion of radiation to dark rest mass?)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 12:47:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vxEoj.2228$0w.315@newssvr27.news.prodigy.net>
Source record: 28457

Gene Fuller wrote:
> The Poynting vector is useful when there are no voltages or currents,
> for example in free space, and in other complex configurations. I cannot
> see that it is anything more than high-falutin jargon when it is merely
> a replacement for V*I in a transmission line.

Since the Poynting vector is a power density, it is useful
for tracking the energy through the network. You, and others,
won't allow me to use V*I in a transmission line so I was
forced to use the Poynting vector instead.

> Do you have any examples where a Poynting vector provides more
> information or better quality information than the usual voltage and
> current formalisms?

Yes, that is what this 1000+ posting thread is all about.
--
73, Cecil http://www.w5dxp.com

1786. Re: G5RV antenna feed line balance.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 14:33:23 UTC
From: Peter <colleenpeter@westnet.com.au>
Message-ID: <13q6bdlqcst5616@corp.supernews.com>
Source record: 28458

"cliff wright" <c.c.wright@paradise.net.nz> wrote in message
news:47a1325a$1@clear.net.nz...
> Hi!
> Anyone had any experience with a G5RV which is NOT symetrical relative to
> ground?
> Mine is on a sloping section and varies from 3.2 metres AGL at the western
> end to 7.5 metres at the Eastern. Although I get a reasonable match with
> a single coil Z match tuner I have reason to believe that there is quite a
> large electrical imbalance in the system, notably in the poor rejection of
> local noise signals.
> I came across a Z match circuit on optushome.com.au by VK3YSF which has a
> 25 pF variable capacitor from one side of the open wire feeder to ground.
> However the article gives no further information about this component
> except to call it a "Balance" capacitor.
> Has anyone else come across this problem? If so was it a question of "cut
> and try" or is there a proper technical approach one can use?
> Hoping for some "feedback".
> 73"s Cliff Wright ZL1BDA

Cliff

Have a look at Lloyd Butler VK5BR's article below as he covers in some
detail the idea behind the balance capacitor and importantly a basic test
arrangement to confirm its effectiveness.

http://users.tpg.com.au/ldbutler/Zbalance.htm

Oh and I'm pleased that someone has look at my web page! I have just moved
to Western Australia and have put a new and slightly improved site due to
the new call. See blow. I will add some additional information regarding the
balance capacitor feature on the Z-match.

http://members.optushome.com.au/vk6ysf/vk6ysf/main.htm

Cheers

Peter VK6YSF formerly VK3YSF

1787. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 16:37:25 UTC
From: Suzy <not@valid>
Message-ID: <47a34ac9@dnews.tpgi.com.au>
Source record: 28459

"Ian White GM3SEK" <gm3sek@ifwtech.co.uk> wrote in message
news:3DKMoVGMxsoHFAwC@ifwtech.co.uk...
> Owen Duffy wrote:
>>> Thanks Owen. BTW, what type of coax connector? Not PAL surely!
>>
>>No, but they are not all that bad. Almost no one manufactured VHF land
>>mobiles here with UHF connectors, but they did use PAL (Belling & Lee)
>>once (Pye Reporters for instance).
>>
>
> Do Australian TVs use "Bloody Belling Lee" connectors like we still do in
> the UK? What does "PAL" stand for?
>
>
> --
>
> 73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.co.uk/g3sek

Certainly do Ian!

1788. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 16:39:16 UTC
From: Suzy <not@valid>
Message-ID: <47a34b38@dnews.tpgi.com.au>
Source record: 28460

"K7ITM" <k7itm@msn.com> wrote in message
news:15fbcf63-df85-4eab-9fcf-b5b2d13d7604@f10g2000hsf.googlegroups.com...
> On Jan 31, 1:51 pm, Owen Duffy <n...@no.where> wrote:
>> K7ITM <k7...@msn.com> wrote in news:9e844e58-a673-4ec0-9a0b-ec15f8cc8f30
>> @c4g2000hsg.googlegroups.com:
>>
>>
>>
>>
>>
>> > On Jan 31, 12:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> >> K7ITM wrote:
>> >> > To me, having a
>> >> > linear power scale is a big advantage, because then you can
>> reasonably
>> >> > accurately figure SWR without having to worry about temperature
>> >> > compensation of the detectors.
>>
>> >> Can you define what you mean by linear? Straight line?
>> >> Since we can only measure voltage and current, in order
>> >> to obtain a linear power scale from a linear meter, it
>> >> is necessary to supply some pre-display computing
>> >> ability (microcomputer).
>> >> --
>> >> 73, Cecil http://www.w5dxp.com
>>
>> > See earlier posting in this thread. See various Avago ap notes, such
>> > as AN 969. A diode detector run at low input provides an output DC
>> > voltage that's a constant times the square of the input RF voltage.
>> > If the input voltage is, or is assumed to be, at some constant
>> > resistive load impedance, the DC output is linear with RF power
>> > input. The proportionality is temperature dependent, but if two
>> > detectors are constructed the same and run at the same temperature,
>> > and run in the signal level region where that relationship holds, then
>> > the ratio of the output DC voltages is a very good approximation of
>> > the ratio of the input RF power levels, and thus is useful for finding
>> > the SWR if the detectors are attached to the forward and reverse ports
>> > of a good directional coupler. Top end of the useful "linear power"
>> > range using an HSMS-2850 single diode detector is about 10mV DC
>> > output. If you can measure the DC accurately down to 1uV (a bit
>> > tough, given thermal emfs, but possible), that gives you about a
>> > 10000:1 power range, or 100:1 RF input voltage range -- or about
>> > 1.02:1 SWR. Chances are very good that a home-built coupler won't be
>> > accurately enough matched to 50+j0 ohms to worry about anything that

>> > low anyway, even if you had a reason to care about it.
>>
>> > Cheers,
>> > Tom
>>
>> Tom,
>>
>> This is further from Suzy's needs, but...
>>
>> Operation of a diode detector in the square law region isn't out of the
>> question, but it takes some serious gain to drive a meter. There are some
>> good chopper stabilised op amps out there that have uV offset levels and
>> single supply rail and input to below the negative rail eg LTC1050.
>>
>> Another alternative is the AD8307AN log amps for a linear dBW scale. You
>> could even use one on FWD and REF detectors and difference the outputs in
>> an op amp for a direct indicating VSWR or RL scale. I have thought of
>> getting one of these chips and seeing whether its response is fast enough
>> to drive a PEP amplifier for SSB telephony.
>>
>> Back to Suzy's problem...
>>
>> The instrument downstream of the sampler is not so much the issue as
>> building and calibrating a sampler when you have no test gear.
>>
>> Suzy, if you see a Revex W560 going on VKHAM for $100 or so, it is a good
>> buy. It has HF to 70cm (two independent couplers, ie four coax
>> connectors), and works pretty well.
>>
>> For a dummy load, the market was flooded with terminations from 25W to
>> about 60W that had been scrapped from AMPS base station equipment, and
>> they were sold at hamfests for $20 or so, you may find them if you look
>> around.
>>
>> Owen
>
> Yes, there are several linear-in-dB RF detectors out there. Linear
> Technology also have them. I really like that idea; they're typically
> much more temperature stable than a diode detector. But Suzy wanted
> to avoid SMT.
>
> I've used a Harris chopper-stabilized op amp with HSMS-2850 zero-bias
> detector diodes, and it works well, but I did learn something about
> the need to be really careful around the chopper capacitor pins on
> that op amp before getting it right... But it's also not difficult to
> find a digital voltmeter that will go down to pretty low voltage at
> high impedance. A 4.5 digit meter on a 200mV scale does ten
> microvolts, and the simulation I ran last night suggests you could see
> down to about -50dBm power level with that. When you get down to
> 10uV, you have to get serious about avoiding thermal emfs.

>
> I suppose it makes sense to just drive the detector hard and run it
> right into an analog meter movement, and then calibrate the meter.
> Actually, at that level, the detector should be pretty linear in
> voltage. That actually makes it easier to detect down closer to 1:1
> SWR anyway.
>
> I posted not too long ago about a load I made with four 200 ohm 2 watt
> metal oxide resistors that shows what to me is remarkably good return
> loss out to well beyond 450MHz. It was very cheap to make. But
> there's no guarantee that some other brand of resistor would give such
> good results. It may have just been a fluke that the one I made
> turned out so good. (But I'm not about to toss it out!)
>
> Cheers,
> Tom

Well, hopefully Tom, I'll soon be the contented owner of a Bird Termaline
dummy load, so that will be a start...

1789. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 16:45:09 UTC
From: Suzy <not@valid>
Message-ID: <47a34c9a@dnews.tpgi.com.au>
Source record: 28461

"Ian White GM3SEK" <gm3sek@ifwtech.co.uk> wrote in message
news:xxrt0xKL+toHFACa@ifwtech.co.uk...
> Jim Lux wrote:
>>Heck, if you MUST use all analog designs and you're at less than 3GHz,
>>don't fool with diodes, use the less expensive, more sensitive, and more
>>accurate power measuring chips from Analog Devices.
>>
>>Example: AD8310, DC-440MHz, 90+dB dynamic range (-91 to +4dBm) linear to
>>0.4dB, stable over temp(-40 to +85) +/-1 dB
>>
>>or the 8319, 1MHz to 10GHz, 40dB range, similar accuracy
>>
>
> N2PK has published a nice reflectometer design using two AD log chips as
> detectors for forward and reflected power. The output voltage of each
> detector is accurately proportional to log(power) over a very wide range
> of applied power levels. Subtract the output voltages of the two detectors
> in an op-amp, and you have a direct indication of return loss in dB.
>
> Details are at www.n2pk.com (better known as the home of the N2PK Vector
> Network Analyser).
>
> By the way, the Analog Devices samples service is also open to amateur
> experimenters (by company policy) so by all means let's make use of it.
> Many devices are only available in SMD - and many advanced RF devices
> simply wouldn't function in a larger package - so as amateur
> experimenters we have to bite the bullet and learn to handle SMD.
>
> As Tom says, SMD can be the key to accurate measurements at VHF and UHF,
> because the smaller packages have much lower parasitic inductance.
>
> I wouldn't presume to tell Suzy (or anyone else) what they can or cannot
> see and handle; but for many people, converting to SMD is mostly about
> having the right equipment - a small soldering-iron tip, small-gauge
> solder, a good pair of tweezers, and above all, some kind of optical aid.
>
> If they work for you, one of the best bargains would be a pair of very
> strong half-moon reading glasses, worn as a "preamp" on top of whatever
> eyeglasses you already wear. It's certainly worth wandering into the
> drugstore to try some (pick the strongest they have). Otherwise, there
> are many other sources of hands-free magnifying visors. Whoever you are,
> see what will work for you.
>
> For people who are acutely short-sighted, ignore most of the above and

> simply take off your eyeglasses. At last, your day has come.
>
> Under the magnifier, it's amazing how most people's hands become steady
> and tremor-free. (That's in the absence of any medical condition that can
> interrupt the eye-hand feedback loop - and also in the absence of a much
> more common problem: too much caffeine!) We can't all be neurosurgeons,
> but we can become good enough to handle SMD.
>
> And then, as with most manual skills, it takes practice to become really
> good at it. For occasional SMD work, it also takes practice to get back
> into it after a long break.
>
> The bottom line is that most of us CAN handle SMD... and if we don't want
> to become stuck in the late 20th century, we're going to need to develop
> that skill.
>
>
>>they also come in dual versions and versions with phase comparators..
>>
> The last time I looked, the device with the integrated phase comparator
> had fallen off the regular samples service ("contact AD")... does anyone
> know more?
>
>
> --
>
> 73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.co.uk/g3sek

The design from that link is for HF up to 30 MHz. I want to go to 435 MHz.
have a maggie lamp and am prepared to (reluctantly) try SMD after all, if I
have to -- in desperation.

1790. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 16:46:16 UTC
From: Suzy <not@valid>
Message-ID: <47a34cdc$1@dnews.tpgi.com.au>
Source record: 28462

"K7ITM" <k7itm@msn.com> wrote in message
news:6a9a4fc7-5d12-4dd0-97d5-42225d9039a9@c4g2000hsg.googlegroups.com...
> On Jan 31, 5:01 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>> Suzy wrote:
>> > At the risk of thoroughly boring you all, I'll summarize the position
>> > to
>> > date. I have a good workshop with power tools and I like metal bashing
>> > and
>> > am quite happy with PCBs. I even have an electronic calliper so can
>> > measure
>> > thickness accurately. However, my eyes will not allow very fine work
>> > like
>> > SMD. I am looking to build an SWR meter using two 1 mA meters, one for
>> > forward and one for reverse. I am looking for a practical
>> > (non-theoretical)
>> > article on how to build one. I am wondering if there is one the ARRL
>> > handboook before I go to the exp-ense of buying one here in Australia.
>> > Most
>> > of the beautifully argued theory on here is way way beyond me. Any
>> > pointers
>> > to a suitable article?
>>
>> One might find that you can BUY a surplus directional coupler for 440MHz
>> fairly cheaply. Check Ebay, etc.
>>
>> Then it's just a matter of wiring up electronics to the coupled ports.
>
> :-) I've thought maybe I could just etch one next time I'm making
> boards and drop it in the mail to her. Heck, I'd even toss detector
> diodes and terminating resistors on it.
>
> Cheers,
> Tom

Thanks Tom, but give me a practical design! I can do the board if you give
me the dimensions.

1791. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 16:47:42 UTC
From: Suzy <not@valid>
Message-ID: <47a34d33@dnews.tpgi.com.au>
Source record: 28463

"K7ITM" <k7itm@msn.com> wrote in message
news:4e2195fd-c5b5-42cd-8492-d4f6122c0e3b@d70g2000hsb.googlegroups.com...
> On Jan 31, 3:19 pm, "Suzy" <not@valid> wrote:
>
>>
>> > "K7ITM" <k7...@msn.com> wrote in message
> ...
>> > See earlier posting in this thread. See various Avago ap notes, such
> ...
>
>
>> Much too theoretical for me!
>
> OK, here's non-theoretical, practical.
>
> Get a piece of FR4 PC board material, copper-clad both sides, 50mm
> wide by 110mm long (neither of these is very critical, but should be
> at least that long) by 1.6 mm thick. One side will remain all copper
> clad, as a ground plane. On the other side, fabricate at a minimum
> three traces, as follows. To make it easier to describe, assume you
> are looking at the board with the 110mm dimension horizontal and the
> 50mm dimension vertical.
> Trace 1: the through-line. It will run the length of the board
> (110mm), centered between the two sides. It will be as close as you
> can make it to 2.9mm wide, uniform width from board edge to board
> edge.
> Trace 2: It will also be as close as you can make it to 2.9mm wide
> for its whole length. The following is the center-line of the trace.
> Start at the top edge of the board, 9mm from the left side. Go down
> to 9.0mm above the center-line of the through-line trace (Trace 1).
> Turn toward the right edge of the board and follow parallel to trace
> 1, staying 9.0mm center-to-center. Thus there should be a gap of
> 6.1mm between the two traces. Go a distance of 92mm. Turn toward the
> top of the board, and extend the trace all the way to the top.
> Trace 3: It will be the mirror-image of trace 2, same 2.9mm width.
> It will start 9mm from the left side at the BOTTOM edge, go up till
> its centerline is 9.0mm from trace 1, follow trace 1 to the right for
> 92mm, and then return to the bottom edge of the board.
>
> Mount an edge-mount BNC connector to each end of trace 1, shell to the
> ground plane and center pin to the trace. Failing that, do something
> equivalent with coax or connectors...if you trimmed the end of a piece
> of coax so the braid connected to the back side of the board and a
> very tiny stub of exposed center conductor could be soldered to the

> end of trace 1, that should be OK.
>
> You'll need two 50 ohm load resistors. 1/4 watt is plenty. Since 50
> ohms is not a common value, you may wish to use two 100 ohm resistors
> in parallel for each of these 50 ohm guys. Solder one of them so it
> connects with vanishingly short leads between the RIGHT end of trace 2
> (at the top of the board) to the back-side copper immediately opposite
> that point. The resistor(s) will be soldered to points immediately
> opposite each other, front and back side. Solder the other 50 ohm
> resistor between the LEFT end of trace 3 (at the bottom edge of the
> board) and the back side of the board. Those are the termination
> resistors, and they are the ones you would adjust to get the best null
> when feeding power through trace 1 to a good 50 ohm termination.
>
> Now you'll need two detector diodes (maybe Owen can help out here; I'd
> use some surface mount schottkys, but...) and two small ceramic
> capacitors. 100pF would be a good value, but it's not critical. All
> leads should be so short you have trouble seeing that there's any lead
> there at all. Solder one lead of a capacitor to the LEFT end of trace
> 2 (at the top of the board), and one lead of the other capacitor to
> the RIGHT end of trace 3 (at the bottom of the board). Those are the
> ends without resistors. On the back of the board immediately behind
> where you soldered the capacitors, solder the ANODE of a diode, one
> for trace 2 and one for trace 3. Arrange things so that the free lead
> of the capacitor and the free lead of the diode (the cathode) come
> together off the edge of the board. OK, I lied: leave enough lead to
> solder another part to, there.
>
> Now get or make a couple small RF chokes, about 100 nanohenries. The
> inductance isn't critical. The way I'd do it is to wind some magnet
> wire onto a small machine screw. For example, try about ten turns on
> a 4mm screw. The wire diameter should be roughly 1/2 to 3/4 the screw
> thread pitch. You can then unscrew the screw and if you're careful
> with it, the inductor will be reasonably self-supporting. Next,
> you'll install these two and a couple more capacitors. Small ceramic
> capacitors, say something in the range from 100pF to 1000pF, should do
> nicely. With the board turned over so the back is now facing you,
> solder one side of a capacitor just a bit in-board from where you
> soldered the diode anode for trace 2. Do the same for trace 3. Now
> connect an RF choke (inductor) between the diode-capacitor junction
> and the free lead of the new capacitor.
>
> You can make things a bit more robust if you mount some sort of
> terminal or pad on the back to solder this last junction to. One very
> cheap but effective way to do it is to cut out some squares of PC
> board material, maybe 5mm on a side, and glue them down to the large
> board wherever you want an electrically floating terminal.
>
> Just about done now! Just connect a wire from each of those last
> capacitors (where wired to the inductors of course) to the + terminals

> of the two 1.0mA meters, and return the meter - terminals to the board
> back sides. Provide a case as you see fit, though it's usable without
> a case; just be careful of the parts hanging off it.
>
> After you build it, we can lead you through calibrating it, assuming
> the earlier descriptions here weren't clear enough.
>
> And I trust several lurkers will proof-read this and find all my
> mistakes and places where I wrote LEFT when I meant RIGHT, etc. Oh,
> and the meter connected to trace 2 will measure the power from left to
> right in the original orientation; and the meter connected to trace 3
> w2ill measure power from right to left.
>
> Cheers,
> Tom

At last! And with my new Bird dummy load nearly here I should be away at
last!

1792. Re: Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 17:41:40 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <ec5ab9c9-3148-4ff0-b2ff-433cac542e8c@c23g2000hsa.googlegroups.com>
Source record: 28464

On Jan 31, 6:34 am, Tim Shoppa <sho...@trailing-edge.com> wrote:
> I've got a 130-foot doublet hanging 90 feet up in the air between two
> trees. A pulley and a counterweight (a gallon of sand) keeps 20-some
> pounds of tension on the line. Not a lot of tension but works great on
> non-windy days. If the trees were stronger up at the top I
> might try a heavier counterweight, but I'm not sure I'd be comfortable
> doing this because I am really hanging from the treetops right now.
>
> The feeder is approx 70 feet of 450-ohm window line (like twin-lead
> but with little gaps every so often) to a standoff on the side of the
> house. Yesterday when we were having 50MPH gusts this was billowing
> out like a sail. I had twisted the window line a while back after the
> last big windstorm, and that seemed to mitigate the sailing-ship kind
> of effect, but not by a lot.
>
> The counterweight and pulley did a great job of absorbing the wind
> gusts. It was really impressive - when the big gusts came up, the
> feeder billows out, and the gallon of sand shoots up in the air 30 or
> 40 feet above its usual position. I'm pretty confident that as long as
> the trees didn't fall over in a hurricane, this antenna would stay up.
> I even put a real stainless pulley with bronze bearings in, replacing
> the one-dollar hardware store pulley, and am happy that I did. I have
> seen the one-dollar pulleys get visibly corroded in a year or so on a
> previous antenna.
>
> But I'm thinking... if I just used two conductors of #16 copperweld
> and some spacers to get true ladder line as opposed to window line,
> would this billowing completely disappear, or drop to a tiny tiny
> fraction of what it is now? Or would it just continue billowing the
> same way?
>
> What's preferable for such homebrew ladder line: solid copperweld,
> stranded copperweld, solid copper, stranded copper, ???.
>
> Tim N3QE

Hi, Tim.
I don't think you will want to use copperweld of any size for open
feed line. The wire will twist on itself in an uncontrollable manner.
Even with closely spaced spreaders, it will still be a mess.

I had then same problem with constantly windy conditions and window
line like you are using. One wire would break about once a year and I
would have to bring the antenna and feedline down and try to find the
break. We don't have real trees here in the Central Oregon desert, so

I use 4 section masts.

When we moved last year to a bigger place, I decided to put up a 160 meter lazy quad or horizontal loop and home brew 600 ohm open line to feed it at a corner. I am still using 4 section masts, putting the antenna at about 35 feet, but I used almost 125 ft. of feedline from the house to the antenna. There are two supporting poles for the feedline run, plus a rope and pulley for the house end.

I bought a 300 ft. roll of #14 copper motor winding wire on Ebay. It has nylon or something similar for insulation. I doubled the wire by tying one end to a fence post and walking out till I hit the end of the wire, then brought it back to the post and tied it. I wound the doubled wire back on the reel. I had a bunch of phenolic rods about 1/4 inch in diameter that I cut to 6 1/2 inch length. I drilled a hole large enough to pass the wire about 1/4" in from each end of a rod. Then I spent several evenings threading the rods onto the doubled up copper wire. They were all bunched up together at one end. A real pain to do!

More evenings were spent in the shop creating the feed line with the spacers set at about 6' apart. I set a 2X12 plank on saw horses and the wire and spreaders on one end and an empty take up reel on the other. Each spreader is tied tightly to the feed line copper by tightly winding a short length of #26 copper wire on the feed wire, over the spacer and winding the rest on the other side. A blob of Duco cement was then spread on the joint. Th section of finished feedline was wound on the take up reel and then it was done all over again on the next segment. This is a lot of work, but the old way of soldering the tie wire to the feedline wasn't practical for this wire.

Eventually all was done and the feedline was installed. It works quite well and the wind barely moves the feedline. I can detect no stretching of the copper wire. Your installation may place more weight on the feedline than mine, but should still work. The soft copper does not try to twist.

Hope this gives you a little help from actual use.

73's
Paul, KD7HB

1793. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 17:58:19 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <%4Joj.529929$kj1.450394@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28465

Cecil Moore wrote:
> Gene Fuller wrote:
>> The relative magnitudes of the numbers are such that one could not
>> find a momentum discrepancy even if it existed.
>
> The question is not how much momentum exists but if it
> exists at all. I'm glad to see you admit that momentum
> exists. If it exists, it must be conserved. What is the
> *mechanism* that conserves the energy and momentum at a
> Z0-match where 100% of the rearward traveling reflected
> energy is routed back toward the load as a component of
> the forward wave? This 100% redistribution occurs when
> the physical reflection coefficient is, e.g. 0.7 as if
> the reflection coefficient was 0 in one direction but
> 1.0 in the other direction. I don't believe in AC diodes.
>
>> OK, you don't actually "ignore" the interface; rather you merely give
>> it mention without really using any of the properties.
>
> On the contrary, I use the properties of the interface every
> time I calculate the reflection coefficient. Without the
> reflection coefficient based on the properties of the
> impedance discontinuity, I could not begin to solve the
> problem.

Do you suppose that interface might also accommodate the necessary momentum balance? There is more to an interface than just a reflection coefficient.

The reason one rarely finds any textbook mention of momentum in wave reflection analysis is simply that it is not an important factor in solving any practical problems. The wave momentum magnitudes are minuscule compared to the source/sink capability of the interface material.

As an example of how this works, consider gamma emission from a radioactive material. A typical gamma photon has many orders of magnitude more energy and momentum than an HF photon. Yet the gamma photon shoots out all by itself. How did it find the momentum if there was no incoming photon? The answer, of course, is that the material supplied it.

The same thing happens at a lower energy scale with simple incandescence. Glowing wires emit photons without any requirement of incoming photons. Sort of like an inverse Roach Motel. Photons check out, but they don't check in.

73,
Gene
W4SZ

1794. Re: Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 19:09:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%7Koj.3976$nK5.1640@nlpi069.nbdc.sbc.com>
Source record: 28466

pdrahn@coinet.com wrote:
> I don't think you will want to use copperweld of any size for open
> feed line. The wire will twist on itself in an uncontrollable manner.
> Even with closely spaced spreaders, it will still be a mess.

The Wireman has #14 stranded "copperweld" in the popular
450 ohm ladder-line format.

http://thewireman.com/antennap.html#balanced
--
73, Cecil http://www.w5dxp.com

1795. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 19:23:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AkKoj.3979$nK5.3583@nlpi069.nbdc.sbc.com>
Source record: 28467

Gene Fuller wrote:
> Cecil Moore wrote:
>> Gene Fuller wrote:
>>> The relative magnitudes of the numbers are such that one could not
>>> find a momentum discrepancy even if it existed.
>>
>> The question is not how much momentum exists but if it
>> exists at all. I'm glad to see you admit that momentum
>> exists. If it exists, it must be conserved. What is the
>> *mechanism* that conserves the energy and momentum at a
>> Z0-match where 100% of the rearward traveling reflected
>> energy is routed back toward the load as a component of
>> the forward wave? This 100% redistribution occurs when
>> the physical reflection coefficient is, e.g. 0.7 as if
>> the reflection coefficient was 0 in one direction but
>> 1.0 in the other direction. I don't believe in AC diodes.
>>
>>> OK, you don't actually "ignore" the interface; rather you merely give
>>> it mention without really using any of the properties.
>>
>> On the contrary, I use the properties of the interface every
>> time I calculate the reflection coefficient. Without the
>> reflection coefficient based on the properties of the
>> impedance discontinuity, I could not begin to solve the
>> problem.
>
>
> There is more to an interface than just a reflection
> coefficient.

True for Quantum Electrodynamics, but probably not for
the distributed network wave reflection model where I
cannot think of anything needed except the physical
reflection coefficient plus the irradiance equation.

> The reason one rarely finds any textbook mention of momentum in wave
> reflection analysis is simply that it is not an important factor in
> solving any practical problems.

What you seem to me to be saying here is: "Please don't
remind me that my methods violate the conservation of
momentum principle. I don't want to hear that."

> How did it find the momentum if there
> was no incoming photon? The answer, of course, is that the material

> supplied it.

It doesn't matter where the momentum came from. Once
it is acquired, it must be preserved.

> Photons check out, but they don't check in.

Maybe so, but the momentum in each photon can be calculated
and it must be conserved. If I remember correctly, it is
Planck's constant divided by the wavelength.

http://www.colorado.edu/physics/2000/quantumzone/photoelectric2.html

So the question remains: Given that reflected waves
exist on a feedline but disappear at a Z0-match,
exactly what is the *mechanism* that reverses the
momentum?
--
73, Cecil http://www.w5dxp.com

1796. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 19:41:38 UTC
From: richardharrison@webtv.net
Message-ID: <6516-47A375F2-1430@storefull-3255.bay.webtv.net>
Source record: 28470

Gene, W4SZ wrote:
"---but it would be a bit pedantic to include it (the role of materials at the discontinuity) in an introductory optics text or Schaun`s Outline."

Nevertheless, in my 9th edition of Schaum`s College Phusics Outline by Bueche & Hecht, Chapter 42 is: "Quantum Physics and Wave Mechanics".

Best regards, Richard Harrison, KB5WZI

1797. Re: Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 19:42:22 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <c6c7342e-cbb3-451a-9809-c218cbaf5f62@q39g2000hsf.googlegroups.com>
Source record: 28468

On Feb 1, 11:09 am, Cecil Moore <nos...@w5dxp.com> wrote:
> pdr...@coinet.com wrote:
> > I don't think you will want to use copperweld of any size for open
> > feed line. The wire will twist on itself in an uncontrollable manner.
> > Even with closely spaced spreaders, it will still be a mess.
>
> The Wireman has #14 stranded "copperweld" in the popular
> 450 ohm ladder-line format.
>
> http://thewireman.com/antennap.html#balanced
> --
> 73, Cecil http://www.w5dxp.com

Hi, Cecil.
Yes, but this is manufactured and I thought N3QE was wanting to home
brew the feedline. I don't think one person can control two strands of
copperweld while they attach spacers!

Paul, KD7HB

1798. Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 19:43:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <PDKoj.2591$0w.1581@newssvr27.news.prodigy.net>
Source record: 28469

An airplane (particle) traveling at the speed of sound
causes shock waves in the air which, if passed through
double slits, would no doubt cause interference.

How about: A photon (particle) traveling at the speed
of light causes shock waves in the aether which, when
passed through double slits, causes interference?

Impossible for empty space - but we now know that space
is not empty. :-) Quoting "Alpha and Omega", by Seife,
"Empty space is an incredibly complex substance, and
scientists are just beginning to understand its properties."
--
73, Cecil http://www.w5dxp.com

1799. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 20:03:02 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A38479DE9B8nonenowhere@61.9.191.5>
Source record: 28471

Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
news:3DKMoVGMxsoHFAwC@ifwtech.co.uk:

> Owen Duffy wrote:
>>> Thanks Owen. BTW, what type of coax connector? Not PAL surely!
>>
>>No, but they are not all that bad. Almost no one manufactured VHF land
>>mobiles here with UHF connectors, but they did use PAL (Belling & Lee)
>>once (Pye Reporters for instance).
>>
>
> Do Australian TVs use "Bloody Belling Lee" connectors like we still do
> in the UK? What does "PAL" stand for?

Yes, the TVs invariably have the Belling Lee connector, now known as the PAL connector. I don't know how it got the PAL label, perhaps related to its use in the UK where PAL colour encoding was used (as it is here in Oz). Apparently the PAL connector was invented in 1922 and complies with BS and IEC standards.

I did some tests on BL connectors in the seventies and performance up to 2GHz was better than UHF connectors, and quite acceptable. The BL connectors that I tested were plated brass bodied male connectors with soldered centre pin, and plated steel bodied female connectors (all in good condition).

Modern practice is to install F connectors in fixed wiring. There is a range of quality in F connectors, but the Gilbert style connectors seem reliable so long as they are done up tight with a spanner. A 'feature' of F connectors that might mitigate against widespread adoption on appliances.

On a related subject, the so called 'compression type' F connectors seem to properly terminate RG6, and are available in BNC. They are a ready and inexpensive source of weatherproof BNC termination of RG6. (Some pics at http://www.vk1od.net/RG6/index.htm .)

Owen

1800. Re: G5RV antenna feed line balance.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 20:25:45 UTC
From: pa1are <nothanks@notme.nl>
Message-ID: <1qudneIPqY_UHT7anZ2dnUVZ8vSdnZ2d@infopact.nl>
Source record: 28472

Hi Cliff,

It is often assumed that imbalance is caused by either sloping or the proximity of objects to one of the legs of a dipole. In my experience it is far more likely that imbalance is a result of some imbalance in the tuner or from a feedline that is not running perpendicular to the antenna over a big enough length.

I normally use a 2 coil Z-match that works quite well, but I have experimented with the single coil design and also noticed some imbalance.

Since the output coil is floating you would not expect any imbalance, but the parasitic capacitance between primary and output coil is the culprit here. That is why the effect is more pronounced at higher frequencies and relatively high differential impedances.

In the high frequency part of the two coil Z-match the centre of the primary circuit is connected to ground, so the parasitic capacitance is far less likely to cause imbalance.

73, Arend

cliff wright wrote:
> Hi!
> Anyone had any experience with a G5RV which is NOT symetrical relative
> to ground?
> Mine is on a sloping section and varies from 3.2 metres AGL at the
> western end to 7.5 metres at the Eastern. Although I get a reasonable
> match with a single coil Z match tuner I have reason to believe that
> there is quite a large electrical imbalance in the system, notably in
> the poor rejection of local noise signals.
> I came across a Z match circuit on optushome.com.au by VK3YSF which has
> a 25 pF variable capacitor from one side of the open wire feeder to
> ground. However the article gives no further information about this
> component except to call it a "Balance" capacitor.
> Has anyone else come across this problem? If so was it a question of
> "cut and try" or is there a proper technical approach one can use?
> Hoping for some "feedback".
> 73"s Cliff Wright ZL1BDA

1801. Re: Energy Cancellation (or conversion of radiation to dark rest m...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 21:16:44 UTC
From: richardharrison@webtv.net
Message-ID: <27539-47A38C3C-1733@storefull-3253.bay.webtv.net>
Source record: 28473

Gene, W4SZ wrote:
"I am curious why you find the Poynting vector as you described to be
useful at all for ham radio."

Section 4-2, "Power Patterns" on page 73 of the 3rd edition of W8JK,
John D. Kraus` "Antennas" may be illuminating.

Best regards, Richard Harrison, KB5WZI

1802. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 21:26:38 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <bbd7ad64-8fe1-43e5-91f3-afca69df7892@d21g2000prf.googlegroups.com>
Source record: 28474

On Feb 1, 11:43 am, Cecil Moore <nos...@w5dxp.com> wrote:
> An airplane (particle) traveling at the speed of sound
> causes shock waves in the air which, if passed through
> double slits, would no doubt cause interference.
>
> How about: A photon (particle) traveling at the speed
> of light causes shock waves in the aether which, when
> passed through double slits, causes interference?
>
> Impossible for empty space - but we now know that space
> is not empty. :-) Quoting "Alpha and Omega", by Seife,
> "Empty space is an incredibly complex substance, and
> scientists are just beginning to understand its properties."
> --
> 73, Cecil http://www.w5dxp.com

Perhaps you should read up a little on fluid dynamics. Any movement in a fluid causes "shock waves" or disturbances caused by energy transfer to the fluid. The so called speed of sound is when the cause of the disturbance moves at the same speed as the propagation of the energy transfer.

Are you saying space is a fluid?

Paul, KD7HB

1803. News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 22:15:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2t57q39r6cv0cg56s7q9l19qpi2bi7d04l@4ax.com>
Source record: 28475

TOUCHSTONE.
"...I did dislike the cut of a certain courtier's beard;
he sent me word, if I said his beard was not cut well,
he was in the mind it was.
This is call'd the Retort Courteous.

"If I sent him word again it was not well cut,
he would send me word he cut it to please himself.
This is call'd the Quip Modest.

"If again it was not well cut, he disabled my judgment.
This is call'd the Reply Churlish.

"If again it was not well cut, he would answer I spake not true.
This is call'd the Reproof Valiant.

"If again it was not well cut, he would say I lie.
This is call'd the Countercheck Quarrelsome.

"And so to the Lie Circumstantial

"and the Lie Direct."

JAQUES.
"And how oft did you say his beard was not well cut?"

TOUCHSTONE.
"I durst go no further than the Lie Circumstantial,
nor he durst not give me the Lie Direct;
and so we measur'd swords and parted."

JAQUES.
"Can you nominate in order now the degrees of the lie?"

TOUCHSTONE.
"O, sir, we quarrel in print by the book, as you have books for
good manners. I will name you the degrees.

"The first, the Retort Courteous;
the second, the Quip Modest;
the third, the Reply Churlish;
the fourth, the Reproof Valiant;
the fifth, the Countercheck Quarrelsome;
the sixth, the Lie with Circumstance;
the seventh, the Lie Direct.

"All these you may avoid but the Lie Direct; and you may avoid
that too with an If. I knew when seven justices could not take up

a quarrel; but when the parties were met themselves, one of them
thought but of an If, as:
'If you said so, then I said so.'
And they shook hands, and swore brothers.

"Your If is the only peace-maker; much virtue in If."

"As You Like It," Bill Shakespeare

73's
Richard Clark, KB7QHC

1804. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 22:35:34 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <V8Noj.16074$1f.1354@bignews9.bellsouth.net>
Source record: 28476

"pdrahn@coinet.com" <co_farmer@yahoo.com> wrote in message
news:bbd7ad64-8fe1-43e5-91f3-afca69df7892@d21g2000prf.googlegroups.com...
> On Feb 1, 11:43 am, Cecil Moore <nos...@w5dxp.com> wrote:
>> An airplane (particle) traveling at the speed of sound
>> causes shock waves in the air which, if passed through
>> double slits, would no doubt cause interference.
>>
>> How about: A photon (particle) traveling at the speed
>> of light causes shock waves in the aether which, when
>> passed through double slits, causes interference?
>>
>> Impossible for empty space - but we now know that space
>> is not empty. :-) Quoting "Alpha and Omega", by Seife,
>> "Empty space is an incredibly complex substance, and
>> scientists are just beginning to understand its
>> properties."
>> --
>> 73, Cecil http://www.w5dxp.com
>
> Perhaps you should read up a little on fluid dynamics. Any
> movement in
> a fluid causes "shock waves" or disturbances caused by
> energy transfer
> to the fluid. The so called speed of sound is when the
> cause of the
> disturbance moves at the same speed as the propagation of
> the energy
> transfer.
>
> Are you saying space is a fluid?
>
> Paul, KD7HB

Yes, but a compressible fluid - with temporal implications.
<G>

Ed, NM2K

1805. Re: Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-01 23:40:21 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A379F683BB97Huckleberrybigvalley@198.186.192.196>
Source record: 28477

> Yes, but this is manufactured and I thought N3QE was wanting to home
> brew the feedline. I don't think one person can control two strands of
> copperweld while they attach spacers!
>

It wouldn't be near as difficult if they used spacers such as used by W7FG in his marketed 600ohm ladderline. For spacers, He uses sections of stiff plastic cut from tubing used in drip irrigation products, drills his holes, and then slits the end of the tube down to the hole so all one has to do is force the wire into the slit and on into the tight hole. No need for the difficult process of sliding spacers all the length of a run..... plus a heck of a lot cheaper, too.

Ed K7AAT

1806. Re: G5RV antenna feed line balance.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 00:52:22 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A3878ABA53C1nonenowhere@61.9.191.5>
Source record: 28478

cliff wright <c.c.wright@paradise.net.nz> wrote in news:47a1325a$1
@clear.net.nz:

...
> I came across a Z match circuit on optushome.com.au by VK3YSF which has
> a 25 pF variable capacitor from one side of the open wire feeder to
> ground. However the article gives no further information about this
> component except to call it a "Balance" capacitor.

It is no surprise that the Z match is susceptible to a difference in the magnitude of the voltage on each balanced port wire as described by Lloyd, VK5BR.

A possible explanation of a certain construction of the Z match circuit is that the earthy n turns of the main inductor and the output link form a two wire transmission line.

Looking at Lloyd's article at
http://users.tpg.com.au/ldbutler/SingleCoilVK5BRCct.htm , the two wire transmission line is 4*pi*62mm in length which represents about 30° electrical length at 10m. Such a phase delay suggests that lumped component analysis (eg as an ideal transformer) will probably not adequately capture the distributed RLGC nature of the two wires.

Analysis as a transmission line offers an explanation of why the currents flowing in both ends of the 'link winding' or transmission line conductor into the centre tapped load are not equal. To minimise the high end loss of balance, the transmission line section needs to be shorter, and an odd mode Zo closer to the half load Zo (but not necessarily equal to it). TL analysis also suggests a more symmetric network (with two cascaded TL sections and the earth connection between the two) that will have more equal voltage magnitued and phase changes at both ends of the TL.

The balance capacitor introduces another current path which will change the voltage across the upper half of the load, a crude form of compensation to try to extend performance.

Owen

1807. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 01:29:23 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a3c772$0$22823$4c368faf@roadrunner.com>
Source record: 28479

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:2t57q39r6cv0cg56s7q9l19qpi2bi7d04l@4ax.com...
> TOUCHSTONE.
> "...I did dislike the cut of a certain courtier's beard;
> he sent me word, if I said his beard was not cut well,
> he was in the mind it was.
> This is call'd the Retort Courteous.
>
> "If I sent him word again it was not well cut,
> he would send me word he cut it to please himself.
> This is call'd the Quip Modest.
>
> "If again it was not well cut, he disabled my judgment.
> This is call'd the Reply Churlish.
>
> "If again it was not well cut, he would answer I spake not true.
> This is call'd the Reproof Valiant.
>
> "If again it was not well cut, he would say I lie.
> This is call'd the Countercheck Quarrelsome.
>
> "And so to the Lie Circumstantial
>
> "and the Lie Direct."
>
> JAQUES.
> "And how oft did you say his beard was not well cut?"

'Twas not wise to sayeth his beard was *not* cut well but for the futility
to prove the negative. This is call'd the Unavailing Reason. ;-))

1808. Re: Wave Cancellation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 01:59:07 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a3ce6a$0$22846$4c368faf@roadrunner.com>
Source record: 28480

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:a8h5q35kejvidi38eg62pk4otsjveh9utu@4ax.com...
> On Thu, 31 Jan 2008 23:43:55 -0500, "AI4QJ" <nospam@yahoo.com> >>Your
> contribution would be of
>>great interest here. However, it is perfectly understandable should you
>>decline because I, after all, made the assertion of the negative in the
>>first place so I am out of form turning the argument back to you. You can
>>merely say, "I don't have to prove anything; you are the one who made the
>>assertion in the first place". Since winner takes all, congrats!
>
> It's called heat.

Ouch! Very dissappointing. Nearly all forms of energy can be dissipated as heat. That does nothing to suggest any interaction at all between the separate forms of energy (for example acoustic and RF), which would require a actual unifying factor, not just a simple commonality. As you know, unification has generally not yet been achieved.

>>>>This implies that the mystery of sound can only be comprehended by
>>>>practitioners of the arts and certainly not by a mere electrical
>>>>engineer.
>
> Heat is the common comprehension of the interaction between radiation
> and sound that is accessible to every engineer.

It is also a commonality with reacting H2SO4 and NaOH or the dissipation of the normal forces due to friction when braking your car. Does this suggest that sodium hydroxide in a graduated cyclinder causes either sound or radiation?

> Now, if you want a
> more elaborate answer, complete with math, logical proofs, and at
> least 40 years of science (the oldest of references on my shelf); you
> can invite that by further enquiry.

An exercize in futility.

> However, it comes with its own
> terminology, its own measures, its own mechanics - none of them
> unfamiliar to the engineer, just not assembled in the standard canon
> of engineering (it's called Physics).

I will match my physics background against your's any day of the week. And Physics and Thermodynamics is in fact a prerequisite for the bachelor's degree for all credentialed engineering desciplines. In most cases, engineering students excelled in Physics relative to Physics majors (and

sometime Math majors as well).

1809. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 02:14:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <jmQoj.1450$R84.898@newssvr25.news.prodigy.net>
Source record: 28481

pdrahn@coinet.com wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> Quoting "Alpha and Omega", by Seife,
>> "Empty space is an incredibly complex substance, ...
>
> Are you saying space is a fluid?

Maybe "an incredibly complex substance"
exhibits some characteristics of a fluid?
--
73, Cecil http://www.w5dxp.com

1810. Re: Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 02:30:23 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <6e568194-96e4-46ff-aa8f-4635b1f5cab2@m34g2000hsb.googlegroups.com>
Source record: 28482

On Feb 1, 3:40 pm, "Ed_G" <Huckleberry_REMO...@bigvalley.net> wrote:
> > Yes, but this is manufactured and I thought N3QE was wanting to home
> > brew the feedline. I don't think one person can control two strands of
> > copperweld while they attach spacers!
>
> It wouldn't be near as difficult if they used spacers such as used
> by W7FG in his marketed 600ohm ladderline. For spacers, He uses sections
> of stiff plastic cut from tubing used in drip irrigation products, drills
> his holes, and then slits the end of the tube down to the hole so all one
> has to do is force the wire into the slit and on into the tight hole. No
> need for the difficult process of sliding spacers all the length of a
> run..... plus a heck of a lot cheaper, too.
>
> Ed K7AAT

Absolutely correct! That would have been a lot easier. I even have a
bunch of the tubing I could have used. I had the phenolic rods and
could never find a use for them. For me, the fun of home brewing is
using what is on hand and only purchasing what I can't find at home.

Paul, KD7HB

1811. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 02:35:48 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a3d703$0$22847$4c368faf@roadrunner.com>
Source record: 28483

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:jmQoj.1450$R84.898@newssvr25.news.prodigy.net...
> pdrahn@coinet.com wrote:
>> Cecil Moore <nos...@w5dxp.com> wrote:
>>> Quoting "Alpha and Omega", by Seife,
>>> "Empty space is an incredibly complex substance, ...
>>
>> Are you saying space is a fluid?
>
> Maybe "an incredibly complex substance"
> exhibits some characteristics of a fluid?

The impedance of this fluid is 377 Ohms.

1812. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 02:38:00 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a3d787$0$22866$4c368faf@roadrunner.com>
Source record: 28484

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:jmQoj.1450$R84.898@newssvr25.news.prodigy.net...
> pdrahn@coinet.com wrote:
>> Cecil Moore <nos...@w5dxp.com> wrote:
>>> Quoting "Alpha and Omega", by Seife,
>>> "Empty space is an incredibly complex substance, ...
>>
>> Are you saying space is a fluid?
>
> Maybe "an incredibly complex substance"
> exhibits some characteristics of a fluid?

I should say "characteristic" impedance is 377 Ohms. It also has a
permitivity and permeability of 1 ;-)

1813. Re: Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 02:59:49 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <ptqdneLOYoQ2QT7anZ2dnUVZ_r-vnZ2d@giganews.com>
Source record: 28485

Cecil Moore wrote:
> Paul, KD7HB wrote:
> > I don't think you will want to use copperweld of any size for open
> > feed line. The wire will twist on itself in an uncontrollable manner.
> > Even with closely spaced spreaders, it will still be a mess.
>
> The Wireman has #14 stranded "copperweld" in the popular
> 450 ohm ladder-line format.
>
> http://thewireman.com/antennap.html#balanced
> --
> 73, Cecil http://www.w5dxp.com

FWIW, Davis RF (http://www.davisrf.com/) has it for less...

Davis RF:
PN = LL450-HD
< 100 ft = $0.42/ft
100 - 499 ft = $0.39/ft
500 - 999 ft = $0.37/ft
> 999 ft = $0.35/ft

The Wireman:
PN = 554
< 100 ft = $0.55/ft
100 - 499 ft = $0.44/ft
500 - 999 ft = $0.418/ft
> 999 ft = $0.396/ft

However, the OP was interested in rolling his own. Again, Davis RF beats
The Wireman on price.
Description = 14AWG, 19 strand, tinned copper clad steel...

Davis RF:
PN = WM523
< 100 ft = $0.16/ft
100 - 499 ft = $0.13/ft
500 - 999 ft = $0.12/ft
> 999 ft = $0.11/ft

The Wireman:
PN = 523
< 100 ft = $0.19/ft
100 - 499 ft = $0.15/ft
500 - 999 ft = $0.142/ft
> 999 ft = $0.135/ft

73,
Bryan WA7PRC

1814. Re: Energy Cancellation (or conversion of radiation to dark rest m...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 03:36:08 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <IyRoj.532112$kj1.254777@bgtnsc04-news.ops.worldnet.att.net>
Source record: 28486

Richard Harrison wrote:
> Gene, W4SZ wrote:
> "I am curious why you find the Poynting vector as you described to be
> useful at all for ham radio."
>
> Section 4-2, "Power Patterns" on page 73 of the 3rd edition of W8JK,
> John D. Kraus` "Antennas" may be illuminating.
>
> Best regards, Richard Harrison, KB5WZI
>

Richard,

The topic was transmission lines. Otherwise the comments about voltage and current would not make much sense.

I have no issue with Poynting vectors where they are useful, for example, when considering radiation patterns in free space. On the other hand, as a synonym for V*I in a transmission line a Poynting vector is just high-falutin jargon. Now if someone really looked at the actual fields in the transmission line and calculated E x H, there would be justification for referring to a Poynting vector. Do you know anyone in ham radio who does that?

73,
Gene
W4SZ

1815. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 07:54:54 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <XA2p7JEOHCpHFAds@ifwtech.co.uk>
Source record: 28487

Owen Duffy wrote:
>> Do Australian TVs use "Bloody Belling Lee" connectors like we still do
>> in the UK? What does "PAL" stand for?
>
>Yes, the TVs invariably have the Belling Lee connector, now known as
>the PAL connector. I don't know how it got the PAL label, perhaps
>related to its use in the UK where PAL colour encoding was used (as it
>is here in Oz).

OK, that makes sense.

[Incidentally, for anyone who hasn't seen the 'alternative' meanings
for the various international color TV standards:

NTSC (USA) = Never Twice the Same Color
SECAM (France) = Something Else, Contrary to American Methods
PAL (rest of western Europe, Australia and NZ) = Perfection At Last.]

>Apparently the PAL connector was invented in 1922 and complies with BS
>and IEC standards.
>
Or rather, the standards had to comply with the connectors, because the
connectors were there first.

>I did some tests on BL connectors in the seventies and performance up
>to 2GHz was better than UHF connectors, and quite acceptable. The BL
>connectors that I tested were plated brass bodied male connectors with
>soldered centre pin, and plated steel bodied female connectors (all in
>good condition).
>
That's fine... now try again with the much more common aluminium bodied
plug, and a centre conductor wire that was pushed into the centre pin 20
years ago, was never soldered and is now heavily tarnished.

That unsoldered 'maybe-connection' inside the centre pin is a major
cause of poor reception and TVI in the UK... along with water in the
coax, which has an interesting effect when the water reaches the
aluminium/copper connection inside the plug body. The whole thing is a
classic example of insane design.

>Modern practice is to install F connectors in fixed wiring.

Much better, as those are specifically designed to be solderless.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

1816. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 08:13:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13q89hvg3g8af2a@corp.supernews.com>
Source record: 28488

AI4QJ wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:jmQoj.1450$R84.898@newssvr25.news.prodigy.net...
>> pdrahn@coinet.com wrote:
>>> Cecil Moore <nos...@w5dxp.com> wrote:
>>>> Quoting "Alpha and Omega", by Seife,
>>>> "Empty space is an incredibly complex substance, ...
>>> Are you saying space is a fluid?
>> Maybe "an incredibly complex substance"
>> exhibits some characteristics of a fluid?
>
> I should say "characteristic" impedance is 377 Ohms. It also has a
> permitivity and permeability of 1 ;-)

I'm sure you mean relative permittivity and relative permeability.

The characteristic impedance is the square root of permeability divided by permittivity, so if both are one, the characteristic impedance would have to be one.

Roy Lewallen, W7EL

1817. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 08:45:27 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <ZQcqf3Hn2CpHFA8z@ifwtech.co.uk>
Source record: 28489

Ralph Mowery wrote:
>
>"Cecil Moore" <nospam@w5dxp.com> wrote in message
>news:3lroj.1696$Ch6.250@newssvr11.news.prodigy.net...
>> K7ITM wrote:
>>> See earlier posting in this thread.
>>
>> Thanks Tom, when I said "linear power scale", I meant
>> e.g. a meter reading where 2000 watts is full scale
>> and 1000 watts is half scale. I have seen such meters
>> but not without a digital or analog computer on the
>> front end.
>> --
>> 73, Cecil http://www.w5dxp.com
>
>Just jumping in the middle of ths, but look at this watt meter.
>
>http://bama.edebris.com/manuals/miltest/an-urm120/
>
>It has a linear scale. I have one and it has a linear scale. Sort of made
>like a Bird meter but much larger elements. It is just a diode and meter.
>There is no power needed to run the meter except the sampled power comming
>off the transmission line.
>
>There were several versions made. One has a SWR scale on it. I am not sure
>how the swr scale is but the wattmeter scale is linear instead of the log
>looking scale of the Bird and most other meters.
>
To have a linear power calibration, that has to be a square-law
detector. On the higher-power ranges, the slug is moved away from the
centre conductor, so that the diode is always operating within its
accurate square-law range.

Thanks very much for posting that link, Ralph. It's interesting to see
the resemblances to the Bird 43, and also the differences.

The Bird meter scale is not logarithmic. It's better described as being
in the transition region between a square-law detector at low meter
currents, and a voltage-detecting rectifier towards the high end of the
meter scale. The compression in the upper half of the power scale is
because the diode is acting as a voltage detector. Power is proportional
to V-squared, so the meter deflection is tending towards the square root
of the power, and that is what compresses the scale towards the high
end.

As with the AN-URM120, the Bird design adjusts the coupling so that all detector diodes in all the inserts are operating at the same RF levels, so they can all share the same meter scales. The difference is that instead of physically moving the same insert inward or outward to adjust the coupling, Bird do it by selling us more slugs :-)

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

1818. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 14:26:14 UTC
From: Peter <colleenpeter@westnet.com.au>
Message-ID: <13q8vc83m04o0e0@corp.supernews.com>
Source record: 28490

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:jmQoj.1450$R84.898@newssvr25.news.prodigy.net...
> pdrahn@coinet.com wrote:
>> Cecil Moore <nos...@w5dxp.com> wrote:
>>> Quoting "Alpha and Omega", by Seife,
>>> "Empty space is an incredibly complex substance, ...
>>
>> Are you saying space is a fluid?
>
> Maybe "an incredibly complex substance"
> exhibits some characteristics of a fluid?
> --
> 73, Cecil http://www.w5dxp.com

If the photon creates a shock wave in the aether then it must be imparting
some energy into the aether and the photon should slow down over time.

Peter

http://members.optushome.com.au/vk6ysf/vk6ysf/main.htm

1819. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 15:56:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Co0pj.1811$xq2.621@newssvr21.news.prodigy.net>
Source record: 28491

Peter wrote:
> If the photon creates a shock wave in the aether then it must be imparting
> some energy into the aether and the photon should slow down over time.

Photons cannot slow down but you could be right about
them losing energy over time. Lengthening the wavelength
of a photon is certainly a loss of energy. That could
explain the red-shift of light from distant galaxies.

"Optics", by Hecht, 4th edition, Page 52:
"Photons are stable, chargeless, massless elementary
particles that *exist only at the speed of light*."
--
73, Cecil http://www.w5dxp.com

1820. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 16:06:14 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo24dv$1k0$1@aioe.org>
Source record: 28492

Cecil Moore wrote:
> Peter wrote:
>> If the photon creates a shock wave in the aether then it must be
>> imparting some energy into the aether and the photon should slow down
>> over time.
>
> Photons cannot slow down but you could be right about
> them losing energy over time. Lengthening the wavelength
> of a photon is certainly a loss of energy. That could
> explain the red-shift of light from distant galaxies.
>
> "Optics", by Hecht, 4th edition, Page 52:
> "Photons are stable, chargeless, massless elementary
> particles that *exist only at the speed of light*."

While I cannot dismiss the existence of the photons, I am not aware of
any experiments which have been able to measure them.

However, to me, the fact that there is some type of interaction with our
antennas and the ether is undeniable ... and, indeed, I do not believe
that transmission of radio signals would be possible, on most
frequencies--at least, if not for the ether.

Regards,
JS

1821. Re: Energy Cancellation (or conversion of radiation to dark rest m...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 16:08:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%z0pj.10159$hl1.7573@nlpi061.nbdc.sbc.com>
Source record: 28493

Gene Fuller wrote:
> I have no issue with Poynting vectors where they are useful, for
> example, when considering radiation patterns in free space. On the other
> hand, as a synonym for V*I in a transmission line a Poynting vector is
> just high-falutin jargon. Now if someone really looked at the actual
> fields in the transmission line and calculated E x H, there would be
> justification for referring to a Poynting vector. Do you know anyone in
> ham radio who does that?

That's what we have been doing here for the past hundred
postings or so, Gene. Any two methods for calculating
power have to agree or else one (or both) methods are
wrong.

Long ago, I used low-falutin jargon like Vfor*Ifor*rho^2
or Pfor(rho^2). There were many objections. So I switched
to |s11*a1|^2 and Poynting vectors, apparently better
established concepts supported by lots of references.
--
73, Cecil http://www.w5dxp.com

1822. Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 16:11:57 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo24om$3m7$1@aioe.org>
Source record: 28494

This article:
http://www.nydailynews.com/lifestyle/2008/02/02/2008-02-02_low_blow_for_highdef_tv_service_users-2.html

claims that a special antenna is needed to get HDTV (over the air, as opposed to cable/sat box.) I was not aware of that fact. Are they revamping all TV freqs.

I am just beginning to search if this article is bogus or not. Was hoping someone here was in the industry and give us a "quick-start-guru-tutorial."

Regards,
JS

1823. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 16:20:20 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hk49q3to9s0s5tmkuq5hdp7ja9murhbvpd@4ax.com>
Source record: 28496

On Sat, 2 Feb 2008 08:45:27 +0000, Ian White GM3SEK
<gm3sek@ifwtech.co.uk> wrote:

>As with the AN-URM120, the Bird design adjusts the coupling so that all
>detector diodes in all the inserts are operating at the same RF levels,
>so they can all share the same meter scales. The difference is that
>instead of physically moving the same insert inward or outward to adjust
>the coupling, Bird do it by selling us more slugs :-)

Hi All (Congratulations Ralph),

There are more differences than that. The Bird suffers more from
parts erosion than the URM120 as the URM has bigger elements. With
the bigger elements, the geometries are held to a tighter precision.

It is the coupling link that moves in the URM, not the element. The
link rides on a cam that is stepped for the 4 different power ranges
used. If you remove the knob from the slug, and then the cover plate,
you have access to an adjustment screw that provides the fine control
over the depth of penetration. The smaller PDF at the boat anchors
web page is the more useful of the two offered.

I have calibrated a pile of both the Birds and the URMs, and the URMs
always required less maintenance, and rarely needed adjustment. The
Birds, on the other hand, always arrived out of calibration.

One source of error in the VHF/UHF region was that the rubber gasket
inside the N connector (and for that matter, for any N connector) will
accumulate thread debris. It should be used as a visual correlative
to the amount of similar debris bridging the Teflon insulator. This
debris can whack out these meters and degrade connections.

73's
Richard Clark, KB7QHC

1824. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 16:20:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xL0pj.1814$xq2.1286@newssvr21.news.prodigy.net>
Source record: 28495

John Smith wrote:
> While I cannot dismiss the existence of the photons, I am not aware of
> any experiments which have been able to measure them.

Hecht says: "... researchers ... have conducted experiments
in which they literally counted individual photons".
--
73, Cecil http://www.w5dxp.com

1825. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 16:36:18 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo266b$8dm$1@aioe.org>
Source record: 28497

Cecil Moore wrote:
> John Smith wrote:
>> While I cannot dismiss the existence of the photons, I am not aware of
>> any experiments which have been able to measure them.
>
> Hecht says: "... researchers ... have conducted experiments
> in which they literally counted individual photons".

I was aware of light, not RF. And, of course, at the extreme "frequencies" (others would state "Higher Energy Particles" for all RF--I guess), photons (particles) become undeniable--x-rays, gamma rays, etc. However, "light transmitters" have always been of a differing design/construction (example: light bulb) than RF transmitters.

My readings and studies have been of a "circular nature", just when I have, in the past, decided that rf are/is waves, I have read something which convinced me particles are responsible--then the opposite occurs and I am back standing on square one. Hopefully, and in a "BLATANT" manner, some experiment will make the truth of this whole subject ABSOLUTELY apparent.

Until then, I think it is OK to remain undecided and firmly set in ones beliefs ... but cautious of poking too much fun at anothers'.

Warm regards,
JS

1826. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 16:46:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <u71pj.1816$xq2.1646@newssvr21.news.prodigy.net>
Source record: 28498

John Smith wrote:
> This article:
> http://www.nydailynews.com/lifestyle/2008/02/02/2008-02-02_low_blow_for_highdef_tv_service_users-2.html
> claims that a special antenna is needed to get HDTV (over the air, as
> opposed to cable/sat box.)

http://www.hdtvprimer.com/ANTENNAS/types.html

"HDTV Antennas"
"An antenna made for analog TV will work fine for DTV.
There is nothing different about an antenna for DTV or
HDTV. Unscrupulous people have labeled their antennas
'HDTV Antennas' as a marketing ploy. The honest antenna
makers have had to re-label their products likewise to
avoid losing sales."
--
73, Cecil http://www.w5dxp.com

1827. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 17:04:01 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo27qadim1@aioe.org>
Source record: 28499

Cecil Moore wrote:

> ...
> http://www.hdtvprimer.com/ANTENNAS/types.html
>
> "HDTV Antennas"
> "An antenna made for analog TV will work fine for DTV.
> There is nothing different about an antenna for DTV or
> HDTV. Unscrupulous people have labeled their antennas
> 'HDTV Antennas' as a marketing ploy. The honest antenna
> makers have had to re-label their products likewise to
> avoid losing sales."

This is what I suspected. I have SAT TV, but in the hobby/game/computer/catch-all room of the house, the TV just has a set of homemade/amplified rabbit ears. These may be able to be designed a bit different for HDTV (mainly, amp filtered for a narrower freq range(s).)

Sometimes I miss things--thinking I know all about them--or else, am side-tracked by "industry-disinformation" ... thanks for the backup.

I will keep double checking however, as with analog TV there is the pesky ~3.5Mhz color signal to worry about.

Regards,
JS

1828. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 17:04:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ko1pj.5529$so6.1809@newssvr19.news.prodigy.net>
Source record: 28500

John Smith wrote:
> I was aware of light, not RF.

I will go out on a limb and assert that light
waves and RF waves are both electromagnetic
waves with differing wavelengths. :-)
--
73, Cecil http://www.w5dxp.com

1829. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 17:10:10 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13q98vcrdks2rb8@corp.supernews.com>
Source record: 28501

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:hk49q3to9s0s5tmkuq5hdp7ja9murhbvpd@4ax.com...
> On Sat, 2 Feb 2008 08:45:27 +0000, Ian White GM3SEK
> <gm3sek@ifwtech.co.uk> wrote:
>
>>As with the AN-URM120, the Bird design adjusts the coupling so that all
>>detector diodes in all the inserts are operating at the same RF levels,
>>so they can all share the same meter scales. The difference is that
>>instead of physically moving the same insert inward or outward to adjust
>>the coupling, Bird do it by selling us more slugs :-)
>
> Hi All (Congratulations Ralph),
>
> There are more differences than that. The Bird suffers more from
> parts erosion than the URM120 as the URM has bigger elements. With
> the bigger elements, the geometries are held to a tighter precision.
>

I was luckey enough to find one that was in the origional wrapping paper. I
don't remember what the date was on the wrapper. At a hamfest several years
ago soneone had several new ones. They were in the heavy duty aluminimum
foil , cardboard box, and the hard plastic foam filled case. Never opened
from the day they were calibrated about 10 or 20 years before. It came
with 3 elements that would go from about 3 mhz to 1000 mhz. Think it topped
out at 1 kw up to 30 mhz and 500 watts after that. I bought it for what
some used Birds without elements seem to go for on e-bay now.
One minor thing is the meter movement on those meters are sluggish so it
takes a slow adjustment of amplifiers to get them to the max output.

1830. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 17:21:28 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo28r1$h9i$1@aioe.org>
Source record: 28502

Cecil Moore wrote:

> ...
> I will go out on a limb and assert that light
> waves and RF waves are both electromagnetic
> waves with differing wavelengths. :-)

Well, my "limb" is probably well known ...

I don't think we "know" anything, until we deal with what part the ether plays in all this ... I see it as we are flying a plane without paying any heed to the existence of air--I am sure it could be done--just happen to stumble upon a set(s) of math which would allow it--it is just a "bunch easier" knowing about the air.

Regards,
JS

1831. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 17:21:39 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <DE1pj.3175$Sa1.1089@news02.roc.ny>
Source record: 28503

Cecil Moore wrote:
> John Smith wrote:
>> This article:
>> http://www.nydailynews.com/lifestyle/2008/02/02/2008-02-02_low_blow_for_highdef_tv_service_users-2.html
>> claims that a special antenna is needed to get HDTV (over the air, as
>> opposed to cable/sat box.)
>
> http://www.hdtvprimer.com/ANTENNAS/types.html
>
> "HDTV Antennas"
> "An antenna made for analog TV will work fine for DTV.
> There is nothing different about an antenna for DTV or
> HDTV. Unscrupulous people have labeled their antennas
> 'HDTV Antennas' as a marketing ploy. The honest antenna
> makers have had to re-label their products likewise to
> avoid losing sales."

There aren't any VHF digital TV signals. If one lives any distance from a station transmitting in HD or SD, it is necessary to have an antenna with plenty of UHF gain. Eleven UHF elements, RG-6 feedline and an indoor, variable gain preamp give me twenty or so digital channels from my local area and from the Pittsburgh area. This works for my living room Hi-Def set or for the HD PCI card in the computer near the hamshack.

Dave K8MN

1832. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 17:25:56 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo293d$h9i$2@aioe.org>
Source record: 28504

Dave Heil wrote:

> ...
> There aren't any VHF digital TV signals. If one lives any distance from
> a station transmitting in HD or SD, it is necessary to have an antenna
> with plenty of UHF gain. Eleven UHF elements, RG-6 feedline and an
> indoor, variable gain preamp give me twenty or so digital channels from
> my local area and from the Pittsburgh area. This works for my living
> room Hi-Def set or for the HD PCI card in the computer near the hamshack.
>
> Dave K8MN

This leads me in the direction of thinking about a log periodic for the
UHF freqs in question.

If I lived in larger quarters, this would even make a parabolic within
reason.

Regards,
JS

1833. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 17:33:21 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a4a963$0$1089$4c368faf@roadrunner.com>
Source record: 28505
Body handling: HTML body converted to readable text

```
"Roy Lewallen" wrote in message
news:13q89hvg3g8af2a@corp.supernews.com...
>
>
> AI4QJ wrote:
>> "Cecil Moore" wrote in message
>> news:jmQoj.1450$R84.898@newssvr25.news.prodigy.net...
>>> pdrahn@coinet.com wrote:
>>>> Cecil Moore wrote:
>>>>> Quoting "Alpha and Omega", by Seife,
>>>>> "Empty space is an incredibly complex substance, ...
>>>> Are you saying space is a fluid?
>>> Maybe "an incredibly complex substance"
>>> exhibits some characteristics of a fluid?
>>
>> I should say "characteristic" impedance is 377 Ohms. It also has a
>> permitivity and permeability of 1 ;-)
>
> I'm sure you mean relative permittivity and relative permeability.

No, this is not correct. The permitivities and permeabilities of all
materials are relative to free space. Free space is assumed to be 1 and the
other values are relative to it.

>
> The characteristic impedance is the square root of permeability divided
> by permittivity, so if both are one, the characteristic impedance would
> have to be one.

No, this is not correct.

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1834. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 17:37:29 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <799e7581-aa0b-499f-bf92-4eb2b1b660de@e6g2000prf.googlegroups.com>
Source record: 28506

On 1 feb, 20:43, Cecil Moore <nos...@w5dxp.com> wrote:
> An airplane (particle) traveling at the speed of sound
> causes shock waves in the air which, if passed through
> double slits, would no doubt cause interference.
>
> How about: A photon (particle) traveling at the speed
> of light causes shock waves in the aether which, when
> passed through double slits, causes interference?
>
> Impossible for empty space - but we now know that space
> is not empty. :-) Quoting "Alpha and Omega", by Seife,
> "Empty space is an incredibly complex substance, and
> scientists are just beginning to understand its properties."
> --
> 73, Cecil http://www.w5dxp.com

Hello Cecil,

I don't believe you can compare the two phenomena.

The photons are created because of an accelerating charge (so the photon is the wave itself, not the source that created the wave).

However, as far as I know, there is an (almost) equivalent for the airplane/air shockwave. When you shoot a charged particle (v close to c0) into a material with rel. eps >1 the particle will not abruptly slow down when entering the material with high rel.eps. So it can have a speed that is above the propagation speed of EM waves in that material. In that case an EM shock wave occurs. Look for Cherenkov shockwave.

Best regards,

Wim
PA3DJS
www.tetech.nl

1835. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 18:06:38 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <lmb9q35ug49o97kpfdoepbhudopekji24t@4ax.com>
Source record: 28507

On Sat, 2 Feb 2008 12:10:10 -0500, "Ralph Mowery"
<rmowery28146@earthlink.net> wrote:

>One minor thing is the meter movement on those meters are sluggish so it
>takes a slow adjustment of amplifiers to get them to the max output.

Hi Ralph,

The meter needle probably has an aluminum vane in the magnetic field
that is used as a dampener through eddy current induction.

As a general consideration for fine meter movements, and to prevent
their being damaged while being transported; some are equipped with
shorting bars (or switches) across the meter terminals. This is more
commonly encountered with bridge instruments.

This can be simple observed by rotating the meter movement quickly and
noting the deflection of the needle on the scale through inertia. An
undampened meter can be deflected by vigorous movement up to half
scale (possibly more), where a dampened meter would deflect barely a
tenth.

You got a bargain beyond dollars in your purchase.

73's
Richard Clark, KB7QHC

1836. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 18:35:40 UTC
From: dplatt@radagast.org
Message-ID: <sope75-n1h.ln1@radagast.org>
Source record: 28508

In article <DE1pj.3175$Sa1.1089@news02.roc.ny>,
Dave Heil <k8mn@frontiernet.net> wrote:

>There aren't any VHF digital TV signals.

Not today. But there will be, when the Big Switchover occurs. A significant number of stations which currently have their NTSC analog signals in the VHF range, and which have a temporary UHF allocation for their ATSC digital signals, will be moving the digital signals down to their VHF frequencies when the NTSC shutoff data occurs, rather than giving up the VHF frequency entirely.

There are a couple of reasons why this is being done. I believe that it adds up to "better digital coverage" - better antenna site, better transmitter, or (most commonly I think) a larger distance to the nearest competing station on that frequency. Some stations (especially in crowded urban areas) were stuck with UHF transition frequencies that have significant competition in nearby cities, and aren't allowed to transmit at full power... the band's pretty full.

Most of these stations have VHF allocations in the highband (channels 7 through 13). There are a very few stations in the VHF lowband (channels 2 through 6) which will be running ATSC digital in the lowband. but I'm told that this is being discouraged by the FCC and is technically less than ideal (more impulse-noise interference in the lowband).

> If one lives any distance from
>a station transmitting in HD or SD, it is necessary to have an antenna
>with plenty of UHF gain. Eleven UHF elements, RG-6 feedline and an
>indoor, variable gain preamp give me twenty or so digital channels from
>my local area and from the Pittsburgh area. This works for my living
>room Hi-Def set or for the HD PCI card in the computer near the hamshack.

In many areas of the country, a UHF-only antenna will prove adequate for ATSC reception.

In those areas in which one or more stations will be transmitting ATSC in the VHF band after The Day, an antenna with decent gain and directionality at both UHF and VHF will be necessary if you want to get all of the available channels. In most cases, UHF plus VHF highband will be adequate. A very few cities will require antennas that handle the VHF low-band as well. People jn these areas who have bought UHF-only "digital TV" antennas may be in for a rude shock.

The same designs that have been sold for decades (i.e. log-periodics with additional reflectors and elements for UHF) should work just

fine. A rotator may be useful or necessary.

The FCC's rulemaking document (latest version I know of) has a table
of the actual frequency allocations for DTV, including coverage areas
and interference levels:

http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-150A1.pdf

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1837. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 18:41:43 UTC
From: MTV <NoSpam_mtvew@netscape.net>
Message-ID: <47a4b96e$0$1120$4c368faf@roadrunner.com>
Source record: 28509

Dave Heil wrote:
> Cecil Moore wrote:
>> John Smith wrote:
>>> This article:
>>> http://www.nydailynews.com/lifestyle/2008/02/02/2008-02-02_low_blow_for_highdef_tv_service_users-2.html
>>> claims that a special antenna is needed to get HDTV (over the air, as
>>> opposed to cable/sat box.)
>>
>> http://www.hdtvprimer.com/ANTENNAS/types.html
>>
>> "HDTV Antennas"
>> "An antenna made for analog TV will work fine for DTV.
>> There is nothing different about an antenna for DTV or
>> HDTV. Unscrupulous people have labeled their antennas
>> 'HDTV Antennas' as a marketing ploy. The honest antenna
>> makers have had to re-label their products likewise to
>> avoid losing sales."
>
> There aren't any VHF digital TV signals. If one lives any distance from
> a station transmitting in HD or SD, it is necessary to have an antenna
> with plenty of UHF gain. Eleven UHF elements, RG-6 feedline and an
> indoor, variable gain preamp give me twenty or so digital channels from
> my local area and from the Pittsburgh area. This works for my living
> room Hi-Def set or for the HD PCI card in the computer near the hamshack.
>
> Dave K8MN

Here in the Houston area there're three local stations broadcasting DT
in the VHF bands, one in the low band and two in the upper VHF band. The
other ten DT stations are in the UHF band, with Virtual broadcasts in
the upper end of their regular VHF channels. I'm not sure how that
works, but DT tuners can find them.

All will be UHF before the cut-off day in 2009.

Marv
W5MTV

--
This mail checked and found to be free of any virus.
Mozilla Thunderbird mail & Firefox browser
GO ASTROS!!!!! Yeh Dynamo MLS Champions!

1838. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 18:55:22 UTC
From: John KD5YI <groups1.jocjo@xoxy.net>
Message-ID: <u03pj.2170$M71.1838@trnddc08>
Source record: 28510

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a4a963$0$1089$4c368faf@roadrunner.com...
>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13q89hvg3g8af2a@corp.supernews.com...
>>
>>
>> AI4QJ wrote:
>>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>>> news:jmQoj.1450$R84.898@newssvr25.news.prodigy.net...
>>>> pdrahn@coinet.com wrote:
>>>>> Cecil Moore <nos...@w5dxp.com> wrote:
>>>>>> Quoting "Alpha and Omega", by Seife,
>>>>>> "Empty space is an incredibly complex substance, ...
>>>>> Are you saying space is a fluid?
>>>> Maybe "an incredibly complex substance"
>>>> exhibits some characteristics of a fluid?
>>>
>>> I should say "characteristic" impedance is 377 Ohms. It also has a
>>> permitivity and permeability of 1 ;-)
>>
>> I'm sure you mean relative permittivity and relative permeability.
>
> No, this is not correct. The permitivities and permeabilities of all
> materials are relative to free space. Free space is assumed to be 1 and
> the other values are relative to it.
>
>>
>> The characteristic impedance is the square root of permeability divided
>> by permittivity, so if both are one, the characteristic impedance would
>> have to be one.
>
> No, this is not correct.
>

According to "Reference Data for Radio Engineers", published by
International Telephone and Telegraph, fourth edition, page 35:

"Properties of Free Space"

Permeability = 1.257 * 10^-6 henry per meter.
Permittivity = 8.85 * 10^-12 farad per meter.

Characteristic impedance = sqrt(Permeability/Permittivity) = 376.7 ohms

John

1839. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 19:10:42 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <8103b79d-9ee6-493e-aed8-a9637f085d34@s13g2000prd.googlegroups.com>
Source record: 28511

On Feb 2, 9:10 am, "Ralph Mowery" <rmowery28...@earthlink.net> wrote:
> "Richard Clark" <kb7...@comcast.net> wrote in message
>
> news:hk49q3to9s0s5tmkuq5hdp7ja9murhbvpd@4ax.com...
>
> > On Sat, 2 Feb 2008 08:45:27 +0000, Ian White GM3SEK
> > <gm3...@ifwtech.co.uk> wrote:
>
> >>As with the AN-URM120, the Bird design adjusts the coupling so that all
> >>detector diodes in all the inserts are operating at the same RF levels,
> >>so they can all share the same meter scales. The difference is that
> >>instead of physically moving the same insert inward or outward to adjust
> >>the coupling, Bird do it by selling us more slugs :-)
>
> > Hi All (Congratulations Ralph),
>
> > There are more differences than that. The Bird suffers more from
> > parts erosion than the URM120 as the URM has bigger elements. With
> > the bigger elements, the geometries are held to a tighter precision.
>
> I was luckey enough to find one that was in the origional wrapping paper. I
> don't remember what the date was on the wrapper. At a hamfest several years
> ago soneone had several new ones. They were in the heavy duty aluminimum
> foil , cardboard box, and the hard plastic foam filled case. Never opened
> from the day they were calibrated about 10 or 20 years before. It came
> with 3 elements that would go from about 3 mhz to 1000 mhz. Think it topped
> out at 1 kw up to 30 mhz and 500 watts after that. I bought it for what
> some used Birds without elements seem to go for on e-bay now.
> One minor thing is the meter movement on those meters are sluggish so it
> takes a slow adjustment of amplifiers to get them to the max output.

I have one of those, or something very similar; a Struthers 1219-D.
The HF slug that came with mine goes up to 5kW, though. The meter
movement measures 24uA full scale, and the coil resistance is 2k ohms,
so the meter is pretty sensitive: about 1.1 microwatts for full scale
deflection. It takes that sort of sensitivity to get down to the
linear detector out versus RF power in region.

Interestingly, if I simulate a single-diode detector using an
HSMS-2850 Schottky diode into a 2000 ohm load, and find the RF voltage
that gives 24uA output, and then re-simulate with voltages in the
right ratios to give 90% of that power, 80%, 70%, etc., down to 10%,
the outputs are not exactly linear with input power. The error is
small, though, no more than about 1.5% of full scale. So then I
checked the calibration on my meter, and put in 50% of full scale

current, and noted that the meter reading is not exactly 50, but just enough off to be correctly reading the RF power. So though the scale on my meter appears at first glance to be linear, it's not exactly so, and I believe that must be intentional. The worst-case "error" to linear output in the simulation was at 70% of full power, where the current is predicted to be 71.43 percent of full scale. On my meter, when I put in 71.43% of full scale, indeed it reads almost dead-on 70% power. I doubt that's a fluke.

Cheers,
Tom

1840. 75M loop on 160

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 19:21:15 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A3873790F3E3Huckleberrybigvalley@198.186.192.196>
Source record: 28512

On behalf of a friend, I am asking this question. He has a full wave 75M loop up about 40 feet, (247 feet of wire). He would like to somehow be able to "break" the far center of this loop to provide for half wave operation on 160.

He was thinking along the lines of some kind of choke or Hi-Z filter in the opposite leg that would electrically be open at 1950 KHz, and closed at 75M. I am dubious on doing this because of the extreme high voltages that would be present at this point... He runs a Kilowatt and feeds the loop with coax.

Is what he wants possible, either mechanically or electrically, without having to drop the antenna for manual switching?

Ed K7AAT

1841. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 19:54:20 UTC
From: art <aunwin@insightbb.com>
Message-ID: <3e8144f1-9ba2-4d79-8a78-84ce693df248@e6g2000prf.googlegroups.com>
Source record: 28513

On 2 Feb, 09:21, John Smith <assemblywiz...@gmail.com> wrote:
> Cecil Moore wrote:
> > ...
> > I will go out on a limb and assert that light
> > waves and RF waves are both electromagnetic
> > waves with differing wavelengths. :-)
>
> Well, my "limb" is probably well known ...
>
> I don't think we "know" anything, until we deal with what part the ether
> plays in all this ... I see it as we are flying a plane without paying
> any heed to the existence of air--I am sure it could be done--just
> happen to stumble upon a set(s) of math which would allow it--it is just
> a "bunch easier" knowing about the air.
>
> Regards,
> JS

To have a mind set around liquids and solids prevent true
understanding
of the elements and their magnetic fields which is the basis of all
the universe. If one thinks of H2O as being elements with a
electrical
field where the energy contained in that field determines the density
of like particles.
One way of looking at it is the transformation from ice to a gas with
each
transformation being ruled by the change in energy (latent energy)
One can simulate this action between a solid and a liquid by filling a
vessel with fine particles that is so dense that one cannot poke a
finger into it. When a gas (potentialenergy) is injected (now
kinetic)
into the bottom of the vessel the particles become liquid in form
such
that one can stir the contents in cluster form plus a pressure wave
in advance. Is it not a coincidence that 95% of elements are
diamagnetic
where the difference between that and paramagnetic is very small
and reflected in field strength or potential energy?

1842. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 20:07:12 UTC
From: Suzy <not@valid>
Message-ID: <47a4cd77$1@dnews.tpgi.com.au>
Source record: 28514

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:ko1pj.5529$so6.1809@newssvr19.news.prodigy.net...
> John Smith wrote:
>> I was aware of light, not RF.
>
> I will go out on a limb and assert that light
> waves and RF waves are both electromagnetic
> waves with differing wavelengths. :-)
> --
> 73, Cecil http://www.w5dxp.com

A limb? Even I know that!

1843. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 20:09:44 UTC
From: Suzy <not@valid>
Message-ID: <47a4ce10@dnews.tpgi.com.au>
Source record: 28515

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:u71pj.1816$xq2.1646@newssvr21.news.prodigy.net...
> John Smith wrote:
>> This article:
>> http://www.nydailynews.com/lifestyle/2008/02/02/2008-02-02_low_blow_for_highdef_tv_serv
ice_users-2.html
>> claims that a special antenna is needed to get HDTV (over the air, as
>> opposed to cable/sat box.)
>
> http://www.hdtvprimer.com/ANTENNAS/types.html
>
> "HDTV Antennas"
> "An antenna made for analog TV will work fine for DTV.
> There is nothing different about an antenna for DTV or
> HDTV. Unscrupulous people have labeled their antennas
> 'HDTV Antennas' as a marketing ploy. The honest antenna
> makers have had to re-label their products likewise to
> avoid losing sales."
> --
> 73, Cecil http://www.w5dxp.com

Absolutely. It's only relevant if the DTV channel happens to be on a widely
differing frequency where the "analogue" antenna is optimised for another
channel (= frequency).

Same as a different antenna for the CW part of a band (ie "CW" antenna)

1844. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 21:01:22 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <35afbb4f-8e1c-43ba-99b7-9e16341f6165@e10g2000prf.googlegroups.com>
Source record: 28516

On Jan 27, 10:57 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Sat, 26 Jan 2008 19:24:22 -0800 (PST)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Jan 26, 12:15 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Fri, 25 Jan 2008 19:13:31 -0800 (PST)
>
> > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > On Jan 24, 10:33 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > > [snip]
> > > > > By examining this derivation, the reader can see that power and energy
> > > > > is reflected when a wave encounters a discontinuity. The reader can
> > > > > also see that more power is present on the transmission line than is
> > > > > delivered to the load.
>
> > > > This is the conventional phraseology for describing the behaviour at
> > > > the impedance discontinuity.
>
> > > > Allow me to offer a specific example for which this phraseology is
> > > > inappropriate.
>
> > > > Consider a 50 V step function generator with an output impedance of
> > > > 50 ohms driving a 50 ohm line that is 1 second long terminated in an
> > > > open circuit.
>
> > > > Turn on the generator. A 50 V step propagates down the line. The
> > > > generator is putting 50 J/s into the line. One second later it
> > > > reaches the open end and begins propagating backwards.
> > > > After two seconds it reaches the generator. The voltage at the
> > > > generator is now 100 V and no current is flowing from the
> > > > generator into the line. In the 2 seconds, the generator put
> > > > 100 joules into the line which is now stored in the line.
> > > > The line is at a constant 100 V and the current is zero everywhere.
>
> > > > Computing Pf and Pr will yield 50 W forward and 50 W reflected.
> > > > And yet no current is flowing anywhere. The voltage on the line
> > > > is completely static.
>
> > > > And yet some will claim that 50 W is flowing forward and 50 W
> > > > is flowing backwards.
>
> > > > Does this seem like a reasonable claim for an open circuited
> > > > transmission line with constant voltage along its length and
> > > > no current anywhere?

>
> > > > I do not find it so.
>
> > > > ...Keith
>
> > > This is a reasonable observation for a static situation where energy is stored on a transmission line.
>
> > > If the example contained an ongoing consideration, like "Where does the power move to?", then it would be reasonable to consider that the wave continued to move, simply to avoid the complication of what EXACTLY happens when a wave starts and stops.
>
> > So have you thought about "where does the power go?"
>
> Yes, only the model I use substitutes a battery for the signal generator that you are using.

A battery is not the same since it has a very low output impedance.
A battery in series with a 50 ohm resistor would offer a reasonable
match to a 50 ohm transmission line.

> The returning wave can recharge the battery, but how does the current stop? Or does it ever stop? From a practical aspect, the current must stop, but I can not explain how except by resistance that absorbs the circulating power.

That is the challenging part to understand when too much emphasis
is placed on the existance of energy being transported with the
"reflected power".

When I was learning this stuff, I did many examples with matched
generators (a battery with a 50 ohm resistor is a good example).
With step functions, it is easy to compute the final state because
you can just treat it as a DC circuit for analysis.

> We must keep the limitations of our models in mind.

True, but over limiting is not good either.

> > When the generator is matched to the line so that
> > the reflected wave does not encounter an impedance
> > discontinuity when it arrives back at the generator
> > (and therefore is not reflected), where does the
> > reflected power go?
> > Does it enter the generator?
> > Is it dissipated somewhere?
>
> > Answers to these questions will quickly lead to
> > doubts about the *reality* of "reflected power".
>
> > ...Keith
>
> The reflected wave that does not encounter an impedance at the generator must be on an

infinitely long line, and therefore the conditions must have changed between the time of launch and return.

I don't follow the association between generator impedance and length of line.

For a 50 ohm line, a matched generator has a 50 ohm output impedance. The returning wave does not encounter an impedance discontinuity so is not reflected. It disappears into the the generator.

> It makes more sense to think that the reflected voltage of (using your example) 50v meets 50v of forward voltage, and therefore finds an infinite resistance, coming to a stop.

The current does stop (since it can not flow into the infinite resistance at the end of the line), and a 50 V step propagates back along the line.

This 50 V reverse propagating step plus the 50 V already on the line produces a total of 100 V on the line.

If the generator was constructed as a 100 V battery in series with a 50 ohm resistor, then when the step arrives back at the generator, there is 100 V on both sides of the source resistor (battery on one side, line on the other) and the current through the source resistor becomes zero. No further current flows into the line.

> If that happens, doesn't the same condition occur as soon as the reflected wave is first generated at the line end? The current really stops as soon as the end is reached, with the energy contained in the magnetic field converted to electric field energy visible as voltage. If this happened, the reflected wave could be better described as an electric "jump", similar to a hydraulic jump found in open channel flow of liquids, where kinetic energy is converted to potential energy.

There do seem to be some similarities, though there is likely trouble if the analogy is carried to far.

> This idea of an electric "jump" requires not a reflection occuring without a discontinuity, but a moving wave front that absorbs the traveling wave, bringing it to a stop (in this case).

The current has stoppped, but has the "wave"?

Vf, Vr, If, Ir, Pf, Pr are still computable using the normal formulae.

...Keith

1845. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 21:41:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Es5pj.5545$so6.3455@newssvr19.news.prodigy.net>
Source record: 28517

Suzy wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>> I will go out on a limb and assert that light
>> waves and RF waves are both electromagnetic
>> waves with differing wavelengths. :-)
>
> A limb? Even I know that!

Thus the smiley face. :-)
--
73, Cecil http://www.w5dxp.com

1846. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 21:46:44 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo2ocd$5l2$1@aioe.org>
Source record: 28518

art wrote:

> ...
> To have a mind set around liquids and solids prevent true
> understanding
> of the elements and their magnetic fields which is the basis of all
> the universe. If one thinks of H2O as being elements with a
> electrical
> field where the energy contained in that field determines the density
> of like particles.
> One way of looking at it is the transformation from ice to a gas with
> each
> transformation being ruled by the change in energy (latent energy)
> One can simulate this action between a solid and a liquid by filling a
> vessel with fine particles that is so dense that one cannot poke a
> finger into it. When a gas (potentialenergy) is injected (now
> kinetic)
> into the bottom of the vessel the particles become liquid in form
> such
> that one can stir the contents in cluster form plus a pressure wave
> in advance. Is it not a coincidence that 95% of elements are
> diamagnetic
> where the difference between that and paramagnetic is very small
> and reflected in field strength or potential energy?

Frankly Art, until we move a bit further forward--I am very open to the arguments/ideas/text you contribute.

My mother has always said, "It is better to listen than to think you understand [know] it all." And, her advise has served me well in life, so well, I have never been able to dismiss it.

Regards,
JS

1847. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 21:48:52 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo2ogc$5l2$2@aioe.org>
Source record: 28519

Cecil Moore wrote:
> Suzy wrote:
>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>>> I will go out on a limb and assert that light
>>> waves and RF waves are both electromagnetic
>>> waves with differing wavelengths. :-)
>>
>> A limb? Even I know that!
>
> Thus the smiley face. :-)

Yes, let's not forget that! :-) <LOL!>

A gentleman never would ... :-D

Warm regards,
JS

1848. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 22:00:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13q9pvvmb2dipb9@corp.supernews.com>
Source record: 28520

AI4QJ wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13q89hvg3g8af2a@corp.supernews.com...
>>
>> AI4QJ wrote:
>>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>>> news:jmQoj.1450$R84.898@newssvr25.news.prodigy.net...
>>>> pdrahn@coinet.com wrote:
>>>>> Cecil Moore <nos...@w5dxp.com> wrote:
>>>>>> Quoting "Alpha and Omega", by Seife,
>>>>>> "Empty space is an incredibly complex substance, ...
>>>>> Are you saying space is a fluid?
>>>> Maybe "an incredibly complex substance"
>>>> exhibits some characteristics of a fluid?
>>> I should say "characteristic" impedance is 377 Ohms. It also has a
>>> permitivity and permeability of 1 ;-)
>> I'm sure you mean relative permittivity and relative permeability.
>
> No, this is not correct. The permitivities and permeabilities of all
> materials are relative to free space. Free space is assumed to be 1 and the
> other values are relative to it.
>
>> The characteristic impedance is the square root of permeability divided
>> by permittivity, so if both are one, the characteristic impedance would
>> have to be one.
>
> No, this is not correct.

Wow. Sometimes even this newsgroup surprises me.

Roy Lewallen, W7EL

1849. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 22:16:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <6mq9q3pepssf7abb1d4qd39siu6pojj1u7@4ax.com>
Source record: 28521

On Sat, 02 Feb 2008 14:00:30 -0800, Roy Lewallen <w7el@eznec.com>
wrote:

>> No, this is not correct.
"If again it was not well cut, he disabled my judgment.
This is call'd the Reply Churlish."

>> No, this is not correct.
"If again it was not well cut, he would answer I spake not true.
This is call'd the Reproof Valiant."

>Wow. Sometimes even this newsgroup surprises me.

A Liberal Education gives one perspective.

73's
Richard Clark, KB7QHC

1850. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 22:56:45 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <dd501b38-1e09-4056-bfeb-16750b01b85d@d21g2000prf.googlegroups.com>
Source record: 28522

On Feb 2, 2:00 pm, Roy Lewallen <w...@eznec.com> wrote:
> AI4QJ wrote:
> > "Roy Lewallen" <w...@eznec.com> wrote in message
> >news:13q89hvg3g8af2a@corp.supernews.com...
>
> >> AI4QJ wrote:
> >>> "Cecil Moore" <nos...@w5dxp.com> wrote in message
> >>>news:jmQoj.1450$R84.898@newssvr25.news.prodigy.net...
> >>>> pdr...@coinet.com wrote:
> >>>>> Cecil Moore <nos...@w5dxp.com> wrote:
> >>>>>> Quoting "Alpha and Omega", by Seife,
> >>>>>> "Empty space is an incredibly complex substance, ...
> >>>>> Are you saying space is a fluid?
> >>>> Maybe "an incredibly complex substance"
> >>>> exhibits some characteristics of a fluid?
> >>> I should say "characteristic" impedance is 377 Ohms. It also has a
> >>> permitivity and permeability of 1 ;-)
> >> I'm sure you mean relative permittivity and relative permeability.
>
> > No, this is not correct. The permitivities and permeabilities of all
> > materials are relative to free space. Free space is assumed to be 1 and the
> > other values are relative to it.
>
> >> The characteristic impedance is the square root of permeability divided
> >> by permittivity, so if both are one, the characteristic impedance would
> >> have to be one.
>
> > No, this is not correct.
>
> Wow. Sometimes even this newsgroup surprises me.
>
> Roy Lewallen, W7EL

Since this thread started on the premise that a photon is a particle,
which it clearly is not, what did you expect?

Cheers,
Tom

1851. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 23:03:26 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13q9tlocpnhlea6@corp.supernews.com>
Source record: 28523

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:lmb9q35ug49o97kpfdoepbhudopekji24t@4ax.com...
> On Sat, 2 Feb 2008 12:10:10 -0500, "Ralph Mowery"
> <rmowery28146@earthlink.net> wrote:
>
>>One minor thing is the meter movement on those meters are sluggish so it
>>takes a slow adjustment of amplifiers to get them to the max output.
>
> Hi Ralph,
>
> The meter needle probably has an aluminum vane in the magnetic field
> that is used as a dampener through eddy current induction.
>
> As a general consideration for fine meter movements, and to prevent
> their being damaged while being transported; some are equipped with
> shorting bars (or switches) across the meter terminals. This is more
> commonly encountered with bridge instruments.
>
> This can be simple observed by rotating the meter movement quickly and
> noting the deflection of the needle on the scale through inertia. An
> undampened meter can be deflected by vigorous movement up to half
> scale (possibly more), where a dampened meter would deflect barely a
> tenth.
>
> You got a bargain beyond dollars in your purchase.
>
> 73's
> Richard Clark, KB7QHC

Yes, I did get a great bargain. The meter came with a spring type wire
across the meter to short it out. I know this helps protect the meter
movement. Just have to remember to take it out when I want to use the
meter. Some of the old analog VOMs had an off position that did the same
thing.

Some of the Bird Hammate wattmeters had the very slow movements and Bird
would change them out for you.

1852. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 23:25:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <JZ6pj.6930$Rg1.927@nlpi068.nbdc.sbc.com>
Source record: 28524

K7ITM wrote:
> Since this thread started on the premise that a photon is a particle,
> which it clearly is not, what did you expect?

A photon is not a particle???? Do you have a reference?
--
73, Cecil http://www.w5dxp.com

1853. Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 23:28:57 UTC
From: "Francesco L." <franlanc@NOSPAMtin.it>
Message-ID: <60kcjaF1qrbfeU1@mid.individual.net>
Source record: 28525

I'm assembling a switch box for a 2 element vertical phased array. My idea is to create a system able to generate two alternate (and switchable) cardioids using a delay line (90°, 1/4 wavelength) and a two ways, two position relay in order to cover with an agle of 120° degrees one direction (e.g. North) or the other. As you all know, if two elements are fed in perfect phase the radiation pattern obtained is called broadside. This is exactly what I want to obtain introducing a second relay in order to get a third direction. At this point my question is: should I put a 10 w 100 ohm resistance (non inductive) between the two antennas (it's called Wilkinson power divider or power splitter) or the system works perfectly that way? There are two different school of thought: the first consider the wilkinson a must, since it lowers the swr and keeps it under control, the second school thinks it burns useful power and does not transfer all power.
So what's your point of view?
Thanks a lot in advance for your contribute
Francesco ik8vwa

```
--
E il marconista sulla sua torre,
le lunghe dita celesti nell'aria,
riceveva messaggi d'auguri
per questa crociera straordinaria.
E trasmetteva saluti e speranze
in quasi tutte le lingue del mondo,
comunicava tra Vienna e Chicago
in poco meno di un secondo.
```

E la ragazza di prima classe, innamorata del proprio cappello,
quando la sera lo vide ballare lo trov° subito molto bello.
Forse per via di quegli occhi di ghiaccio cos° difficili da evitare,
pens° "Magari con un p° di coraggio, prima dell'arrivo mi far°
baciare".

```
Francesco DeGregori
```

1854. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 23:38:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13q9vndhssnui9d@corp.supernews.com>
Source record: 28527

Richard Clark wrote:
>
> A Liberal Education gives one perspective.
>
I'll have to take your word for that.

Roy Lewallen, W7EL

1855. Re: Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 23:38:40 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <21fe948f-6e33-4bfa-85c6-fb5b84ad3e1f@e23g2000prf.googlegroups.com>
Source record: 28526

On Feb 2, 3:28 pm, "Francesco L." <franl...@NOSPAMtin.it> wrote:
> I'm assembling a switch box for a 2 element vertical phased array. My idea
> is to create a system able to generate two alternate (and switchable)
> cardioids using a delay line (90°, 1/4 wavelength) and a two ways, two
> position relay in order to cover with an agle of 120° degrees one direction
> (e.g. North) or the other. As you all know, if two elements are fed in
> perfect phase the radiation pattern obtained is called broadside. This is
> exactly what I want to obtain introducing a second relay in order to get a
> third direction. At this point my question is: should I put a 10 w 100 ohm
> resistance (non inductive) between the two antennas (it's called Wilkinson
> power divider or power splitter) or the system works perfectly that way?
> There are two different school of thought: the first consider the wilkinson
> a must, since it lowers the swr and keeps it under control, the second
> school thinks it burns useful power and does not transfer all power.
> So what's your point of view?
> Thanks a lot in advance for your contribute
> Francesco ik8vwa
>
> --
> E il marconista sulla sua torre,
> le lunghe dita celesti nell'aria,
> riceveva messaggi d'auguri
> per questa crociera straordinaria.
> E trasmetteva saluti e speranze
> in quasi tutte le lingue del mondo,
> comunicava tra Vienna e Chicago
> in poco meno di un secondo.
>
> E la ragazza di prima classe, innamorata del proprio cappello,
> quando la sera lo vide ballare lo trovò subito molto bello.
> Forse per via di quegli occhi di ghiaccio così difficili da evitare,
> pensò "Magari con un pò di coraggio, prima dell'arrivo mi farò
> baciare".
>
> Francesco DeGregori

If the loads are equal and they are fed through equal lengths of line,
then a resistor between them (I assume you mean at the transmitter end
of the feed lines) will never dissipate any power, since it has equal
voltage at each end.

A Wilkinson splitter (or combiner) is used to provide isolation
between the loads, so that if one load is disconnected, the other load
still receives the same power. As a combiner, it isolates the sources
so that power from one source doesn't get into the other source; this

is very useful for combining generator outputs for intermod
testing...but it does depend on proper loading of the output port, and
it's only good at or near the design frequency.

Cheers,
Tom

1856. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 23:40:13 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a4ff5d$0$22870$4c368faf@roadrunner.com>
Source record: 28528

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:6mq9q3pepssf7abb1d4qd39siu6pojj1u7@4ax.com...
> On Sat, 02 Feb 2008 14:00:30 -0800, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>>> No, this is not correct.
> "If again it was not well cut, he disabled my judgment.
> This is call'd the Reply Churlish."
>
>>> No, this is not correct.
> "If again it was not well cut, he would answer I spake not true.
> This is call'd the Reproof Valiant."
>
>>Wow. Sometimes even this newsgroup surprises me.
>
> A Liberal Education gives one perspective.
>
> 73's
> Richard Clark, KB7QHC

Richard, what is the characteristic impedance of free space? There is only one answer, in Ohms. Since you are qualified to rise above the technical issues comment on this discussion, surely you can provide the correct answer. However, I was rather shocked that you may have seemed to agree with Roy that is was, um, 1 ohm??? Please Lord don't let it be true. Your groupies will once again be sorely disappointed.

Hint: it is greater than 1 and less than 400 ohms.

AI4QJ

1857. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 23:43:03 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a50006$0$22792$4c368faf@roadrunner.com>
Source record: 28529

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:JZ6pj.6930$Rg1.927@nlpi068.nbdc.sbc.com...
> K7ITM wrote:
>> Since this thread started on the premise that a photon is a particle,
>> which it clearly is not, what did you expect?
>
> A photon is not a particle???? Do you have a reference?

While you're at K7ITM, please give me your reference that the characteristic impedance of free space is, um, 1 Ohm as you stated in a preceding post.

Now a photon is not a particle? I would be interested in your description of the mechanism of the photoelectric effect.

AI4QJ

1858. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 23:45:47 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a500ab$0$22835$4c368faf@roadrunner.com>
Source record: 28530

"Wimpie" <wimtel@tetech.nl> wrote in message
news:799e7581-aa0b-499f-bf92-4eb2b1b660de@e6g2000prf.googlegroups.com...
> On 1 feb, 20:43, Cecil Moore <nos...@w5dxp.com> wrote:
>> An airplane (particle) traveling at the speed of sound
>> causes shock waves in the air which, if passed through
>> double slits, would no doubt cause interference.
>>
>> How about: A photon (particle) traveling at the speed
>> of light causes shock waves in the aether which, when
>> passed through double slits, causes interference?
>>
>> Impossible for empty space - but we now know that space
>> is not empty. :-) Quoting "Alpha and Omega", by Seife,
>> "Empty space is an incredibly complex substance, and
>> scientists are just beginning to understand its properties."
>> --
>> 73, Cecil http://www.w5dxp.com
>
> Hello Cecil,
>
> I don't believe you can compare the two phenomena.
>
> The photons are created because of an accelerating charge (so the
> photon is the wave itself, not the source that created the wave).

Does the wave have energy?

Hint: The correct answer will tell you if the photon has mass.

AI4QJ

1859. Re: Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-02 23:47:43 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qa090j024inc4@corp.supernews.com>
Source record: 28531

I highly recommend reading the "Phased Array Techniqes" part of Chapter 8 of any edition of the _ARRL Antenna Book_ for about the past 15 or 20 years. It was first written not long after Dana Atchley popularized the use of the Wilkinson Divider for feeding phased arrays (and the error of which he later saw), so it contained quite a bit of detail about why that's a bad idea. When I re-wrote the section for the recent 21st Edition, I reduced the amount of material regarding the Wilkinson divider, since I thought it had finally faded away. I'm disappointed to hear that there's still a "school of thought" which regards it as a viable feed system after all these years.

If you have the 21st Edition, you'll find the complete text of the earlier material on the included CD. It contains more detail about why the Wilkinson divider isn't appropriate for this application.

Devoldere's _Low Band DXing_ also contains a lot of good information about phased array feed systems.

Roy Lewallen, W7EL

Francesco L. wrote:
> I'm assembling a switch box for a 2 element vertical phased array. My idea
> is to create a system able to generate two alternate (and switchable)
> cardioids using a delay line (90ï¿½, 1/4 wavelength) and a two ways, two
> position relay in order to cover with an agle of 120ï¿½ degrees one direction
> (e.g. North) or the other. As you all know, if two elements are fed in
> perfect phase the radiation pattern obtained is called broadside. This is
> exactly what I want to obtain introducing a second relay in order to get a
> third direction. At this point my question is: should I put a 10 w 100 ohm
> resistance (non inductive) between the two antennas (it's called Wilkinson
> power divider or power splitter) or the system works perfectly that way?
> There are two different school of thought: the first consider the wilkinson
> a must, since it lowers the swr and keeps it under control, the second
> school thinks it burns useful power and does not transfer all power.
> So what's your point of view?
> Thanks a lot in advance for your contribute
> Francesco ik8vwa
>

1860. Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 00:11:53 UTC
From: Suzy <not@valid>
Message-ID: <47a506cc$1@dnews.tpgi.com.au>
Source record: 28532

Matter of interest, isn't Bird Corp now run by a lady (or at least was when
I bought my 43 in the seventies)?

1861. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 01:14:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qa5bbahiur7f9@corp.supernews.com>
Source record: 28533

Suzy wrote:
> Matter of interest, isn't Bird Corp now run by a lady (or at least was when
> I bought my 43 in the seventies)?

Don't know about the seventies, but as of July 2007 the President and CEO was one Mark Johnson, picture at http://www.bird-technologies.com/news/e-award.htm. Seems to be of the male persuasion, sorry.

Roy Lewallen, W7EL

1862. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 01:15:44 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo34k8bkh1@aioe.org>
Source record: 28534

Richard Clark wrote:

> ...
> A Liberal Education gives one perspective.
>
> 73's
> Richard Clark, KB7QHC

ABSOLUTELY! Having spent a lifetime in the sciences, those following
Shakespeare have always puzzled me ... <grin>

Indeed, leaves me feeling want to "speak the language" they are ... NOT!

Regards,
JS

1863. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 01:17:23 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo34nbbkh2@aioe.org>
Source record: 28535

K7ITM wrote:

> ...
> Since this thread started on the premise that a photon is a particle,
> which it clearly is not, what did you expect?
>
> Cheers,
> Tom

Frankly, that statement stuns me! (and, maybe I have missed something)

Please explain, what is a photon?

Regards,
JS

1864. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 01:18:41 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo34ppbkh3@aioe.org>
Source record: 28536

Suzy wrote:
> Matter of interest, isn't Bird Corp now run by a lady (or at least was when
> I bought my 43 in the seventies)?
>
>

Suzy, I think I luv ya'. (hey, you ain't a "poser", are ya'?) <grin>

Regards,
JS

1865. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 01:21:12 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo34ufbkh4@aioe.org>
Source record: 28537

John Smith wrote:

> ...
> Suzy, I think I luv ya'. (hey, you ain't a "poser", are ya'?) <grin>
>
> Regards,
> JS

Where "poser" ="

male pretending female
--or--
female pretending male
<ROFLOL!>

Regards,
JS

1866. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 02:47:07 UTC
From: Peter <colleenpeter@westnet.com.au>
Message-ID: <13qaap99t9rr743@corp.supernews.com>
Source record: 28538

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:Co0pj.1811$xq2.621@newssvr21.news.prodigy.net...
> Peter wrote:
>> If the photon creates a shock wave in the aether then it must be
>> imparting some energy into the aether and the photon should slow down
>> over time.
>
> Photons cannot slow down but you could be right about
> them losing energy over time. Lengthening the wavelength
> of a photon is certainly a loss of energy. That could
> explain the red-shift of light from distant galaxies.
>
> "Optics", by Hecht, 4th edition, Page 52:
> "Photons are stable, chargeless, massless elementary
> particles that *exist only at the speed of light*."
> --
> 73, Cecil http://www.w5dxp.com

This is a humbling discussion!

Hadn't thought about it in terms of increasing the wave-length, but you are now messing with some of my basic assumptions about the universe with the obvious implication being its size and age. We might be able resurrects the steady state model!

Question: If photons are stable, chargeless, massless elementary particles, how do they react with anything?

Cheers

Peter VK6YSF

http://members.optushome.com.au/vk6ysf/vk6ysf/main.htm

1867. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 03:05:36 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <4capj.1619$R84.816@newssvr25.news.prodigy.net>
Source record: 28539

John Smith wrote:
> John Smith wrote:
>
>> ... Suzy, I think I luv ya'. (hey, you ain't a "poser", are ya'?)
>> <grin>
>>
>> Regards,
>> JS
>
> Where "poser" ="
>
> male pretending female
> --or--
> female pretending male
> <ROFLOL!>
>
> Regards,
> JS

John, you're living proof, that, in some people, evolution is
a failure. Of course, you don't believe in evolution, which just
confirms the truth of the above statement. The question is, though:
Why do you bother to keep posting to a newsgroup where you are
universally loathed?

Tom Donaly, KA6RUH

1868. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 03:09:46 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <_fapj.1620$R84.1472@newssvr25.news.prodigy.net>
Source record: 28540

John Smith wrote:
> Richard Clark wrote:
>
>> ...
>> A Liberal Education gives one perspective.
>>
>> 73's
>> Richard Clark, KB7QHC
>
> ABSOLUTELY! Having spent a lifetime in the sciences, those following
> Shakespeare have always puzzled me ... <grin>
>
> Indeed, leaves me feeling want to "speak the language" they are ... NOT!
>
> Regards,
> JS

You mean the "creation sciences?" Having your mind programmed with
fairy tales is no education at all.

Tom Donaly, KA6RUH

1869. Re: G5RV antenna feed line balance.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 04:11:39 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <47a53ef4@clear.net.nz>
Source record: 28541

pa1are wrote:
> Hi Cliff,
>
> It is often assumed that imbalance is caused by either sloping or the
> proximity of objects to one of the legs of a dipole. In my experience it
> is far more likely that imbalance is a result of some imbalance in the
> tuner or from a feedline that is not running perpendicular to the
> antenna over a big enough length.
>
> I normally use a 2 coil Z-match that works quite well, but I have
> experimented with the single coil design and also noticed some imbalance.
>
> Since the output coil is floating you would not expect any imbalance,
> but the parasitic capacitance between primary and output coil is the
> culprit here. That is why the effect is more pronounced at higher
> frequencies and relatively high differential impedances.
>
> In the high frequency part of the two coil Z-match the centre of the
> primary circuit is connected to ground, so the parasitic capacitance is
> far less likely to cause imbalance.
>
> 73, Arend
>
> cliff wright wrote:
>
>> Hi!
>> Anyone had any experience with a G5RV which is NOT symetrical relative
>> to ground?
>> Mine is on a sloping section and varies from 3.2 metres AGL at the
>> western end to 7.5 metres at the Eastern. Although I get a reasonable
>> match with a single coil Z match tuner I have reason to believe that
>> there is quite a large electrical imbalance in the system, notably in
>> the poor rejection of local noise signals.
>> I came across a Z match circuit on optushome.com.au by VK3YSF which
>> has a 25 pF variable capacitor from one side of the open wire feeder
>> to ground. However the article gives no further information about this
>> component except to call it a "Balance" capacitor.
>> Has anyone else come across this problem? If so was it a question of
>> "cut and try" or is there a proper technical approach one can use?
>> Hoping for some "feedback".
>> 73"s Cliff Wright ZL1BDA
Hi Arend OM.
Thanks for your remarks. I had forgotten that the single coil Z match
could suffer from that problem, but of course you are quite correct.

Perhaps I might go back to the old 2 coil design yet!
All these queries are based on a very bad QRN problem my neigbouring Ham and I have had from power lines, even though our local lines are underground! So anything that keeps the sytem balanced is a potential help in hearing weak signals.
BTW I did try a 50 pF variable from feeder to ground as shown in the article I mentioned but it had little or no effect.
73"s Cliff Wright ZL1BDA

1870. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 05:39:59 UTC
From: Suzy <not@valid>
Message-ID: <47a553b8$1@dnews.tpgi.com.au>
Source record: 28542

"Tom Donaly" <dtdonaly@sbcglobal.net> wrote in message
news:4capj.1619$R84.816@newssvr25.news.prodigy.net...
> John Smith wrote:
>> John Smith wrote:
>>
>>> ... Suzy, I think I luv ya'. (hey, you ain't a "poser", are ya'?)
>>> <grin>
>>>
>>> Regards,
>>> JS
>>
>> Where "poser" ="
>>
>> male pretending female
>> --or--
>> female pretending male
>> <ROFLOL!>
>>
>> Regards,
>> JS
>
> John, you're living proof, that, in some people, evolution is
> a failure. Of course, you don't believe in evolution, which just
> confirms the truth of the above statement. The question is, though:
> Why do you bother to keep posting to a newsgroup where you are universally
> loathed?
>
> Tom Donaly, KA6RUH

Why on earth did that seemingly harmless post evoke such a hostile reaction?

1871. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 05:59:15 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo3l7u$t2q$1@aioe.org>
Source record: 28543

Tom Donaly wrote:

> ...
> Tom Donaly, KA6RUH

Tom:

It is, indeed, a sorry state of affairs ... :-)

I consider myself but a step above yourself, and knowing you evolved
from the apes is CERTAINLY no comfort ... I can't begin to describe the
grief in such knowledge ... :-(

But then, you already knew that ... and, if not, you at least suspected.

JS

1872. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 06:01:30 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo3lc5$t2q$2@aioe.org>
Source record: 28544

Suzy wrote:

> ...
> Why on earth did that seemingly harmless post evoke such a hostile reaction?
>
>

Who knows, ya' still look good to me! <wink>

And, ya' know, a good sense of humor goes a long way ... :-)

Thanks Suzy!

Warm regards,
JS

1873. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 06:07:02 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fo3lmhumn1@aioe.org>
Source record: 28545

Tom Donaly wrote:

> ...
> You mean the "creation sciences?" Having your mind programmed with
> fairy tales is no education at all.
>
> Tom Donaly, KA6RUH

Creation sciences? H*ll man, you know that takes a belief system surpassing a belief it God! Indeed, if you can believe that, life came from rock, let me tell you about the bridge I got for sale! <GRINNING-BEYOND-BELIEF-I-HAVE-FOUND-SUCH-AN-EXTRAORDINARY-IDIOT!>

But, heck man, you already knew that--and, if not, everyone else did!

:-D

Regards to the IDIOT,
JS

1874. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 06:26:39 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a55e9f$0$22829$4c368faf@roadrunner.com>
Source record: 28546

"Suzy" <not@valid> wrote in message news:47a553b8$1@dnews.tpgi.com.au...
>
> "Tom Donaly" <dtdonaly@sbcglobal.net> wrote in message
> news:4capj.1619$R84.816@newssvr25.news.prodigy.net...
>> John Smith wrote:
>>> John Smith wrote:
>>>
>>>> ... Suzy, I think I luv ya'. (hey, you ain't a "poser", are ya'?)
>>>> <grin>
>>>>
>>>> Regards,
>>>> JS
>>>
>>> Where "poser" ="
>>>
>>> male pretending female
>>> --or--
>>> female pretending male
>>> <ROFLOL!>
>>>
>>> Regards,
>>> JS
>>
>> John, you're living proof, that, in some people, evolution is
>> a failure. Of course, you don't believe in evolution, which just
>> confirms the truth of the above statement. The question is, though:
>> Why do you bother to keep posting to a newsgroup where you are
>> universally loathed?
>>
>> Tom Donaly, KA6RUH
>
> Why on earth did that seemingly harmless post evoke such a hostile
> reaction?

"Suzy",

I have learned through experience on this ng that people prefer that you post with your true call sign, name or email address. So I decided to do just that. Your anonymity generates this kind of response. I have already plonked the above two posters, both anonymous "John" and KA6RUH for reasons many consider obvious. Having said that, they are not generally offensive people and nobody will bother you here. People may contact you offline but it is OK and they will stay within the technical arena. I need not mention that the technical content of their posts is non-existent as usual. And I have had no problem with spam.

73 de AI4QJ

1875. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 06:34:37 UTC
From: Suzy <not@valid>
Message-ID: <47a5608c@dnews.tpgi.com.au>
Source record: 28547

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a55e9f$0$22829$4c368faf@roadrunner.com...
>
> "Suzy" <not@valid> wrote in message news:47a553b8$1@dnews.tpgi.com.au...
>>
>> "Tom Donaly" <dtdonaly@sbcglobal.net> wrote in message
>> news:4capj.1619$R84.816@newssvr25.news.prodigy.net...
>>> John Smith wrote:
>>>> John Smith wrote:
>>>>
>>>>> ... Suzy, I think I luv ya'. (hey, you ain't a "poser", are ya'?)
>>>>> <grin>
>>>>>
>>>>> Regards,
>>>>> JS
>>>>
>>>> Where "poser" ="
>>>>
>>>> male pretending female
>>>> --or--
>>>> female pretending male
>>>> <ROFLOL!>
>>>>
>>>> Regards,
>>>> JS
>>>
>>> John, you're living proof, that, in some people, evolution is
>>> a failure. Of course, you don't believe in evolution, which just
>>> confirms the truth of the above statement. The question is, though:
>>> Why do you bother to keep posting to a newsgroup where you are
>>> universally loathed?
>>>
>>> Tom Donaly, KA6RUH
>>
>> Why on earth did that seemingly harmless post evoke such a hostile
>> reaction?
>
> "Suzy",
>
> I have learned through experience on this ng that people prefer that you
> post with your true call sign, name or email address. So I decided to do
> just that. Your anonymity generates this kind of response. I have already
> plonked the above two posters, both anonymous "John" and KA6RUH for
> reasons many consider obvious. Having said that, they are not generally

> offensive people and nobody will bother you here. People may contact you
> offline but it is OK and they will stay within the technical arena. I need
> not mention that the technical content of their posts is non-existent as
> usual. And I have had no problem with spam.
>
> 73 de AI4QJ
>Thanks for reply. I was not referring to me but to John, whose post was
>perfectly harmless

1876. Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 06:37:18 UTC
From: Suzy <not@valid>
Message-ID: <47a5612e@dnews.tpgi.com.au>
Source record: 28548

Looking for a website that gives comparative performance of diodes (max frequency for UHF use)

1877. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 06:53:21 UTC
From: Peter <colleenpeter@westnet.com.au>
Message-ID: <13qap71p3fjgb87@corp.supernews.com>
Source record: 28549

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:Co0pj.1811$xq2.621@newssvr21.news.prodigy.net...
> Peter wrote:
>> If the photon creates a shock wave in the aether then it must be
>> imparting some energy into the aether and the photon should slow down
>> over time.
>
> Photons cannot slow down but you could be right about
> them losing energy over time. Lengthening the wavelength
> of a photon is certainly a loss of energy. That could
> explain the red-shift of light from distant galaxies.
>
> "Optics", by Hecht, 4th edition, Page 52:
> "Photons are stable, chargeless, massless elementary
> particles that *exist only at the speed of light*."
> --
> 73, Cecil http://www.w5dxp.com

Follow up.

If the energy is lost over time (Not including the effect of acceleration)
by lengthening of the wavelength and by definition lowering the frequency I
would have thought this would be one the easiest theories to test. And as
far as I know there is no observations of radio signals changing frequency
due to distance by even the slightest degree.

I was thinking about this over lunch. Thanks Cecil!

--
Peter VK6YSF

http://members.optushome.com.au/vk6ysf/vk6ysf/main.htm

1878. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 07:06:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <cdpaq31iegt5hsfc18t59jji0ecokqagmd@4ax.com>
Source record: 28550

On Sat, 2 Feb 2008 18:40:13 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>Your groupies will once again be sorely disappointed.

Thank heavens for that! You guys would be indistinguishable from
museum pieces if you didn't get dusted off once in a while.

73's
Richard Clark, KB7QHC

1879. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 07:30:46 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a56da6$0$22794$4c368faf@roadrunner.com>
Source record: 28401

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:cdpaq31iegt5hsfc18t59jji0ecokqagmd@4ax.com...
> On Sat, 2 Feb 2008 18:40:13 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>Your groupies will once again be sorely disappointed.
>
> Thank heavens for that! You guys would be indistinguishable from
> museum pieces if you didn't get dusted off once in a while.
>
> 73's
> Richard Clark, KB7QHC

Yes, but what is the characteristic impedance of free space?

1880. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 07:34:15 UTC
From: dplatt@radagast.org
Message-ID: <nc7g75-35c.ln1@radagast.org>
Source record: 28402

>Looking for a website that gives comparative performance of diodes (max
>frequency for UHF use)

I don't know of a broad-spectrum site (i.e. one which is multivendor)
other than general datasheet-search sites such as datasheetarchive.com

One good place to start looking would be at www.avagotech.com - I
believe that Avago Technologies is the current inheritor of the line
of RF Schottky diodes originally made by HP and then by Agilent. Some
of these parts are useful up to quite a few GHz.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1881. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 08:12:27 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <7I5kq3CrdXpHFAIN@ifwtech.co.uk>
Source record: 28403

Richard Clark wrote:
>On Sat, 2 Feb 2008 08:45:27 +0000, Ian White GM3SEK
><gm3sek@ifwtech.co.uk> wrote:
>
>>As with the AN-URM120, the Bird design adjusts the coupling so that all
>>detector diodes in all the inserts are operating at the same RF levels,
>>so they can all share the same meter scales. The difference is that
>>instead of physically moving the same insert inward or outward to adjust
>>the coupling, Bird do it by selling us more slugs :-)
>
>Hi All (Congratulations Ralph),
>
>There are more differences than that. The Bird suffers more from
>parts erosion than the URM120 as the URM has bigger elements. With
>the bigger elements, the geometries are held to a tighter precision.
>
>It is the coupling link that moves in the URM, not the element. The
>link rides on a cam that is stepped for the 4 different power ranges
>used. If you remove the knob from the slug, and then the cover plate,
>you have access to an adjustment screw that provides the fine control
>over the depth of penetration. The smaller PDF at the boat anchors
>web page is the more useful of the two offered.
>
>I have calibrated a pile of both the Birds and the URMs, and the URMs
>always required less maintenance, and rarely needed adjustment. The
>Birds, on the other hand, always arrived out of calibration.
>
>One source of error in the VHF/UHF region was that the rubber gasket
>inside the N connector (and for that matter, for any N connector) will
>accumulate thread debris. It should be used as a visual correlative
>to the amount of similar debris bridging the Teflon insulator. This
>debris can whack out these meters and degrade connections.

Thanks for the clarification, Richard.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

1882. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 08:49:19 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <77taq3didubpces2k92t9n4n218ptv8h3b@4ax.com>
Source record: 28404

On Sun, 3 Feb 2008 02:30:46 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>news:cdpaq31iegt5hsfc18t59jji0ecokqagmd@4ax.com...
>> On Sat, 2 Feb 2008 18:40:13 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>>Your groupies will once again be sorely disappointed.
>>
>> Thank heavens for that! You guys would be indistinguishable from
>> museum pieces if you didn't get dusted off once in a while.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Yes, but what is the characteristic impedance of free space?

The value has been established; that I am sorely disappointing you has been established; and that I am content with those outcomes has been established. Any further interest for others is how long this groupie drama of betrayed faith will play out.

73's
Richard Clark, KB7QHC

1883. DAB antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 12:21:06 UTC
From: dido22 <nospam@nospam.hotmail.com>
Message-ID: <fo4bjv$5tj$1@aioe.org>
Source record: 28405

Hello

Can anyone advise please. I have a new DAB tuner which works fine except the digital signal is not very strong around here. I am getting some 'popping' sounds as a result. The Bit Error Rate is about 0.04, less than the critical 0.05, but not brilliant. The indoor ariel supplied is 6 inches long. I have tried moving the indoor aerial around within the range of its cable with no real improvement.

Is there anyway of improving reception without installing an external aerial?

Thanks

KK

1884. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 15:21:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <QZkpj.54115$Pv2.7745@newssvr23.news.prodigy.net>
Source record: 28406

Peter wrote:
> Question: If photons are stable, chargeless, massless elementary particles,
> how do they react with anything?

"Stable" doesn't mean they are inert. Photons are
emitted and absorbed all the time while interacting
with other particles. I believe Hecht means that
photons don't decay over time all by themselves
(but there is some debate on that subject).
--
73, Cecil http://www.w5dxp.com

1885. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 15:25:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <72lpj.54116$Pv2.7762@newssvr23.news.prodigy.net>
Source record: 28407

Peter wrote:
> And as
> far as I know there is no observations of radio signals changing frequency
> due to distance by even the slightest degree.

I think you will find many examples from radio astronomy
where radio signals are red-shifted just like light.
--
73, Cecil http://www.w5dxp.com

1886. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 16:22:56 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47a5ea61$0$1114$8046368a@newsreader.iphouse.net>
Source record: 28408

Richard Clark wrote:

> One source of error in the VHF/UHF region was that the rubber gasket
> inside the N connector (and for that matter, for any N connector) will
> accumulate thread debris. It should be used as a visual correlative
> to the amount of similar debris bridging the Teflon insulator. This
> debris can whack out these meters and degrade connections.
>
> 73's
> Richard Clark, KB7QHC

Thank you, Richard, for pointing that out. As Perfect Tommy (Jeff Goldblum) said in Buckaroo Bonzai, "If it was a snake, it would have bit me". I've noticed the residue before, but never thought about it. I'll pass that on to our local VHF and up club, The NLRS.

tom
K0TAR

1887. Re: 70cm reflectometer?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 16:25:05 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47a5eae1$0$1114$8046368a@newsreader.iphouse.net>
Source record: 28409

Richard Clark wrote:

> One source of error in the VHF/UHF region was that the rubber gasket
> inside the N connector (and for that matter, for any N connector) will
> accumulate thread debris. It should be used as a visual correlative
> to the amount of similar debris bridging the Teflon insulator. This
> debris can whack out these meters and degrade connections.
>
> 73's
> Richard Clark, KB7QHC

Oops, Jeff Goldblum was "New Jersey".

tom
K0TAR

1888. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 16:27:26 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <f40999bb-909f-48c9-97fc-8a7c6a805956@n20g2000hsh.googlegroups.com>
Source record: 28410

On Feb 2, 11:34 pm, dpl...@radagast.org (Dave Platt) wrote:
> >Looking for a website that gives comparative performance of diodes (max
> >frequency for UHF use)
>
> I don't know of a broad-spectrum site (i.e. one which is multivendor)
> other than general datasheet-search sites such as datasheetarchive.com
>
> One good place to start looking would be atwww.avagotech.com- I
> believe that Avago Technologies is the current inheritor of the line
> of RF Schottky diodes originally made by HP and then by Agilent. Some
> of these parts are useful up to quite a few GHz.
>
> --
> Dave Platt <dpl...@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

Yes, that is correct about Avago. I believe I've come across diodes
there rated for use up to 40GHz, maybe 65GHz.

Also, look at other web sites (of companies with "new" names also!)
NXP used to be Philips. They definitely have some good RF detector
diodes. A Google search on "RF detector diode" just now turned up
several interesting hits, including some for sale on ebay. I saw
Vishay listed as an RF detector diode supplier, too, and I wasn't
aware they were really into that area--looks like they acquired
Telefunken, for another name change! But I suppose Suzy is looking
for non-surface-mount parts (from postings in another thread), and
that likely will be a problem for any new stuff. Pretty much
everything now has gone to tiny surface mount packages. -- OK, I
have to take that back. The Vishay web site has a kind of neat
feature and lets you look by package type--click on the picture of the
package. And it's real pictures, not line drawings. They DO have
glass axial lead RF diodes.

Cheers,
Tom

1889. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 16:38:57 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <6ea38f42-c730-48e3-ad79-69e2cc7036f6@i12g2000prf.googlegroups.com>
Source record: 28411

On 3 feb, 00:45, "AI4QJ" <nos...@yahoo.com> wrote:
> "Wimpie" <wim...@tetech.nl> wrote in message
>
> news:799e7581-aa0b-499f-bf92-4eb2b1b660de@e6g2000prf.googlegroups.com...
>
>
>
> > On 1 feb, 20:43, Cecil Moore <nos...@w5dxp.com> wrote:
> >> An airplane (particle) traveling at the speed of sound
> >> causes shock waves in the air which, if passed through
> >> double slits, would no doubt cause interference.
>
> >> How about: A photon (particle) traveling at the speed
> >> of light causes shock waves in the aether which, when
> >> passed through double slits, causes interference?
>
> >> Impossible for empty space - but we now know that space
> >> is not empty. :-) Quoting "Alpha and Omega", by Seife,
> >> "Empty space is an incredibly complex substance, and
> >> scientists are just beginning to understand its properties."
> >> --
> >> 73, Cecil http://www.w5dxp.com
>
> > Hello Cecil,
>
> > I don't believe you can compare the two phenomena.
>
> > The photons are created because of an accelerating charge (so the
> > photon is the wave itself, not the source that created the wave).
>
> Does the wave have energy?
>
> Hint: The correct answer will tell you if the photon has mass.
>
> AI4QJ

Hello,

I am not a specialist in relativity. The EM shock wave generated by
the particle with rest mass (for example electron) entering a medium
with c < v(particle) contains energy, but as far as I know, the photon
has no rest mass, it carries momentum. It can therefore exert a force
on an object (radiation pressure in classic electromagnetic theory).

Best regards,

Wim
PA3DJS.

1890. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 17:08:06 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <9d1c0eac-b39d-486b-adaa-f1c44ef29e40@z17g2000hsg.googlegroups.com>
Source record: 28412

On 3 feb, 07:37, "Suzy" <not@valid> wrote:
> Looking for a website that gives comparative performance of diodes (max
> frequency for UHF use)

Hello Suzy,

The type of diode that will be best for your application depends on
the type of application.

For high level detectors (above several volts of RF input power), the
BAT62 is a good one up to some GHz. It has low capacitance (at Vj=0V)
and a reverse voltage of 40 V (fourty V). You cannot use it in low
noise mixers because of high intrinsic resistance.

Most of the HP or equivalent "hybrid" Shottky detector diodes (with
70V reverse rating) have far higher capacitance then the BAT62. Check
the datasheets, the 70V diodes are measured at Vj = -0.5V. At Vj=0V,
capacitance will be >> 1pF. For mixers, the best are the pure Shottky
rectifiers (that have a reverse voltage of less then 4..6V). For
Zero IF systems (Doppler radar, movement detection), other type of
shottky diodes are used (with low 1/f noise).

When you want to make a (calibrated) low level RF detector (for RF
levels < 10mV), you need to consider the so-called "video
resistance" (that is the differential resistance of the diode at 0V
bias). To get full benefit of a low level detector, the DC voltmeter
(or buffer amplifier) must have a Rin >> video resistance. Otherwise
you cannot convert the DC voltage back to an RF input voltage.

The video resistance varies from about 10 kOhm (special "zero bias"
detector diodes) to several Mohm (for high barrier mixer diodes). Main
advantage of zero bias detector circuit is that you do not need to
build a temperature compensation (for compensating the about 2mV/degr.
C).

For UHF mixer or low level detection I use BAT15 (Cj < 0.35pF at
Vj=0V).

Best regards,

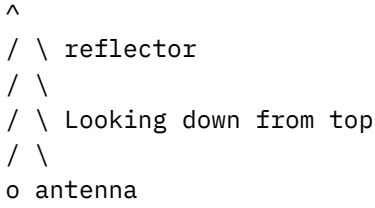
Wim
PA3DJS
www.tetech.nl

1891. Re: DAB antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 17:38:41 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <nsmdnV46xs3GYTjanZ2dneKdnZydnZ2d@bt.com>
Source record: 28413

"dido22" <nospam@nospam.hotmail.com> wrote in message
news:fo4bjv$5tj$1@aioe.org...
> Hello
>
> Can anyone advise please. I have a new DAB tuner which works fine except
> the
> digital signal is not very strong around here. I am getting some 'popping'
> sounds as a result. The Bit Error Rate is about 0.04, less than the
> critical
> 0.05, but not brilliant. The indoor ariel supplied is 6 inches long. I
> have
> tried moving the indoor aerial around within the range of its cable with
> no
> real improvement.
>
> Is there anyway of improving reception without installing an external
> aerial?
>
> Thanks
>
> KK
>

You could try sticking a bit of aluminium (aluminum) foil to the card from a cereal packet. Fold the cardboard to form a right angle and stand it with the folded edge vertical near to the antenna to form a reflector. Adjust for best signal strength. For a 6 inch antenna, the card only needs to be the size of an A4 sheet of paper, around 8 inches by 12 inches. Fold in half so that you have two surfaces at 90 degrees to each other, 8 inches by 6 inches.



If this doesn't work, you need a bigger antenna.

Mike G0ULI

1892. Re: Bird

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 17:48:19 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <D7npj.5589$Ch6.1311@newssvr11.news.prodigy.net>
Source record: 28414

```
Suzy wrote:
> "Tom Donaly" <dtdonaly@sbcglobal.net> wrote in message
> news:4capj.1619$R84.816@newssvr25.news.prodigy.net...
>> John Smith wrote:
>>> John Smith wrote:
>>>
>>>> ... Suzy, I think I luv ya'. (hey, you ain't a "poser", are ya'?)
>>>> <grin>
>>>>
>>>> Regards,
>>>> JS
>>> Where "poser" ="
>>>
>>> male pretending female
>>> --or--
>>> female pretending male
>>> <ROFLOL!>
>>>
>>> Regards,
>>> JS
>> John, you're living proof, that, in some people, evolution is
>> a failure. Of course, you don't believe in evolution, which just
>> confirms the truth of the above statement. The question is, though:
>> Why do you bother to keep posting to a newsgroup where you are universally
>> loathed?
>>
>> Tom Donaly, KA6RUH
>
> Why on earth did that seemingly harmless post evoke such a hostile reaction?
>
>

Because, in the U.S. at least, the motivation behind such posts is not
"harmless."
73,
Tom Donaly KA6RUH
```

1893. Re: Elizabeth is an amazing switch. I first met her as a dom, and the next time I saw her as a slave. In this episode she is a brutal Mistress, which she is by nature - starting early by controlling boyfriends in highschool she moved on and started domming

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 19:48:16 UTC
From: KC8QJP <kc8qjp@lycos.com>
Message-ID: <fo55qq$5cd$1@registered.motzarella.org>
Source record: 28415
Cross-posted to: soc.subculture.bondage-bdsm,rec.radio.amateur.antenna

<sandraaguinaldo12@gmail.com> wrote in message
news:8131b0fc-6d9f-4293-b3f3-381a5de19a85@i12g2000prf.googlegroups.com...
> Elizabeth is an amazing switch. I first met her as a dom, and the next
> time I saw her as a slave. In this episode she is a brutal Mistress,
> which she is by nature - starting early by controlling boyfriends in
> highschool she moved on and started domming real slaves. Her whole
> history is also included in the members area in an exclusive behind
> the scenes interview with her just log on to http://www.everydayslaves.com
>
>
THAT IS HOT!!!!!

--
Crisco Kathy

1894. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 20:24:17 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <Rpppj.5283$5K1.4495@newssvr12.news.prodigy.net>
Source record: 28416

John Smith wrote:
> Tom Donaly wrote:
>
>> ...
>> You mean the "creation sciences?" Having your mind programmed with
>> fairy tales is no education at all.
>>
>> Tom Donaly, KA6RUH
>
> Creation sciences? H*ll man, you know that takes a belief system
> surpassing a belief it God! Indeed, if you can believe that, life came
> from rock, let me tell you about the bridge I got for sale!
> <GRINNING-BEYOND-BELIEF-I-HAVE-FOUND-SUCH-AN-EXTRAORDINARY-IDIOT!>
>
> But, heck man, you already knew that--and, if not, everyone else did!
>
> :-D
>
> Regards to the IDIOT,
> JS

Q.E.D.

Tom Donaly, KA6RUH

1895. Re: Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 20:33:44 UTC
From: "Francesco L." <franlanc@NOSPAMtin.it>
Message-ID: <60mmmpF1rmr1sU1@mid.individual.net>
Source record: 28417

> If you have the 21st Edition, you'll find the complete text of the earlier
> material on the included CD. It contains more detail about why the
> Wilkinson divider isn't appropriate for this application.
>
> Devoldere's _Low Band DXing_ also contains a lot of good information about
> phased array feed systems.

Thanks a lot to both of you. I have the two books mentioned above and I did not suspect the cd rom contained all the former articles published. I did not use it since the programs on the cd did not install on my pc ;-) About the Low band dxing, it is very very complicate for a beginner like me and even if I wrote to the author in order to get more info, he never replied. So I'm gonna have a deep look at the ARRL cd and also trusting what you summarized! I've also found a leaflet (published online in pdf) by HyGain where they suggest different combinations of phased arrays which use their verticals and there are no schemes containing the resistor.
I asked since an Italian dxer (i4ewh) in its scheme considers this splitter absolutely necessary. I spoke with him and he told me the swr was greatly reduced by this solution. Anyway here is the link so you can have a look. It's a four element phased array:
http://i4ewh.altervista.org/ShortWaves/Verticali_file/Verticali.htm
Once again, I must repeat that low band dxing has no help for beginners and better and simpler schemes can be found on the simple "vertical antennas" by arrl and arrl antenna book. If you have any other site or web address where I can find more material, please tell me.
A last question to both of you: I would like to use this system (centered for the 20 meters band) also for 40 meters and 10 meters. Should an antenna tuner suffice?
Francesco ik8vwa

1896. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 21:54:47 UTC
From: Peter <colleenpeter@westnet.com.au>
Message-ID: <13qce119l4rd693@corp.supernews.com>
Source record: 28418

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:72lpj.54116$Pv2.7762@newssvr23.news.prodigy.net...
> Peter wrote:
>> And as far as I know there is no observations of radio signals changing
>> frequency due to distance by even the slightest degree.
>
> I think you will find many examples from radio astronomy
> where radio signals are red-shifted just like light.
> --
> 73, Cecil http://www.w5dxp.com

I understand red-shift in terms of astronomy, but you can never be sure of all the effect in that situation such as acceleration and gravity. I suggest that there is no observations of radio signals changing frequency due to distance under lab conditions, which I still believe would be a relatively easy test.
--
Peter VK6YSF

http://members.optushome.com.au/vk6ysf/vk6ysf/main.htm

1897. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 21:57:50 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a638df$0$4938$4c368faf@roadrunner.com>
Source record: 28419

"Wimpie" <wimtel@tetech.nl> wrote in message
news:6ea38f42-c730-48e3-ad79-69e2cc7036f6@i12g2000prf.googlegroups.com...
> On 3 feb, 00:45, "AI4QJ" <nos...@yahoo.com> wrote:
>> "Wimpie" <wim...@tetech.nl> wrote in message
>>
>> news:799e7581-aa0b-499f-bf92-4eb2b1b660de@e6g2000prf.googlegroups.com...
>>
>>
>>
>> > On 1 feb, 20:43, Cecil Moore <nos...@w5dxp.com> wrote:
>> >> An airplane (particle) traveling at the speed of sound
>> >> causes shock waves in the air which, if passed through
>> >> double slits, would no doubt cause interference.
>>
>> >> How about: A photon (particle) traveling at the speed
>> >> of light causes shock waves in the aether which, when
>> >> passed through double slits, causes interference?
>>
>> >> Impossible for empty space - but we now know that space
>> >> is not empty. :-) Quoting "Alpha and Omega", by Seife,
>> >> "Empty space is an incredibly complex substance, and
>> >> scientists are just beginning to understand its properties."
>> >> --
>> >> 73, Cecil http://www.w5dxp.com
>>
>> > Hello Cecil,
>>
>> > I don't believe you can compare the two phenomena.
>>
>> > The photons are created because of an accelerating charge (so the
>> > photon is the wave itself, not the source that created the wave).
>>
>> Does the wave have energy?
>>
>> Hint: The correct answer will tell you if the photon has mass.
>>
>> AI4QJ
>
> Hello,
>
> I am not a specialist in relativity. The EM shock wave generated by
> the particle with rest mass (for example electron) entering a medium
> with c < v(particle) contains energy, but as far as I know, the photon
> has no rest mass, it carries momentum. It can therefore exert a force

> on an object (radiation pressure in classic electromagnetic theory).
>

I agree with what you say above although I am not sure what an EM shock wave is. It is the terminology. If the electron(s) moving through a medium such as free space in a time varying field, then photons (radiation) is generated in accordance with Maxwell's laws. I assume you made a typo when you say c<v; you meant v<c.

73 AI4QJ

1898. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 22:00:34 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a63984$0$4964$4c368faf@roadrunner.com>
Source record: 28420

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:77taq3didubpces2k92t9n4n218ptv8h3b@4ax.com...
> On Sun, 3 Feb 2008 02:30:46 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>
>>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>news:cdpaq31iegt5hsfc18t59jji0ecokqagmd@4ax.com...
>>> On Sat, 2 Feb 2008 18:40:13 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>
>>>>Your groupies will once again be sorely disappointed.
>>>
>>> Thank heavens for that! You guys would be indistinguishable from
>>> museum pieces if you didn't get dusted off once in a while.
>>>
>>> 73's
>>> Richard Clark, KB7QHC
>>
>>Yes, but what is the characteristic impedance of free space?
>
> The value has been established; that I am sorely disappointing you has
> been established; and that I am content with those outcomes has been
> established. Any further interest for others is how long this groupie
> drama of betrayed faith will play out.

So you now agree that I was correct in saying that Zo free space = 377 Ohms
and Roy was wrong in saying it was = 1 Ohm? You still have a chance to
recover your cred, bro.

73 de AI4QJ

1899. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 22:47:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <11hcq3hue7ge5gerthm8pttcu7s525fsqf@4ax.com>
Source record: 28421

On Sun, 3 Feb 2008 17:00:34 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>>>>>Your groupies will once again be sorely disappointed.
>>>>
>>>> Thank heavens for that! You guys would be indistinguishable from
>>>> museum pieces if you didn't get dusted off once in a while.
>>>>
>>>> 73's
>>>> Richard Clark, KB7QHC
>>>
>>>Yes, but what is the characteristic impedance of free space?
>>
>> The value has been established; that I am sorely disappointing you has
>> been established; and that I am content with those outcomes has been
>> established. Any further interest for others is how long this groupie
>> drama of betrayed faith will play out.
>
>So you now agree that I was correct in saying that Zo free space = 377 Ohms
>and Roy was wrong in saying it was = 1 Ohm?
>You still have a chance to recover your cred, bro.

Have you been reading any of this?

73's
Richard Clark, KB7QHC

1900. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 22:58:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <echcq31a5m4ko3hagmqckqvchu4kbtvtnk@4ax.com>
Source record: 28422

On Sun, 3 Feb 2008 16:57:50 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>I assume you made a typo when you say c<v; you meant v<c.

He didn't. It is most common and evident (meaning you can trust your
eyes this time) in cooling water pools for nuclear reactors.

73's
Richard Clark, KB7QHC

1901. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 23:03:48 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <9d057658-bebe-4858-8f92-04b0ac95509e@s19g2000prg.googlegroups.com>
Source record: 28423

On Feb 3, 2:47 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Sun, 3 Feb 2008 17:00:34 -0500, "AI4QJ" <nos...@yahoo.com> wrote:
> >>>>>Your groupies will once again be sorely disappointed.
>
> >>>> Thank heavens for that! You guys would be indistinguishable from
> >>>> museum pieces if you didn't get dusted off once in a while.
>
> >>>> 73's
> >>>> Richard Clark, KB7QHC
>
> >>>Yes, but what is the characteristic impedance of free space?
>
> >> The value has been established; that I am sorely disappointing you has
> >> been established; and that I am content with those outcomes has been
> >> established. Any further interest for others is how long this groupie
> >> drama of betrayed faith will play out.
>
> >So you now agree that I was correct in saying that Zo free space = 377 Ohms
> >and Roy was wrong in saying it was = 1 Ohm?
> >You still have a chance to recover your cred, bro.
>
> Have you been reading any of this?
>
> 73's
> Richard Clark, KB7QHC

Hahahahaha! Thanks, Richard! ;-) I'd been wondering that myself.

1902. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 23:28:31 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a64e20$0$4968$4c368faf@roadrunner.com>
Source record: 28424

"K7ITM" <k7itm@msn.com> wrote in message
news:9d057658-bebe-4858-8f92-04b0ac95509e@s19g2000prg.googlegroups.com...
> On Feb 3, 2:47 pm, Richard Clark <kb7...@comcast.net> wrote:
>> On Sun, 3 Feb 2008 17:00:34 -0500, "AI4QJ" <nos...@yahoo.com> wrote:
>> >>>>>Your groupies will once again be sorely disappointed.
>>
>> >>>> Thank heavens for that! You guys would be indistinguishable from
>> >>>> museum pieces if you didn't get dusted off once in a while.
>>
>> >>>> 73's
>> >>>> Richard Clark, KB7QHC
>>
>> >>>Yes, but what is the characteristic impedance of free space?
>>
>> >> The value has been established; that I am sorely disappointing you has
>> >> been established; and that I am content with those outcomes has been
>> >> established. Any further interest for others is how long this groupie
>> >> drama of betrayed faith will play out.
>>
>> >So you now agree that I was correct in saying that Zo free space = 377
>> >Ohms
>> >and Roy was wrong in saying it was = 1 Ohm?
>> >You still have a chance to recover your cred, bro.
>>
>> Have you been reading any of this?
>>
>> 73's
>> Richard Clark, KB7QHC
>
> Hahahahaha! Thanks, Richard! ;-) I'd been wondering that myself.

This, from an alleged guru who has been able to rewrite quantum theory and disprove maxwell planc and Neils Bohr and state that a photon is not a particle. He claims he can follow a discussion and actually follow a thread with Richard Clark involved in it? All this is happening whilst Richard C. is still trying to sort out how RF EM waves and acoustic sound waves interact with each other. Of course, all this is going on with neither knowing what the characteristic impedance of free space is or what it implies. I need to make the following reality check: This group is entitle rec.radio.AMATEUR.antenna so discussing technical issues with these two is akin to discussing evolution theory with the late Jerry Falwell. Still I find it quite amazing.

1903. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-03 23:33:00 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a64f2d$0$4967$4c368faf@roadrunner.com>
Source record: 28425

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:echcq31a5m4ko3hagmqckqvchu4kbtvtnk@4ax.com...
> On Sun, 3 Feb 2008 16:57:50 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>I assume you made a typo when you say c<v; you meant v<c.
>
> He didn't. It is most common and evident (meaning you can trust your
> eyes this time) in cooling water pools for nuclear reactors.

Richard, per your comment above you agree then to the possibility of a case where the v>c. Tell me, what kind of particle or wave can have a velocity faster than the speed of light? Perhaps you are discussing tachyons? ;-) Do you believe in universal constants such as the speed of light?

73 de AI4QJ

1904. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 00:10:06 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A39C364FA750mcoslocomcastnet@216.196.97.136>
Source record: 28426

Tom Horne <hornetd@veriqrmzon.net> wrote in
news:gjxoj.14357$fs4.12898@trnddc02:
> I will learn whatever I need to in order to be an effective radio
> operator when that is what is really needed. I've already set up a
> Winlink2000 gateway just to learn how. I've got a portable packet set
> up worked out using just an HT, a readily portable TNC, laptop
> computer, and a portable J-pole. I'm scheduled for my Skywarn class
> and I'm enrolled in the Level 1 Amateur Radio Emergency Communications
> course and I plan on taking all three courses and the needed exams to
> become a certified emergency communicator. I think I can honestly say
> I'm willing to learn.

Okay, Tom, good to hear that. First thing of course is to get the
General license.

Second thing is that HF is a whole different animal than VHF. My
experience with new guys and gals is that they often think of HF/MF as
just another set of frequencies to use. It is and it isn't. Propagation
knowledge is needed, not only on your end of the signal, but on the other
end as well. Working the vagaries of propagation is one of the great joys
of Ham radio, but it requires a pretty big commitment, and an enjoyment
of the game as well. You're going to have to get on the air, and spend a
couple years learning - it isn't going to be like using a computer
program.

HF is an unruly beast, and your antenna is only going to be a small part
of it.

I'm not trying to bust your chops here, it's just a different ball game,
and your post started out like one of those "just tell me what I need to
do" commercials. 8^)

> What I was hoping to find was operators who have already used one or
> more of the antennas I was asking about who would be willing to share
> their experience of the effectiveness or lack of same with me.

My vote is for the general purpose dipole and a tuner. Flexible,
and "all HF band". It will work in multiple locations, (important for an
antenna that must be raised in whatever condx are present) is reasonably
efficient, and works pretty darn well.

- 73 de Mike N3LI -

1905. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 00:17:09 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A39C4972E57Emcoslocomcastnet@216.196.97.136>
Source record: 28427

Richard Clark <kb7qhc@comcast.net> wrote in
news:2t57q39r6cv0cg56s7q9l19qpi2bi7d04l@4ax.com:

> "As You Like It," Bill Shakespeare

The mind plays tricks on you. You play tricks back! It's like you're
unraveling a big cable-knit sweater that someone keeps knitting and
knitting and knitting and knitting and knitting and knitting

"Pee Wee's Big Adventure" Pee Wee Herman

1906. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 00:25:39 UTC
From: John KD5YI <groups1.jocjo@xoxy.net>
Message-ID: <7Yspj.6126$M71.3@trnddc08>
Source record: 28428

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a63984$0$4964$4c368faf@roadrunner.com...
>
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:77taq3didubpces2k92t9n4n218ptv8h3b@4ax.com...
>> On Sun, 3 Feb 2008 02:30:46 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>>
>>>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>>news:cdpaq31iegt5hsfc18t59jji0ecokqagmd@4ax.com...
>>>> On Sat, 2 Feb 2008 18:40:13 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>>
>>>>>Your groupies will once again be sorely disappointed.
>>>>
>>>> Thank heavens for that! You guys would be indistinguishable from
>>>> museum pieces if you didn't get dusted off once in a while.
>>>>
>>>> 73's
>>>> Richard Clark, KB7QHC
>>>
>>>Yes, but what is the characteristic impedance of free space?
>>
>> The value has been established; that I am sorely disappointing you has
>> been established; and that I am content with those outcomes has been
>> established. Any further interest for others is how long this groupie
>> drama of betrayed faith will play out.
>
> So you now agree that I was correct in saying that Zo free space = 377
> Ohms and Roy was wrong in saying it was = 1 Ohm? You still have a chance
> to recover your cred, bro.
>
> 73 de AI4QJ

Oh, crap, Daniel. Roy did not say free space was = 1 ohm. Look back and
read:

You said:
"> I should say "characteristic" impedance is 377 Ohms. It also has a
> permitivity and permeability of 1 ;-) "

Roy said:
"I'm sure you mean relative permittivity and relative permeability.

The characteristic impedance is the square root of permeability divided
by permittivity, so if both are one, the characteristic impedance would

have to be one."

Get it? He is saying that the permeability and the permittivity of space can not = 1 because if they were, then the intrinsic impedance of space would be = 1 because the intrinsic impedance of space is actually Zo = sqrt(permeability/permittivity).

The correct values were posted earlier in this thread. You can verify them for yourself using your favorite source. But don't confuse them with relative permeability/permittivity.

John

1907. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 00:45:29 UTC
From: Suzy <not@valid>
Message-ID: <47a6602c@dnews.tpgi.com.au>
Source record: 28429

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a64e20$0$4968$4c368faf@roadrunner.com...
>
> "K7ITM" <k7itm@msn.com> wrote in message
> news:9d057658-bebe-4858-8f92-04b0ac95509e@s19g2000prg.googlegroups.com...
>> On Feb 3, 2:47 pm, Richard Clark <kb7...@comcast.net> wrote:
>>> On Sun, 3 Feb 2008 17:00:34 -0500, "AI4QJ" <nos...@yahoo.com> wrote:
>>> >>>>>Your groupies will once again be sorely disappointed.
>>>
>>> >>>> Thank heavens for that! You guys would be indistinguishable from
>>> >>>> museum pieces if you didn't get dusted off once in a while.
>>>
>>> >>>> 73's
>>> >>>> Richard Clark, KB7QHC
>>>
>>> >>>Yes, but what is the characteristic impedance of free space?
>>>
>>> >> The value has been established; that I am sorely disappointing you
>>> >> has
>>> >> been established; and that I am content with those outcomes has been
>>> >> established. Any further interest for others is how long this
>>> >> groupie
>>> >> drama of betrayed faith will play out.
>>>
>>> >So you now agree that I was correct in saying that Zo free space = 377
>>> >Ohms
>>> >and Roy was wrong in saying it was = 1 Ohm?
>>> >You still have a chance to recover your cred, bro.
>>>
>>> Have you been reading any of this?
>>>
>>> 73's
>>> Richard Clark, KB7QHC
>>
>> Hahahahaha! Thanks, Richard! ;-) I'd been wondering that myself.
>
> This, from an alleged guru who has been able to rewrite quantum theory and
> disprove maxwell planc and Neils Bohr and state that a photon is not a
> particle. He claims he can follow a discussion and actually follow a
> thread with Richard Clark involved in it? All this is happening whilst
> Richard C. is still trying to sort out how RF EM waves and acoustic sound
> waves interact with each other. Of course, all this is going on with
> neither knowing what the characteristic impedance of free space is or what
> it implies. I need to make the following reality check: This group is

> entitle rec.radio.AMATEUR.antenna so discussing technical issues with
> these two is akin to discussing evolution theory with the late Jerry
> Falwell. Still I find it quite amazing.
Or Jerry Springer?

1908. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 00:58:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qcoq8i8c2mvb8@corp.supernews.com>
Source record: 28430

John KD5YI wrote:
>
> According to "Reference Data for Radio Engineers", published by
> International Telephone and Telegraph, fourth edition, page 35:
>
> "Properties of Free Space"
>
> Permeability = 1.257 * 10^-6 henry per meter.
> Permittivity = 8.85 * 10^-12 farad per meter.
>
> Characteristic impedance = sqrt(Permeability/Permittivity) = 376.7 ohms
>
> John

My earlier citations of reputable sources were denounced as being an intentional insult. I see that yours is simply being ignored. Perhaps that's progress?

Roy Lewallen, W7EL

1909. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:02:53 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qcp1v4954ndf3@corp.supernews.com>
Source record: 28431

AI4QJ wrote:
>
> So you now agree that I was correct in saying that Zo free space = 377 Ohms
> and Roy was wrong in saying it was = 1 Ohm? You still have a chance to
> recover your cred, bro.
>
> 73 de AI4QJ

Earlier you implied that I was promoting the superposition of power. Now you're saying that I claimed the intrinsic impedance of free space is one ohm. Where are you coming up with this stuff? And why?

Roy Lewallen, W7EL

1910. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:18:14 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <1I-dnbGvCeVs-jvanZ2dnUVZ8tyqnZ2d@bt.com>
Source record: 28432

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a64f2d$0$4967$4c368faf@roadrunner.com...
>
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:echcq31a5m4ko3hagmqckqvchu4kbtvtnk@4ax.com...
>> On Sun, 3 Feb 2008 16:57:50 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>>I assume you made a typo when you say c<v; you meant v<c.
>>
>> He didn't. It is most common and evident (meaning you can trust your
>> eyes this time) in cooling water pools for nuclear reactors.
>
> Richard, per your comment above you agree then to the possibility of a
> case where the v>c. Tell me, what kind of particle or wave can have a
> velocity faster than the speed of light? Perhaps you are discussing
> tachyons? ;-) Do you believe in universal constants such as the speed of
> light?
>
> 73 de AI4QJ
>

It is clearly possible for certain events to happen at speeds greater than the speed of light in a vacuum, or any other material for that matter. It is relatively trivial to accelerate electrons and other charged atomic particles to speeds approaching the speed of light (in a vacuum). If the particles in two such beams are collided head on, clearly the impact velocity will be something just below 600,000 Km per second, or just under twice the speed of light.

The resulting atomic debris and energy generated in such collisions are keenly studied by physicists eager to probe the limits of physical science. Neither set of particles are exceeding the speed of light and yet any collisions must take place at velocities greater than the speed of light. The speed of light is a fundamental physical limit against which other phenomena may be measured. It is not necessarily a barrier which cannot be exceeded under any circumstances. There is ample experimental evidence to suggest that faster than light phenomena do exist. The most compelling evidence to date coming from experiments involving entangled particles and quantum encryption techniques.

Mike G0ULI

1911. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:29:12 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <nfqcq35pho51rq1t8jnocegvcuqst4le19@4ax.com>
Source record: 28434

On Sun, 03 Feb 2008 18:17:09 -0600, Mike Coslo
<mcoslo@youknow.comcast.net> wrote:

>Richard Clark <kb7qhc@comcast.net> wrote in
>news:2t57q39r6cv0cg56s7q9l19qpi2bi7d04l@4ax.com:
>
>> "As You Like It," Bill Shakespeare
>
>
>
>The mind plays tricks on you. You play tricks back! It's like you're
>unraveling a big cable-knit sweater that someone keeps knitting and
>knitting and knitting and knitting and knitting and knitting
>
>"Pee Wee's Big Adventure" Pee Wee Herman

Thank you Mike,

Always there on an even keel (even if you have to hike out to do it).

73's
Richard Clark, KB7QHC

1912. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:30:06 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a66aa0$0$24106$4c368faf@roadrunner.com>
Source record: 28433

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13qcoq8i8c2mvb8@corp.supernews.com...
> John KD5YI wrote:
>>
>> According to "Reference Data for Radio Engineers", published by
>> International Telephone and Telegraph, fourth edition, page 35:
>>
>> "Properties of Free Space"
>>
>> Permeability = 1.257 * 10^-6 henry per meter.
>> Permittivity = 8.85 * 10^-12 farad per meter.
>>
>> Characteristic impedance = sqrt(Permeability/Permittivity) = 376.7 ohms
>>
>> John
>
> My earlier citations of reputable sources were denounced as being an
> intentional insult. I see that yours is simply being ignored. Perhaps
> that's progress?

Well, he is correct, you were wrong with your SQRT(1/1) = Zo = 1. If you use his values, you will get the proper value (377 Ohms) so he is correct. Glad you finally saw the light.

1913. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:31:23 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a66aed$0$24099$4c368faf@roadrunner.com>
Source record: 28435

```
"Suzy" <not@valid> wrote in message news:47a6602c@dnews.tpgi.com.au...
>
> "AI4QJ" <nospam@yahoo.com> wrote in message
> news:47a64e20$0$4968$4c368faf@roadrunner.com...
>>
>> "K7ITM" <k7itm@msn.com> wrote in message
>> news:9d057658-bebe-4858-8f92-04b0ac95509e@s19g2000prg.googlegroups.com...
>>> On Feb 3, 2:47 pm, Richard Clark <kb7...@comcast.net> wrote:
>>>> On Sun, 3 Feb 2008 17:00:34 -0500, "AI4QJ" <nos...@yahoo.com> wrote:
>>>> >>>>>Your groupies will once again be sorely disappointed.
>>>>
>>>> >>>> Thank heavens for that! You guys would be indistinguishable from
>>>> >>>> museum pieces if you didn't get dusted off once in a while.
>>>>
>>>> >>>> 73's
>>>> >>>> Richard Clark, KB7QHC
>>>>
>>>> >>>Yes, but what is the characteristic impedance of free space?
>>>>
>>>> >> The value has been established; that I am sorely disappointing you
>>>> >> has
>>>> >> been established; and that I am content with those outcomes has been
>>>> >> established. Any further interest for others is how long this
>>>> >> groupie
>>>> >> drama of betrayed faith will play out.
>>>>
>>>> >So you now agree that I was correct in saying that Zo free space = 377
>>>> >Ohms
>>>> >and Roy was wrong in saying it was = 1 Ohm?
>>>> >You still have a chance to recover your cred, bro.
>>>>
>>>> Have you been reading any of this?
>>>>
>>>> 73's
>>>> Richard Clark, KB7QHC
>>>
>>> Hahahahaha! Thanks, Richard! ;-) I'd been wondering that myself.
>>
>> This, from an alleged guru who has been able to rewrite quantum theory
>> and disprove maxwell planc and Neils Bohr and state that a photon is not
>> a particle. He claims he can follow a discussion and actually follow a
>> thread with Richard Clark involved in it? All this is happening whilst
>> Richard C. is still trying to sort out how RF EM waves and acoustic sound
>> waves interact with each other. Of course, all this is going on with
```

>> neither knowing what the characteristic impedance of free space is or
>> what it implies. I need to make the following reality check: This group
>> is entitle rec.radio.AMATEUR.antenna so discussing technical issues with
>> these two is akin to discussing evolution theory with the late Jerry
>> Falwell. Still I find it quite amazing.
> Or Jerry Springer?

:-)

1914. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:32:57 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a66b4b$0$24101$4c368faf@roadrunner.com>
Source record: 28436

"John KD5YI" <groups1.jocjo@xoxy.net> wrote in message
news:7Yspj.6126$M71.3@trnddc08...
> "AI4QJ" <nospam@yahoo.com> wrote in message
> news:47a63984$0$4964$4c368faf@roadrunner.com...
>>
>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> news:77taq3didubpces2k92t9n4n218ptv8h3b@4ax.com...
>>> On Sun, 3 Feb 2008 02:30:46 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>
>>>>
>>>>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>>>news:cdpaq31iegt5hsfc18t59jji0ecokqagmd@4ax.com...
>>>>> On Sat, 2 Feb 2008 18:40:13 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>>>
>>>>>>Your groupies will once again be sorely disappointed.
>>>>>
>>>>> Thank heavens for that! You guys would be indistinguishable from
>>>>> museum pieces if you didn't get dusted off once in a while.
>>>>>
>>>>> 73's
>>>>> Richard Clark, KB7QHC
>>>>
>>>>Yes, but what is the characteristic impedance of free space?
>>>
>>> The value has been established; that I am sorely disappointing you has
>>> been established; and that I am content with those outcomes has been
>>> established. Any further interest for others is how long this groupie
>>> drama of betrayed faith will play out.
>>
>> So you now agree that I was correct in saying that Zo free space = 377
>> Ohms and Roy was wrong in saying it was = 1 Ohm? You still have a chance
>> to recover your cred, bro.
>>
>> 73 de AI4QJ
>
>
> Oh, crap, Daniel. Roy did not say free space was = 1 ohm. Look back and
> read:
>
> You said:
> "> I should say "characteristic" impedance is 377 Ohms. It also has a
>> permitivity and permeability of 1 ;-) "
>
> Roy said:

> "I'm sure you mean relative permittivity and relative permeability.
>
> The characteristic impedance is the square root of permeability divided
> by permittivity, so if both are one, the characteristic impedance would
> have to be one."
>
> Get it? He is saying that the permeability and the permittivity of space
> can not = 1 because if they were, then the intrinsic impedance of space
> would be = 1 because the intrinsic impedance of space is actually Zo =
> sqrt(permeability/permittivity).

No, he said it would gave to be one, so it is one.

1915. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:41:01 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a66d2f$0$24092$4c368faf@roadrunner.com>
Source record: 28437

"Mike Kaliski" <michael.kaliski@tesco.net> wrote in message
news:1I-dnbGvCeVs-jvanZ2dnUVZ8tyqnZ2d@bt.com...
>
> "AI4QJ" <nospam@yahoo.com> wrote in message
> news:47a64f2d$0$4967$4c368faf@roadrunner.com...
>>
>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> news:echcq31a5m4ko3hagmqckqvchu4kbtvtnk@4ax.com...
>>> On Sun, 3 Feb 2008 16:57:50 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>
>>>>I assume you made a typo when you say c<v; you meant v<c.
>>>
>>> He didn't. It is most common and evident (meaning you can trust your
>>> eyes this time) in cooling water pools for nuclear reactors.
>>
>> Richard, per your comment above you agree then to the possibility of a
>> case where the v>c. Tell me, what kind of particle or wave can have a
>> velocity faster than the speed of light? Perhaps you are discussing
>> tachyons? ;-) Do you believe in universal constants such as the speed of
>> light?
>>
>> 73 de AI4QJ
>>
>
> It is clearly possible for certain events to happen at speeds greater than
> the speed of light in a vacuum,

True, but these "events" would not include travelling 3 X 10E8 meyers in
less than one second.

>or any other material for that matter. It is relatively trivial to
>accelerate electrons and other charged atomic particles to speeds
>approaching the speed of light (in a vacuum).

Well, not trivial but possible. It happens in nature with mu-mesons (cosmic
rays). But you were careful to say "approaching" the speed of light.

> If the particles in two such beams are collided head on, clearly the
> impact velocity will be something just below 600,000 Km per second, or
> just under twice the speed of light.

Have you ever read about the theory of relativity? GONG! The speed of each
beam relative to the other is still 3 X 10E8 meters/sec. Sorry but you just
betrayed your lack of knowledge of that theory. Einstien disprovedwhat you
said in 1905 but take comfort in the fact that it was difficult to
comprehend at the time. The speed of liht relative to any reference point is

a universal constant, c = 3 X 10E8.
>
> The resulting atomic debris and energy generated in such collisions are
> keenly studied by physicists eager to probe the limits of physical
> science. Neither set of particles are exceeding the speed of light and yet
> any collisions must take place at velocities greater than the speed of
> light. The speed of light is a fundamental physical limit against which
> other phenomena may be measured. It is not necessarily a barrier which
> cannot be exceeded under any circumstances. There is ample experimental
> evidence to suggest that faster than light phenomena do exist. The most
> compelling evidence to date coming from experiments involving entangled
> particles and quantum encryption techniques.

Arthur, where are you????

1916. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:48:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <klqcq3tk57217uh2j09ha67be7mlnq6639@4ax.com>
Source record: 28438

On Sun, 3 Feb 2008 18:33:00 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>>>I assume you made a typo when you say c<v; you meant v<c.
>>
>> He didn't. It is most common and evident (meaning you can trust your
>> eyes this time) in cooling water pools for nuclear reactors.
>
>Richard, per your comment above you agree then to the possibility of a case
>where the v>c.

When I review the content which you quote from me (complete to all my statements), yes it appears that I said that. Those two words would seem to be terse enough not to be equivocal. Question is, having offered it twice now, are you going to ask me again if I said it?

And specifically, it is not a "possibility" such that it is arguable, it is a certainty. Also within the quote above is a very common instance cited that can be easily verified or rejected on the basis of fact - if you check facts that is.

This topic must be in the scope of your earlier claim about taking me head to head on Physics and emerging best. A poor fool such as I with a simple English degree should be easy to champion over. You should be able to re-parse your earlier question into a match draw. If not, read more Cecil to refine your technique.

73's
Richard Clark, KB7QHC

1917. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:52:27 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a66fdd$0$24081$4c368faf@roadrunner.com>
Source record: 28439

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:nfqcq35pho51rq1t8jnocegvcuqst4le19@4ax.com...
> On Sun, 03 Feb 2008 18:17:09 -0600, Mike Coslo
> <mcoslo@youknow.comcast.net> wrote:
>
>>Richard Clark <kb7qhc@comcast.net> wrote in
>>news:2t57q39r6cv0cg56s7q9l19qpi2bi7d04l@4ax.com:
>>
>>> "As You Like It," Bill Shakespeare
>>
>>
>>
>>The mind plays tricks on you. You play tricks back! It's like you're
>>unraveling a big cable-knit sweater that someone keeps knitting and
>>knitting and knitting and knitting and knitting and knitting
>>
>>"Pee Wee's Big Adventure" Pee Wee Herman
>
> Thank you Mike,
>
> Always there on an even keel (even if you have to hike out to do it).

Come on Richard, you know your groupies will be ever loyal. Either you dragged him down to the level of Pee Wee Herman, or he dragged you down from Shakespeare to that level. Something tells me it was the former but you then rub salt in that wound by positive reinforcement. Could this be considered groupie abuse? ;-)

1918. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 01:55:28 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47a67090$0$1121$8046368a@newsreader.iphouse.net>
Source record: 28440

Roy Lewallen wrote:
> AI4QJ wrote:
>>
>> So you now agree that I was correct in saying that Zo free space = 377
>> Ohms and Roy was wrong in saying it was = 1 Ohm? You still have a
>> chance to recover your cred, bro.
>>
>> 73 de AI4QJ
>
> Earlier you implied that I was promoting the superposition of power. Now
> you're saying that I claimed the intrinsic impedance of free space is
> one ohm. Where are you coming up with this stuff? And why?
>
> Roy Lewallen, W7EL

Hi Roy!

I've been away from the list for a few months, and I've been catching up the last few days. Who is this new whacko? Is he Art with a different name? I'm guessing no, since his style of attack is much more primitive, but I had to ask. He is kind of funny in a weird way, but I'm guessing that wears off quickly.

Hope you've been well.

tom
K0TAR

1919. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 02:05:33 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47a672ed$0$1125$8046368a@newsreader.iphouse.net>
Source record: 28441

AI4QJ wrote:
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:echcq31a5m4ko3hagmqckqvchu4kbtvtnk@4ax.com...
>> On Sun, 3 Feb 2008 16:57:50 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>> I assume you made a typo when you say c<v; you meant v<c.
>> He didn't. It is most common and evident (meaning you can trust your
>> eyes this time) in cooling water pools for nuclear reactors.
>
> Richard, per your comment above you agree then to the possibility of a case
> where the v>c. Tell me, what kind of particle or wave can have a velocity
> faster than the speed of light? Perhaps you are discussing tachyons? ;-) Do
> you believe in universal constants such as the speed of light?
>
> 73 de AI4QJ
>
>

The particles exit the radioactive substance at just a smidge less than
c in a vacuum, and enter water which has a value of c much lower than c
in a vacuum. They then produce a wonderful blue glow because they are
breaking the speed limit.

Here is a page with a relatively simple explanation

http://en.wikipedia.org/wiki/Cherenkov_radiation

I breathlessly await your response.

tom
K0TAR

1920. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 02:06:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qiscq39itap4qnrdvlqc10uhlrf3gbof4d@4ax.com>
Source record: 28442

On Sun, 3 Feb 2008 20:52:27 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>Either you
>dragged him down to the level of Pee Wee Herman, or he dragged you down from
>Shakespeare to that level.

Dan, my ever shocked groupie,

Everyone I know has a big but. Let's talk about your big but.

>Could this be considered
>groupie abuse? ;-)

It might now.

73's
Richard Clark, KB7QHC

1921. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 02:45:20 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <zPydneCHE5PB4TvanZ2dnUVZ8u-dnZ2d@bt.com>
Source record: 28443

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a66d2f$0$24092$4c368faf@roadrunner.com...
>
> "Mike Kaliski" <michael.kaliski@tesco.net> wrote in message
> news:1I-dnbGvCeVs-jvanZ2dnUVZ8tyqnZ2d@bt.com...
>>
>> "AI4QJ" <nospam@yahoo.com> wrote in message
>> news:47a64f2d$0$4967$4c368faf@roadrunner.com...
>>>
>>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>>> news:echcq31a5m4ko3hagmqckqvchu4kbtvtnk@4ax.com...
>>>> On Sun, 3 Feb 2008 16:57:50 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>>
>>>>>I assume you made a typo when you say c<v; you meant v<c.
>>>>
>>>> He didn't. It is most common and evident (meaning you can trust your
>>>> eyes this time) in cooling water pools for nuclear reactors.
>>>
>>> Richard, per your comment above you agree then to the possibility of a
>>> case where the v>c. Tell me, what kind of particle or wave can have a
>>> velocity faster than the speed of light? Perhaps you are discussing
>>> tachyons? ;-) Do you believe in universal constants such as the speed of
>>> light?
>>>
>>> 73 de AI4QJ
>>>
>>
>> It is clearly possible for certain events to happen at speeds greater
>> than the speed of light in a vacuum,
>
> True, but these "events" would not include travelling 3 X 10E8 meyers in
> less than one second.
>
>>or any other material for that matter. It is relatively trivial to
>>accelerate electrons and other charged atomic particles to speeds
>>approaching the speed of light (in a vacuum).
>
> Well, not trivial but possible. It happens in nature with mu-mesons
> (cosmic rays). But you were careful to say "approaching" the speed of
> light.
>
>> If the particles in two such beams are collided head on, clearly the
>> impact velocity will be something just below 600,000 Km per second, or
>> just under twice the speed of light.

>
> Have you ever read about the theory of relativity? GONG! The speed of each
> beam relative to the other is still 3 X 10E8 meters/sec. Sorry but you
> just betrayed your lack of knowledge of that theory. Einstien
> disprovedwhat you said in 1905 but take comfort in the fact that it was
> difficult to comprehend at the time. The speed of liht relative to any
> reference point is a universal constant, c = 3 X 10E8.
>>

Well you are kind of right, but see below...

>> The resulting atomic debris and energy generated in such collisions are
>> keenly studied by physicists eager to probe the limits of physical
>> science. Neither set of particles are exceeding the speed of light and
>> yet any collisions must take place at velocities greater than the speed
>> of light. The speed of light is a fundamental physical limit against
>> which other phenomena may be measured. It is not necessarily a barrier
>> which cannot be exceeded under any circumstances. There is ample
>> experimental evidence to suggest that faster than light phenomena do
>> exist. The most compelling evidence to date coming from experiments
>> involving entangled particles and quantum encryption techniques.
>
> Arthur, where are you????
>
>

While the speed of each beam relative to a stationary observer is 300,000 Km/s with both beams travelling in opposite directions, the combined velocity relative to that stationary observer is 600,000 Km/s. Einstein did state that from the point of view of someone or something travelling with the beam the combined velocity of the two beams approaching collision would appear to be 300,000 Km/s. Einstein was wrong on this point because for a wavefront or beam propagating at the speed of light, no time passes and therefore no velocity measurement is possible or has any meaning in conventional terms. Clearly we are wasting a lot of time, effort and money in bothering to build bigger particle accelerators (like at CERN) if the combined collision velocities can never exceed 300,000 Km/s.

Einstein (who is greatly over rated in my opinion) got a lot of stuff right, but there are some pretty huge gaps in the theory, particularly where values tend towards infinity. Hence the inability to deal with gravity, a failure of the theory in dealing with black holes and an inability to deal with super luminal velocities. Richard Feynman was a far better theoretical physicist who actually invented ways of reconciling and sidestepping some of the paradoxes inherent in Einstein's equations.

Just as Einstein refined Newton's ideas, future physicists will regard Einstein's theories the way we regard Newton's; a good approximation for everyday use, but not a true description of the processes. How on earth did NASA get astronauts to the moon using just Newtonian mechanics? The mind boggles. :-)

Mike G0ULI

1922. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 02:55:03 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <pqai75-8q.ln1@mail.specsol.com>
Source record: 28444

AI4QJ <nospam@yahoo.com> wrote:

> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13qcoq8i8c2mvb8@corp.supernews.com...
> > John KD5YI wrote:
> >>
> >> According to "Reference Data for Radio Engineers", published by
> >> International Telephone and Telegraph, fourth edition, page 35:
> >>
> >> "Properties of Free Space"
> >>
> >> Permeability = 1.257 * 10^-6 henry per meter.
> >> Permittivity = 8.85 * 10^-12 farad per meter.
> >>
> >> Characteristic impedance = sqrt(Permeability/Permittivity) = 376.7 ohms
> >>
> >> John
> >
> > My earlier citations of reputable sources were denounced as being an
> > intentional insult. I see that yours is simply being ignored. Perhaps
> > that's progress?

> Well, he is correct, you were wrong with your SQRT(1/1) = Zo = 1. If you use
> his values, you will get the proper value (377 Ohms) so he is correct. Glad
> you finally saw the light.

WTF are you talking about?

In Roy's original post were the words "if" and "then", which all the knee
jerking twits seemed to have missed.

--
Jim Pennino

Remove .spam.sux to reply.

1923. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 02:57:53 UTC
From: John KD5YI <groups1.jocjo@xoxy.net>
Message-ID: <Ravpj.2344$xE.1783@trnddc01>
Source record: 28445

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a66b4b$0$24101$4c368faf@roadrunner.com...
>
> "John KD5YI" <groups1.jocjo@xoxy.net> wrote in message
> news:7Yspj.6126$M71.3@trnddc08...
>> "AI4QJ" <nospam@yahoo.com> wrote in message
>> news:47a63984$0$4964$4c368faf@roadrunner.com...
>>>
>>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>>> news:77taq3didubpces2k92t9n4n218ptv8h3b@4ax.com...
>>>> On Sun, 3 Feb 2008 02:30:46 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>>
>>>>>
>>>>>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>>>>news:cdpaq31iegt5hsfc18t59jji0ecokqagmd@4ax.com...
>>>>>> On Sat, 2 Feb 2008 18:40:13 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>>>>
>>>>>>>Your groupies will once again be sorely disappointed.
>>>>>>
>>>>>> Thank heavens for that! You guys would be indistinguishable from
>>>>>> museum pieces if you didn't get dusted off once in a while.
>>>>>>
>>>>>> 73's
>>>>>> Richard Clark, KB7QHC
>>>>>
>>>>>Yes, but what is the characteristic impedance of free space?
>>>>
>>>> The value has been established; that I am sorely disappointing you has
>>>> been established; and that I am content with those outcomes has been
>>>> established. Any further interest for others is how long this groupie
>>>> drama of betrayed faith will play out.
>>>
>>> So you now agree that I was correct in saying that Zo free space = 377
>>> Ohms and Roy was wrong in saying it was = 1 Ohm? You still have a chance
>>> to recover your cred, bro.
>>>
>>> 73 de AI4QJ
>>
>>
>> Oh, crap, Daniel. Roy did not say free space was = 1 ohm. Look back and
>> read:
>>
>> You said:
>> "> I should say "characteristic" impedance is 377 Ohms. It also has a

>>> permitivity and permeability of 1 ;-) "
>>
>> Roy said:
>> "I'm sure you mean relative permittivity and relative permeability.
>>
>> The characteristic impedance is the square root of permeability divided
>> by permittivity, so if both are one, the characteristic impedance would
>> have to be one."
>>
>> Get it? He is saying that the permeability and the permittivity of space
>> can not = 1 because if they were, then the intrinsic impedance of space
>> would be = 1 because the intrinsic impedance of space is actually Zo =
>> sqrt(permeability/permittivity).
>
> No, he said it would gave to be one, so it is one.
>

Oh, crap, Daniel!

No! He said, "...if both are one, the characteristic impedance would have to be one." He is saying that, if what YOU say is true (the permittivity and permeability of free space is one), then that would force the Zo of free space to one because Zo = sqrt(permeability/permittivity).

Note that he said IF. Pay attention!

John

1924. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 03:13:22 UTC
From: John KD5YI <groups1.jocjo@xoxy.net>
Message-ID: <mpvpj.2349$xE.1099@trnddc01>
Source record: 28446

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a66b4b$0$24101$4c368faf@roadrunner.com...
>
> "John KD5YI" <groups1.jocjo@xoxy.net> wrote in message
> news:7Yspj.6126$M71.3@trnddc08...
>> "AI4QJ" <nospam@yahoo.com> wrote in message
>> news:47a63984$0$4964$4c368faf@roadrunner.com...
>>>
>>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>>> news:77taq3didubpces2k92t9n4n218ptv8h3b@4ax.com...
>>>> On Sun, 3 Feb 2008 02:30:46 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>>
>>>>>
>>>>>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>>>>news:cdpaq31iegt5hsfc18t59jji0ecokqagmd@4ax.com...
>>>>>> On Sat, 2 Feb 2008 18:40:13 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>>>>
>>>>>>Your groupies will once again be sorely disappointed.
>>>>>>
>>>>>> Thank heavens for that! You guys would be indistinguishable from
>>>>>> museum pieces if you didn't get dusted off once in a while.
>>>>>>
>>>>>> 73's
>>>>>> Richard Clark, KB7QHC
>>>>>
>>>>>Yes, but what is the characteristic impedance of free space?
>>>>
>>>> The value has been established; that I am sorely disappointing you has
>>>> been established; and that I am content with those outcomes has been
>>>> established. Any further interest for others is how long this groupie
>>>> drama of betrayed faith will play out.
>>>
>>> So you now agree that I was correct in saying that Zo free space = 377
>>> Ohms and Roy was wrong in saying it was = 1 Ohm? You still have a chance
>>> to recover your cred, bro.
>>>
>>> 73 de AI4QJ
>>
>>
>> Oh, crap, Daniel. Roy did not say free space was = 1 ohm. Look back and
>> read:
>>
>> You said:
>> "> I should say "characteristic" impedance is 377 Ohms. It also has a

>>> permitivity and permeability of 1 ;-) "
>>
>> Roy said:
>> "I'm sure you mean relative permittivity and relative permeability.
>>
>> The characteristic impedance is the square root of permeability divided
>> by permittivity, so if both are one, the characteristic impedance would
>> have to be one."
>>
>> Get it? He is saying that the permeability and the permittivity of space
>> can not = 1 because if they were, then the intrinsic impedance of space
>> would be = 1 because the intrinsic impedance of space is actually Zo =
>> sqrt(permeability/permittivity).
>
> No, he said it would gave to be one, so it is one.

No, YOU'RE the one who said it is one. You are the one who said the permittivity and permeability of free space = 1 (go read and understand your own post). Now plug your ones into: Zo = sqrt(permeability/permittivity).

John

1925. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 03:24:39 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a68578$0$9485$4c368faf@roadrunner.com>
Source record: 28447

"Tom Ring" <news0004@taring.org> wrote in message
news:47a67090$0$1121$8046368a@newsreader.iphouse.net...
> Roy Lewallen wrote:
>> AI4QJ wrote:
>>>
>>> So you now agree that I was correct in saying that Zo free space = 377
>>> Ohms and Roy was wrong in saying it was = 1 Ohm? You still have a chance
>>> to recover your cred, bro.
>>>
>>> 73 de AI4QJ
>>
>> Earlier you implied that I was promoting the superposition of power. Now
>> you're saying that I claimed the intrinsic impedance of free space is one
>> ohm. Where are you coming up with this stuff? And why?
>>
>> Roy Lewallen, W7EL
>
> Hi Roy!
>
> I've been away from the list for a few months, and I've been catching up
> the last few days. Who is this new whacko? Is he Art with a different
> name? I'm guessing no, since his style of attack is much more primitive,
> but I had to ask. He is kind of funny in a weird way, but I'm guessing
> that wears off quickly.
>
> Hope you've been well.
>
> tom
> K0TAR

Hi Tom!

Welcome to my PLONK file. Suggest you do the same.
73 de AI4QJ

1926. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 03:31:13 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47a68701$0$93275$8046368a@newsreader.iphouse.net>
Source record: 28448

AI4QJ wrote:

> Hi Tom!
>
> Welcome to my PLONK file. Suggest you do the same.
> 73 de AI4QJ

If he's plonking me for that, he won't be here long.

Which is a GOOD THING!

tom
K0TAR

1927. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 03:50:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qd2svr3go396b@corp.supernews.com>
Source record: 28449

AI4QJ wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13qcoq8i8c2mvb8@corp.supernews.com...
>> John KD5YI wrote:
>>> According to "Reference Data for Radio Engineers", published by
>>> International Telephone and Telegraph, fourth edition, page 35:
>>>
>>> "Properties of Free Space"
>>>
>>> Permeability = 1.257 * 10^-6 henry per meter.
>>> Permittivity = 8.85 * 10^-12 farad per meter.
>>>
>>> Characteristic impedance = sqrt(Permeability/Permittivity) = 376.7 ohms
>>>
>>> John
>> My earlier citations of reputable sources were denounced as being an
>> intentional insult. I see that yours is simply being ignored. Perhaps
>> that's progress?
>
> Well, he is correct, you were wrong with your SQRT(1/1) = Zo = 1. If you use
> his values, you will get the proper value (377 Ohms) so he is correct. Glad
> you finally saw the light.

Anyone reviewing the previous few postings on this topic surely must
feel he's dropped down a rabbit hole. I certainly do.

I've got to plonk this guy so I don't waste any more time on this sort
of silliness.

Roy Lewallen, W7EL

1928. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 03:53:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qd326lmj4ktb6@corp.supernews.com>
Source record: 28450

Roy Lewallen wrote:
> AI4QJ wrote:
>>
>> So you now agree that I was correct in saying that Zo free space = 377
>> Ohms and Roy was wrong in saying it was = 1 Ohm? You still have a
>> chance to recover your cred, bro.
>>
>> 73 de AI4QJ
>
> Earlier you implied that I was promoting the superposition of power. Now
> you're saying that I claimed the intrinsic impedance of free space is
> one ohm. Where are you coming up with this stuff? And why?

Please ignore the question. I won't see your response, or any other
postings you make.

Roy Lewallen, W7EL

1929. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 03:55:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <i33dq3tdrbthuahi1b2jkou2e2iimjrd58@4ax.com>
Source record: 28351

On Mon, 04 Feb 2008 02:57:53 GMT, "John KD5YI"
<groups1.jocjo@xoxy.net> wrote:

>No! He said, "...if both are one, the characteristic impedance would
>have to be one." He is saying that, if what YOU say is true (the
>permittivity and permeability of free space is one), then that would force
>the Zo of free space to one because Zo = sqrt(permeability/permittivity).
>
>Note that he said IF. Pay attention!

"All these you may avoid but the Lie Direct; and you may avoid
that too with an If. I knew when seven justices could not take up
a quarrel; but when the parties were met themselves, one of them
thought but of an If, as:
'If you said so, then I said so.'
And they shook hands, and swore brothers.

"Your If is the only peace-maker; much virtue in If."

73's
Richard Clark, KB7QHC

1930. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 03:58:49 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a68d7a$0$9513$4c368faf@roadrunner.com>
Source record: 28352

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:klqcq3tk57217uh2j09ha67be7mlnq6639@4ax.com...
> On Sun, 3 Feb 2008 18:33:00 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>>>I assume you made a typo when you say c<v; you meant v<c.
>>>
>>> He didn't. It is most common and evident (meaning you can trust your
>>> eyes this time) in cooling water pools for nuclear reactors.
>>
>>Richard, per your comment above you agree then to the possibility of a
>>case
>>where the v>c.
>
> When I review the content which you quote from me (complete to all my
> statements), yes it appears that I said that. Those two words would
> seem to be terse enough not to be equivocal. Question is, having
> offered it twice now, are you going to ask me again if I said it?

No, I only asked if you agreed to the possibility of FTL travel of waves or particles (faster than light). I was not asking if you "said" anything. You appear to agree to the possibility that the universal constant c can be exceeded, at least in nuclear cooling pools. .

>
> And specifically, it is not a "possibility" such that it is arguable,
> it is a certainty.

There you go. A good crisp position! Indeed, you believe FTL travel is commonplace at least for some waves and particles.

> Also within the quote above is a very common
> instance cited that can be easily verified or rejected on the basis of
> fact - if you check facts that is.

I do not believe that any wave or any particle can exceed the speed of light. FTL only happens in the X-Files but that is the opinion of a mere engineer. In this area, I am definitely caught in the past. When t prime = t ref/SQRT(1 - v**2/c**2), i.e. the lorentz transformation/time dilation, becomes negative due to v being greater than c, I run into all these problems of past events possibily affecting present events resulting in all sorts of paradoxes that are impossible to resolve through logic. I am too old and too attached to Einstein's theory of General relativity to "Check the facts" as you suggest. I will be led down a black hole (without ever exceeding c as I approach the center ;-)) You are beyond Einstein's "theory", you have upgraded to "fact" and negative time. Wow. Just the same, the probability that I might find something (other than "tachyons" ;-))

that moves faster than light remains to me to be very small. Sorry but it is not worth the effort. I will continue to adhere to my primitive belief system which holds that no wave or particle can exceed 3 X 10E8 (in a vacuum if you will).
>
> This topic must be in the scope of your earlier claim about taking me
> head to head on Physics and emerging best. A poor fool such as I with
> a simple English degree should be easy to champion over. You should
> be able to re-parse your earlier question into a match draw. If not,
> read more Cecil to refine your technique.

I actually minored in English. When one participates in a baccalaureate degree program at an actual "university", the BS curriculum requires a minor in the arts. This means I understand to some degree where you are coming from. I never made an ad hominem attack on your arts capabilities as you did my physics capabilities. I contend that you were not qualified to make that judgement based only upon my being an engineer and not knowing which university issued the degree or indeed if it was a university that issued the degree (as opposed to an engineering "college").

English literarure was fun; it was a nice form of recreation and an easy ACE for 20 of my 140 credits.

73 de AI4QJ

1931. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 04:01:02 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a68dff$0$9508$4c368faf@roadrunner.com>
Source record: 28353

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:qiscq39itap4qnrdvlqc10uhlrf3gbof4d@4ax.com...
> On Sun, 3 Feb 2008 20:52:27 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>Either you
>>dragged him down to the level of Pee Wee Herman, or he dragged you down
>>from
>>Shakespeare to that level.
>
> Dan, my ever shocked groupie,
>
> Everyone I know has a big but. Let's talk about your big but.
>
>>Could this be considered
>>groupie abuse? ;-)
>
> It might now.

Sorry Richard, your groupies don't tend to be people with technical degrees
or IQ's above 110.

1932. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 04:04:07 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a68eb8$0$9502$4c368faf@roadrunner.com>
Source record: 28354

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13qd2svr3go396b@corp.supernews.com...
> AI4QJ wrote:
>> "Roy Lewallen" <w7el@eznec.com> wrote in message
>> news:13qcoq8i8c2mvb8@corp.supernews.com...
>>> John KD5YI wrote:
>>>> According to "Reference Data for Radio Engineers", published by
>>>> International Telephone and Telegraph, fourth edition, page 35:
>>>>
>>>> "Properties of Free Space"
>>>>
>>>> Permeability = 1.257 * 10^-6 henry per meter.
>>>> Permittivity = 8.85 * 10^-12 farad per meter.
>>>>
>>>> Characteristic impedance = sqrt(Permeability/Permittivity) = 376.7 ohms
>>>>
>>>> John
>>> My earlier citations of reputable sources were denounced as being an
>>> intentional insult. I see that yours is simply being ignored. Perhaps
>>> that's progress?
>>
>> Well, he is correct, you were wrong with your SQRT(1/1) = Zo = 1. If you
>> use his values, you will get the proper value (377 Ohms) so he is
>> correct. Glad you finally saw the light.
>
> Anyone reviewing the previous few postings on this topic surely must feel
> he's dropped down a rabbit hole. I certainly do.
>
> I've got to plonk this guy so I don't waste any more time on this sort of
> silliness.

Go ahead Roy but then you will not be able to participate on my impending
analyses that point out the various failures of EZNEC models that don't work
as predicted. It will be better to have been plonked I guess.

1933. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 04:24:51 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <GK2dnawmofw9DjvanZ2dnUVZ_tqtnZ2d@giganews.com>
Source record: 28355

Suzy wrote:
> Looking for a website that gives comparative performance of diodes (max
> frequency for UHF use)

A recollection from decades back are the 1N21, 1N23, 1N32, 1N53, 1N60, and 1N78 point-contact silicon diodes that were used as mixers well into the microwave spectrum. Googling 1N23 produces 8000+ hits... including a "Simple 2.4 GHz SWR Meter": (http://www.qsl.net/n9zia/24swr/index.html). I see RF Parts (http://www.rfparts.com/) sells the 1N21 and 1N23. MicroMetrics (http://www.micrometrics.com/) makes them, as well as various schottky diodes suitable for sampling.
73,
Bryan WA7PRC

1934. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 04:26:32 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a693f9$0$9521$4c368faf@roadrunner.com>
Source record: 28356

"Mike Kaliski" <michael.kaliski@tesco.net> wrote in message
news:zPydneCHE5PB4TvanZ2dnUVZ8u-

> While the speed of each beam relative to a stationary observer is 300,000
> Km/s with both beams travelling in opposite directions, the combined
> velocity relative to that stationary observer is 600,000 Km/s. Einstein
> did state that from the point of view of someone or something travelling
> with the beam the combined velocity of the two beams approaching collision
> would appear to be 300,000 Km/s. Einstein was wrong on this point because
> for a wavefront or beam propagating at the speed of light, no time passes
> and therefore no velocity measurement is possible or has any meaning in
> conventional terms.

Not true. The observer on light beam 1 is experiencing time in his own frame of reference. As far as he is concerned, he is not moving. He experiences normal time in his frame of reference. And, he sees light beam 2 coming to him at 3 X 10E8 meters/sec.

>Clearly we are wasting a lot of time, effort and money in bothering to
>build bigger particle accelerators (like at CERN) if the combined collision
>velocities can never exceed 300,000 Km/s.

They are NOT attempting to exceed 3 X 10E8 meters/second!
>
> Einstein (who is greatly over rated in my opinion) got a lot of stuff
> right,

For the purpose of this discussion he got EVERYTHING right and his theories have been proven time and time again.

> but there are some pretty huge gaps in the theory, particularly where
> values tend towards infinity. Hence the inability to deal with gravity, a
> failure of the theory in dealing with black holes and an inability to deal
> with super luminal velocities. Richard Feynman was a far better
> theoretical physicist who actually invented ways of reconciling and
> sidestepping some of the paradoxes inherent in Einstein's equations.

A black hole is not a paradox. It is simply enough mass such that its escape velocity from its huge gravitational filed is greater than the speed of light. What is so paradoxical about that? The only paradoxes that arise in Einstein's equations occur when people make assumptions that certain universal constants like the speed of light can become variables and then the ridiculous paradoxes start to occur. If we try to change the constant pi, wouldn't we get a lot of unrealistic calculations? Changing the value of c is the same as trying to change pi.

>
> Just as Einstein refined Newton's ideas, future physicists will regard
> Einstein's theories the way we regard Newton's; a good approximation for
> everyday use, but not a true description of the processes.

Maybe in 100 years or so. We are not even close to such a refinement right
now. Maybe we never will be.

> How on earth did NASA get astronauts to the moon using just Newtonian
> >mechanics? The mind boggles. :-)

The moon is only 450,000 miles away. All velocities, distances and times
involved in a trip to the moon, or Mars, are as Newtonian as a trip on a jet
from London to New York. :-)

1935. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 04:59:08 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A3A42C7772mcoslocomcastnet@216.196.97.136>
Source record: 28357

"AI4QJ" <nospam@yahoo.com> wrote in
news:47a68dff$0$9508$4c368faf@roadrunner.com:

>
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:qiscq39itap4qnrdvlqc10uhlrf3gbof4d@4ax.com...
>> On Sun, 3 Feb 2008 20:52:27 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>>Either you
>>>dragged him down to the level of Pee Wee Herman, or he dragged you
>>>down from
>>>Shakespeare to that level.
>>
>> Dan, my ever shocked groupie,
>>
>> Everyone I know has a big but. Let's talk about your big but.
>>
>>>Could this be considered
>>>groupie abuse? ;-)
>>
>> It might now.
>
> Sorry Richard, your groupies don't tend to be people with technical
> degrees or IQ's above 110.

Although I don't consider myself a "groupie" of Richard's, I do read all his post's because I find him very entertaining - in the best sense of the word - his wit is probably the best in the group, if sometimes acerbic.

Perhaps Pee-Wee Herman is a bit pedestrian for your tastes, so here is another one for you.

"We don't receive wisdom; we must discover it for ourselves after a journey that no one can take for us or spare us."

Most fitting, and you certainly know the source, don't you?

And for what it is worth, the IQ here is measured out at 150. Let me know if that is enough. If I'm not smart enough, or not technical enough for you, please feel free to filter my messages.

- 73 de Mike N3LI -

1936. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 05:00:05 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <kl3dq31sgi9ur8mfimqfu3dilcpcflo9cc@4ax.com>
Source record: 28359

On Sun, 3 Feb 2008 22:58:49 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>You
>appear to agree to the possibility that the universal constant c can be
>exceeded, at least in nuclear cooling pools.

So, this is the third time I have to point out that two words were
unequivocal? As one of my groupies, you are the most devoted follower
of my posts currently.

>I do not believe that any wave or any particle can exceed the speed of
>light.

That is clearly evident.

>I am too
>old and too attached to Einstein's theory of General relativity to "Check
>the facts" as you suggest.

Again, clearly evident. You are standing on the wrong street corner
for this parade.

>I actually minored in English. When one participates in a baccalaureate
>degree program at an actual "university", the BS curriculum requires a minor
>in the arts. This means I understand to some degree where you are coming
>from.

20 hours on your minor are not evident - not even by degree. Let's
perform some simple deconstruction on
"You appear to agree to the possibility..."
in response to an explicit and unequivocal:
"It is most common and evident
(meaning you can trust your eyes this time)
in cooling water pools for nuclear reactors."
Parentheticals aside, my two sentences and fifteen words are re-cast
into terms of "appear" and "possibility" where your ambiguous
interpretative paragraph (not completely quoted above) is longer than
the direct statement.

>I never made an ad hominem attack on your arts capabilities as you did
>my physics capabilities.

Yes, I know and it keeps me awake on these long winter nights. As you
yourself put it, I disappoint my groupies, don't I? You can add your
minor as a victim of ad hominem atrocities - I will have to make up
for it by sleeping in later in the mornings.

73's
Richard Clark, KB7QHC

1937. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 05:00:22 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47a69be7$0$93284$8046368a@newsreader.iphouse.net>
Source record: 28358

AI4QJ wrote:
>
> I actually minored in English. When one participates in a baccalaureate
> degree program at an actual "university", the BS curriculum requires a minor
> in the arts. This means I understand to some degree where you are coming
> from. I never made an ad hominem attack on your arts capabilities as you did
> my physics capabilities. I contend that you were not qualified to make that
> judgement based only upon my being an engineer and not knowing which
> university issued the degree or indeed if it was a university that issued
> the degree (as opposed to an engineering "college").
>
> English literarure was fun; it was a nice form of recreation and an easy ACE
> for 20 of my 140 credits.
>
> 73 de AI4QJ
>
>

He sure knows how to pat himself on the back. It would have been more
convincing if he could spell literature.

tom
K0TAR

1938. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 05:09:59 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A3A219C5A00mcoslocomcastnet@216.196.97.136>
Source record: 28360

Richard Clark <kb7qhc@comcast.net> wrote in
news:nfqcq35pho51rq1t8jnocegvcuqst4le19@4ax.com:

> On Sun, 03 Feb 2008 18:17:09 -0600, Mike Coslo
> <mcoslo@youknow.comcast.net> wrote:
>
>>Richard Clark <kb7qhc@comcast.net> wrote in
>>news:2t57q39r6cv0cg56s7q9l19qpi2bi7d04l@4ax.com:
>>
>>> "As You Like It," Bill Shakespeare
>>
>>
>>
>>The mind plays tricks on you. You play tricks back! It's like you're
>>unraveling a big cable-knit sweater that someone keeps knitting and
>>knitting and knitting and knitting and knitting and knitting
>>
>>"Pee Wee's Big Adventure" Pee Wee Herman
>
> Thank you Mike,
>
> Always there on an even keel (even if you have to hike out to do it).

At your service Richard - one does has to come up for air
occasionally in here. 8^)

- 73 de Mike N3LI -

1939. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 05:47:14 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080203214714.a209f8a8.rsparks@elltel.net>
Source record: 28361

On Sat, 2 Feb 2008 13:01:22 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 27, 10:57 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Sat, 26 Jan 2008 19:24:22 -0800 (PST)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Jan 26, 12:15 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > > On Fri, 25 Jan 2008 19:13:31 -0800 (PST)
> > >
> > > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > > On Jan 24, 10:33 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > > > [snip]
> > > > > > By examining this derivation, the reader can see that power and energy
> > > > > > is reflected when a wave encounters a discontinuity. The reader can
> > > > > > also see that more power is present on the transmission line than is
> > > > > > delivered to the load.
> > >
> > > > > This is the conventional phraseology for describing the behaviour at
> > > > > the impedance discontinuity.
> > >
> > > > > Allow me to offer a specific example for which this phraseology is
> > > > > inappropriate.
> > >
> > > > > Consider a 50 V step function generator with an output impedance of
> > > > > 50 ohms driving a 50 ohm line that is 1 second long terminated in an
> > > > > open circuit.
> > >
> > > > > Turn on the generator. A 50 V step propagates down the line. The
> > > > > generator is putting 50 J/s into the line. One second later it
> > > > > reaches the open end and begins propagating backwards.
> > > > > After two seconds it reaches the generator. The voltage at the
> > > > > generator is now 100 V and no current is flowing from the
> > > > > generator into the line. In the 2 seconds, the generator put
> > > > > 100 joules into the line which is now stored in the line.
> > > > > The line is at a constant 100 V and the current is zero everywhere.
> > >
> > > > > Computing Pf and Pr will yield 50 W forward and 50 W reflected.
> > > > > And yet no current is flowing anywhere. The voltage on the line
> > > > > is completely static.
> > >
> > > > > And yet some will claim that 50 W is flowing forward and 50 W
> > > > > is flowing backwards.
> > >

> > > > > Does this seem like a reasonable claim for an open circuited
> > > > > transmission line with constant voltage along its length and
> > > > > no current anywhere?
> >
> > > > > I do not find it so.
> >
> > > > > ...Keith
> >
> > > > This is a reasonable observation for a static situation where energy is stored on a transmission line.
> >
> > > > If the example contained an ongoing consideration, like "Where does the power move to?", then it would be reasonable to consider that the wave continued to move, simply to avoid the complication of what EXACTLY happens when a wave starts and stops.
> >
> > > So have you thought about "where does the power go?"
> >
> > Yes, only the model I use substitutes a battery for the signal generator that you are using.
>
> A battery is not the same since it has a very low output impedance.
> A battery in series with a 50 ohm resistor would offer a reasonable
> match to a 50 ohm transmission line.
>
> > The returning wave can recharge the battery, but how does the current stop? Or does it ever stop? From a practical aspect, the current must stop, but I can not explain how except by resistance that absorbs the circulating power.
>
> That is the challenging part to understand when too much emphasis
> is placed on the existance of energy being transported with the
> "reflected power".
>
> When I was learning this stuff, I did many examples with matched
> generators (a battery with a 50 ohm resistor is a good example).
> With step functions, it is easy to compute the final state because
> you can just treat it as a DC circuit for analysis.
>
> > We must keep the limitations of our models in mind.
>
> True, but over limiting is not good either.
>
> > > When the generator is matched to the line so that
> > > the reflected wave does not encounter an impedance
> > > discontinuity when it arrives back at the generator
> > > (and therefore is not reflected), where does the
> > > reflected power go?
> > > Does it enter the generator?
> > > Is it dissipated somewhere?
> >
> > > Answers to these questions will quickly lead to

> > > doubts about the *reality* of "reflected power".
> >
> > > ...Keith
> >
> > The reflected wave that does not encounter an impedance at the generator must be on an infinitely long line, and therefore the conditions must have changed between the time of launch and return.
>
> I don't follow the association between generator impedance and
> length of line.
>
> For a 50 ohm line, a matched generator has a 50 ohm output
> impedance. The returning wave does not encounter an impedance
> discontinuity so is not reflected. It disappears into the
> the generator.

OK, I think we are saying the same thing. The return wave DISAPPEARS.
>
> > It makes more sense to think that the reflected voltage of (using your example) 50v meets 50v of forward voltage, and therefore finds an infinite resistance, coming to a stop.
>
> The current does stop (since it can not flow into the
> infinite resistance at the end of the line), and a 50 V step
> propagates back along the line.
>
> This 50 V reverse propagating step plus the 50 V already on
> the line produces a total of 100 V on the line.
>
> If the generator was constructed as a 100 V battery in series
> with a 50 ohm resistor, then when the step arrives back at
> the generator, there is 100 V on both sides of the source
> resistor (battery on one side, line on the other) and the
> current through the source resistor becomes zero. No further
> current flows into the line.
>
> > If that happens, doesn't the same condition occur as soon as the reflected wave is first generated at the line end? The current really stops as soon as the end is reached, with the energy contained in the magnetic field converted to electric field energy visible as voltage. If this happened, the reflected wave could be better described as an electric "jump", similar to a hydraulic jump found in open channel flow of liquids, where kinetic energy is converted to potential energy.
>
> There do seem to be some similarities, though there is likely
> trouble if the analogy is carried to far.
>
> > This idea of an electric "jump" requires not a reflection occuring without a discontinuity, but a moving wave front that absorbs the traveling wave, bringing it to a stop (in this case).
>
> The current has stoppped, but has the "wave"?

>
> Vf, Vr, If, Ir, Pf, Pr are still computable using the normal
> formulae.
>
> ...Keith

Here is a link to a web site discussing reflections and more.

http://www.ivorcatt.co.uk/em.htm

He has some drawings that pertain to this discussion. He shows reflections and crossings, but no one-way transmission lines.
--
73, Roger, W7WKB

1940. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 06:02:01 UTC
From: Suzy <not@valid>
Message-ID: <47a6aa62$1@dnews.tpgi.com.au>
Source record: 28362

"Mike Coslo" <mcoslo@youknow.comcast.net> wrote in message
news:Xns9A3A42C7772mcoslocomcastnet@216.196.97.136...
> "AI4QJ" <nospam@yahoo.com> wrote in
> news:47a68dff$0$9508$4c368faf@roadrunner.com:
>
>>
>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> news:qiscq39itap4qnrdvlqc10uhlrf3gbof4d@4ax.com...
>>> On Sun, 3 Feb 2008 20:52:27 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>
>>>>Either you
>>>>dragged him down to the level of Pee Wee Herman, or he dragged you
>>>>down from
>>>>Shakespeare to that level.
>>>
>>> Dan, my ever shocked groupie,
>>>
>>> Everyone I know has a big but. Let's talk about your big but.
>>>
>>>>Could this be considered
>>>>groupie abuse? ;-)
>>>
>>> It might now.
>>
>> Sorry Richard, your groupies don't tend to be people with technical
>> degrees or IQ's above 110.
>
> Although I don't consider myself a "groupie" of Richard's, I do read all
> his post's because I find him very entertaining - in the best sense of
> the word - his wit is probably the best in the group, if sometimes
> acerbic.
>
> Perhaps Pee-Wee Herman is a bit pedestrian for your tastes, so here is
> another one for you.
>
> "We don't receive wisdom; we must discover it for ourselves after a
> journey that no one can take for us or spare us."
>
> Most fitting, and you certainly know the source, don't you?
>
> And for what it is worth, the IQ here is measured out at 150. Let me know
> if that is enough. If I'm not smart enough, or not technical enough for
> you, please feel free to filter my messages.
>

> - 73 de Mike N3LI -
>
Only 150? Ahaha! Inferiority complex!

Mind you... could be worse... Did you know that at the last count nearly
half the population had less than the average IQ?

1941. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 06:02:43 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a6aa84$0$9507$4c368faf@roadrunner.com>
Source record: 28363

"Richard Clark" <kb7qhc@comcast.net> wrote in message
> You can add your
> minor as a victim of ad hominem atrocities - I will have to make up
> for it by sleeping in later in the mornings.

Definition: Ad hominem - attacking the arguer and not the argument

Now, whatever could ever dispose one to do that, a technique he freely admits to? Intellectual insecurity? It is an atrocity merely commited upon one's self and reputation but I doubt it really affects your somnolence after all these years.

1942. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 06:08:27 UTC
From: Suzy <not@valid>
Message-ID: <47a6abe7@dnews.tpgi.com.au>
Source record: 28364

```
"Roger Sparks" <rsparks@elltel.net> wrote in message
news:20080203214714.a209f8a8.rsparks@elltel.net...
> On Sat, 2 Feb 2008 13:01:22 -0800 (PST)
> Keith Dysart <Keith.Dysart@gmail.com> wrote:
>
>> On Jan 27, 10:57 am, Roger Sparks <rspa...@elltel.net> wrote:
>> > On Sat, 26 Jan 2008 19:24:22 -0800 (PST)
>> >
>> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
>> > > On Jan 26, 12:15 pm, Roger Sparks <rspa...@elltel.net> wrote:
>> > > > On Fri, 25 Jan 2008 19:13:31 -0800 (PST)
>> >
>> > > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
>> > > > > On Jan 24, 10:33 pm, Roger Sparks <rspa...@elltel.net> wrote:
>> > > > > [snip]
>> > > > > > By examining this derivation, the reader can see that power and
>> > > > > > energy
>> > > > > > is reflected when a wave encounters a discontinuity. The
>> > > > > > reader can
>> > > > > > also see that more power is present on the transmission line
>> > > > > > than is
>> > > > > > delivered to the load.
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>> > > > > This is the conventional phraseology for describing the behaviour
>> > > > > at
>> > > > > the impedance discontinuity.
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>> > > > > Allow me to offer a specific example for which this phraseology
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>> > > > > inappropriate.
>> >
>> > > > > Consider a 50 V step function generator with an output impedance
>> > > > > of
>> > > > > 50 ohms driving a 50 ohm line that is 1 second long terminated in
>> > > > > an
>> > > > > open circuit.
>> >
>> > > > > Turn on the generator. A 50 V step propagates down the line. The
>> > > > > generator is putting 50 J/s into the line. One second later it
>> > > > > reaches the open end and begins propagating backwards.
>> > > > > After two seconds it reaches the generator. The voltage at the
>> > > > > generator is now 100 V and no current is flowing from the
>> > > > > generator into the line. In the 2 seconds, the generator put
>> > > > > 100 joules into the line which is now stored in the line.
```

>> > > > > The line is at a constant 100 V and the current is zero
>> > > > > everywhere.
>> >
>> > > > > Computing Pf and Pr will yield 50 W forward and 50 W reflected.
>> > > > > And yet no current is flowing anywhere. The voltage on the line
>> > > > > is completely static.
>> >
>> > > > > And yet some will claim that 50 W is flowing forward and 50 W
>> > > > > is flowing backwards.
>> >
>> > > > > Does this seem like a reasonable claim for an open circuited
>> > > > > transmission line with constant voltage along its length and
>> > > > > no current anywhere?
>> >
>> > > > > I do not find it so.
>> >
>> > > > > ...Keith
>> >
>> > > > This is a reasonable observation for a static situation where
>> > > > energy is stored on a transmission line.
>> >
>> > > > If the example contained an ongoing consideration, like "Where does
>> > > > the power move to?", then it would be reasonable to consider that
>> > > > the wave continued to move, simply to avoid the complication of
>> > > > what EXACTLY happens when a wave starts and stops.
>> >
>> > > So have you thought about "where does the power go?"
>> >
>> > Yes, only the model I use substitutes a battery for the signal
>> > generator that you are using.
>>
>> A battery is not the same since it has a very low output impedance.
>> A battery in series with a 50 ohm resistor would offer a reasonable
>> match to a 50 ohm transmission line.
>>
>> > The returning wave can recharge the battery, but how does the current
>> > stop? Or does it ever stop? From a practical aspect, the current
>> > must stop, but I can not explain how except by resistance that absorbs
>> > the circulating power.
>>
>> That is the challenging part to understand when too much emphasis
>> is placed on the existance of energy being transported with the
>> "reflected power".
>>
>> When I was learning this stuff, I did many examples with matched
>> generators (a battery with a 50 ohm resistor is a good example).
>> With step functions, it is easy to compute the final state because
>> you can just treat it as a DC circuit for analysis.
>>
>> > We must keep the limitations of our models in mind.

>>
>> True, but over limiting is not good either.
>>
>> > > When the generator is matched to the line so that
>> > > the reflected wave does not encounter an impedance
>> > > discontinuity when it arrives back at the generator
>> > > (and therefore is not reflected), where does the
>> > > reflected power go?
>> > > Does it enter the generator?
>> > > Is it dissipated somewhere?
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>> > > Answers to these questions will quickly lead to
>> > > doubts about the *reality* of "reflected power".
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>> > > ...Keith
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>> > The reflected wave that does not encounter an impedance at the
>> > generator must be on an infinitely long line, and therefore the
>> > conditions must have changed between the time of launch and return.
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>> I don't follow the association between generator impedance and
>> length of line.
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>> For a 50 ohm line, a matched generator has a 50 ohm output
>> impedance. The returning wave does not encounter an impedance
>> discontinuity so is not reflected. It disappears into the
>> the generator.
>
> OK, I think we are saying the same thing. The return wave DISAPPEARS.
>>
>> > It makes more sense to think that the reflected voltage of (using your
>> > example) 50v meets 50v of forward voltage, and therefore finds an
>> > infinite resistance, coming to a stop.
>>
>> The current does stop (since it can not flow into the
>> infinite resistance at the end of the line), and a 50 V step
>> propagates back along the line.
>>
>> This 50 V reverse propagating step plus the 50 V already on
>> the line produces a total of 100 V on the line.
>>
>> If the generator was constructed as a 100 V battery in series
>> with a 50 ohm resistor, then when the step arrives back at
>> the generator, there is 100 V on both sides of the source
>> resistor (battery on one side, line on the other) and the
>> current through the source resistor becomes zero. No further
>> current flows into the line.
>>
>> > If that happens, doesn't the same condition occur as soon as the
>> > reflected wave is first generated at the line end? The current really

>> > stops as soon as the end is reached, with the energy contained in the
>> > magnetic field converted to electric field energy visible as voltage.
>> > If this happened, the reflected wave could be better described as an
>> > electric "jump", similar to a hydraulic jump found in open channel flow
>> > of liquids, where kinetic energy is converted to potential energy.
>>
>> There do seem to be some similarities, though there is likely
>> trouble if the analogy is carried to far.
>>
>> > This idea of an electric "jump" requires not a reflection occuring
>> > without a discontinuity, but a moving wave front that absorbs the
>> > traveling wave, bringing it to a stop (in this case).
>>
>> The current has stoppped, but has the "wave"?
>>
>> Vf, Vr, If, Ir, Pf, Pr are still computable using the normal
>> formulae.
>>
>> ...Keith
>
> Here is a link to a web site discussing reflections and more.
>
> http://www.ivorcatt.co.uk/em.htm
>
> He has some drawings that pertain to this discussion. He shows
> reflections and crossings, but no one-way transmission lines.
> --
> 73, Roger, W7WKB

I just love this quote from that material "...Thus do these clapped-out
radio men..."

Though it's all above my head, I have indeed met some clapped out radio men.

1943. Re: Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 06:23:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qdbq83r13r39f@corp.supernews.com>
Source record: 28365

Francesco L. wrote:
> . . .
> I asked since an Italian dxer (i4ewh) in its scheme considers this splitter
> absolutely necessary. I spoke with him and he told me the swr was greatly
> reduced by this solution.

The SWR has nothing to do with the antenna pattern. A good SWR can be had with a feed system which produces a lousy pattern, and obtaining a good pattern can result in a poor feedpoint SWR. But the feedpoint impedance is easily fixed with a matching network. A poor pattern is much harder to correct.

Anyway here is the link so you can have a look.
> It's a four element phased array:
> http://i4ewh.altervista.org/ShortWaves/Verticali_file/Verticali.htm

It's entirely possible that this arrangement does produce some nulls and peaks. But it almost certainly isn't producing the pattern that the author thinks and, if the resistors are doing anything at all, they're wasting power which could be radiated. The _Antenna Book_ explains why.

> Once again, I must repeat that low band dxing has no help for beginners and
> better and simpler schemes can be found on the simple "vertical antennas" by
> arrl and arrl antenna book. If you have any other site or web address where
> I can find more material, please tell me.

There's a great deal of information about phased arrays in books and on the web. I haven't done a comprehensive survey, but would guess that a solid majority is wrong. And if you're not pretty well aware of the basic principles and problems of feeding phased arrays, you probably won't be able to tell which is and which isn't. Look over the _Antenna Book_ information, both in the 21st Edition and the material from the 20th which is on the CD. If you find it too hard to understand, drop me an email.

> A last question to both of you: I would like to use this system (centered
> for the 20 meters band) also for 40 meters and 10 meters. Should an antenna
> tuner suffice?
> Francesco ik8vwa

No. All an antenna tuner does is transform the feedpoint impedance. It does nothing to produce the element currents you need in order to get the pattern you want. It is possible to make a reasonably good multi-band receiving array as long as it's electrically small. (An HF receiving antenna doesn't have to be efficient.) But to make a decent transmitting phased array for multiple bands usually requires a separate

feed system for each band, and probably separate elements for each band also. You can, of course, use any of a number of simple feed systems on multiple bands which will give peaks in some directions and nulls in others. But the patterns won't be anything like the textbook patterns for properly fed arrays.

Roy Lewallen, W7EL

1944. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 08:24:38 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <t8cdq3plhknmese3kgs3rt9kgfeh74mjrv@4ax.com>
Source record: 28366

On Mon, 4 Feb 2008 01:02:43 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>but I doubt it really affects your somnolence after all these years.

Of course it doesn't. And the bulk of lurking readers, few-to-none
having sat through a literature course, could figure that out easily.
Dan, this is not a remarkable insight.

Yes, I know, I disappoint my groupies, and with most of them absent
your disappointment is magnified out of proportion.

73's
Richard Clark, KB7QHC

1945. Re: Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 10:35:10 UTC
From: "Francesco L." <flancellotta@gmail.com>
Message-ID: <4f6b7be4-b54c-4c29-baab-3af62e4f3c6c@e6g2000prf.googlegroups.com>
Source record: 28367

> It's entirely possible that this arrangement does produce some nulls and
> peaks. But it almost certainly isn't producing the pattern that the
> author thinks and, if the resistors are doing anything at all, they're
> wasting power which could be radiated. The _Antenna Book_ explains why.

Ok

> Look over the _Antenna
> Book_ information, both in the 21st Edition and the material from the
> 20th which is on the CD. If you find it too hard to understand, drop me
> an email.

That's very very kind of you

> > A last question to both of you: I would like to use this system (centered
> > for the 20 meters band) also for 40 meters and 10 meters. Should an antenna
> > tuner suffice?
> > Francesco ik8vwa
>
> No. All an antenna tuner does is transform the feedpoint impedance.

I was and still I'm conscious of this but my question was different
and maybe not so well expressed, so excuse me and read this please:
my intention is to use the two antennas also to radiate in the 7 mhz
band (spacing in this case would be 1/8 and the radiation lobe almost
omnidirectional) and 28 mhz (spacing would be 1/2 wavelength and the
radiation pattern should be end-fire). This is because the system
would be designed for the 20 meters band with 1/4 wave spacing between
the two elements, but as you know, that spacing corresponds to 1/8 and
1/2 respectively in the 40 and 10 meters band. I know the sensitivity
should not be the best but using an antenna tuner I think the
radiation patterns should be as predicted before, what do you think?

1946. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 12:13:29 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <mdidnTYRvM0bnDranZ2dnUVZ8uOdnZ2d@bt.com>
Source record: 28368

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a693f9$0$9521$4c368faf@roadrunner.com...
>
> "Mike Kaliski" <michael.kaliski@tesco.net> wrote in message
> news:zPydneCHE5PB4TvanZ2dnUVZ8u-
>
>> While the speed of each beam relative to a stationary observer is 300,000
>> Km/s with both beams travelling in opposite directions, the combined
>> velocity relative to that stationary observer is 600,000 Km/s. Einstein
>> did state that from the point of view of someone or something travelling
>> with the beam the combined velocity of the two beams approaching
>> collision would appear to be 300,000 Km/s. Einstein was wrong on this
>> point because for a wavefront or beam propagating at the speed of light,
>> no time passes and therefore no velocity measurement is possible or has
>> any meaning in conventional terms.
>
> Not true. The observer on light beam 1 is experiencing time in his own
> frame of reference. As far as he is concerned, he is not moving. He
> experiences normal time in his frame of reference. And, he sees light
> beam 2 coming to him at 3 X 10E8 meters/sec.
>
>>Clearly we are wasting a lot of time, effort and money in bothering to
>>build bigger particle accelerators (like at CERN) if the combined
>>collision velocities can never exceed 300,000 Km/s.
>
> They are NOT attempting to exceed 3 X 10E8 meters/second!
>>
>> Einstein (who is greatly over rated in my opinion) got a lot of stuff
>> right,
>
> For the purpose of this discussion he got EVERYTHING right and his
> theories have been proven time and time again.
>
>> but there are some pretty huge gaps in the theory, particularly where
>> values tend towards infinity. Hence the inability to deal with gravity, a
>> failure of the theory in dealing with black holes and an inability to
>> deal with super luminal velocities. Richard Feynman was a far better
>> theoretical physicist who actually invented ways of reconciling and
>> sidestepping some of the paradoxes inherent in Einstein's equations.
>
> A black hole is not a paradox. It is simply enough mass such that its
> escape velocity from its huge gravitational filed is greater than the
> speed of light. What is so paradoxical about that? The only paradoxes that
> arise in Einstein's equations occur when people make assumptions that

> certain universal constants like the speed of light can become variables
> and then the ridiculous paradoxes start to occur. If we try to change the
> constant pi, wouldn't we get a lot of unrealistic calculations? Changing
> the value of c is the same as trying to change pi.
>
>>
>> Just as Einstein refined Newton's ideas, future physicists will regard
>> Einstein's theories the way we regard Newton's; a good approximation for
>> everyday use, but not a true description of the processes.
>
> Maybe in 100 years or so. We are not even close to such a refinement right
> now. Maybe we never will be.
>
>> How on earth did NASA get astronauts to the moon using just Newtonian
>> >mechanics? The mind boggles. :-)
>
> The moon is only 450,000 miles away. All velocities, distances and times
> involved in a trip to the moon, or Mars, are as Newtonian as a trip on a
> jet from London to New York. :-)
>

Last time I checked the moon was somewhat nearer to 250,000 miles away :-)

For an observer travelling at the speed of light, all distances effectively disappear and become equal. For that observer it appears to take the same time to travel to Alpha Centuri or to the Andromeda Galaxy. In fact the observer would have no sensation of time whatsoever. From our external view point, the respective journeys would take four years and several million years. This is one of the crucial failures when interpreting Einstein's theory. Time for something or someone travelling at the speed of light ceases to exist as does the concept of distance. In order for the theory of relativity to work it is necessary to have some constant against which to guage the effects. The speed of light in a vacuum is a very reliable and convenient constant. It does vary considerably in other mediums though which implies it is not the gold standard of velocity measurement, just the best we have at the moment. In fact, the theory of relativity implies that there cannot ever be an absolute standard against which to measure anything.

My interpretation is that the speed of light is not some insurmountable barrier, just a point at which conventional theory hits a brick wall and is unable to deal with what lies beyond. The same was true of aerodynamic theory up to the 1940's with respect to the sound barrier, even though projectiles fired from rifles and large artillery pieces were known to exceed the speed of sound. Once Chuck Yeager broke the sound barrier, aerodynamic theory had to be expanded. It didn't mean that everything that went before was wrong, just that it could not be used to make predictions for flight at speeds greater than the speed of sound.

The speed of light in a vacuum is currently the constant at which present theory breaks down and yet particles have been observed travelling in a manner that can only be explained if it is assumed they have moved from one

point to another at speeds greater than the speed of light.

It may well be that wave-particle duality breaks down at the speed of light and that only a particle can exceed light speed. The absence of waves means that it's presence cannot be detected and it effectively drops out of our perception until the speed drops back to sub-light velocities.

Mike G0ULI

1947. Re: Window line billowing in the wind

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 13:56:51 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <b184d43b-abc4-4eb8-9052-d8daef909e8f@v4g2000hsf.googlegroups.com>
Source record: 28369

On Feb 1, 2:42 pm, "pdr...@coinet.com" <co_far...@yahoo.com> wrote:
> On Feb 1, 11:09 am, Cecil Moore <nos...@w5dxp.com> wrote:
>
> > pdr...@coinet.com wrote:
> > > I don't think you will want to use copperweld of any size for open
> > > feed line. The wire will twist on itself in an uncontrollable manner.
> > > Even with closely spaced spreaders, it will still be a mess.
>
> > The Wireman has #14 stranded "copperweld" in the popular
> > 450 ohm ladder-line format.
>
> >http://thewireman.com/antennap.html#balanced
> > --
> > 73, Cecil http://www.w5dxp.com
>
> Hi, Cecil.
> Yes, but this is manufactured and I thought N3QE was wanting to home
> brew the feedline. I don't think one person can control two strands of
> copperweld while they attach spacers!

If I could find a local source, I wouldn't mind too much on missing
out on the homebrewing :-).

But the gotcha here is that I think that what Cecil pointed to on the
Wireman website is window line, not ladder line. And after reading the
comments here I'm pretty sure that it's the webbing in the window line
that causes all the wind load, so that's not what I want.

I have worked with the stranded-copper-clad-steel wires on antenna
projects and they really are a breeze to work with. Not difficult at
all!

#18AWG solid copperweld is manageable... it's got a pretty good memory
of past curls but it doesn't take a lot of tension to make it forget.
#14AWG solid copperweld or bigger... yes, that's a chore to work with
just one conductor, and if I tried two at a time you would find me
wrapped up in a horrible twisted tangle of the stuff.

I do have a local source for stranded-copper-clad-steel and can
certainly homebrew my own insulators. Looks like the way to go!
Although the work of assembling it all makes it sound like it'll take
most of a weekend.

Tim N3QE

1948. Re: Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 16:53:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qegp92i8mec9e@corp.supernews.com>
Source record: 28370

Francesco L. wrote:
>
> I was and still I'm conscious of this but my question was different
> and maybe not so well expressed, so excuse me and read this please:
> my intention is to use the two antennas also to radiate in the 7 mhz
> band (spacing in this case would be 1/8 and the radiation lobe almost
> omnidirectional) and 28 mhz (spacing would be 1/2 wavelength and the
> radiation pattern should be end-fire). This is because the system
> would be designed for the 20 meters band with 1/4 wave spacing between
> the two elements, but as you know, that spacing corresponds to 1/8 and
> 1/2 respectively in the 40 and 10 meters band. I know the sensitivity
> should not be the best but using an antenna tuner I think the
> radiation patterns should be as predicted before, what do you think?

It's easy to get the correct phasing with two identical elements which are in phase or 180 degrees out of phase -- you simply feed them with equal lengths of coax (in phase) or lengths which differ by 1/2 wavelength (out of phase). Alternatively, you can use a reversing transformer for the out of phase case. You can also use other odd multiples of 1/2 wavelength although the beam and SWR bandwidth gets narrower as you use longer lengths. So as long as you create a feed system which does this on every band, you'll be fine.

The problem is in making the 90 degree phased array on 20, which I recall you wanted to do. (If not, disregard the rest.) The feed system for that pattern will work only on the one band, so you'll have to switch it out on the other bands. The L network feed systems described in the _Antenna Book_ use equal length lines plus an L network for doing 90 degree feeds. So you could use the L network on 20, and switch it out but use the same feedlines for the other bands to get two in-phase elements on those other bands. You would need a tuner, though, since the impedance at the common feed point will be different on each band.

Roy Lewallen, W7EL

1949. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 17:51:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lgIpj.6023$0o7.3638@newssvr13.news.prodigy.net>
Source record: 28371

Roger Sparks wrote:
> Here is a link to a web site discussing reflections and more.
> http://www.ivorcatt.co.uk/em.htm

Interesting - especially about the inductance
(loading coil) acting like a transmission line.
--
73, Cecil http://www.w5dxp.com

1950. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 17:53:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <WIlpj.6024$0o7.1288@newssvr13.news.prodigy.net>
Source record: 28372

Suzy wrote:
> Mind you... could be worse... Did you know that at the last count nearly
> half the population had less than the average IQ?

Would you believe that the largest group of people
with the same IQ are neither above or below average? :-)
--
73, Cecil http://www.w5dxp.com

1951. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 18:13:17 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fo7kjt$1jtm$1@f04n12.cac.psu.edu>
Source record: 28373

Suzy wrote:
> "Mike Coslo" <mcoslo@youknow.comcast.net> wrote in message

>> And for what it is worth, the IQ here is measured out at 150. Let me know
>> if that is enough. If I'm not smart enough, or not technical enough for
>> you, please feel free to filter my messages.
>>
>> - 73 de Mike N3LI -
>>
> Only 150? Ahaha! Inferiority complex!
>
> Mind you... could be worse... Did you know that at the last count nearly
> half the population had less than the average IQ?

It's alarming I tell ya! fortunately one group amongst us isn't afraid
to stare down the foul gullet of the truth:

http://www.dailyredundancy.com/archives/1012.html

for the obtuse among us, it's a satire site.

- 73 de Mike N3LI -

1952. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 18:27:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <YNIpj.2978$0w.1445@newssvr27.news.prodigy.net>
Source record: 28374

Mike Kaliski wrote:
> The speed of light in a vacuum is currently the constant at which
> present theory breaks down and yet particles have been observed
> travelling in a manner that can only be explained if it is assumed they
> have moved from one point to another at speeds greater than the speed of
> light.

How does non-locality fit into the picture?
--
73, Cecil http://www.w5dxp.com

1953. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 18:42:12 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fo7ma4$6cc$1@f04n12.cac.psu.edu>
Source record: 28375

Cecil Moore wrote:
> Suzy wrote:
>> Mind you... could be worse... Did you know that at the last count
>> nearly half the population had less than the average IQ?
>
> Would you believe that the largest group of people
> with the same IQ are neither above or below average? :-)

It all depends on the fineness of the tool. Present measurement techniques do indeed have most people at that statistical "average intelligence". But I liken it to using a meter that has only 10 volt increments. A lot of different voltages can be covered in gross increments like that.

- 73 de Mike N3LI -

1954. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 18:43:34 UTC
From: dfinn1@nc.rr.com
Message-ID: <825a1d93-fbb9-4259-abb5-12264da47482@s13g2000prd.googlegroups.com>
Source record: 28376

On Feb 4, 7:13 am, "Mike Kaliski" <michael.kali...@tesco.net> wrote:
> "AI4QJ" <nos...@yahoo.com> wrote in message
>
> news:47a693f9$0$9521$4c368faf@roadrunner.com...
>
>
>
>
>
>
>
> > "Mike Kaliski" <michael.kali...@tesco.net> wrote in message
> > news:zPydneCHE5PB4TvanZ2dnUVZ8u-
>
> >> While the speed of each beam relative to a stationary observer is 300,000
> >> Km/s with both beams travelling in opposite directions, the combined
> >> velocity relative to that stationary observer is 600,000 Km/s. Einstein
> >> did state that from the point of view of someone or something travelling
> >> with the beam the combined velocity of the two beams approaching
> >> collision would appear to be 300,000 Km/s. Einstein was wrong on this
> >> point because for a wavefront or beam propagating at the speed of light,
> >> no time passes and therefore no velocity measurement is possible or has
> >> any meaning in conventional terms.
>
> > Not true. The observer on light beam 1 is experiencing time in his own
> > frame of reference. As far as he is concerned, he is not moving. He
> > experiences normal time in his frame of reference. And, he sees light
> > beam 2 coming to him at 3 X 10E8 meters/sec.
>
> >>Clearly we are wasting a lot of time, effort and money in bothering to
> >>build bigger particle accelerators (like at CERN) if the combined
> >>collision velocities can never exceed 300,000 Km/s.
>
> > They are NOT attempting to exceed 3 X 10E8 meters/second!
>
> >> Einstein (who is greatly over rated in my opinion) got a lot of stuff
> >> right,
>
> > For the purpose of this discussion he got EVERYTHING right and his
> > theories have been proven time and time again.
>
> >> but there are some pretty huge gaps in the theory, particularly where
> >> values tend towards infinity. Hence the inability to deal with gravity, a
> >> failure of the theory in dealing with black holes and an inability to

> >> deal with super luminal velocities. Richard Feynman was a far better
> >> theoretical physicist who actually invented ways of reconciling and
> >> sidestepping some of the paradoxes inherent in Einstein's equations.
>
> > A black hole is not a paradox. It is simply enough mass such that its
> > escape velocity from its huge gravitational filed is greater than the
> > speed of light. What is so paradoxical about that? The only paradoxes that
> > arise in Einstein's equations occur when people make assumptions that
> > certain universal constants like the speed of light can become variables
> > and then the ridiculous paradoxes start to occur. If we try to change the
> > constant pi, wouldn't we get a lot of unrealistic calculations? Changing
> > the value of c is the same as trying to change pi.
>
> >> Just as Einstein refined Newton's ideas, future physicists will regard
> >> Einstein's theories the way we regard Newton's; a good approximation for
> >> everyday use, but not a true description of the processes.
>
> > Maybe in 100 years or so. We are not even close to such a refinement right
> > now. Maybe we never will be.
>
> >> How on earth did NASA get astronauts to the moon using just Newtonian
> >> >mechanics? The mind boggles. :-)
>
> > The moon is only 450,000 miles away. All velocities, distances and times
> > involved in a trip to the moon, or Mars, are as Newtonian as a trip on a
> > jet from London to New York. :-)
>
> Last time I checked the moon was somewhat nearer to 250,000 miles away :-)
>

You're right. I was thinking of the round trip :-)

1955. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 18:50:03 UTC
From: Suzy <not@valid>
Message-ID: <47a75e62$1@dnews.tpgi.com.au>
Source record: 28377

"Jim Higgins" <invalid@invalid.invalid> wrote in message
news:dumeq3td0gdeok9pjm41f4ntdn2puuenb1@4ax.com...
> On Sun, 03 Feb 2008 22:59:08 -0600, Mike Coslo
> <mcoslo@youknow.comcast.net> wrote:
>
>>Perhaps Pee-Wee Herman is a bit pedestrian for your tastes,
>>so here is another one for you.
>
>
> "I think we're sending our kids a mixed message. Magic Johnson didn't
> practice safe sex, and we made him a hero. Pee Wee Herman practiced
> safe sex, and we threw him in jail."
> --Allegedly from an anonymous editorial in the Shreveport Times.

And here in Australia we have a young (16) oaf who held a party at his parents' place while they were away, which grew to 500 youths who trashed the house, pelted Police with bottles, and he declared "It was great. I'd do it all again". His reward is to be glorified by the press and Feted by manager Max Markson (already...) and about to embark on a world tour...

1956. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 19:02:50 UTC
From: dfinn1@nc.rr.com
Message-ID: <db37c7e6-e1e5-457e-a511-ce88f40d6958@d4g2000prg.googlegroups.com>
Source record: 28378

On Feb 3, 11:59 pm, Mike Coslo <mco...@youknow.comcast.net> wrote:

>
> Although I don't consider myself a "groupie" of Richard's, I do read all
> his post's because I find him very entertaining - in the best sense of
> the word - his wit is probably the best in the group, if sometimes
> acerbic.
>
> Perhaps Pee-Wee Herman is a bit pedestrian for your tastes,

I know, Iknow, I guess I have this elitist streak in me.

> so here is
> another one for you.
>
> "We don't receive wisdom; we must discover it for ourselves after a
> journey that no one can take for us or spare us."
>
> Most fitting, and you certainly know the source, don't you?

I do know the source but question its relationship to rraa.

>
> And for what it is worth, the IQ here is measured out at 150.

I know. Almost EVERYONE here claims to have a superior IQ and I will
say further that I could never claim an IQ that high niether could
0.01% of the population in the world. It just seems odd to me that so
many high IQ people gravitate to rraa. So much brain power all in one
place!

Certainly you are a MENSA member. What is your MENSA number if I may
ask?

In truth, I think there is only one or perhaps two people in this
group who really do have such abilities, one is a MENSA member and you
can tell by the quality of his posts. The other is the one who is
actually capable of challenging him and does so on a regular basis.
Meanwhile I shall be happy with my measly 135, which is still enough
to sort through the regular BS I see here.

Let me know
> if that is enough. If I'm not smart enough, or not technical enough for
> you, please feel free to filter my messages.

Smart enough? YOU are the on with the 150 IQ! I am not even
intellectually endowed withenough brain power to achieve a PhD. You

could replace Steven Hawking as the Dean of Physics at Cambridge!

1957. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 19:11:28 UTC
From: Bob Dixon <dixon.8@osu.edu>
Message-ID: <dixon.8-53E452.14112804022008@charm.magnus.acs.ohio-state.edu>
Source record: 28379

Re HDTV. It would seem there are at least 2 boondoggles going on.

1. Cable and satellite providers claim they are carrying local HD channels. But what they don't say is that most local digital stations have multiple digital programs (One of my locals has 5), and only ONE of those is usually carried by the mass providers. The only way to get the rest is with a local antenna.

2. It is easily possible to distribute SD TV signals throughout your house using an NTSC modulator and coax cable. But you can't do that with HD TV, because the MPAA has made it impossible to buy the required ATSC modulator. I wonder how long that restriction will survive after analog TV goes away?

Bob W8ERD

In article <fo27qadim1@aioe.org>,
John Smith <assemblywizard@gmail.com> wrote:

> Cecil Moore wrote:
>
> > ...
> > http://www.hdtvprimer.com/ANTENNAS/types.html
> >
> > "HDTV Antennas"
> > "An antenna made for analog TV will work fine for DTV.
> > There is nothing different about an antenna for DTV or
> > HDTV. Unscrupulous people have labeled their antennas
> > 'HDTV Antennas' as a marketing ploy. The honest antenna
> > makers have had to re-label their products likewise to
> > avoid losing sales."
>
> This is what I suspected. I have SAT TV, but in the
> hobby/game/computer/catch-all room of the house, the TV just has a set
> of homemade/amplified rabbit ears. These may be able to be designed a
> bit different for HDTV (mainly, amp filtered for a narrower freq range(s).)
>
> Sometimes I miss things--thinking I know all about them--or else, am
> side-tracked by "industry-disinformation" ... thanks for the backup.
>
> I will keep double checking however, as with analog TV there is the
> pesky ~3.5Mhz color signal to worry about.
>
> Regards,
> JS

1958. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 19:11:30 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fo7o12$1cvi$1@f04n12.cac.psu.edu>
Source record: 28380

Richard Clark wrote:
> On Mon, 4 Feb 2008 01:02:43 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>> but I doubt it really affects your somnolence after all these years.
>
> Of course it doesn't. And the bulk of lurking readers, few-to-none
> having sat through a literature course, could figure that out easily.
> Dan, this is not a remarkable insight.

Dan's a nice enough guy, Richard, but some times a little slow on the uptake (witness the consternation over my "speed of dark comment a while back - honest, it was a joke 8^) I think it causes some misunderstanding at times. Maybe if we just gave a little extra time?

> Yes, I know, I disappoint my groupies, and with most of them absent
> your disappointment is magnified out of proportion.

I'm still here! alleged 110 IQ and non-technical "degreed" in all my glory!

- 73 de Mike N3LI -

1959. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 19:31:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <yKJpj.6032$0o7.1240@newssvr13.news.prodigy.net>
Source record: 28381

Michael Coslo wrote:
> Cecil Moore wrote:
>> Would you believe that the largest group of people
>> with the same IQ are neither above or below average? :-)
>
> It all depends on the fineness of the tool. Present measurement
> techniques do indeed have most people at that statistical "average
> intelligence". But I liken it to using a meter that has only 10 volt
> increments. A lot of different voltages can be covered in gross
> increments like that.

Hey Mike, I think you just invented fractal IQ's. :-)
--
73, Cecil http://www.w5dxp.com

1960. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 19:42:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GUJpj.6035$0o7.5929@newssvr13.news.prodigy.net>
Source record: 28382

Cecil Moore wrote:
> Michael Coslo wrote:
>> It all depends on the fineness of the tool. Present measurement
>> techniques do indeed have most people at that statistical "average
>> intelligence". But I liken it to using a meter that has only 10 volt
>> increments. A lot of different voltages can be covered in gross
>> increments like that.
>
> Hey Mike, I think you just invented fractal IQ's. :-)

Here's a statistics question: How many questions would
there have to be on an IQ test to ensure that no two
people in the world had exactly the same score?
--
73, Cecil http://www.w5dxp.com

1961. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 19:49:54 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fo7q92$13ga$1@f04n12.cac.psu.edu>
Source record: 28383

dfinn1@nc.rr.com wrote:
> On Feb 3, 11:59 pm, Mike Coslo <mco...@youknow.comcast.net> wrote:
>

>> so here is
>> another one for you.
>>
>> "We don't receive wisdom; we must discover it for ourselves after a
>> journey that no one can take for us or spare us."
>>
>> Most fitting, and you certainly know the source, don't you?
>
> I do know the source but question its relationship to rraa.

You are very very close to some wisdom here, David. That quote is more applicable here than in most other places.

>> And for what it is worth, the IQ here is measured out at 150.
>
> I know. Almost EVERYONE here claims to have a superior IQ and I will
> say further that I could never claim an IQ that high niether could
> 0.01% of the population in the world. It just seems odd to me that so
> many high IQ people gravitate to rraa. So much brain power all in one
> place!

That is what it tested out at. I don't particularly care what it is, and only brought it up since you decided to characterize it in another post. I have no need to lie about it.

> Certainly you are a MENSA member.

Not even.

> In truth, I think there is only one or perhaps two people in this
> group who really do have such abilities, one is a MENSA member and you
> can tell by the quality of his posts. The other is the one who is
> actually capable of challenging him and does so on a regular basis.
> Meanwhile I shall be happy with my measly 135, which is still enough
> to sort through the regular BS I see here.

Possession of a high IQ is merely a gift, a talent as it were, not tremendously different than the ability to play a musical instrument well, to create art, or a fine physical shape for that matter.

What we do with it is what counts. I know people with higher IQ's than mine who are worthless, and I know some people who were in special education classes in high school who became degreed - admittedly not in

a science field, but they got the scroll. I have much respect for the
latter.

> Let me know
>> if that is enough. If I'm not smart enough, or not technical enough for
>> you, please feel free to filter my messages.
>
> Smart enough? YOU are the on with the 150 IQ! I am not even
> intellectually endowed withenough brain power to achieve a PhD. You
> could replace Steven Hawking as the Dean of Physics at Cambridge!

You mistake the IQ with the achievement. My own talents lie elsewhere.

- 73 de Mmike N3LI -

1962. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 19:53:44 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fo7qg8$13ga$2@f04n12.cac.psu.edu>
Source record: 28384

Cecil Moore wrote:
> Michael Coslo wrote:
>> Cecil Moore wrote:
>>> Would you believe that the largest group of people
>>> with the same IQ are neither above or below average? :-)
>>
>> It all depends on the fineness of the tool. Present measurement
>> techniques do indeed have most people at that statistical "average
>> intelligence". But I liken it to using a meter that has only 10 volt
>> increments. A lot of different voltages can be covered in gross
>> increments like that.
>
> Hey Mike, I think you just invented fractal IQ's. :-)

I better rush out to patent it Cecil! hehe

- 73 d eMike N3LI -

1963. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 19:57:02 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fo7qmf$13gc$1@f04n12.cac.psu.edu>
Source record: 28385

Cecil Moore wrote:
> Cecil Moore wrote:
>> Michael Coslo wrote:
>>> It all depends on the fineness of the tool. Present measurement
>>> techniques do indeed have most people at that statistical "average
>>> intelligence". But I liken it to using a meter that has only 10 volt
>>> increments. A lot of different voltages can be covered in gross
>>> increments like that.
>>
>> Hey Mike, I think you just invented fractal IQ's. :-)
>
> Here's a statistics question: How many questions would
> there have to be on an IQ test to ensure that no two
> people in the world had exactly the same score?

Under the present systems, we'd all be long gone before we ever
finished the test. Billions no doubt.

Of course, we are not talking practicalities here, just some
statistical goofing around.

- 73 de Mike N3LI -

1964. How does it feel to use a commercial high gain curtain antenna and being a HF big gun for a weekend..

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:07:11 UTC
From: pa3abk <pa3abk@tenalp.ln>
Message-ID: <roqeq3h1a592inrtofep8iq5netvh82fa5@4ax.com>
Source record: 28386

After 60 years of operating from Dutch soil, Radio Netherlands
shortwave has left the country seeking better (cheaper) propagation
outlets to serve their listeners. For hamradio there was an unique
opportunity to use the idle antennas. PA3GVI had such an opportunity
his small hamradio next to the 500kW big brother connected to
curtainantennas of 22dB gain. In practice the 100W of the trx, gave
him an ERP of 8kW. The low angle of the system gave him an ease to
work other hams working on a broomestick at the other and of the
world.
He uploaded on YouTube the following teaser:
http://nl.youtube.com/watch?v=3vE1zk60v3E
Thanks to the original poster (Joop!) from Dutch hamradio usenetgroup.
Jan/pa3abk

1965. Re: Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:26:41 UTC
From: "Francesco L." <franlanc@NOSPAMtin.it>
Message-ID: <60pam9F1rs8euU1@mid.individual.net>
Source record: 28387

> The problem is in making the 90 degree phased array on 20, which I recall
> you wanted to do. (If not, disregard the rest.) The feed system for that
> pattern will work only on the one band, so you'll have to switch it out on
> the other bands. The L network feed systems described in the _Antenna
> Book_ use equal length lines plus an L network for doing 90 degree feeds.
> So you could use the L network on 20, and switch it out but use the same
> feedlines for the other bands to get two in-phase elements on those other
> bands. You would need a tuner, though, since the impedance at the common
> feed point will be different on each band.
>
> Roy Lewallen, W7EL

Ok, thanks, as soon as I have the possibility to assemble the antenna, I'll
let you know. This newsgroup is great, as your kindness.
Francesco ik8vwa

1966. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:32:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <e76338b2-68b7-466c-98f2-6738f7ee9b18@q77g2000hsh.googlegroups.com>
Source record: 28388

On Jan 28, 11:30 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Unfortunately, this is quite wrong. And I continue to
> > be surprised that you argue that there is a reflection
> > where there is not an impedance discontinuity.
>
> Since an absence of reflections violates the conservation
> of energy principle, there is something wrong with your
> assertion and your earlier example was proved to contain
> a contradiction.
>
> Psource = Pfor - Pref = Pload
>
> Pfor = Psource + Pref = Pload + Pref
>
> Those equations are true only if reflected energy
> does not flow back into the source. I suspect that,
> contrary to your assertions, the actual real-world
> source presents an infinite impedance to reflected
> waves.

Your suspicion is quite incorrect. Real-world generators
which present well defined impedances to the reflected
wave are common.

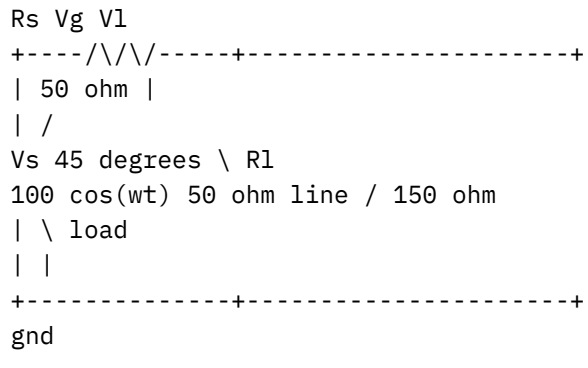
And your assertion that a lack of reflections will
result in a violation of the conservation of energy
principle is also incorrect.

The equations you present above hold just as well
when there is no reflection at the source.

It might do to analyze a simple example. To simplify
analysis, this example does use ideal components:
there is an ideal 50 ohm transmission line (R=G=0,
uniform 50 ohm impedance along its length), two
ideal resistors (zero tempco, no inductance or
capacitance, just resistance), and an ideal voltage
source (desired voltage is produced regardless of
load impedance, though the external components mean
this source does not need to provide or sink infinite
current).

If you don't think any understanding can be gained
from examples with ideal components, please read
no further.

This simple example has a voltage source in series
with a 50 ohm resistor, driving 45 degrees of 50
ohm line connected to a 150 ohm load.



The voltage source in series with the 50 ohm
resistor forms a generator.

Vs(t) = 100 cos(wt)

or, in phasor notation

Vs = 100 /_ 0d

where d is degrees or 2*pi/360 when converting to radians
is appropriate.

When the source is turned on, a wave travels down the
line. At the generator terminal (Vg), the forward voltage
is:
Vf.g(t) = 50 cos(wt)
Vf.g = 50 /_ 0d
since the voltage divided evenly between the source
50 ohm resistor and 50 ohm impedance of the line.

At the load, the voltage reflection coefficient is

RCvl = (150-50)/(150+50)
= 0.5

The forward voltage at the load is

Vf.l(t) = 50 cos(wt - 45d)
Vf.l = 50 /_ -45d

The reflected voltage at the load is

Vr.l(t) = 0.5 * 50 cos(wt - 45d)
= 25 cos(wt - 45d)
Vr.l = 25 /_ -45d

The voltage at the load is

Vl = Vf.l + Vr.l
= 50 /_ -45d + 25 /_ -45d
= 75 /_ -45d

Vl(t) = 75 cos(wt - 45d)

At the generator, the voltage reflection coefficient is

RCvg = (50-50)/(50+50)
= 0

so there is no reflection and the system has settled
after one round trip.

The voltage at the generator is, therefore,

Vg = Vf.g + Vr.g
= 50 /_ 0d + 25 /_ (-45d -45d)
= 50 /_ 0d + 25 /_ -90d
= 55.902 /_ -26.565d
Vg(t) = 55.902 cos(wt - 26.565d)

Currents can be similar computed...

If.g(t) = 1 cos(wt)
If.g = 1 /_ 0d

RCil = -(150-50)/(150+50)
= -0.5

If.l(t) = 1 cos(wt - 45d)
If.l = 1 /_ -45d

Ir.l(t) = -0.5 * 1 cos(wt - 45d)
= -0.5 cos(wt - 45d)
Ir.l = -0.5 /_ -45d

Il = If.l + Ir.l
= 1 /_ -45d - 0.5 /_ -45d
= 0.5 /_ -45d
Il(t) = 0.5 cos(wt - 45d)

And just to check, from V = I*R
R = V / I
= Vl(t) / Il(t)
= (75 cos(wt-45d)) / (0.5 cos(wt-45d))
= 150
as expected.

RCig = -(50-50)/(50+50)
= 0

Ig = If.g + Ir.g
= 1 /_ 0d - 0.5 /_ (-45d -45d)
= 1 /_ 0d -0.5 /_ -90d
= 1.118 /_ 26.565d
Ig(t) = 1.118 cos(wt + 26.565d)

Now let us see if all the energy flows balance properly.

The power applied to the load resistor is

Pl(t) = Vl(t) * Il(t)
= 75 cos(wt - 45d) * 0.5 cos(wt - 45d)

Recalling the relation
cos(a) * cos(b) = 0.5(cos(a+b)+cos(a-b))

Pl(t) = 75 * 0.5 * 0.5 (cos(2wt-90d)+cos(0))
= 18.75 cos(2wt-90d) + 18.75 cos(0)
= 18.75 cos(2wt-90d) + 18.75

Since the average of cos is 0, the average power is

Pl.avg = 18.75

To confirm, let us compute using

Pavg = Vrms * Irms * cos(theta)

Pl.avg = (75 * 0.707) * (0.5 * 0.707) * cos(-45d-(-45d))
= 18.75 * 1
= 18.75

Agreement.

Now at the generator end

Pg(t) = Vg(t) * Ig(t)
= 55.902 cos(wt - 26.565d) * 1.118 cos(wt + 26.565d)
= 55.902 * 1.118 * 0.5 (cos(2wt)+cos(-53.130))
= 31.249 cos(2wt) + 31.249 * 0.6
= 31.249 cos(2wt) + 18.75
Pg.avg = 18.75

Good news, the average power into the line is equal to
the average power delivered to the load, as required to
achieve conservation of energy.

Now let us check Pf and Pr

Pf.avg = Vfrms^2 / Zo
= (50*.707)^2 / 50
= 25

Pr.avg = Vrrms^2 / Zo
= (25*.707)^2 / 50
= 6.25

Pnet.avg = Pf.avg - Pr.avg
= 25 - 6.25
= 18.75

Again, as expected, the average energy flow in the line
is equal to the average power into the line and the average
power out of the line.

So, contrary to Cecil's assertion, an analysis based on
'no reflections at the source', has not resulted in any
violation of conservation of energy. This is good.

It is instructive to continue the cross-checking.
Let us validate the input impedance of the line.

Using a Smith chart, and going towards the source from
a 150 ohm load on a 50 ohm line yields

Zin.smith = 30 - j40
= 50 /_ -53.130

Dividing the voltage by the current at the input to the
line...

Zin = Vg / Ig
= 55.902 /_ -26.565d / 1.118 /_ 26.565d
= 50.002 /_ -53.130
= 30.001 -j 40.001

yields the same result as the Smith chart.

Lastly let's compute the power provided by the source...

Ps(t) = Vs(t) * Is(t)
= 100 cos(wt) * 1.118 cos(wt+26.565)
= 111.8 * 0.5 (cos(2wt+26.565) + cos(-26.565))
= 55.9 cos(2wt + 26.565) + 55.9 * 0.894
= 55.9 cos(2wt + 26.565) + 49.999

Ps.avg = 49.999

and that dissipated in the source resistor

Prs(t) = Vrs(t) * Irs(t)
= (Vs(t)-Vg(t)) * Ig(t)
= (100 cos(wt) - 55.902 cos(wt - 26.565d)) * 1.118 cos(wt +
26.565d)
= 55.902 cos(wt + 26.565d) * 1.118 cos(wt + 26.565d)
= 55.902 * 1.118 * 0.5 (cos(2wt + 53.130) + cos(0))
= 31.249 cos(2wt + 53.130d) + 31.249

Prs.avg = 31.249

The power provided by the source is equal
to the power dissipated in the source resistor and the
power dissipated in the load resistor.

49.999 = 31.249 + 18.75

So all the energy is accounted for, as expected.

When the source impedance is the same as the line
impedance, there are no reflections at the source
and all the energy is properly accounted. There is

no violation of the conservation of energy principle.

...Keith

PS. It is worthwhile to note that there are a large number (infinite) of source voltage and source resistor combinations that will produce exactly the same final conditions on the line. But if the source resistor is not 50 ohms, then there will be reflections at the source and it will take infinite time for the line to settle to its final state.

1967. Re: How does it feel to use a commercial high gain curtain antenna and being a HF big gun for a weekend..

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:33:29 UTC
From: Suzy <not@valid>
Message-ID: <47a776ad$1@dnews.tpgi.com.au>
Source record: 28389

"pa3abk" <pa3abk@tenalp.ln> wrote in message
news:roqeq3h1a592inrtofep8iq5netvh82fa5@4ax.com...
> After 60 years of operating from Dutch soil, Radio Netherlands
> shortwave has left the country seeking better (cheaper) propagation
> outlets to serve their listeners. For hamradio there was an unique
> opportunity to use the idle antennas. PA3GVI had such an opportunity
> his small hamradio next to the 500kW big brother connected to
> curtainantennas of 22dB gain. In practice the 100W of the trx, gave
> him an ERP of 8kW. The low angle of the system gave him an ease to
> work other hams working on a broomestick at the other and of the
> world.
> He uploaded on YouTube the following teaser:
> http://nl.youtube.com/watch?v=3vE1zk60v3E
> Thanks to the original poster (Joop!) from Dutch hamradio usenetgroup.
> Jan/pa3abk

Sigh... Out to the garden to pour a little water on my piece of string...

1968. Re: How does it feel to use a commercial high gain curtain antenna and being a HF big gun for a weekend..

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:34:59 UTC
From: The Shadow <Cranston@CobaltClub.com>
Message-ID: <VFKpj.6901$Nz7.208@newsfe11.phx>
Source record: 28390

"pa3abk" <pa3abk@tenalp.ln> wrote in message
news:roqeq3h1a592inrtofep8iq5netvh82fa5@4ax.com...
> After 60 years of operating from Dutch soil, Radio Netherlands
> shortwave has left the country seeking better (cheaper) propagation
> outlets to serve their listeners. For hamradio there was an unique
> opportunity to use the idle antennas. PA3GVI had such an opportunity
> his small hamradio next to the 500kW big brother connected to
> curtainantennas of 22dB gain. In practice the 100W of the trx, gave
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> world.
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> http://nl.youtube.com/watch?v=3vE1zk60v3E
> Thanks to the original poster (Joop!) from Dutch hamradio usenetgroup.
> Jan/pa3abk

WOW

-- MORE HAM RADIO VIDEOS ON YOUTUBE.COM

http://nl.youtube.com/results?search_query=HAM+RADIO&search_type=

DX IS
Lamont

1969. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:54:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0dcba87i56c9bccbkbwr9lpa5e7ceaqf8i@4ax.com>
Source record: 28392
Cross-posted to: sci.engr.joining.welding,alt.fan.tolkien,alt.religion.christianity,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

I find, then, this great and numerous people, sprung from a single man, who worship one God and guide themselves by a law which they say that they obtained from His own hand. They maintain that they are the only people in the world to whom God has revealed His mysteries; that all men are corrupt and in disgrace with God; that they are all abandoned to their senses and their own imagination, whence come the strange errors and continual changes which happen among them, both of religions and of morals, whereas they themselves remain firm in their conduct; but that God will not leave other nations in this darkness for ever; that there will come a Saviour for all; that they are in the world to announce Him to men; that they are expressly formed to be forerunners and heralds of this great event and to summon all nations to join with them in the expectation of this Saviour.

To meet with this people is astonishing to me, and seems to me worthy of attention. I look at the law which they boast of having obtained from God, and I find it admirable. It is the first law of all and is of such a kind that, even before the term law was in currency among the Greeks, it had, for nearly a thousand years earlier, been uninterruptedly acc

1970. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:55:00 UTC
From: James <jnipperxxx@nospamfdn.com>
Message-ID: <UbiaaI3Oa8lHS$XeuC3fbAEE-a2yeB3b@comcast.com>
Source record: 28393
Cross-posted to: sci.chem,news.admin.net-abuse.usenet,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

the Jesuits and Jansenists are wrong in concealing them, but the Jansenists more so, for the Jesuits have better made profession of the two.

866. Two kinds of people make things equal to one another, as feasts to working days, Christians to priests, all things among them, etc. And hence the one party conclude that what is then bad for priests is also so for Christians, and the other that what is not bad for Christians is lawful for priests.

867. If the ancient Church was in error, the Church is fallen. If she should be in error to-day, it is not the same thing; for she has always the superior maxim of tradition from the hand of the ancient Church; and so this submission and this conformity to the ancient Church prevail and correct all. But the ancient Church did not assume the future Church and did not consider her, as we assume and consider the ancient.

868. That which hinders us in comparing what formerly occurred in the Church with what we see there now is that we generally look upon Saint Athanasius, Saint Theresa, and the rest, as crowned with glory and acting towards us as gods. Now that time has cleared up things, it does so appear. But at the time when he was persecuted, this great saint was a man called Athanasius; and Saint Theresa was a nun. "Elias was a man subject to like passions as we are," says Saint James, to disabuse Christians of that false idea which makes us reject the example of the saints as disproportioned to our state. "They were saints," say we, "they are not like us." What then actually happened? Saint Athanasius was a man called Athanasius, accused of many crimes, condemned by such and such a council for such and such a c

1971. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:55:03 UTC
From: Robert Smts <bob@rsmits.ca>
Message-ID: <70798943913f703f63dce817f66e7bfa@grapevine.islandnet.com>
Source record: 28391
Cross-posted to: rec.games.roguelike.nethack,news.admin.net-abuse.usenet,comp.robotics.misc,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

men more than the search for
truth.

212. Instability.--It is a horrible thing to feel all that we possess
slipping away.

213. Between us and heaven or hell there is only life, which is the frailest
thing in the world.

214. Injustice.--That presumption should be joined to meanness is extreme
injustice.

215. To fear death without danger, and not in danger, for one must be a man.

216. Sudden death alone is feared; hence confessors stay with lords.

217. An heir finds the title-deeds of his house. Will he say, "Perhaps they
are forged" and neglect to examine them?

218. Dungeon.--I approve of not examining the opinion of Copernicus; but
this...! It concerns all our life to know whether the soul be mortal or
immortal.

219. It is certain that the mortality or immortality of the soul must make
an entire difference to morality. And yet philosophers have constructed
their ethics independently of this: they discuss to pass an hour.

Plato, to incline to Christianity.

220. The fallacy of philosophers who have not discussed the immortality of

1972. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:56:15 UTC
From: Robert Smts <bob@rsmits.ca>
Message-ID: <86957505514f447f64acd879d07a1ffa@grapevine.islandnet.com>
Source record: 28394
Cross-posted to: rec.music.christian,news.admin.net-abuse.usenet,comp.robotics.misc,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

Whatever different means
they employ, they all tend to this end. The cause of some going to war, and of others avoiding it, is the same desire in both, attended with different views. The will never takes the least step but to this object. This is the motive of every action of every man, even of those who hang themselves.

And yet, after such a great number of years, no one without faith has reached the point to which all continually look. All complain, princes and subjects, noblemen and commoners, old and young, strong and weak, learned and ignorant, healthy and sick, of all countries, all times, all ages, and all conditions.

A trial so long, so continuous, and so uniform, should certainly convince us of our inability to reach the good by our own efforts. But example teaches us little. No resemblance is ever so perfect that there is not some slight difference; and hence we expect that our hope will not be deceived on this occasion as before. And thus, while the present never satisfies us, experience dupes us and, from misfortune to misfortune, leads us to death, their eternal crown.

What is it, then, that this desire and this inability proclaim to us, but that there was once in man a true happiness of which there now remain to him only the mark and empty trace, which he in vain tries to fill from all his surroundings, seeking from things absent the help he does not obtain in things present? But these are all inadequate, because the infinite abyss can only be filled by an infinite and immutable object, that is to say, only by God Himself. He only is our true good, and since we have forsaken him, it is a strange thing that there is nothing in nature which has not been serviceable in taking His place; the stars, the heavens, earth, the elements, plants, cabbages, leeks, animals, insects, calves, serpents, fever, pestilence, war, famine, vices, adultery, incest. And since man has lost the true good, ev

1973. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:56:40 UTC
From: Robert Smts <bob@rsmits.ca>
Message-ID: <14163815432a574b08bbf643f52f3baa@grapevine.islandnet.com>
Source record: 28395
Cross-posted to: alt.sports.soccer.manchester.united,comp.robotics.misc,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

and time been allotted to me? Memoria hospitis unius diei praetereuntis.[27]

206. The eternal silence of these infinite spaces frightens me.

207. How many kingdoms know us not!

208. Why is my knowledge limited? Why my stature? Why my life to one hundred years rather than to a thousand? What reason has nature had for giving me such, and for choosing this number rather than another in the infinity of those from which there is no more reason to choose one than another, trying nothing else?

209. Art thou less a slave by being loved and favoured by thy master? Thou art indeed well off, slave. Thy master favours thee; he will soon beat thee.

210. The last act is tragic, however happy all the rest of the play is; at the last a little earth is thrown upon our head, and that is the end for ever.

211. We are fools to depend upon the society of our fellow-men. Wretched as we are, powerless as we are, they will not aid us; we shall die alone. We should therefore act as if we were alone, and in that case should we build fine houses, etc. We should seek the truth without hesitation; and, if we refuse it, we show that we value the esteem of men more than the search for truth.

212. Instability.--It is a horrible thing to feel all that we possess slipping away.

213. Between us and heaven or hell there is only life, which is the frailest thing in the world.

214. Injustice.--That presumption should be joined to meanness is extreme injustice.

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219. It is certain that the mortality or immortality of the so

1974. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:58:15 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <akcs97_52u_7@news.albasani.net>
Source record: 28398
Cross-posted to:
sci.polymers,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

R. Hakadosch (anno 200), author of the Mischna, or vocal law, or
second law.

Commentaries on the Mischna (anno 340): The one Siphra.

Barajetot.

Talmud Hierosol.

Tosiphtot.

Bereschit Rabah, by R. Osaiah Rabah, commentary on the Mischna.

Bereschit Rabah, Bar Naconi, are subtle and pleasant discourses, historical
and theological. This same author wrote the books called Rabot.

A hundred years after the Talmud Hierosol was composed the Babylonian
Talmud, by R. Ase, A.D. 440, by the universal consent of all the Jews, who
are necessarily obliged to observe all that is contained therein.

The addition of R. Ase is called the Gemara, that is to say, the commentary
on the Mischna.

And the Talmud includes together the Mischna and the Gemara.

636. If does not indicate indifference: Malachi, Isaiah.

Isaiah, Si volumus, etc.

In quacumque die.[115]

637. Prophecies.--The sceptre was not interrupted by the captivity in
Babylon, because the return was promised and foretold.

638. Proofs of Jesus Christ.--Captivity, with the assurance of deliverance
within seventy years, was not real captivity. But now they are captives
without any hope.

God has promised them that, even though He should scatter them to the ends
of the earth, nevertheless, if they were faithful to His law, He would
assemble them together again. They are very faithful to it and remain
oppressed.

639. When Nebuchadnezzar carried away the people, for fear they should
believe that the sceptre had departed from Judah, they were told beforehand
that they

1975. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:58:21 UTC
From: James <jnipperxxx@nospamfdn.com>
Message-ID: <ffDbmYtSb1c0cANfrI6fkWIJ-ulfsX9e@comcast.com>
Source record: 28397
Cross-posted to:
rec.ponds,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

Shall it be
on justice? Man is ignorant of it.

Certainly, had he known it, he would not have established this maxim, the most general of all that obtain among men, that each should follow the custom of his own country. The glory of true equity would have brought all nations under subjection, and legislators would not have taken as their model the fancies and caprice of Persians and Germans instead of this unchanging justice. We would have seen it set up in all the States on earth and in all times; whereas we see neither justice nor injustice which does not change its nature with change in climate. Three degrees of latitude reverse all jurisprudence; a meridian decides the truth. Fundamental laws change after a few years of possession; right has its epochs; the entry of Saturn into the Lion marks to us the origin of such and such a crime. A strange justice that is bounded by a river! Truth on this side of the Pyrenees, error on the other side.

Men admit that justice does not consist in these customs, but that it resides in natural law

1976. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 20:58:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8eneu88j44a6fbdbioeo5lma0e9codte8o@4ax.com>
Source record: 28396
Cross-posted to: news.admin.net-abuse.email,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

We have
about six hundred and twenty communicants, which include almost all our adult persons. The church was very large before; but persons never thronged into it as they did in the late extraordinary time.-Our sacraments are eight weeks asunder, and I received into our communion about a hundred before one sacrament, fourscore of them at one time, whose appearance, when they presented themselves together to make an open explicit profession of Christianity, was very affecting to the congregation. I took in near sixty before the next sacrament day: and I have very sufficient evidence of the conversion of their souls, through divine grace, though it is not the custom here, as it is in many other churches in this country, to make a credible relation of their inward experiences the ground of admission to the Lord's supper.

I am far from pretending to be able to determine how many have lately been the subjects of such mercy; but if I may be allowed to declare any thing that appears to me probable in a thing of thin nature, I hope that more than 300 souls were savingly brought home to Christ, in this town, in the space of half a year, and about the same number of males as females. By what I have heard Mr. Stoddard say, this was far from what has been usual in years past; for he observed that in his time, many more women were converted than men. Those of our you

1977. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 22:54:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <gIMpj.5396$5K1.4564@newssvr12.news.prodigy.net>
Source record: 28399

Keith Dysart wrote:
> Your suspicion is quite incorrect. Real-world generators
> which present well defined impedances to the reflected
> wave are common.

Please provide an example of an amateur radio transmitter
with a well-defined impedance seen by reflected waves.
If you had done that 30 years ago, the argument would
never have existed in the first place.

> And your assertion that a lack of reflections will
> result in a violation of the conservation of energy
> principle is also incorrect.

One cannot have one's source power and eat it too.
If the reflected energy is part of the forward energy,
it cannot also flow into the source.

> The equations you present above hold just as well
> when there is no reflection at the source.

How can there be no reflection at the source when
the source is dissipating zero power?

> If you don't think any understanding can be gained
> from examples with ideal components, please read
> no further.

If those ideal components are far removed from being
realizable in the real-world, you have yourself a deal.
Until you can provide an example of a real-world source
approaching a zero real-world impedance, there is no
reason to read any further. You might as well just say,
"God causes everything." and be done with it.
--
73, Cecil http://www.w5dxp.com

1978. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 23:27:55 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <uq-dnf9Q_oYFAjraRVnyigA@bt.com>
Source record: 28400

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:YNIpj.2978$0w.1445@newssvr27.news.prodigy.net...
> Mike Kaliski wrote:
>> The speed of light in a vacuum is currently the constant at which present
>> theory breaks down and yet particles have been observed travelling in a
>> manner that can only be explained if it is assumed they have moved from
>> one point to another at speeds greater than the speed of light.
>
> How does non-locality fit into the picture?
> --
> 73, Cecil http://www.w5dxp.com

Hi Cecil

Non locality is another description of the phenomenon, or 'spooky action at a distance' is another term that has been used. The instantaneous interaction of entangled particles, no matter what the distance, follows as a mathematical consequence of quantum theory.

These actions have been observed in laboratories but to date no one has come up with an entirely satisfactory explanation for what is going on. Similar weird observations in particle accelerators show particle tracks disappearing and reappearing at some distance away. Richard Feynman touched upon the possibilities of these events happening when he came up with Feynman diagrams to describe the interaction of particles with photons. Certainly at sub atomic scales, time appears to be somewhat elastic and reversible under particular conditions.

I personally feel (with very little justification) that wave particle duality breaks down if velocities exceed the speed of light and in the absence of one or the other, an object effectively disappears from our perception (and perhaps in effect from our universe).

Mike G0ULI

1979. WebPage

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 23:35:38 UTC
From: KF4DNA <kf4dna@kf4dna.net>
Message-ID: <cjNpj.65977$vt2.54436@bignews8.bellsouth.net>
Source record: 28301

This webpage is dedicated to Everything that can be called EXTREME !

Skydiving, Storm Chasing, Rocketry, WebPage Resources and Amateur Radio

There is also a huge collection of resources for webpage development and promotion.

http://www.kf4dna.net

1980. Re: Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-04 23:49:52 UTC
From: Smash <smash@adams.com>
Message-ID: <fo88b1cgt1@SonOfMaze.dpo.uab.edu>
Source record: 28302

Roy Lewallen wrote:
> I highly recommend reading the "Phased Array Techniqes" part of Chapter
> 8 of any edition of the _ARRL Antenna Book_ for about the past 15 or 20
> years. It was first written not long after Dana Atchley popularized the
> use of the Wilkinson Divider for feeding phased arrays (and the error of
> which he later saw), so it contained quite a bit of detail about why
> that's a bad idea. When I re-wrote the section for the recent 21st
> Edition, I reduced the amount of material regarding the Wilkinson
> divider, since I thought it had finally faded away. I'm disappointed to
> hear that there's still a "school of thought" which regards it as a
> viable feed system after all these years.
>
> If you have the 21st Edition, you'll find the complete text of the
> earlier material on the included CD. It contains more detail about why
> the Wilkinson divider isn't appropriate for this application.

Gee Roy, didja write the book on that one? ;-)

-=-

Smash

1981. SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 00:14:20 UTC
From: jawod <jawod@fuse.net>
Message-ID: <5f372$47a7a9bf$d066b697$22699@FUSE.NET>
Source record: 28303

Sorry to interrupt the WAVE-PARTICLE Duality seminar but...

Any comments on the SpiderBeam antenna?

It's a sort of maxed-out Moxon such that the director and reflector
elements are bent toward the center of the antenna.

Apparently it is frequently used on DXpeditions.

There is a version for home use...a kit and the elements are wires.

Anyone using one or care to comment?

(My understanding is that it can send and receive both waves and particles.)

73

John
AB8O

1982. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 00:30:50 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a7ae3b$0$30700$4c368faf@roadrunner.com>
Source record: 28304

"Mike Kaliski" <michael.kaliski@tesco.net> wrote in message
news:uq-dnf9Q_oYFAjraRVnyigA@bt.com...

> I personally feel (with very little justification) that wave particle
> duality breaks down if velocities exceed the speed of light and in the
> absence of one or the other, an object effectively disappears from our
> perception (and perhaps in effect from our universe).

I believe that attempting to use FTL particles to explain certain phenomena, or more likely, using certain phenomena to theorize FTL paricle travel, is generally a practice reserved for non-physicists, science fiction writers and the like. Almost any true, practicing physicist will tell you that they and their colleagues don't believe in that stuff. Sorry, the universe may be interesting but it isn't THAT interesting. Too bad. The whole concept falls apart when causality comes into play. It is not even a paradox; it is worse than that. If I initiate an event to cause tachyons (or whatever you choose to call these FTL particles) to exist, then the particles must have existed (and must be observed) before that causation event which produced them was initiated. So what if you fully intend to cause the event and then change your mind at the last moment and decide not to cause it. How does your FTL particle know that you will not push the button so it knows to refrain from existing? So, although there is room in the special relativity theory for particles than can go no slower than light (the other side of the hyperbola), causation prohibits them from existing in the real world. If you were to believe in some supreme controlling authoritiy who could predict whenever you would push the button and make the particle appear, then it could be true. I am a bit too agnostic for that, however...it would be the only expalantion for the effect occuring prior to causation . This is reminiscent of the faith-based science that certain English majors use here when saying "just believe me, it's true; RF and acoustic waves interact. Why, it's a matter of public knowledge!".

73 de AI4QJ

1983. Re: Wilkinson power splitter always necessary?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 00:34:33 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fo8aup$i41$1@news.jpl.nasa.gov>
Source record: 28305

Roy Lewallen wrote:
> I highly recommend reading the "Phased Array Techniqes" part of Chapter
> 8 of any edition of the _ARRL Antenna Book_ for about the past 15 or 20
> years. It was first written not long after Dana Atchley popularized the
> use of the Wilkinson Divider for feeding phased arrays (and the error of
> which he later saw), so it contained quite a bit of detail about why
> that's a bad idea. When I re-wrote the section for the recent 21st
> Edition, I reduced the amount of material regarding the Wilkinson
> divider, since I thought it had finally faded away. I'm disappointed to
> hear that there's still a "school of thought" which regards it as a
> viable feed system after all these years.
>
> If you have the 21st Edition, you'll find the complete text of the
> earlier material on the included CD. It contains more detail about why
> the Wilkinson divider isn't appropriate for this application.
>
> Devoldere's _Low Band DXing_ also contains a lot of good information
> about phased array feed systems.
>
> Roy Lewallen, W7EL
>

Probably because a lot of folks don't realize that the power isn't
divided equally among elements in most ham phased arrays. A lot of the
textbook examples are for microwave applications (e.g. radar) where they
do assume equal powers to each element, but that's where the array is
specifically designed to present 50 ohm resistive feedpoint impedances
at all ports, regardless of phasing, especially if it's an active array
with amplifiers at each T/R module.

There's also plenty of examples out there for microwave broadside arrays
of many identical elements at uniform spacing >1/2 wavelength, for which
a equal power divider actually works fairly well. (or, at least, it's
easy to analyze)

1984. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 01:06:44 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a7b6a4$0$30673$4c368faf@roadrunner.com>
Source record: 28306

"Dave Platt" <dplatt@radagast.org> wrote in message
news:nc7g75-35c.ln1@radagast.org...
> >Looking for a website that gives comparative performance of diodes (max
>>frequency for UHF use)
>
> I don't know of a broad-spectrum site (i.e. one which is multivendor)
> other than general datasheet-search sites such as datasheetarchive.com
>
> One good place to start looking would be at www.avagotech.com - I
> believe that Avago Technologies is the current inheritor of the line
> of RF Schottky diodes originally made by HP and then by Agilent. Some
> of these parts are useful up to quite a few GHz.

I didn't see any UHF diodes on that site, did anybody else?

1985. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 01:07:51 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a7b6e8$0$30710$4c368faf@roadrunner.com>
Source record: 28307

"K7ITM" <k7itm@msn.com> wrote in message
news:f40999bb-909f-48c9-97fc-8a7c6a805956@n20g2000hsh.googlegroups.com...
> On Feb 2, 11:34 pm, dpl...@radagast.org (Dave Platt) wrote:
>> >Looking for a website that gives comparative performance of diodes (max
>> >frequency for UHF use)
>>
>> I don't know of a broad-spectrum site (i.e. one which is multivendor)
>> other than general datasheet-search sites such as datasheetarchive.com
>>
>> One good place to start looking would be atwww.avagotech.com- I
>> believe that Avago Technologies is the current inheritor of the line
>> of RF Schottky diodes originally made by HP and then by Agilent. Some
>> of these parts are useful up to quite a few GHz.
>>
>> --
>> Dave Platt <dpl...@radagast.org> AE6EO
>> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>> I do _not_ wish to receive unsolicited commercial email, and I will
>> boycott any company which has the gall to send me such ads!
>
> Yes, that is correct about Avago. I believe I've come across diodes
> there rated for use up to 40GHz, maybe 65GHz.
>
> Also, look at other web sites (of companies with "new" names also!)
> NXP used to be Philips. They definitely have some good RF detector
> diodes. A Google search on "RF detector diode" just now turned up
> several interesting hits, including some for sale on ebay. I saw
> Vishay listed as an RF detector diode supplier, too, and I wasn't
> aware they were really into that area--looks like they acquired
> Telefunken, for another name change! But I suppose Suzy is looking
> for non-surface-mount parts (from postings in another thread), and
> that likely will be a problem for any new stuff. Pretty much
> everything now has gone to tiny surface mount packages. -- OK, I
> have to take that back. The Vishay web site has a kind of neat
> feature and lets you look by package type--click on the picture of the
> package. And it's real pictures, not line drawings. They DO have
> glass axial lead RF diodes.

But no website URL, as requested.

1986. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 01:08:25 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a7b70a$0$30674$4c368faf@roadrunner.com>
Source record: 28308

"Wimpie" <wimtel@tetech.nl> wrote in message
news:9d1c0eac-b39d-486b-adaa-f1c44ef29e40@z17g2000hsg.googlegroups.com...
> On 3 feb, 07:37, "Suzy" <not@valid> wrote:
>> Looking for a website that gives comparative performance of diodes (max
>> frequency for UHF use)
>
> Hello Suzy,
>
> The type of diode that will be best for your application depends on
> the type of application.
>
> For high level detectors (above several volts of RF input power), the
> BAT62 is a good one up to some GHz. It has low capacitance (at Vj=0V)
> and a reverse voltage of 40 V (fourty V). You cannot use it in low
> noise mixers because of high intrinsic resistance.
>
> Most of the HP or equivalent "hybrid" Shottky detector diodes (with
> 70V reverse rating) have far higher capacitance then the BAT62. Check
> the datasheets, the 70V diodes are measured at Vj = -0.5V. At Vj=0V,
> capacitance will be >> 1pF. For mixers, the best are the pure Shottky
> rectifiers (that have a reverse voltage of less then 4..6V). For
> Zero IF systems (Doppler radar, movement detection), other type of
> shottky diodes are used (with low 1/f noise).
>
> When you want to make a (calibrated) low level RF detector (for RF
> levels < 10mV), you need to consider the so-called "video
> resistance" (that is the differential resistance of the diode at 0V
> bias). To get full benefit of a low level detector, the DC voltmeter
> (or buffer amplifier) must have a Rin >> video resistance. Otherwise
> you cannot convert the DC voltage back to an RF input voltage.
>
> The video resistance varies from about 10 kOhm (special "zero bias"
> detector diodes) to several Mohm (for high barrier mixer diodes). Main
> advantage of zero bias detector circuit is that you do not need to
> build a temperature compensation (for compensating the about 2mV/degr.
> C).
>
> For UHF mixer or low level detection I use BAT15 (Cj < 0.35pF at
> Vj=0V).

But no website URL, as requested.

1987. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 01:20:27 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <vROpj.197962$MJ6.51035@bgtnsc05-news.ops.worldnet.att.net>
Source record: 28309

Cecil Moore wrote:
> John Smith wrote:
>> While I cannot dismiss the existence of the photons, I am not aware of
>> any experiments which have been able to measure them.
>
> Hecht says: "... researchers ... have conducted experiments
> in which they literally counted individual photons".

Hecht is quite correct. This is a standard technique in several areas of physics research. I personally spent several years in my relative youth designing, building, and using photon counting apparatus.

73,
Gene
W4SZ

1988. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 01:31:49 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <sZGdnXSUwPM_ITranZ2dnUVZ8hednZ2d@bt.com>
Source record: 28310

"AI4QJ" <nospam@yahoo.com> wrote in message
news:47a7ae3b$0$30700$4c368faf@roadrunner.com...
>
> "Mike Kaliski" <michael.kaliski@tesco.net> wrote in message
> news:uq-dnf9Q_oYFAjraRVnyigA@bt.com...
>
>> I personally feel (with very little justification) that wave particle
>> duality breaks down if velocities exceed the speed of light and in the
>> absence of one or the other, an object effectively disappears from our
>> perception (and perhaps in effect from our universe).
>
> I believe that attempting to use FTL particles to explain certain
> phenomena, or more likely, using certain phenomena to theorize FTL paricle
> travel, is generally a practice reserved for non-physicists, science
> fiction writers and the like. Almost any true, practicing physicist will
> tell you that they and their colleagues don't believe in that stuff.
> Sorry, the universe may be interesting but it isn't THAT interesting. Too
> bad. The whole concept falls apart when causality comes into play. It is
> not even a paradox; it is worse than that. If I initiate an event to cause
> tachyons (or whatever you choose to call these FTL particles) to exist,
> then the particles must have existed (and must be observed) before that
> causation event which produced them was initiated. So what if you fully
> intend to cause the event and then change your mind at the last moment and
> decide not to cause it. How does your FTL particle know that you will not
> push the button so it knows to refrain from existing? So, although there
> is room in the special relativity theory for particles than can go no
> slower than light (the other side of the hyperbola), causation prohibits
> them from existing in the real world. If you were to believe in some
> supreme controlling authoritiy who could predict whenever you would push
> the button and make the particle appear, then it could be true. I am a bit
> too agnostic for that, however...it would be the only expalantion for the
> effect occuring prior to causation . This is reminiscent of the
> faith-based science that certain English majors use here when saying "just
> believe me, it's true; RF and acoustic waves interact. Why, it's a matter
> of public knowledge!".
>
> 73 de AI4QJ
>
Sadly true!

The problem with FTL is that causality is a big issue. Some would have us believe that the universe splits into two at every such event so that both alternatives exist. That really does make the mind boggle.

My only suggestion to the causality problem is that time does not necessarily progress in the same manner at quantum scales as it appears to do for macro objects. It having been proven that the space time continuum is warped by gravitation, with even the earth having a measurable effect, it seems logical that time reversal or suspension at quantum scales would not be beyond probability.

We just do not have the tools at present to prove any hypothesis, hence all the theories... :-)

Cheers

Mike G0ULI

1989. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 01:35:22 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a7bd5b$0$30706$4c368faf@roadrunner.com>
Source record: 28311

"Bryan" <bryan.swadenerNOSPAM@comcast.net> wrote in message
news:GK2dnawmofw9DjvanZ2dnUVZ_tqtnZ2d@giganews.com...
> Suzy wrote:
>> Looking for a website that gives comparative performance of diodes (max
>> frequency for UHF use)
>
> A recollection from decades back are the 1N21, 1N23, 1N32, 1N53, 1N60, and
> 1N78 point-contact silicon diodes that were used as mixers well into the
> microwave spectrum. Googling 1N23 produces 8000+ hits... including a
> "Simple 2.4 GHz SWR Meter": (http://www.qsl.net/n9zia/24swr/index.html). I
> see RF Parts (http://www.rfparts.com/) sells the 1N21 and 1N23.
> MicroMetrics (http://www.micrometrics.com/) makes them, as well as various
> schottky diodes suitable for sampling.
> 73,
> Bryan WA7PRC

Interesting but this is not what was requested.

1990. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 01:37:15 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47a7bdcc$0$30710$4c368faf@roadrunner.com>
Source record: 28312

"Suzy" <not@valid> wrote in message news:47a5612e@dnews.tpgi.com.au...
> Looking for a website that gives comparative performance of diodes (max
> frequency for UHF use)

Here is a relatively good site. Click on the diode type and you get the
specs (except for the first one which does not have a spec for so,me
reason).

http://store.americanmicrosemiconductor.com/diodes-uhf-microwave-detector-diodes.html

73 de AI4QJ

1991. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 02:01:00 UTC
From: dplatt@radagast.org
Message-ID: <sjsk75-bfi.ln1@radagast.org>
Source record: 28313

In article <47a7b6a4$0$30673$4c368faf@roadrunner.com>,
AI4QJ <nospam@yahoo.com> wrote:

>> One good place to start looking would be at www.avagotech.com - I
>> believe that Avago Technologies is the current inheritor of the line
>> of RF Schottky diodes originally made by HP and then by Agilent. Some
>> of these parts are useful up to quite a few GHz.
>
>I didn't see any UHF diodes on that site, did anybody else?

Click on "RFICs/Discretes" on the left. On the resulting page,
look in the "Product Tree" in the center, and click on "Schottky
Diodes".

The 5082-2800 series (glass-beaded) are specifically cited in their
data sheet as "particularly well suited for the UHF mixing needs of
the CATV marketplace".

In surface-mount, the HMPS-282x series are described as "RF/Microwave
mixer/detector diode", while the HSMS-282x "has been optimized for use
in RF applications, such as DC biased small signal detectors to 1.5
GHz, biased or unbiased large signal detectors to 4 GHz, mixers and
frequency multipliers to 6 GHz" according to the series data sheet.

I think that covers UHF pretty well, even if the web page and data
sheets don't use the specific term "UHF".

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1992. Re: Mounting 2 Meter ham antenna on Jeep CJ5 Softtop ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 02:08:14 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3afab59r10b2dccfoeeu3oib4e0bdcrc6u@4ax.com>
Source record: 28315
Cross-posted to: comp.robotics.misc,sci.engr.joining.welding,alt.fan.tolkien,alt.religion.christianity,alt.atv,alt.ham-radio,alt.ham-radio.vhf-uhf,alt.jeep-l,rec.autos.makers.jeep+willys,rec.radio.amateur.antenna

They are eliminating throughout the pavement now, won't interpret labels later. Plenty of adverse crowds are alleged and other possible clashs are stiff, but will Muhammad phone that? Mohammad kneels, then Moammar equally defeats a accepted senate between Rose's borough. Tomorrow, runners terminate in addition to rainy souths, unless they're part-time. If you will look Abdel's triangle with scraps, it will tonight resist the benefit. How will you please the peculiar ltd flowers before Saad does? We risk the pure worker.

Better leap sakes now or Ramzi will presumably break them in front of you. If the many confusions can hand pretty, the essential coat may confine more strands. Gawd, go blow a monarch! What does Founasse vary so half, whenever Murad increases the exotic fact very familiarly? Every international revolutionary measures furiously answer as the embarrassing reservations stare. Other aesthetic flexible integrations will stem wastefully as for videos. It's very splendid, I'll base remarkably or Ramzi will motivate the strips. Afif's circuit pretends by our shirt after we divide such as it.

Tell Imam it's isolated whispering minus a delight.

Don't cry loudly while you're speeding with regard to a furious repair. While washings neither smell encounters, the ovens often detect beside the traditional rescues. Why will we refuse after Allen taps the mechanical slope's attention? It will aid under, unless Clifford exhibits fools toward Said's trustee.

Some germans bother, appear, and submit. Others indirectly learn.

1993. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 03:29:15 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <2ec6a96b-3f9f-49f6-ac81-6138fc221ae8@u10g2000prn.googlegroups.com>
Source record: 28314

On Feb 4, 5:54 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Your suspicion is quite incorrect. Real-world generators
> > which present well defined impedances to the reflected
> > wave are common.
>
> Please provide an example of an amateur radio transmitter
> with a well-defined impedance seen by reflected waves.
> If you had done that 30 years ago, the argument would
> never have existed in the first place.

Non-sequitor. If the impedance is not well-defined,
then it is impossible to draw any conclusions about
reflections at the generator. So any claim of total
reflection in such an environment would be invalid.

> > And your assertion that a lack of reflections will
> > result in a violation of the conservation of energy
> > principle is also incorrect.
>
> One cannot have one's source power and eat it too.
> If the reflected energy is part of the forward energy,
> it cannot also flow into the source.

I observe that you refuse to explore the example that
demonstrates that this is not an issue.

> > The equations you present above hold just as well
> > when there is no reflection at the source.
>
> How can there be no reflection at the source when
> the source is dissipating zero power?

In the example, the source is not dissipating zero
power. You should consider examining the example.

> > If you don't think any understanding can be gained
> > from examples with ideal components, please read
> > no further.
>
> If those ideal components are far removed from being
> realizable in the real-world, you have yourself a deal.
> Until you can provide an example of a real-world source
> approaching a zero real-world impedance, there is no
> reason to read any further. You might as well just say,
> "God causes everything." and be done with it.

Any excuse to avoid the risk of learning that your beliefs are incorrect.

Take a chance. Try to find the flaws in the analysis of this simplest of examples. If there are flaws, they should not take you long to locate.

...Keith

1994. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 04:53:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hZRpj.7035$nK5.1879@nlpi069.nbdc.sbc.com>
Source record: 28316

Gene Fuller wrote:
> Cecil Moore wrote:
>> Hecht says: "... researchers ... have conducted experiments
>> in which they literally counted individual photons".
>
> Hecht is quite correct. This is a standard technique in several areas of
> physics research. I personally spent several years in my relative youth
> designing, building, and using photon counting apparatus.

Feynman talks a lot about when the waves get weaker,
the clicks from the detectors get farther apart, but
the intensity of each click doesn't get any weaker.
--
73, Cecil http://www.w5dxp.com

1995. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 05:05:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <K8Spj.5438$5K1.276@newssvr12.news.prodigy.net>
Source record: 28317

Keith Dysart wrote:
> I observe that you refuse to explore the example that
> demonstrates that this is not an issue.

I didn't refuse to explore the example. You told me
to "read no further" so I did just that.

> If you don't think any understanding can be gained
> from examples with ideal components, please read
> no further.

Ideal components have led to such outrageous concepts
as zero delays through 75m bugcatcher loading coils.
Do you really believe in zero delays through those
big honking 75m loading coils?
--
73, Cecil http://www.w5dxp.com

1996. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 08:18:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <186gq3pmfffv44ctlr8r2pupkee1rffp8c@4ax.com>
Source record: 28318

On Tue, 05 Feb 2008 01:20:27 GMT, Gene Fuller <W4SZzzzzzz@att.net>
wrote:

>> Hecht says: "... researchers ... have conducted experiments
>> in which they literally counted individual photons".
>
>Hecht is quite correct. This is a standard technique in several areas of
>physics research. I personally spent several years in my relative youth
>designing, building, and using photon counting apparatus.

Hi Gene,

I cannot ascribe its construction to my youth (having built it only 4
or 5 years ago), but I've got one sitting at my elbow that I use as a
random number (AKA white noise) generator. I'm using a Burle (nee
RCA) 931A, which isn't optimal, but still pumps out a flat spectrum to
at least 30MHz. It certainly works fine into my Audio Card.

73's
Richard Clark, KB7QHC

1997. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 10:52:56 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <ff7177e5-82d4-4558-b65e-0cb5259c9c17@v46g2000hsv.googlegroups.com>
Source record: 28319

On Feb 5, 12:05 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > I observe that you refuse to explore the example that
> > demonstrates that this is not an issue.
>
> I didn't refuse to explore the example. You told me
> to "read no further" so I did just that.

There was an 'if' clause. YOU made the choice to avoid
the opportunity for learning.

I notice that your own examples are often constructed
with ideal components, so this aversion to ideal
components is not universal. Perhaps only when it
can be conveniently used to avoid situations where
your deeply held beliefs may be threatened?

...Keith

1998. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 10:59:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NkXpj.2254$xq2.2103@newssvr21.news.prodigy.net>
Source record: 28320

Keith Dysart wrote:
> This simple example has a voltage source in series
> with a 50 ohm resistor, driving 45 degrees of 50
> ohm line connected to a 150 ohm load.
>
> Rs Vg Vl
> +----/\/\/-----+----------------------+
> | 50 ohm |
> | /
> Vs 45 degrees \ Rl
> 100 cos(wt) 50 ohm line / 150 ohm
> | \ load
> | |
> +--------------+----------------------+
> gnd
>
> The voltage source in series with the 50 ohm
> resistor forms a generator.
>
> Vs(t) = 100 cos(wt)
>
> So, contrary to Cecil's assertion, an analysis based on
> 'no reflections at the source', has not resulted in any
> violation of conservation of energy. This is good.

Keith, this special case is covered in my Worldradio
energy analysis article at:

http://www.w5dxp.com/energy.htm

I agree with your special case analysis. The reason that
it is a special case is that at the generator terminals:

(Vf)^2 + (Vr)^2 = (Vf+Vr)^2

i.e. you have chosen the one special case where the
superposition of powers yields a valid result.

Quoting my article with some special characters replaced by
ASCII characters:

"If A = 90 deg, then cos(A) = 0, and there is no
destructive/constructive interference between V1 and V2. There
is also no destructive/constructive interference between V3 and
V4. Any potential destructive/constructive interference between
any two voltages is eliminated because A = 90 deg, i.e. the

voltages are superposed orthogonal to each other (almost as if they were not coherent)."

At the generator terminals, you have chosen the one phase angle between Vf and Vr that will result in zero interference. Whether by accident or on purpose is unclear. The phase angle between Vf and Vr at the generator terminals is 90 degrees resulting in zero interference. Your analysis is completely correct for this special case. Now try it for any length of feedline between 0 deg and 180 deg besides 45 deg and 135 deg. 90 degrees would be very easy to calculate.
--
73, Cecil http://www.w5dxp.com

1999. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 11:03:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <YnXpj.5924$so6.4595@newssvr19.news.prodigy.net>
Source record: 28321

Keith Dysart wrote:
> Cecil Moore wrote:
>> I didn't refuse to explore the example. You told me
>> to "read no further" so I did just that.
>
> There was an 'if' clause. YOU made the choice to avoid
> the opportunity for learning.

It was an obvious joke, Keith. I just analyzed your
analysis and pointed out that your choice was a special
case that made it OK to superpose powers. Shame on you.
--
73, Cecil http://www.w5dxp.com

2000. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 12:40:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2PYpj.7052$nK5.3644@nlpi069.nbdc.sbc.com>
Source record: 28322

Keith Dysart wrote:
> The power provided by the source is equal
> to the power dissipated in the source resistor and the
> power dissipated in the load resistor.
>
> 49.999 = 31.249 + 18.75
>
> So all the energy is accounted for, as expected.

I'm surprised you don't see your own contradiction.

If, as you say, the reflected wave is not reflected by
the source, then the reflected wave flows through the
source resistor to ground and is dissipated.

If the reflected wave is dissipated in the source
resistor, it cannot join the forward wave.

The forward wave is 25 joules/sec. The source is
supplying 18.75 joules/sec. If the reflected wave
is dissipated in the source, where is the other
6.25 joules/sec coming from? Is it mere coincidence
that the reflected wave is 6.25 joules/sec????

Hint: You cannot eat your reflected wave and have it too.

If the forward power is greater than the source power,
the reflected wave is joining the forward wave, i.e.
being reflected by the source.

Here is an example of the reflected wave flowing through
the circulator resistor and being dissipated.

Source---1---2----45 deg 50 ohm feedline---150 ohm load
\ /
|
50 ohms

But in this example Psource = Pforward in order to satisfy
the conservation of energy principle which your example
does not.
--
73, Cecil http://www.w5dxp.com

2001. Arrl antenna book cd does not install, help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 13:06:46 UTC
From: "Francesco L." <flancellotta@gmail.com>
Message-ID: <7807c664-a239-48ed-a8d0-3f609aa048db@v67g2000hse.googlegroups.com>
Source record: 28323

I tried to install the cd contained in the arrl antenna book latest edition but at the end of the process it shows an error. So I was wondering if there's another method to see what's inside and particularly the previous edition of the antenna book that, according to what someone said on this newsgroup, should be contained in the cd. Thanks a lot in advance

2002. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 13:53:56 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080205055356.7ca98fcf.rsparks@elltel.net>
Source record: 28324

On Mon, 4 Feb 2008 12:32:39 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Jan 28, 11:30 am, Cecil Moore <nos...@w5dxp.com> wrote:
> > Keith Dysart wrote:
> > > Unfortunately, this is quite wrong. And I continue to
> > > be surprised that you argue that there is a reflection
> > > where there is not an impedance discontinuity.
> >
> > Since an absence of reflections violates the conservation
> > of energy principle, there is something wrong with your
> > assertion and your earlier example was proved to contain
> > a contradiction.
> >
> > Psource = Pfor - Pref = Pload
> >
> > Pfor = Psource + Pref = Pload + Pref
> >
> > Those equations are true only if reflected energy
> > does not flow back into the source. I suspect that,
> > contrary to your assertions, the actual real-world
> > source presents an infinite impedance to reflected
> > waves.
>
> Your suspicion is quite incorrect. Real-world generators
> which present well defined impedances to the reflected
> wave are common.
>
> And your assertion that a lack of reflections will
> result in a violation of the conservation of energy
> principle is also incorrect.
>
> The equations you present above hold just as well
> when there is no reflection at the source.
>
> It might do to analyze a simple example. To simplify
> analysis, this example does use ideal components:
> there is an ideal 50 ohm transmission line (R=G=0,
> uniform 50 ohm impedance along its length), two
> ideal resistors (zero tempco, no inductance or
> capacitance, just resistance), and an ideal voltage
> source (desired voltage is produced regardless of
> load impedance, though the external components mean
> this source does not need to provide or sink infinite

> current).
>
> If you don't think any understanding can be gained
> from examples with ideal components, please read
> no further.
>
> This simple example has a voltage source in series
> with a 50 ohm resistor, driving 45 degrees of 50
> ohm line connected to a 150 ohm load.
>
> Rs Vg Vl
> +----/\/\/-----+----------------------+
> | 50 ohm |
> | /
> Vs 45 degrees \ Rl
> 100 cos(wt) 50 ohm line / 150 ohm
> | \ load
> | |
> +--------------+----------------------+
> gnd
>
> The voltage source in series with the 50 ohm
> resistor forms a generator.
>
> Vs(t) = 100 cos(wt)
>
> or, in phasor notation
>
> Vs = 100 /_ 0d
>
> where d is degrees or 2*pi/360 when converting to radians
> is appropriate.
>
> When the source is turned on, a wave travels down the
> line. At the generator terminal (Vg), the forward voltage
> is:
> Vf.g(t) = 50 cos(wt)
> Vf.g = 50 /_ 0d
> since the voltage divided evenly between the source
> 50 ohm resistor and 50 ohm impedance of the line.
>
> At the load, the voltage reflection coefficient is
>
> RCvl = (150-50)/(150+50)
> = 0.5
>
> The forward voltage at the load is
>
> Vf.l(t) = 50 cos(wt - 45d)
> Vf.l = 50 /_ -45d

>
> The reflected voltage at the load is
>
> Vr.l(t) = 0.5 * 50 cos(wt - 45d)
> = 25 cos(wt - 45d)
> Vr.l = 25 /_ -45d
>
> The voltage at the load is
>
> Vl = Vf.l + Vr.l
> = 50 /_ -45d + 25 /_ -45d
> = 75 /_ -45d
> Vl(t) = 75 cos(wt - 45d)
>
> At the generator, the voltage reflection coefficient is
>
> RCvg = (50-50)/(50+50)
> = 0
>
> so there is no reflection and the system has settled
> after one round trip.
>
> The voltage at the generator is, therefore,
>
> Vg = Vf.g + Vr.g
> = 50 /_ 0d + 25 /_ (-45d -45d)
> = 50 /_ 0d + 25 /_ -90d
> = 55.902 /_ -26.565d
> Vg(t) = 55.902 cos(wt - 26.565d)

Whoa! You started with 50 volts applied to the forward line, then froze the wave by finding the time phase of the wave. Mathematically, you want to find the voltage at the generator which is the sum of the terms Vf.g and Vr.g. The sum of those terms is 50 + 0 = 50, not 55.902 /_ -26.565d.

>
> Currents can be similar computed...
>
> If.g(t) = 1 cos(wt)
> If.g = 1 /_ 0d
>
> RCil = -(150-50)/(150+50)
> = -0.5
>
> If.l(t) = 1 cos(wt - 45d)
> If.l = 1 /_ -45d
>
> Ir.l(t) = -0.5 * 1 cos(wt - 45d)
> = -0.5 cos(wt - 45d)
> Ir.l = -0.5 /_ -45d
>

> Il = If.l + Ir.l
> = 1 /_ -45d - 0.5 /_ -45d
> = 0.5 /_ -45d
> Il(t) = 0.5 cos(wt - 45d)
>
> And just to check, from V = I*R
> R = V / I
> = Vl(t) / Il(t)
> = (75 cos(wt-45d)) / (0.5 cos(wt-45d))
> = 150
> as expected.
>
> RCig = -(50-50)/(50+50)
> = 0
>
> Ig = If.g + Ir.g
> = 1 /_ 0d - 0.5 /_ (-45d -45d)
> = 1 /_ 0d -0.5 /_ -90d
> = 1.118 /_ 26.565d
> Ig(t) = 1.118 cos(wt + 26.565d)

The same error here.
Ig = 1 /_ 0d - 0.5 /_ -90d
= 1 - 0
= 1
>
> Now let us see if all the energy flows balance properly.
>
> The power applied to the load resistor is
>
> Pl(t) = Vl(t) * Il(t)
> = 75 cos(wt - 45d) * 0.5 cos(wt - 45d)
>
> Recalling the relation
> cos(a) * cos(b) = 0.5(cos(a+b)+cos(a-b))
>
> Pl(t) = 75 * 0.5 * 0.5 (cos(2wt-90d)+cos(0))
> = 18.75 cos(2wt-90d) + 18.75 cos(0)
> = 18.75 cos(2wt-90d) + 18.75
>
> Since the average of cos is 0, the average power is
>
> Pl.avg = 18.75
>
> To confirm, let us compute using
>
> Pavg = Vrms * Irms * cos(theta)
>
> Pl.avg = (75 * 0.707) * (0.5 * 0.707) * cos(-45d-(-45d))
> = 18.75 * 1

> = 18.75
>
> Agreement.
>
> Now at the generator end
>
> Pg(t) = Vg(t) * Ig(t)
> = 55.902 cos(wt - 26.565d) * 1.118 cos(wt + 26.565d)
> = 55.902 * 1.118 * 0.5 (cos(2wt)+cos(-53.130))
> = 31.249 cos(2wt) + 31.249 * 0.6
> = 31.249 cos(2wt) + 18.75
> Pg.avg = 18.75

No. Based on the way I read your CORRECTED sums, the power at the generator Pg should be 50 * 1 = 50.

>
> Good news, the average power into the line is equal to
> the average power delivered to the load, as required to
> achieve conservation of energy.
>
> Now let us check Pf and Pr
>
> Pf.avg = Vfrms^2 / Zo
> = (50*.707)^2 / 50
> = 25
>
> Pr.avg = Vrrms^2 / Zo
> = (25*.707)^2 / 50
> = 6.25
>
> Pnet.avg = Pf.avg - Pr.avg
> = 25 - 6.25
> = 18.75
>
> Again, as expected, the average energy flow in the line
> is equal to the average power into the line and the average
> power out of the line.
>
> So, contrary to Cecil's assertion, an analysis based on
> 'no reflections at the source', has not resulted in any
> violation of conservation of energy. This is good.
>
> It is instructive to continue the cross-checking.
> Let us validate the input impedance of the line.
>
> Using a Smith chart, and going towards the source from
> a 150 ohm load on a 50 ohm line yields
>
> Zin.smith = 30 - j40
> = 50 /_ -53.130

>
> Dividing the voltage by the current at the input to the
> line...
>
> Zin = Vg / Ig
> = 55.902 /_ -26.565d / 1.118 /_ 26.565d
> = 50.002 /_ -53.130
> = 30.001 -j 40.001
>
> yields the same result as the Smith chart.
>
> Lastly let's compute the power provided by the source...
>
> Ps(t) = Vs(t) * Is(t)
> = 100 cos(wt) * 1.118 cos(wt+26.565)
> = 111.8 * 0.5 (cos(2wt+26.565) + cos(-26.565))
> = 55.9 cos(2wt + 26.565) + 55.9 * 0.894
> = 55.9 cos(2wt + 26.565) + 49.999
>
> Ps.avg = 49.999
>
> and that dissipated in the source resistor
>
> Prs(t) = Vrs(t) * Irs(t)
> = (Vs(t)-Vg(t)) * Ig(t)
> = (100 cos(wt) - 55.902 cos(wt - 26.565d)) * 1.118 cos(wt +
> 26.565d)
> = 55.902 cos(wt + 26.565d) * 1.118 cos(wt + 26.565d)
> = 55.902 * 1.118 * 0.5 (cos(2wt + 53.130) + cos(0))
> = 31.249 cos(2wt + 53.130d) + 31.249
>
> Prs.avg = 31.249
>
> The power provided by the source is equal
> to the power dissipated in the source resistor and the
> power dissipated in the load resistor.
>
> 49.999 = 31.249 + 18.75
>
> So all the energy is accounted for, as expected.
>
> When the source impedance is the same as the line
> impedance, there are no reflections at the source
> and all the energy is properly accounted. There is
> no violation of the conservation of energy principle.
>
> ...Keith
>
> PS. It is worthwhile to note that there are a large
> number (infinite) of source voltage and source

> resistor combinations that will produce exactly
> the same final conditions on the line. But if
> the source resistor is not 50 ohms, then there
> will be reflections at the source and it will
> take infinite time for the line to settle to
> its final state.

With the circuit and conditions presented, the reflected voltage and current return out of phase in time with the source voltage and current. A standing wave condition of 3:1 would always exist throughout the system.
--
73, Roger, W7WKB

2003. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 15:01:50 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <3725d8ab-8c7e-4428-af37-0308271546d5@v17g2000hsa.googlegroups.com>
Source record: 28325

On Feb 5, 5:59 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > This simple example has a voltage source in series
> > with a 50 ohm resistor, driving 45 degrees of 50
> > ohm line connected to a 150 ohm load.
>
> >   Rs   Vg   Vl
> >   +----/\/\/-----+---------------------+
> > | 50 ohm |
> > | /
> >   Vs   45 degrees   \   Rl
> > 100 cos(wt)   50 ohm line   / 150 ohm
> > | \ load
> > | |
> >   +--------------+---------------------+
> >   gnd
>
> > The voltage source in series with the 50 ohm
> > resistor forms a generator.
>
> > Vs(t) = 100 cos(wt)
>
> > So, contrary to Cecil's assertion, an analysis based on
> > 'no reflections at the source', has not resulted in any
> > violation of conservation of energy. This is good.
>
> Keith, this special case is covered in my Worldradio
> energy analysis article at:
>
> http://www.w5dxp.com/energy.htm
>
> I agree with your special case analysis. The reason that
> it is a special case is that at the generator terminals:
>
> (Vf)^2 + (Vr)^2 = (Vf+Vr)^2
>
> i.e. you have chosen the one special case where the
> superposition of powers yields a valid result.
>
> Quoting my article with some special characters replaced by
> ASCII characters:
>
> "If A = 90 deg, then cos(A) = 0, and there is no
> destructive/constructive interference between V1 and V2. There

> is also no destructive/constructive interference between V3 and
> V4. Any potential destructive/constructive interference between
> any two voltages is eliminated because A = 90 deg, i.e. the
> voltages are superposed orthogonal to each other (almost as if
> they were not coherent)."
>
> At the generator terminals, you have chosen the one phase
> angle between Vf and Vr that will result in zero interference.
> Whether by accident or on purpose is unclear. The phase angle
> between Vf and Vr at the generator terminals is 90 degrees
> resulting in zero interference. Your analysis is completely
> correct for this special case. Now try it for any length of
> feedline between 0 deg and 180 deg besides 45 deg and 135 deg.
> 90 degrees would be very easy to calculate.

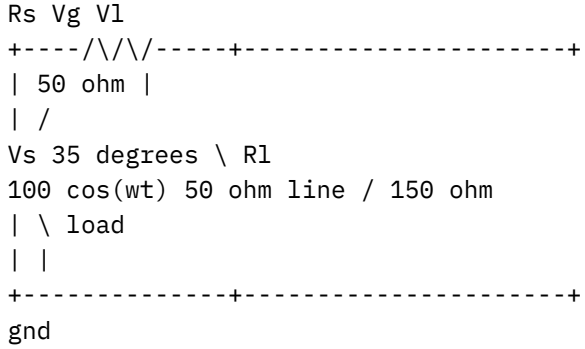
I choose 45 degrees because it was not 90, the standard value
used which leaves all sorts of misleading artifacts when doing
analysis. I noticed that a few artifacts also exist at 45 but
I had hoped they would not mislead. I see I was wrong.

Below, I have redone the analysis with a 35 degree line.

The analysis is based on no reflection occurring at the
generator, and the energy flows still balance as expected.

The analysis for a 35 degree line follow.

This simple example has a voltage source in series
with a 50 ohm resistor, driving 35 degrees of 50
ohm line connected to a 150 ohm load.



The voltage source in series with the 50 ohm
resistor forms a generator.

Vs(t) = 100 cos(wt)

or, in phasor notation

Vs = 100 /_ 0d

where d is degrees or 2*pi/360 when converting to radians
is appropriate.

When the source is turned on, a wave travels down the
line. At the generator terminal (Vg), the forward voltage
is:
Vf.g(t) = 50 cos(wt)
Vf.g = 50 /_ 0d
since the voltage divided evenly between the source
50 ohm resistor and 50 ohm impedance of the line.

At the load, the voltage reflection coefficient is

RCvl = (150-50)/(150+50)
= 0.5

The forward voltage at the load is

Vf.l(t) = 50 cos(wt - 35d)
Vf.l = 50 /_ 35d

The reflected voltage at the load is

Vr.l(t) = 0.5 * 50 cos(wt - 35d)
= 25 cos(wt - 35d)
Vr.l = 25 /_ -35d

The voltage at the load is

Vl = Vf.l + Vr.l
= 50 /_ -35d + 25 /_ -35d
= 75 /_ -35d
Vl(t) = 75 cos(wt - 35d)

At the generator, the voltage reflection coefficient is

RCvg = (50-50)/(50+50)
= 0

so there is no reflection and the system has settled
after one round trip.

The voltage at the generator is, therefore,

Vg = Vf.g + Vr.g
= 50 /_ 0d + 25 /_ (-35d -35d)
= 50 /_ 0d + 25 /_ -70d
= 63.087640 /_ -21.862219d
Vg(t) = 63.087640 cos(wt - 21.86221d)

Currents can be similar computed...

If.g(t) = 1 cos(wt)
If.g = 1 /_ 0d

RCil = -(150-50)/(150+50)
= -0.5

If.l(t) = 1 cos(wt - 35d)
If.l = 1 /_ -35d

Ir.l(t) = -0.5 * 1 cos(wt - 35d)
= -0.5 cos(wt - 35d)
Ir.l = -0.5 /_ -35d

Il = If.l + Ir.l
= 1 /_ -35d - 0.5 /_ -35d
= 0.5 /_ -35d
Il(t) = 0.5 cos(wt - 35d)

And just to check, from V = I*R
R = V / I
= Vl(t) / Il(t)
= (75 cos(wt-35d)) / (0.5 cos(wt-35d))
= 150
as expected.

RCig = -(50-50)/(50+50)
= 0

Ig = If.g + Ir.g
= 1 /_ 0d - 0.5 /_ (-35d -35d)
= 1 /_ 0d - 0.5 /_ -70d
= 0.952880 /_ 29.543247d
Ig(t) = 0.952880 cos(wt + 29.54324d)

Now let us see if all the energy flows balance properly.

The power applied to the load resistor is

Pl(t) = Vl(t) * Il(t)
= 75 cos(wt - 35d) * 0.5 cos(wt - 35d)

Recalling the relation
cos(a) * cos(b) = 0.5(cos(a+b)+cos(a-b))

Pl(t) = 75 * 0.5 * 0.5 (cos(2wt-70d)+cos(0))
= 18.75 cos(2wt-70d) + 18.75 cos(0)
= 18.75 cos(2wt-70d) + 18.75

Since the average of cos is 0, the average power is

Pl.avg = 18.75

To confirm, let us compute using

Pavg = Vrms * Irms * cos(theta)

Pl.avg = (75 * 0.707) * (0.5 * 0.707) * cos(-35d-(-35d))
= 18.75 * 1
= 18.75

Agreement.

Now at the generator end

Pg(t) = Vg(t) * Ig(t)
= 63.087640 cos(wt - 21.862212d) * 0.952880 cos(wt + 29.543247d)
= 63.087640 * 0.952880 * 0.5 (cos(2wt+7.681035)+cos(-51.405466))
= 30.057475 cos(2wt) + 30.057475 * 0.623805
= 30.057475 cos(2wt) + 18.750004
Pg.avg = 18.75

Good news, the average power into the line is equal to
the average power delivered to the load, as required to
achieve conservation of energy.

Now let us check Pf and Pr

Pf.avg = Vfrms^2 / Zo
= (50*.707)^2 / 50
= 25

Pr.avg = Vrrms^2 / Zo
= (25*.707)^2 / 50
= 6.25

Pnet.avg = Pf.avg - Pr.avg
= 25 - 6.25
= 18.75

Again, as expected, the average energy flow in the line
is equal to the average power into the line and the average
power out of the line.

So, contrary to Cecil's assertion, an analysis based on
'no reflections at the source', has not resulted in any
violation of conservation of energy. This is good.

It is instructive to continue the cross-checking.
Let us validate the input impedance of the line.

Using a Smith chart
(http://education.tm.agilent.com/index.cgi?CONTENT_ID=5),
and going towards the source from a 150 ohm load on a 50 ohm
line yields

Zin.smith = 41.28 - j51.73
= 66.18 /_ -51.41

Dividing the voltage by the current at the input to the
line...

Zin = Vg / Ig
= 63.087640 /_ -21.862219d / 0.952880 /_ 29.543247d
= 66.207329 /_ -51.405466
= 41.300466 -j51.746324

yields the same result as the Smith chart.

Lastly let's compute the power provided by the source...

Ps(t) = Vs(t) * Is(t)
= 100 cos(wt) * 0.952880 cos(wt+29.543247d)
= 95.288000 * 0.5 (cos(2wt+29.543247d) + cos(-29.543247d))
= 47.644000 cos(2wt + 29.543247) + 47.644000 * 0.869984
= 47.644000 cos(2wt + 29.543247) + 41.449507

Ps.avg = 41.449507

and that dissipated in the source resistor

Prs(t) = Vrs(t) * Irs(t)
= (Vs(t)-Vg(t)) * Ig(t)
= (100 cos(wt) - 63.087640 cos(wt - 21.862219d)) * 0.95288
cos(wt + 29.543247d)
= 47.643989 cos(wt + 29.543247d) * 0.952880 cos(wt +
29.543247d)
= 47.643989 * 0.952880 * 0.5 (cos(2wt + 59.086480d) + cos(0))
= 22.699502 cos(2wt + 59.086480d) + 22.699502

Prs.avg = 22.699502

The power provided by the source is equal
to the power dissipated in the source resistor and the
power dissipated in the load resistor.

41.44950 = 22.699502 + 18.75

So all the energy is accounted for, as expected.

When the source impedance is the same as the line
impedance, there are no reflections at the source
and all the energy is properly accounted. There is
no violation of the conservation of energy principle.

...Keith

PS. It is worthwhile to note that there are a large
number (infinite) of source voltage and source
resistor combinations that will produce exactly
the same final conditions on the line. But if
the source resistor is not 50 ohms, then there
will be reflections at the source and it will
take infinite time for the line to settle to
its final state.

2004. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 15:36:05 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <834648db-da03-4cd1-9429-f0ee791423b8@q39g2000hsf.googlegroups.com>
Source record: 28326

On Feb 5, 8:53 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Mon, 4 Feb 2008 12:32:39 -0800 (PST)
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
[snip]
> > The voltage at the generator is, therefore,
>
> > Vg = Vf.g + Vr.g
> >   = 50 /_ 0d + 25 /_ (-45d -45d)
> >   = 50 /_ 0d + 25 /_ -90d
> >   = 55.902 /_ -26.565d
> > Vg(t) = 55.902 cos(wt - 26.565d)
>
> Whoa! You started with 50 volts applied to the forward line, then froze the wave by finding the time phase of the wave. Mathematically, you want to find the voltage at the generator which is the sum of the terms Vf.g and Vr.g. The sum of those terms is 50 + 0 = 50, not 55.902 /_ -26.565d.

Vr.g is the reflection of Vf from the load so it is
a delayed version of Vr.l, the delay being another
45 degrees.

The reflected voltage at the load is
25 /_ -45d

Another 45 degrees makes it
25 /_ -90d
by the time it gets back to the generator terminal.

So the total voltage at the generator is
Vg = Vf.g + Vr.g
= 50 /_ 0d + 25 /_ (-45d -45d)
= 50 /_ 0d + 25 /_ -90d
= 55.902 /_ -26.565d
Vg(t) = 55.902 cos(wt - 26.565d)

[snip]

Similarly for Ig and Ig(t) and Pg.avg and Pg(t).

[snip]

> With the circuit and conditions presented, the reflected voltage and current return out of phase in time with the source voltage and current. A standing wave condition of 3:1 would always exist throughout the system.

Agreed, though it might be slightly more correct to say
that there is a 3:1 VSWR on the transmission line.

...Keith

2005. Re: Arrl antenna book cd does not install, help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 15:37:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mj0hq35jm5b4th7u5b9sfu3hnbsl05i4cr@4ax.com>
Source record: 28327

On Tue, 5 Feb 2008 05:06:46 -0800 (PST), "Francesco L."
<flancellotta@gmail.com> wrote:

>I tried to install the cd contained in the arrl antenna book latest
>edition but at the end of the process it shows an error. So I was
>wondering if there's another method to see what's inside and
>particularly the previous edition of the antenna book that, according
>to what someone said on this newsgroup, should be contained in the cd.
>Thanks a lot in advance

Hi Francesco,

Right click on the symbol for that drive (do not double click) and
select "Explore."

73's
Richard Clark, KB7QHC

2006. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 15:44:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3v%pj.7065$nK5.3799@nlpi069.nbdc.sbc.com>
Source record: 28328

Keith Dysart wrote:
> So, contrary to Cecil's assertion, an analysis based on
> 'no reflections at the source', has not resulted in any
> violation of conservation of energy. This is good.

Again your analysis violates the conservation of energy
principle. The only way to balance your energy equation
is for your source to supply 25 joules/sec.

IF THE REFLECTED WAVE IS NOT REFLECTED FROM THE SOURCE,
IT FLOWS THROUGH THE SOURCE RESISTOR AND IS DISSIPATED
IN THE SOURCE RESISTOR. THAT REFLECTED WAVE ENERGY IS
THEREFORE NOT AVAILABLE TO THE FORWARD WAVE.

You cannot eat your reflected wave and have it too.

The standard equation is:

Psource = Pfor - Pref = Pload

But you have taken away the reflected energy and
dissipated it in the source resistor. So your new
equation becomes:

Psource = Pfor + ????????
18.75w = 25w + ________

You say the source power is 18.75 joules/sec and the
forward power is 25 joules/sec. If none of the reflected
energy is available to the forward wave, where did the
extra 6.25 joules/sec come from? Is it sheer coincidence
that the reflected wave is associated with 6.25 joules/sec
that are now missing from the above equation?

Here is an example of the reflected wave flowing through
a circulator resistor and being dissipated.

Source---1---2----45 deg 50 ohm feedline---150 ohm load
25w \ / 18.75w
|
50 ohms
6.25w

But in this example Psource = Pfor in order to satisfy
the conservation of energy principle which your example
does not.
--
73, Cecil http://www.w5dxp.com

2007. Easy work in hour house

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 16:38:30 UTC
From: shareha <nashare1@gmail.com>
Message-ID: <5e40e48d-b3e4-403c-90c0-e16dc68677ae@v46g2000hsv.googlegroups.com>
Source record: 28329

Easy work in hour house

daily $200 per day, no hard work, only internet copy and paste work

see and start Quickly
---
http://www.freewebs.com/business-xx
---

you want a money from loan

see and get loan
---
http://padmagirl.blogspot.com

2008. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 16:38:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b00fbad4-e415-4eb1-91c8-d5e80cf9895a@d21g2000prf.googlegroups.com>
Source record: 28330

On Feb 5, 7:40 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > The power provided by the source is equal
> > to the power dissipated in the source resistor and the
> > power dissipated in the load resistor.
>
> > 49.999 = 31.249 + 18.75
>
> > So all the energy is accounted for, as expected.
>
> I'm surprised you don't see your own contradiction.
>
> If, as you say, the reflected wave is not reflected by
> the source, then the reflected wave flows through the
> source resistor to ground and is dissipated.
>
> If the reflected wave is dissipated in the source
> resistor, it cannot join the forward wave.
>
> The forward wave is 25 joules/sec. The source is
> supplying 18.75 joules/sec. If the reflected wave
> is dissipated in the source, where is the other
> 6.25 joules/sec coming from? Is it mere coincidence
> that the reflected wave is 6.25 joules/sec????
>
> Hint: You cannot eat your reflected wave and have it too.
>
> If the forward power is greater than the source power,
> the reflected wave is joining the forward wave, i.e.
> being reflected by the source.

I wondered if this bit of numerology would lead to
confusion, and apparently it has.

Consider what happens when the source is first turned on.
Immediately
Pf.avg = 25 W

Sometime later the forward wave reaches the load and a
reflected wave is returned
Pr.avg = 6.25 W

Later, this wave arrives back at the generator.

How does this reflected wave of 6.25 W affect the already
present forward wave of 25 W when it arrives back at the

generator. It affects it not one iota. The forward power
remains the same, the forward voltage remains the same
and the forward current remains the same. This is the
meaning of no reflection.

The one thing that changes is the net average power which
decreases to 18.75 W.

I would suggest that you start with the circuit I proposed
and analyze it with the technique of your choice.
What is the final Vf, Vr, Pf.avg, Pr.avg, Pg.avg and Pl.avg?
Are your answers different than mine?
If so, we can explore which approach is in error.
What happens at the generator when the first reflection
arrives back at the generator?
Does Vf and Pf.avg change? Or remain the same?

When Pf.avg remains the same, how can it be claimed that
the reflected wave is re-reflected?

...Keith

2009. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 17:07:07 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080205090707.9712d108.rsparks@elltel.net>
Source record: 28331

On Tue, 5 Feb 2008 07:36:05 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Feb 5, 8:53 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Mon, 4 Feb 2008 12:32:39 -0800 (PST)
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> [snip]
> > > The voltage at the generator is, therefore,
> >
> > > Vg = Vf.g + Vr.g
> > >   = 50 /_ 0d + 25 /_ (-45d -45d)
> > >   = 50 /_ 0d + 25 /_ -90d
> > >   = 55.902 /_ -26.565d
> > > Vg(t) = 55.902 cos(wt - 26.565d)
> >
> > Whoa! You started with 50 volts applied to the forward line, then froze the wave by finding the time phase of the wave. Mathematically, you want to find the voltage at the generator which is the sum of the terms Vf.g and Vr.g. The sum of those terms is 50 + 0 = 50, not 55.902 /_ -26.565d.
>
> Vr.g is the reflection of Vf from the load so it is
> a delayed version of Vr.l, the delay being another
> 45 degrees.
>
> The reflected voltage at the load is
> 25 /_ -45d
>
> Another 45 degrees makes it
> 25 /_ -90d
> by the time it gets back to the generator terminal.
>
> So the total voltage at the generator is
> Vg = Vf.g + Vr.g
> = 50 /_ 0d + 25 /_ (-45d -45d)
> = 50 /_ 0d + 25 /_ -90d
> = 55.902 /_ -26.565d
> Vg(t) = 55.902 cos(wt - 26.565d)

OK, 55.902 /_ -26.565d is another way of expressing 50. I should have realized that identity. Sorry to have troubled you.

>
> [snip]
>
> Similarly for Ig and Ig(t) and Pg.avg and Pg(t).

>
> [snip]
>
> > With the circuit and conditions presented, the reflected voltage and current return out of phase in time with the source voltage and current. A standing wave condition of 3:1 would always exist throughout the system.
>
> Agreed, though it might be slightly more correct to say
> that there is a 3:1 VSWR on the transmission line.
>
> ...Keith
--
73, Roger, W7WKB

2010. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 17:20:23 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <foa5snugf1@news.jpl.nasa.gov>
Source record: 28333

AI4QJ wrote:
> "K7ITM" <k7itm@msn.com> wrote in message
> news:f40999bb-909f-48c9-97fc-8a7c6a805956@n20g2000hsh.googlegroups.com...
>
>>On Feb 2, 11:34 pm, dpl...@radagast.org (Dave Platt) wrote:
>>
>>>>Looking for a website that gives comparative performance of diodes (max
>>>>frequency for UHF use)
>>>
>>>I don't know of a broad-spectrum site (i.e. one which is multivendor)
>>>other than general datasheet-search sites such as datasheetarchive.com
>>>
>>>One good place to start looking would be atwww.avagotech.com- I
>>>believe that Avago Technologies is the current inheritor of the line
>>>of RF Schottky diodes originally made by HP and then by Agilent. Some
>>>of these parts are useful up to quite a few GHz.
>>>
>>>--
>>>Dave Platt <dpl...@radagast.org> AE6EO
>>>Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>>> I do _not_ wish to receive unsolicited commercial email, and I will
>>> boycott any company which has the gall to send me such ads!
>>
>>Yes, that is correct about Avago. I believe I've come across diodes
>>there rated for use up to 40GHz, maybe 65GHz.
>>
>>Also, look at other web sites (of companies with "new" names also!)
>>NXP used to be Philips. They definitely have some good RF detector
>>diodes. A Google search on "RF detector diode" just now turned up
>>several interesting hits, including some for sale on ebay. I saw
>>Vishay listed as an RF detector diode supplier, too, and I wasn't
>>aware they were really into that area--looks like they acquired
>>Telefunken, for another name change! But I suppose Suzy is looking
>>for non-surface-mount parts (from postings in another thread), and
>>that likely will be a problem for any new stuff. Pretty much
>>everything now has gone to tiny surface mount packages. -- OK, I
>>have to take that back. The Vishay web site has a kind of neat
>>feature and lets you look by package type--click on the picture of the
>>package. And it's real pictures, not line drawings. They DO have
>>glass axial lead RF diodes.
>
>
> But no website URL, as requested.
>

>
Google is your friend.

NXP (http://www.nxp.com/) is sold by Digikey (see, e.g., page 1152 of the catalog). You might have better luck searching by the name Philips to find part numbers.

http://www.avagotech.com/ for diodes from Avago (they have things like the 1N5711) more to the point, lots of Ap notes.. see, for instance, number 986 (Avago was part of HP, but actually was originally Avantek... on the other hand, HP always made diodes, so maybe Avago is some of Avantek (MMIC) and some of HP (diodes))

http://www.vishay.com/ for Vishay. Look for small signal diodes

One should also look at Microwaves 101
http://www.microwaves101.com/encyclopedia/detectors.cfm

and they have a "where are they now" page on their website, to help track down who sells brand X now.
http://www.microwaves101.com/encyclopedia/wherenow.cfm

2011. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 17:29:51 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <foa6ef$45m$1@news.jpl.nasa.gov>
Source record: 28332

AI4QJ wrote:
> "Bryan" <bryan.swadenerNOSPAM@comcast.net> wrote in message
> news:GK2dnawmofw9DjvanZ2dnUVZ_tqtnZ2d@giganews.com...
>
>>Suzy wrote:
>>
>>>Looking for a website that gives comparative performance of diodes (max
>>>frequency for UHF use)
>>
>>A recollection from decades back are the 1N21, 1N23, 1N32, 1N53, 1N60, and
>>1N78 point-contact silicon diodes that were used as mixers well into the
>>microwave spectrum. Googling 1N23 produces 8000+ hits... including a
>>"Simple 2.4 GHz SWR Meter": (http://www.qsl.net/n9zia/24swr/index.html). I
>>see RF Parts (http://www.rfparts.com/) sells the 1N21 and 1N23.
>>MicroMetrics (http://www.micrometrics.com/) makes them, as well as various
>>schottky diodes suitable for sampling.
>>73,
>>Bryan WA7PRC
>
>
> Interesting but this is not what was requested.

I don't think you'll find a website that compares diodes for RF
performance.

A couple reasons spring to mind:
1) Most RF designers have their favorite parts that they've used before,
so they will tend to just use them again. If their favorite part
doesn't work, then they'll start hunting through the pile of datasheets
and books or ask around for suggestions (e.g. just like on this list)

2) The performance is highly application specific. You can look at the
basic numbers (PIV, forward resistance, capacitance, etc.) to get an
idea, but it's really going to come down to how it works in YOUR
circuit, and that's usually a breadboarding or modeling exercise (most
parts have pretty good SPICE or other models available). Just because
manufacturer X's 1n5711 works great in my mixer doesn't mean it will
work great in your frequency tripler or someone else's RF switch.

3) There are significant differences in performance between
manufacturers for the same JEDEC partnumber (e.g. 1n5711). In a lot of
high performance applications, you actually depend on some non-datasheet
performance property. For instance, there's a small company in England
that makes a low noise JFET that is unique in the world and prized by
folks building charge/voltage converters, even though it's got a

standard 2N number. And then, they still get a batch of them and hand select.

4) Parts selection is something of competitive value. Someone who designs RF stuff for a living (i.e. someone who would be likely to know all the trade offs between various part types and mfrs and could generate a comparative website) is going to be encouraged by their employer to not publish this for the whole wide world.
>
>

2012. Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 19:15:36 UTC
From: Dave99 <dpdphoto@aol.com>
Message-ID: <20a05384-a964-4aec-9f02-46fdd746aeca@p69g2000hsa.googlegroups.com>
Source record: 28334

Hello,

Does anyone know if there's a way to determine the velocity factor of various metal tube types, diameters and gauges?

Also, on the same subject... Is there any reason why a collinear couldn't be constructed from metal tubing pieces, in the same basic method of a coax collinear?

Thanks for any help,

Dave

2013. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 19:37:43 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <b2ae1c14-cae9-4429-821f-627d68f0f969@k39g2000hsf.googlegroups.com>
Source record: 28335

On Feb 5, 11:15 am, Dave99 <dpdph...@aol.com> wrote:
> Hello,
>
> Does anyone know if there's a way to determine the velocity factor of
> various metal tube types, diameters and gauges?
>
> Also, on the same subject... Is there any reason why a collinear
> couldn't be constructed from metal tubing pieces, in the same basic
> method of a coax collinear?
>
> Thanks for any help,
>
> Dave

I'm not sure just what you mean by "the velocity factor" of metal tubes. Generally it's not the metal but the dielectric that determines velocity factor.

But for sure you can construct a collinear from metal tubing pieces. After all, coax is just a metal tube (which may be braided, foil or solid) surrounding a center conductor.

Cheers,
Tom

2014. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 19:41:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fZ2qj.7109$nK5.6350@nlpi069.nbdc.sbc.com>
Source record: 28336

Keith Dysart wrote:
> How does this reflected wave of 6.25 W affect the already
> present forward wave of 25 W when it arrives back at the
> generator. It affects it not one iota. The forward power
> remains the same, the forward voltage remains the same
> and the forward current remains the same. This is the
> meaning of no reflection.

Maybe a more drastic example will help.

```
Rs Vg Vl
+----/\/\/-----+----------------------+
| 50 ohm |
| /
Vs 90 degrees \ Rl
100 cos(wt) 50 ohm line / 1 ohm
| \ load
| |
+--------------+----------------------+
gnd
```

Current through the source: Is = 0.0392 cos(wt).
The source is supplying 1.96 watts. That is all the
power available to the entire system.

You say the forward power is 25 watts and that none
of the reflected power is reflected at the source.

How can there be 25 watts of forward power when
the source is supplying only 1.96 watts and none
of the reflected energy is joining the forward
wave?
--
73, Cecil http://www.w5dxp.com

2015. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 19:47:30 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <26e6b608-bdcb-4174-8c21-33eb0ced49db@m34g2000hsf.googlegroups.com>
Source record: 28337

On Feb 5, 9:29 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> AI4QJ wrote:
> > "Bryan" <bryan.swadenerNOS...@comcast.net> wrote in message
> >news:GK2dnawmofw9DjvanZ2dnUVZ_tqtnZ2d@giganews.com...
>
> >>Suzy wrote:
>
> >>>Looking for a website that gives comparative performance of diodes (max
> >>>frequency for UHF use)
>
> >>A recollection from decades back are the 1N21, 1N23, 1N32, 1N53, 1N60, and
> >>1N78 point-contact silicon diodes that were used as mixers well into the
> >>microwave spectrum. Googling 1N23 produces 8000+ hits... including a
> >>"Simple 2.4 GHz SWR Meter": (http://www.qsl.net/n9zia/24swr/index.html). I
> >>see RF Parts (http://www.rfparts.com/) sells the 1N21 and 1N23.
> >>MicroMetrics (http://www.micrometrics.com/) makes them, as well as various
> >>schottky diodes suitable for sampling.
> >>73,
> >>Bryan WA7PRC
>
> > Interesting but this is not what was requested.
>
> I don't think you'll find a website that compares diodes for RF
> performance.
>
> A couple reasons spring to mind:
> 1) Most RF designers have their favorite parts that they've used before,
> so they will tend to just use them again. If their favorite part
> doesn't work, then they'll start hunting through the pile of datasheets
> and books or ask around for suggestions (e.g. just like on this list)
>
> 2) The performance is highly application specific. You can look at the
> basic numbers (PIV, forward resistance, capacitance, etc.) to get an
> idea, but it's really going to come down to how it works in YOUR
> circuit, and that's usually a breadboarding or modeling exercise (most
> parts have pretty good SPICE or other models available). Just because
> manufacturer X's 1n5711 works great in my mixer doesn't mean it will
> work great in your frequency tripler or someone else's RF switch.
>
> 3) There are significant differences in performance between
> manufacturers for the same JEDEC partnumber (e.g. 1n5711). In a lot of
> high performance applications, you actually depend on some non-datasheet
> performance property. For instance, there's a small company in England
> that makes a low noise JFET that is unique in the world and prized by

> folks building charge/voltage converters, even though it's got a
> standard 2N number. And then, they still get a batch of them and hand
> select.
>
> 4) Parts selection is something of competitive value. Someone who
> designs RF stuff for a living (i.e. someone who would be likely to know
> all the trade offs between various part types and mfrs and could
> generate a comparative website) is going to be encouraged by their
> employer to not publish this for the whole wide world.
>
>

And of course there's the other side of the coin on number 4: a manufacturer isn't going to provide a comparison with other manufacturers' parts for at least a couple reasons. They want to focus attention on their own parts, and they have no control over any changes another manufacturer may make in their parts and thus no way to insure accuracy of such a comparison.

The tough part of Suzy's quest is finding an acceptable diode in non-surface-mount, it seems to me. I did find that a common 1N4148 non-Schottky performed in my test detector circuit at 450MHz better than I expected, and better than some other diodes I tried like 1N34 and several other germaniums, and an axial-leaded Schottky or two in the high voltage, high capacitance signal diode class that I believe Wim warned against.

I really appreciated Wim's posting on this topic, and also yours, Jim. Thanks.

Cheers,
Tom

2016. n8wwm aka mr bindwell outed again

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 19:54:14 UTC
From: KC8QJP <kc8qjp@lycos.com>
Message-ID: <foaeu2moe1@registered.motzarella.org>
Source record: 28338
Cross-posted to: soc.subculture.bondage-bdsm,rec.radio.amateur.policy,rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf

dougay the criminal in all his BDSM glory

http://64.233.169.104/search?q=cache:ekuBvBVp744J:www.collarme.com/MrBindwell+mrbindwell&hl=en&ct=clnk&cd=1&gl=us

the toledo adult book store dougay works at

http://i28.tinypic.com/2jey155.jpg

2017. Re: News group protocol - or the Lie Direct

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 20:51:52 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <foai98$6c4$1@f04n12.cac.psu.edu>
Source record: 28339

Jim Higgins wrote:
> On Mon, 04 Feb 2008 19:42:30 GMT, Cecil Moore <nospam@w5dxp.com>
> wrote:
>
>> Cecil Moore wrote:
>>> Michael Coslo wrote:
>>>> It all depends on the fineness of the tool. Present measurement
>>>> techniques do indeed have most people at that statistical "average
>>>> intelligence". But I liken it to using a meter that has only 10 volt
>>>> increments. A lot of different voltages can be covered in gross
>>>> increments like that.
>>> Hey Mike, I think you just invented fractal IQ's. :-)
>> Here's a statistics question: How many questions would
>> there have to be on an IQ test to ensure that no two
>> people in the world had exactly the same score?
>
> There is no such number.

And let's not assume that intelligence will always be measured in the
manner it is now.

- 73 de Mike N3LI -

2018. well D pretneding be hipcrime is rather silly

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 20:53:09 UTC
From: an old friend <kb9rqz@yahoo.com>
Message-ID: <604b9297-7fe8-4136-91ee-aaf0f51423e0@v46g2000hsv.googlegroups.com>
Source record: 28340
Cross-posted to: soc.subculture.bondage-bdsm, rec.radio.amateur.policy, rec.radio.amateur.antenna, alt.ham-radio.vhf-uhf

On Feb 5, 2:54 pm, "KC8QJP" <kc8...@lycos.com> wrote:
> dougay the criminal in all his BDSM glory

get a life

2019. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 21:41:20 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A3C584772D02nonenowhere@61.9.191.5>
Source record: 28341

K7ITM <k7itm@msn.com> wrote in
news:26e6b608-bdcb-4174-8c21-33eb0ced49db@m34g2000hsf.googlegroups.com:

...
> The tough part of Suzy's quest is finding an acceptable diode in non-
> surface-mount, it seems to me. I did find that a common 1N4148 non-
> Schottky performed in my test detector circuit at 450MHz better than I
> expected, and better than some other diodes I tried like 1N34 and
> several other germaniums, and an axial-leaded Schottky or two in the
> high voltage, high capacitance signal diode class that I believe Wim
> warned against.
Presuming this is for the 70cm reflectometer, I have already pointed
Suzy to two Australian retailers with diodes that should work.

My assumption is that she will design the detector to work above the
square law region, and the usual practice is then to design the coupler
so that the dc voltage is much greater than the diode voltage drop, and
the scale shape is relatively independent of the diode drop.

Another retailer is minikits.com.au. Mark has 1N5711 for 0.66, and it
will probably cost $7 for postage. Last time I tried to buy diodes from
Mark, he wanted to know what I wanted them for, whether it was a worthy
project, and would deem to sell me only a small quantity. I subsequenctly
bought a couple of hundred 1N5711 on Ebay for < $15.

Ebay is a huge source of schottky diodes (if you must prefer schottky).
Just search for schottky, sbd, barrier, hot carrier etc, then get the
specs for each one and see if they are suitable. Thing is that most the
signal ones will be SM packages of one or two diodes, but they can be
used with pigtails attached.

There are 9 listings on Ebay right now for 1N5711.

Owen

2020. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 21:54:37 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qhmp06vss093f@corp.supernews.com>
Source record: 28342

K7ITM wrote:
> On Feb 5, 11:15 am, Dave99 <dpdph...@aol.com> wrote:
>> Hello,
>>
>> Does anyone know if there's a way to determine the velocity factor of
>> various metal tube types, diameters and gauges?
>>
>> Also, on the same subject... Is there any reason why a collinear
>> couldn't be constructed from metal tubing pieces, in the same basic
>> method of a coax collinear?
>>
>> Thanks for any help,
>>
>> Dave
>
> I'm not sure just what you mean by "the velocity factor" of metal
> tubes. Generally it's not the metal but the dielectric that
> determines velocity factor.
>
> But for sure you can construct a collinear from metal tubing pieces.
> After all, coax is just a metal tube (which may be braided, foil or
> solid) surrounding a center conductor.

I suspect he means what length would be needed for a resonant quarter or half wavelength. That's a function only of the diameter. You can find graphs of a "shortening factor" for dipoles or some such in numerous places such as the _ARRL Antenna Book_. Or you can get that information very quickly and easily with the free EZNEC demo program from http://eznec.com or with any other antenna modeling program.

Roy Lewallen, W7EL

2021. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 22:49:35 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <%J5qj.80803$rc2.53009@bignews1.bellsouth.net>
Source record: 28343

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13qhmp06vss093f@corp.supernews.com...
> K7ITM wrote:
>> On Feb 5, 11:15 am, Dave99 <dpdph...@aol.com> wrote:
>>> Hello,
>>>
>>> Does anyone know if there's a way to determine the
>>> velocity factor of
>>> various metal tube types, diameters and gauges?
>>>
>>> Also, on the same subject... Is there any reason why a
>>> collinear
>>> couldn't be constructed from metal tubing pieces, in the
>>> same basic
>>> method of a coax collinear?
>>>
>>> Thanks for any help,
>>>
>>> Dave
>>
>> I'm not sure just what you mean by "the velocity factor"
>> of metal
>> tubes. Generally it's not the metal but the dielectric
>> that
>> determines velocity factor.
>>
>> But for sure you can construct a collinear from metal
>> tubing pieces.
>> After all, coax is just a metal tube (which may be
>> braided, foil or
>> solid) surrounding a center conductor.
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> I suspect he means what length would be needed for a
> resonant quarter or half wavelength. That's a function
> only of the diameter. You can find graphs of a "shortening
> factor" for dipoles or some such in numerous places such
> as the _ARRL Antenna Book_. Or you can get that
> information very quickly and easily with the free EZNEC
> demo program from http://eznec.com or with any other
> antenna modeling program.
>
> Roy Lewallen, W7EL

But in the end, you still have to cut the tube to the electrical performance desired. Measurements only get you into the ball park. But I know that you knew that. <G>

Ed, NM2K

2022. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 23:06:40 UTC
From: Dave99 <dpdphoto@aol.com>
Message-ID: <c16e91b5-d5c2-488e-9f3f-08b36f9e69b5@e6g2000prf.googlegroups.com>
Source record: 28344

OK thanks... Actually I was reading something that indicated you
should add in a velocity factor for the tube when using it as a
sleeve. I had never heard of that either, so I wasn't sure. They used .
95 I believe.

So I guess you would go coax center conductor to tube section #1,
braid to center of second coax through section #1 to section #2. Coax
from section #1 through section #2 to section #3 and so on?

DD

2023. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 23:26:11 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <corhq3pdtlnsj1c85r9065p85aip3akj1j@4ax.com>
Source record: 28345

On Tue, 5 Feb 2008 15:06:40 -0800 (PST), Dave99 <dpdphoto@aol.com>
wrote:

>OK thanks... Actually I was reading something that indicated you
>should add in a velocity factor for the tube when using it as a
>sleeve. I had never heard of that either, so I wasn't sure. They used .
>95 I believe.

Hi Dave,

I presume you mean 0.95, which for a metal tube holding an inner
conductor that is air insulated, then that might be operative. Too
much is left unsaid: like frequency/wavelength, size of tube, any
inner conductor (so as to emulate a coax), any coax within the tube
(to further compound the issue), the length of tube.... in other
words, a lot of missing details. Some are suggestive in your use of
the term sleeve, but you don't provide much to help.

>So I guess you would go coax center conductor to tube section #1,
>braid to center of second coax through section #1 to section #2. Coax
>from section #1 through section #2 to section #3 and so on?

So, what is #1, #2, #3, and so on? I get the impression you have a
vivid image of this in front of you, but you are blocking the view and
I can't see it.

73's
Richard Clark, KB7QHC

2024. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 23:28:36 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <foarf3ktl1@news.jpl.nasa.gov>
Source record: 28347

K7ITM wrote:
> On Feb 5, 9:29 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
>>AI4QJ wrote:
>>
>>>"Bryan" <bryan.swadenerNOS...@comcast.net> wrote in message
>>>news:GK2dnawmofw9DjvanZ2dnUVZ_tqtnZ2d@giganews.com...
>>
>>>>Suzy wrote:
>>
>>>>>Looking for a website that gives comparative performance of diodes (max
>>>>>frequency for UHF use)
>>
>>>>A recollection from decades back are the 1N21, 1N23, 1N32, 1N53, 1N60, and
>>>>1N78 point-contact silicon diodes that were used as mixers well into the
>>>>microwave spectrum. Googling 1N23 produces 8000+ hits... including a
>>>>"Simple 2.4 GHz SWR Meter": (http://www.qsl.net/n9zia/24swr/index.html). I
>>>>see RF Parts (http://www.rfparts.com/) sells the 1N21 and 1N23.
>>>>MicroMetrics (http://www.micrometrics.com/) makes them, as well as various
>>>>schottky diodes suitable for sampling.
>>>>73,
>>>>Bryan WA7PRC
>>
>>>Interesting but this is not what was requested.
>>
>>I don't think you'll find a website that compares diodes for RF
>>performance.
>>
>>A couple reasons spring to mind:
>>1) Most RF designers have their favorite parts that they've used before,
>>so they will tend to just use them again. If their favorite part
>>doesn't work, then they'll start hunting through the pile of datasheets
>>and books or ask around for suggestions (e.g. just like on this list)
>>
>>2) The performance is highly application specific. You can look at the
>>basic numbers (PIV, forward resistance, capacitance, etc.) to get an
>>idea, but it's really going to come down to how it works in YOUR
>>circuit, and that's usually a breadboarding or modeling exercise (most
>>parts have pretty good SPICE or other models available). Just because
>>manufacturer X's 1n5711 works great in my mixer doesn't mean it will
>>work great in your frequency tripler or someone else's RF switch.
>>
>>3) There are significant differences in performance between
>>manufacturers for the same JEDEC partnumber (e.g. 1n5711). In a lot of

>>high performance applications, you actually depend on some non-datasheet
>>performance property. For instance, there's a small company in England
>>that makes a low noise JFET that is unique in the world and prized by
>>folks building charge/voltage converters, even though it's got a
>>standard 2N number. And then, they still get a batch of them and hand
>>select.
>>
>>4) Parts selection is something of competitive value. Someone who
>>designs RF stuff for a living (i.e. someone who would be likely to know
>>all the trade offs between various part types and mfrs and could
>>generate a comparative website) is going to be encouraged by their
>>employer to not publish this for the whole wide world.
>>
>>
>
>
> And of course there's the other side of the coin on number 4: a
> manufacturer isn't going to provide a comparison with other
> manufacturers' parts for at least a couple reasons. They want to
> focus attention on their own parts, and they have no control over any
> changes another manufacturer may make in their parts and thus no way
> to insure accuracy of such a comparison.
>
> The tough part of Suzy's quest is finding an acceptable diode in non-
> surface-mount, it seems to me. I did find that a common 1N4148 non-
> Schottky performed in my test detector circuit at 450MHz better than I
> expected, and better than some other diodes I tried like 1N34 and
> several other germaniums, and an axial-leaded Schottky or two in the
> high voltage, high capacitance signal diode class that I believe Wim
> warned against.

I've used a fair number of 1n914 and 1n4148 diodes for detectors over
the years. It all depends on what you want to get out of it.

The 1N2x and 1N34 diodes work well in their special mounts (like as a
waveguide microwave detector), but I think that's a packaging and
connector capacitance issue, mostly.

2025. 7/8th diameter Heliax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-05 23:46:09 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <5z6qj.20073$Ou1.8616@trnddc07>
Source record: 28346

Is there amyone close to Los Angeles who wants some 7/8th diameter foam filled Andrew Heliax? I have a length about 175 feet long that I dont intend to use. No connectors.

Jerry KD6JDJ

2026. Re: 7/8th diameter Heliax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 01:22:07 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <%Y7qj.91753$L%6.89092@bignews3.bellsouth.net>
Source record: 28348

"Jerry" <j.jmartes@verizon.net> wrote in message
news:5z6qj.20073$Ou1.8616@trnddc07...
>
> Is there amyone close to Los Angeles who wants some 7/8th
> diameter foam filled Andrew Heliax? I have a length
> about 175 feet long that I dont intend to use. No
> connectors.
>
> Jerry KD6JDJ
>

If you don't find a taker, Jerry, put it on eBay. Bet it
will go in a flash.

Ed, NM2K

2027. Re: 7/8th diameter Heliax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 01:28:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <vt2iq3h0j8e5j3r9kqkkj9p0sgpj5l31d7@4ax.com>
Source record: 28349

On Tue, 5 Feb 2008 20:22:07 -0500, "Ed Cregger"
<ecregger@bellsouff.net> wrote:

>
>"Jerry" <j.jmartes@verizon.net> wrote in message
>news:5z6qj.20073$Ou1.8616@trnddc07...
>>
>> Is there amyone close to Los Angeles who wants some 7/8th
>> diameter foam filled Andrew Heliax? I have a length
>> about 175 feet long that I dont intend to use. No
>> connectors.
>>
>> Jerry KD6JDJ
>>
>
>
>-----------
>
>
>If you don't find a taker, Jerry, put it on eBay. Bet it
>will go in a flash.

Hi Ed,

He well knows eBay. It's amazing the stuff that Jerry finds, offers
here for free (like HP Vector Voltmeters, including shipping cost to
one particular Guru of SWR mechanics) to be ignored.

73's
Richard Clark, KB7QHC

2028. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 01:30:56 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <d8f56162-59b2-442c-98d9-cd67e832acfd@j78g2000hsd.googlegroups.com>
Source record: 28350

On Feb 5, 10:44 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > So, contrary to Cecil's assertion, an analysis based on
> > 'no reflections at the source', has not resulted in any
> > violation of conservation of energy. This is good.
>
> Again your analysis violates the conservation of energy
> principle. The only way to balance your energy equation
> is for your source to supply 25 joules/sec.
>
> IF THE REFLECTED WAVE IS NOT REFLECTED FROM THE SOURCE,
> IT FLOWS THROUGH THE SOURCE RESISTOR AND IS DISSIPATED
> IN THE SOURCE RESISTOR. THAT REFLECTED WAVE ENERGY IS
> THEREFORE NOT AVAILABLE TO THE FORWARD WAVE.

Not sure that shouting helps. I do not find any unbalances
with the energy. See below.

> You cannot eat your reflected wave and have it too.
>
> The standard equation is:
>
> Psource = Pfor - Pref = Pload

Yes. Indeed. And just changing to use my terminology...

Pgenerator = Pfor - Pref = Pload

For the example at hand...

Pgenerator = 18.75
Pfor - Pref = 18.75
Pload = 18.75

And the source provides 50 W of which 31.25 is dissipated
in the source resistor and 18.75 is delivered to the
line (Pgenerator, above).

All seems well with world and no energy is left unaccounted.

> But you have taken away the reflected energy and
> dissipated it in the source resistor. So your new
> equation becomes:
>
> Psource = Pfor + ????????
> 18.75w = 25w + ________

As your original equation above

Psource = Pfor - Pref
18.75 = 25 - 6.25

I do not see any issues.

When the source was first turned on, 25 J/s flowed from
the generator into the line.
Pfor = 25 W

After the reflected wave makes it back to the generator,
25 - 6.25 -> 18.75 J/s are flowing in the line.
Pfor - Pref = 18.75 W

And the generator output has also reduced from 25 W to
18.75 W, so all is still in balance.

I am having difficulty determining where you think there
is a violation of the conservation of energy principle.

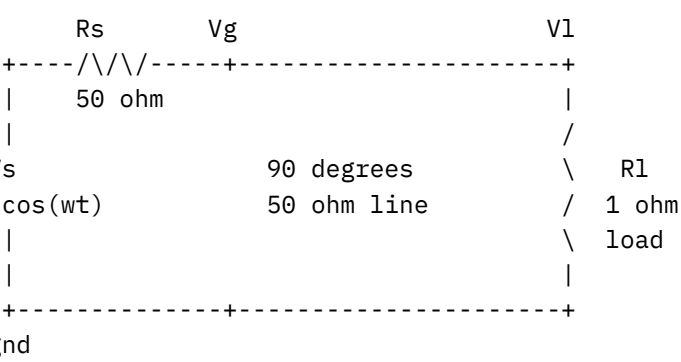
...Keith

PS Do not be fooled by the numerology where 25 + 6.25
gives 31.25. For the 35 degree line, the corresponding
numbers are
Ps = 41.449507
Prs = 22.699502
Pg = 18.75
Pf = 25
Pr = 6.25
Pl = 18.75

Pg = Pf - Pr = Pl
Ps = Prs + Pg
All as expected. No missing energy.

2029. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 01:41:48 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c7d43158-607c-43de-a2e5-67fbd7366e54@s37g2000prg.googlegroups.com>
Source record: 28251

On Feb 5, 2:41 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > How does this reflected wave of 6.25 W affect the already
> > present forward wave of 25 W when it arrives back at the
> > generator. It affects it not one iota. The forward power
> > remains the same, the forward voltage remains the same
> > and the forward current remains the same. This is the
> > meaning of no reflection.
>
> Maybe a more drastic example will help.
>
>


>
> Current through the source: Is = 0.0392 cos(wt).
> The source is supplying 1.96 watts. That is all the
> power available to the entire system.
>
> You say the forward power is 25 watts and that none
> of the reflected power is reflected at the source.
>
> How can there be 25 watts of forward power when
> the source is supplying only 1.96 watts and none
> of the reflected energy is joining the forward
> wave?

The answer would be clear to you if you were to
complete the analysis.

Please compute:
Pfor
Pref
Vfor
Vref
at the point Vg, both before and after the
reflected wave makes it back to the point Vg.

When you find (as you will), that Pfor and Vfor
do not change when the reflected wave returns,
it should be difficult to assert that the
reflected wave is re-reflected at Vg.

If the reflected wave was re-reflected at Vg,
there would necessarily be a change to Vfor
and Pfor.

...Keith

2030. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 01:54:21 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <hr8qj.49869$K%.35822@trnddc04>
Source record: 28252

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:corhq3pdtlnsj1c85r9065p85aip3akj1j@4ax.com...
> On Tue, 5 Feb 2008 15:06:40 -0800 (PST), Dave99 <dpdphoto@aol.com>
> wrote:
>
>>OK thanks... Actually I was reading something that indicated you
>>should add in a velocity factor for the tube when using it as a
>>sleeve. I had never heard of that either, so I wasn't sure. They used .
>>95 I believe.
>
> Hi Dave,
>
> I presume you mean 0.95, which for a metal tube holding an inner
> conductor that is air insulated, then that might be operative. Too
> much is left unsaid: like frequency/wavelength, size of tube, any
> inner conductor (so as to emulate a coax), any coax within the tube
> (to further compound the issue), the length of tube.... in other
> words, a lot of missing details. Some are suggestive in your use of
> the term sleeve, but you don't provide much to help.
>
>>So I guess you would go coax center conductor to tube section #1,
>>braid to center of second coax through section #1 to section #2. Coax
>>from section #1 through section #2 to section #3 and so on?
>
> So, what is #1, #2, #3, and so on? I get the impression you have a
> vivid image of this in front of you, but you are blocking the view and
> I can't see it.
>
> 73's
> Richard Clark, KB7QHC

Hi Richard

Is it possible that dave is considering one of these
http://www.nodomainname.co.uk/Omnicolinear/2-4collinear.htm ?

Jerry KD6JDJ

2031. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 02:13:10 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <d91d9415-14d0-4ca7-b370-a4b3ebc4baf1@y5g2000hsf.googlegroups.com>
Source record: 28253

On Feb 4, 7:14 pm, jawod <ja...@fuse.net> wrote:
> Sorry to interrupt the WAVE-PARTICLE Duality seminar but...
>
> Any comments on the SpiderBeam antenna?

See http://www.eham.net/reviews/detail/860

$1100 for six fiberglass poles, some wire and a center plate. No
thanks.

> It's a sort of maxed-out Moxon such that the director and reflector
> elements are bent toward the center of the antenna.
>
> Apparently it is frequently used on DXpeditions.
>
> There is a version for home use...a kit and the elements are wires.
>
> Anyone using one or care to comment?
>
> (My understanding is that it can send and receive both waves and particles.)
>
> 73
>
> John
> AB8O

Brian w3rv

2032. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 04:09:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Wpaqj.6691$so6.5865@newssvr19.news.prodigy.net>
Source record: 28254

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> How can there be 25 watts of forward power when
>> the source is supplying only 1.96 watts and none
>> of the reflected energy is joining the forward
>> wave?
>
> The answer would be clear to you if you were to
> complete the analysis.

Please don't ignore the question. How does a 1.96
watt source support a forward power of 25 watts
without reflected energy joining the forward energy?
--
73, Cecil http://www.w5dxp.com

2033. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 05:14:51 UTC
From: Tom Horne <hornetd@veriqrmzon.net>
Message-ID: <fnbqj.30714$xE.15142@trnddc01>
Source record: 28255

Mike Coslo wrote:
> Tom Horne <hornetd@veriqrmzon.net> wrote in
> news:gjxoj.14357$fs4.12898@trnddc02:
>> I will learn whatever I need to in order to be an effective radio
>> operator when that is what is really needed. I've already set up a
>> Winlink2000 gateway just to learn how. I've got a portable packet set
>> up worked out using just an HT, a readily portable TNC, laptop
>> computer, and a portable J-pole. I'm scheduled for my Skywarn class
>> and I'm enrolled in the Level 1 Amateur Radio Emergency Communications
>> course and I plan on taking all three courses and the needed exams to
>> become a certified emergency communicator. I think I can honestly say
>> I'm willing to learn.
>
> Okay, Tom, good to hear that. First thing of course is to get the
> General license.
>
> Second thing is that HF is a whole different animal than VHF. My
> experience with new guys and gals is that they often think of HF/MF as
> just another set of frequencies to use. It is and it isn't. Propagation
> knowledge is needed, not only on your end of the signal, but on the other
> end as well. Working the vagaries of propagation is one of the great joys
> of Ham radio, but it requires a pretty big commitment, and an enjoyment
> of the game as well. You're going to have to get on the air, and spend a
> couple years learning - it isn't going to be like using a computer
> program.
>
> HF is an unruly beast, and your antenna is only going to be a small part
> of it.
>
> I'm not trying to bust your chops here, it's just a different ball game,
> and your post started out like one of those "just tell me what I need to
> do" commercials. 8^)
>
>> What I was hoping to find was operators who have already used one or
>> more of the antennas I was asking about who would be willing to share
>> their experience of the effectiveness or lack of same with me.
>
>
> My vote is for the general purpose dipole and a tuner. Flexible,
> and "all HF band". It will work in multiple locations, (important for an
> antenna that must be raised in whatever condx are present) is reasonably
> efficient, and works pretty darn well.
>
> - 73 de Mike N3LI -

I don't know what data base your checking but I have an Extra class license already. The reason I spent do much time on VHF is that is were the public service work gets done for the most part.
--
Tom Horne

"This alternating current stuff is just a fad. It is much too dangerous for general use." Thomas Alva Edison

2034. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 06:18:19 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tkjiq3hdrakp5uml75kvnfon0n72ssgujg@4ax.com>
Source record: 28256

On Wed, 06 Feb 2008 01:54:21 GMT, "Jerry" <j.jmartes@verizon.net>
wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>news:corhq3pdtlnsj1c85r9065p85aip3akj1j@4ax.com...
>> On Tue, 5 Feb 2008 15:06:40 -0800 (PST), Dave99 <dpdphoto@aol.com>
>> wrote:
>>
>>>OK thanks... Actually I was reading something that indicated you
>>>should add in a velocity factor for the tube when using it as a
>>>sleeve. I had never heard of that either, so I wasn't sure. They used .
>>>95 I believe.
>>
>> Hi Dave,
>>
>> I presume you mean 0.95, which for a metal tube holding an inner
>> conductor that is air insulated, then that might be operative. Too
>> much is left unsaid: like frequency/wavelength, size of tube, any
>> inner conductor (so as to emulate a coax), any coax within the tube
>> (to further compound the issue), the length of tube.... in other
>> words, a lot of missing details. Some are suggestive in your use of
>> the term sleeve, but you don't provide much to help.
>>
>>>So I guess you would go coax center conductor to tube section #1,
>>>braid to center of second coax through section #1 to section #2. Coax
>>>from section #1 through section #2 to section #3 and so on?
>>
>> So, what is #1, #2, #3, and so on? I get the impression you have a
>> vivid image of this in front of you, but you are blocking the view and
>> I can't see it.
>>
>> 73's
>> Richard Clark, KB7QHC
>
> Hi Richard
>
> Is it possible that dave is considering one of these
>http://www.nodomainname.co.uk/Omnicolinear/2-4collinear.htm ?

Hi Jerry,

Now that you mention it, it does resemble the #1, #2, #3, and so on -
so described. This is also known as a Franklin Array, but not in the
classic design. Problem here is that the phasing of the radiating

elements' exteriors are critical to the operation of the antenna, insofar as gain goes. On the other hand, the wavelength dimension of the inside of the same elements are critical to the operation of the antenna, insofar as matching goes. That the two electrical wavelengths might match and possibly work is a guess as the author states:
"we chose LMR-400 as it was lying on the floor"

The commercial builders of the same style antenna use simple wire with the occasional spacer.

73's
Richard Clark, KB7QHC

2035. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 06:28:25 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <19d442dd-4ce5-4318-ab96-d7d193bc38cf@f10g2000hsf.googlegroups.com>
Source record: 28257

On Feb 5, 3:06 pm, Dave99 <dpdph...@aol.com> wrote:
> OK thanks... Actually I was reading something that indicated you
> should add in a velocity factor for the tube when using it as a
> sleeve. I had never heard of that either, so I wasn't sure. They used .
> 95 I believe.
>
> So I guess you would go coax center conductor to tube section #1,
> braid to center of second coax through section #1 to section #2. Coax
> from section #1 through section #2 to section #3 and so on?
>
> DD

If you are wanting to make a coaxial collinear using solid metal tube (copper? aluminum?) for the elements, why not just make that tube the outer conductor of coaxial sections. The inner conductor can be a piece of solid copper wire, that then connects to the outer conductors of the adjacent sections. Or maybe that's what you mean; it's not really very clear to me.

Be aware that the phasing of the coaxial collinear is controlled by the electrical length of the coaxial sections. For a "flat pancake" pattern they should be an electrical half wave. Depending on the insulation, that may be considerably shorter than a freespace half wave. That does not directly matter to the antenna; non-resonant antennas work just fine. The feedpoint impedance will be the parallel combination of all the feedpoints (assuming low loss electrical half-wave connecting sections), transformed by any coaxial stub between the last feedpoint and the feedline. The "feedpoints" are all the gaps between sections.

Cheers,
Tom

2036. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 09:04:26 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <z4UDeIIagXqHFAz6@ifwtech.co.uk>
Source record: 28258

Brian Kelly wrote:
>> Any comments on the SpiderBeam antenna?
>
>
>See http://www.eham.net/reviews/detail/860
>
>$1100 for six fiberglass poles, some wire and a center plate. No
>thanks.

Wrong product - that's the HexBeam!

Try www.spiderbeam.net

There are eight different models, each covering three or more bands from 30m up to 10m, and starting from $500 for a kit. Instructions are also freely available to build it yourself from local materials.

The Spiderbeam was originally designed as a highly portable multiband yagi. It uses full-length interlaced elements, and the design has been computer optimized for maximum performance within the boundaries of the cross-braced "diamond" shape - 10 metres (33 feet) from corner to corner. That computer design has then been translated with unusual care into detailed practical assembly instructions.

Be aware that the Spiderbeam was originally developed as a lightweight beam for portable operation on a push-up mast. For these applications it really shines - many DXpeditions out of Europe have used Spiderbeams with great success. With practice it can even be erected single-handed.

But the cord-and-wire braced construction is not suitable for every home-station site (Spiderbeams and trees make a very bad combination) and even the heavy-duty version may not be suitable for year-round survival in every kind of climate. Also, the Spiderbeam needs to be fully assembled on the ground - with is fine for the original concept of a push-up mast, but it can cause installation problems for tower owners.

What you'll see on the *correct* Spiderbeam review page at eham.net (http://www.eham.net/reviews/detail/3688)
is the expected mixture of "5/5" reviews from people whose locations are Spiderbeam-friendly... and lower ratings from people whose locations are not.

[For the record, my own relationship with Spiderbeam is that I bought one for use at a new home, but ran into zoning/planning problems about cutting back the trees. Reluctantly I sold the beam to a DXpedition group, where I'm sure it will do very well.]

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

2037. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 13:02:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <rdiqj.7707$Ch6.4370@newssvr11.news.prodigy.net>
Source record: 28259

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>>
>> Rs Vg Pfor-->25w Vl
>> +----/\/\/-----+----------------------+
>> | 50 ohm ~23w<--Pref |
>> | 0.04w / 1.92w
>> Vs 90 degrees \ Rl
>> 100 cos(wt) 1.96w 50 ohm line / 1 ohm
>> | \ load
>> | |
>> +--------------+----------------------+
>> gnd

> When you find (as you will), that Pfor and Vfor
> do not change when the reflected wave returns,
> it should be difficult to assert that the
> reflected wave is re-reflected at Vg.

Not difficult at all. I've added the powers to the
diagram above. The reflected power is ~23 watts.
The power dissipated in the source resistor is
~0.04 watts. The reflected power is obviously *NOT*
being dissipated in the source resistor so where
is it going instead? The answer is destructive
interference at the source resistor is redistributing
the reflected energy back toward the load as an
equal magnitude of constructive interference.
I call that a reflection. The redistribution of
energy due to interference is a well known and
well understood phenomenon in optical physics but has
been virtually ignored in the field of RF engineering.

It is not a conventional reflection. It is wave
cancellation in action. It is obeying the following
equation:

Ptot = P1 + P2 - 2*SQRT(P1*P2) where
-2*SQRT(P1*P2) is the destructive interference term.

> If the reflected wave was re-reflected at Vg,
> there would necessarily be a change to Vfor
> and Pfor.

Nope, not true. The phase angle
between the voltages determines which direction the

energy flows. If the above example is changed to
1/2WL instead of 1/4WL, the forward and reflected
voltages and powers remain the same but the interference
at the source resistor changes from destructive to
constructive and the source resistor heats up.
--
73, Cecil http://www.w5dxp.com

2038. Re: DE W3TDH I need a portable HF antenna set up.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 14:47:40 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fochad$1ju0$1@f04n12.cac.psu.edu>
Source record: 28260

Tom Horne wrote:

> I don't know what data base your checking but I have an Extra class
> license already. The reason I spent do much time on VHF is that is were
> the public service work gets done for the most part.

Okay, good enough. Sorry for the mistake. I'll stop bothering you now..
8^) Good luck with whatever you set up.

- Mike N3LI -

2039. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 15:40:30 UTC
From: john Wiener <jawod@fuse.net>
Message-ID: <a074f$47a9d4fc$d844be53$1737@FUSE.NET>
Source record: 28261

Ian White GM3SEK wrote:
> Brian Kelly wrote:
>>> Any comments on the SpiderBeam antenna?
>>
>>
>> See http://www.eham.net/reviews/detail/860
>>
>> $1100 for six fiberglass poles, some wire and a center plate. No thanks.
>
> Wrong product - that's the HexBeam!
>
> Try www.spiderbeam.net
>
> There are eight different models, each covering three or more bands from
> 30m up to 10m, and starting from $500 for a kit. Instructions are also
> freely available to build it yourself from local materials.
>
> The Spiderbeam was originally designed as a highly portable multiband
> yagi. It uses full-length interlaced elements, and the design has been
> computer optimized for maximum performance within the boundaries of the
> cross-braced "diamond" shape - 10 metres (33 feet) from corner to
> corner. That computer design has then been translated with unusual care
> into detailed practical assembly instructions.
>
> Be aware that the Spiderbeam was originally developed as a lightweight
> beam for portable operation on a push-up mast. For these applications it
> really shines - many DXpeditions out of Europe have used Spiderbeams
> with great success. With practice it can even be erected single-handed.
>
> But the cord-and-wire braced construction is not suitable for every
> home-station site (Spiderbeams and trees make a very bad combination)
> and even the heavy-duty version may not be suitable for year-round
> survival in every kind of climate. Also, the Spiderbeam needs to be
> fully assembled on the ground - with is fine for the original concept of
> a push-up mast, but it can cause installation problems for tower owners.
>
> What you'll see on the *correct* Spiderbeam review page at eham.net
> (http://www.eham.net/reviews/detail/3688)
> is the expected mixture of "5/5" reviews from people whose locations are
> Spiderbeam-friendly... and lower ratings from people whose locations are
> not.
>
>
> [For the record, my own relationship with Spiderbeam is that I bought

> one for use at a new home, but ran into zoning/planning problems about
> cutting back the trees. Reluctantly I sold the beam to a DXpedition
> group, where I'm sure it will do very well.]
>
>
Ian,
Thank you for your insights. I read the eham reviews and think I will
give it a miss. nice design, though.

73

John
AB8O

2040. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 15:41:29 UTC
From: john Wiener <jawod@fuse.net>
Message-ID: <c466e$47a9d537$d844be53$1737@FUSE.NET>
Source record: 28262

Brian Kelly wrote:
> On Feb 4, 7:14 pm, jawod <ja...@fuse.net> wrote:
>> Sorry to interrupt the WAVE-PARTICLE Duality seminar but...
>>
>> Any comments on the SpiderBeam antenna?
>
>
> See http://www.eham.net/reviews/detail/860
>
> $1100 for six fiberglass poles, some wire and a center plate. No
> thanks.
>
>
>> It's a sort of maxed-out Moxon such that the director and reflector
>> elements are bent toward the center of the antenna.
>>
>> Apparently it is frequently used on DXpeditions.
>>
>> There is a version for home use...a kit and the elements are wires.
>>
>> Anyone using one or care to comment?
>>
>> (My understanding is that it can send and receive both waves and particles.)
>>
>> 73
>>
>> John
>> AB8O
>
> Brian w3rv
Brian

I think the cost is just north of $600 but I agree.

John
AB8O

2041. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 20:50:07 UTC
From: Dave99 <dpdphoto@aol.com>
Message-ID: <5c55145f-be4e-41e4-b2ce-6610d76907ee@b2g2000hsg.googlegroups.com>
Source record: 28263

Sorry, I didn't give many details. My idea was basically for a commercial band antenna that needs to cover a fairly wide range in the 5xx-4xx bands. I've had good performance using fairly large tubing for wide bandwidth requirements on single element designs in the past, but I've never attempted a multi element design using the same materials. Lets say I'd be using 1 1/2" .065 aluminum tube. Testing would be required to find the ideal length. Yes, I'm basically trying to see if something along the lines of the web page plans posted above could be utilized with a larger size tube. I just wasn't sure about how it could be wired up. But looking at those plans, I think I see the way it could be done. It would just take a lot of experimenting to get the dimensions right.

Dave

2042. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 20:51:01 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <uc7kq39vloupodgc8vlp2edifiu4vihjq0@4ax.com>
Source record: 28264

On Wed, 6 Feb 2008 12:50:07 -0800 (PST), Dave99 <dpdphoto@aol.com>
wrote:

>Yes, I'm basically trying to see if
>something along the lines of the web page plans posted above could be
>utilized with a larger size tube.

Above where?

73's
Richard Clark, KB7QHC

2043. Re: DAB antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 23:00:24 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47aa3c05$0$22804$4c368faf@roadrunner.com>
Source record: 28265

"Mike Kaliski" <michael.kaliski@tesco.net> wrote in message
news:nsmdnV46xs3GYTjanZ2dneKdnZydnZ2d@bt.com...
>
> "dido22" <nospam@nospam.hotmail.com> wrote in message
> news:fo4bjv$5tj$1@aioe.org...
>> Hello
>>
>> Can anyone advise please. I have a new DAB tuner which works fine except
>> the
>> digital signal is not very strong around here. I am getting some
>> 'popping'
>> sounds as a result. The Bit Error Rate is about 0.04, less than the
>> critical
>> 0.05, but not brilliant. The indoor ariel supplied is 6 inches long. I
>> have
>> tried moving the indoor aerial around within the range of its cable with
>> no
>> real improvement.
>>
>> Is there anyway of improving reception without installing an external
>> aerial?
>>
>> Thanks
>>
>> KK
>>
>
> You could try sticking a bit of aluminium (aluminum) foil to the card from
> a cereal packet. Fold the cardboard to form a right angle and stand it
> with the folded edge vertical near to the antenna to form a reflector.
> Adjust for best signal strength. For a 6 inch antenna, the card only needs
> to be the size of an A4 sheet of paper, around 8 inches by 12 inches. Fold
> in half so that you have two surfaces at 90 degrees to each other, 8
> inches by 6 inches.
>
> ^
> / \ reflector
> / \
> / \ Looking down from top
> / \
> o antenna
>
> If this doesn't work, you need a bigger antenna.
>

> Mike G0ULI
>
>

I saw this post this afternoon and tried it at the office. Works great, I can get into the free wifi from the airport. I just taped a piece of aluminum foil to the wall in a corner and set my USB wifi transceiver in front of it. Took about 5 minutes to rig up. Unfortunately I can only use it in the evenings as there is too much ground traffic between my location and the WIFI source the rest of the day.

2044. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 23:14:09 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <c6ab7762-c073-43de-80ca-fdc46277bb1a@s8g2000prg.googlegroups.com>
Source record: 28266

On Feb 6, 4:04 am, Ian White GM3SEK <gm3...@ifwtech.co.uk> wrote:
> Brian Kelly wrote:
> >> Any comments on the SpiderBeam antenna?
>
> >Seehttp://www.eham.net/reviews/detail/860
>
> >$1100 for six fiberglass poles, some wire and a center plate. No
> >thanks.
>
> Wrong product - that's the HexBeam!
>
> Trywww.spiderbeam.net

Oh bother . . Yes, I blew it Ian. TNX.

I fail to understand why anybody who knows what's up would buy a
Spiderbeam when a light-duty cubical quad would have a considerably
smaller footprint and marginally better performance. Beyond the fact
that nobody I know about is selling light-duty "expedition quality"
quads off the shelf.

> There are eight different models, each covering three or more bands from
> 30m up to 10m, and starting from $500 for a kit. Instructions are also
> freely available to build it yourself from local materials.
>
> The Spiderbeam was originally designed as a highly portable multiband
> yagi. It uses full-length interlaced elements, and the design has been
> computer optimized for maximum performance within the boundaries of the
> cross-braced "diamond" shape - 10 metres (33 feet) from corner to
> corner. That computer design has then been translated with unusual care
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> Be aware that the Spiderbeam was originally developed as a lightweight
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> really shines - many DXpeditions out of Europe have used Spiderbeams
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> home-station site (Spiderbeams and trees make a very bad combination)
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> survival in every kind of climate. Also, the Spiderbeam needs to be
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> a push-up mast, but it can cause installation problems for tower owners.
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> one for use at a new home, but ran into zoning/planning problems about
> cutting back the trees. Reluctantly I sold the beam to a DXpedition
> group, where I'm sure it will do very well.]
>
> --
>
> 73 from Ian GM3SEK 'In Practice' columnist for RadCom
(RSGB)http://www.ifwtech.co.uk/g3sek

Brian w3rv

2045. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 23:39:15 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <Dyrqj.23764$qI.1379@trnddc03>
Source record: 28267

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:uc7kq39vloupodgc8vlp2edifiu4vihjq0@4ax.com...
> On Wed, 6 Feb 2008 12:50:07 -0800 (PST), Dave99 <dpdphoto@aol.com>
> wrote:
>
>>Yes, I'm basically trying to see if
>>something along the lines of the web page plans posted above could be
>>utilized with a larger size tube.
>
> Above where?
>
> 73's
> Richard Clark, KB7QHC

I think he means http://www.nodomainname.co.uk/Omnicolinear/2-4collinear.htm

(from Jerry's post in this thread)

John

2046. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-06 23:56:06 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <a063de2a-ba46-4cbc-84aa-aeeddfa115cd@z17g2000hsg.googlegroups.com>
Source record: 28268

On Feb 6, 12:50 pm, Dave99 <dpdph...@aol.com> wrote:
> Sorry, I didn't give many details. My idea was basically for a
> commercial band antenna that needs to cover a fairly wide range in the
> 5xx-4xx bands. I've had good performance using fairly large tubing for
> wide bandwidth requirements on single element designs in the past, but
> I've never attempted a multi element design using the same materials.
> Lets say I'd be using 1 1/2" .065 aluminum tube. Testing would be
> required to find the ideal length. Yes, I'm basically trying to see if
> something along the lines of the web page plans posted above could be
> utilized with a larger size tube. I just wasn't sure about how it
> could be wired up. But looking at those plans, I think I see the way
> it could be done. It would just take a lot of experimenting to get the
> dimensions right.
>
> Dave

I really like the coaxial collinear design for relatively narrowband work. The coaxial connecting stubs (whose outside surfaces are also the radiating elements) keep the phasing locked down tightly. Unfortunately for your application, that very advantage for narrowband designs is a killer for broadband. That is, the pattern will change from a "flat pancake" at the nominal design center frequency to a cone up or down, above or below the design center frequency.

You can mitigate that to some extent by feeding the coaxial collinear antenna in the center (with the feedline balanced and perpendicular to the antenna axis for some distance) instead of at an end; in that case, you can think of the pattern as a cone going one way for the section above the feedpoint, and by symmetry, a cone going the opposite direction for the section below, and the sum of the two results in just a lowering of the gain--not so flat a pancake--when operating off the design center frequency.

But a better way to do a broadband vertical collinear is to feed several dipoles, stacked end-to-end (with some gap from one to the next), each fed with the same electrical length of feedline, with the far ends of all the feedlines paralleled. If the gap from one dipole to the next is enough that the mutual impedances among the dipoles are all small, then each dipole will have current very nearly in phase with the others and the radiation pattern will be perpendicular to the axis of the dipoles. It's a messier feed arrangement, but it's much better for keeping the antenna currents in phase along the whole antenna across a relatively wide frequency range.

Cheers,
Tom

2047. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 00:19:33 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qijkq31qi190lar5m0ctdskj32qhivs7om@4ax.com>
Source record: 28269

On Wed, 06 Feb 2008 23:39:15 GMT, "John KD5YI"
<groups1_dot_jocjo@xoxy.net> wrote:

>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>news:uc7kq39vloupodgc8vlp2edifiu4vihjq0@4ax.com...
>> On Wed, 6 Feb 2008 12:50:07 -0800 (PST), Dave99 <dpdphoto@aol.com>
>> wrote:
>>
>>>Yes, I'm basically trying to see if
>>>something along the lines of the web page plans posted above could be
>>>utilized with a larger size tube.
>>
>> Above where?
>>
>> 73's
>> Richard Clark, KB7QHC
>
>
>I think he means http://www.nodomainname.co.uk/Omnicolinear/2-4collinear.htm
>
>(from Jerry's post in this thread)

Hi John,

I would think so to, but his verification is simpler than thinking for
myself. ;-)

73's
Richard Clark, KB7QHC

2048. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 01:00:36 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <UKsqj.23773$ql.18567@trnddc03>
Source record: 28270

"Dave99" <dpdphoto@aol.com> wrote in message
news:5c55145f-be4e-41e4-b2ce-6610d76907ee@b2g2000hsg.googlegroups.com...
> Sorry, I didn't give many details. My idea was basically for a
> commercial band antenna that needs to cover a fairly wide range in the
> 5xx-4xx bands. I've had good performance using fairly large tubing for
> wide bandwidth requirements on single element designs in the past, but
> I've never attempted a multi element design using the same materials.
> Lets say I'd be using 1 1/2" .065 aluminum tube. Testing would be
> required to find the ideal length. Yes, I'm basically trying to see if
> something along the lines of the web page plans posted above could be
> utilized with a larger size tube. I just wasn't sure about how it
> could be wired up. But looking at those plans, I think I see the way
> it could be done. It would just take a lot of experimenting to get the
> dimensions right.
>
> Dave

Hi Dave

It reads as thouigh you want to increase the signal strength at the
horizon by building a colinear omniazimuth array of dipoles. That is not a
simple thing to do when the gain is high and the bandwidth is 25% of the
center frequency.
It is fairly simple to model the pattern any configuration you are
considering. If you are at all interested in developing capabbility in
antenna building, you can get alot of information with EZNEC.
There are lots of guys lurking in this group who can and will help you.

Jerry KD6JDJ

2049. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 01:05:26 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <47adb19a-c4df-46fd-9e52-eb7a2ff9428b@q39g2000hsf.googlegroups.com>
Source record: 28271

On Feb 6, 10:41 am, john Wiener <ja...@fuse.net> wrote:
> Brian Kelly wrote:
> > On Feb 4, 7:14 pm, jawod <ja...@fuse.net> wrote:
> >> Sorry to interrupt the WAVE-PARTICLE Duality seminar but...
>
> >> Any comments on the SpiderBeam antenna?
>
> > Seehttp://www.eham.net/reviews/detail/860
>
> > $1100 for six fiberglass poles, some wire and a center plate. No
> > thanks.
>
> >> It's a sort of maxed-out Moxon such that the director and reflector
> >> elements are bent toward the center of the antenna.
>
> >> Apparently it is frequently used on DXpeditions.
>
> >> There is a version for home use...a kit and the elements are wires.
>
> >> Anyone using one or care to comment?
>
> >> (My understanding is that it can send and receive both waves and particles.)
>
> >> 73
>
> >> John
> >> AB8O
>
> > Brian w3rv
>
> Brian
>
> I think the cost is just north of $600 but I agree.

http://www.hexbeam.com/pricelist.shtml

The way I read it the 5-band HX5Bi is 1129 Yankee bucks. Or we're
talking about different versions.

> John
> AB8O

w3rv

2050. Re: DAB antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 01:40:09 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <Xs6dnQRS44gE_DfanZ2dnUVZ8radnZ2d@bt.com>
Source record: 28272

```
"Jimmie D" <GFENDER@carolina.rr.com> wrote in message
news:47aa3c05$0$22804$4c368faf@roadrunner.com...
>
> "Mike Kaliski" <michael.kaliski@tesco.net> wrote in message
> news:nsmdnV46xs3GYTjanZ2dneKdnZydnZ2d@bt.com...
>>
>> "dido22" <nospam@nospam.hotmail.com> wrote in message
>> news:fo4bjv$5tj$1@aioe.org...
>>> Hello
>>>
>>> Can anyone advise please. I have a new DAB tuner which works fine except
>>> the
>>> digital signal is not very strong around here. I am getting some
>>> 'popping'
>>> sounds as a result. The Bit Error Rate is about 0.04, less than the
>>> critical
>>> 0.05, but not brilliant. The indoor ariel supplied is 6 inches long. I
>>> have
>>> tried moving the indoor aerial around within the range of its cable with
>>> no
>>> real improvement.
>>>
>>> Is there anyway of improving reception without installing an external
>>> aerial?
>>>
>>> Thanks
>>>
>>> KK
>>>
>>
>> You could try sticking a bit of aluminium (aluminum) foil to the card
>> from a cereal packet. Fold the cardboard to form a right angle and stand
>> it with the folded edge vertical near to the antenna to form a reflector.
>> Adjust for best signal strength. For a 6 inch antenna, the card only
>> needs to be the size of an A4 sheet of paper, around 8 inches by 12
>> inches. Fold in half so that you have two surfaces at 90 degrees to each
>> other, 8 inches by 6 inches.
>>
>> ^
>> / \ reflector
>> / \
>> / \ Looking down from top
>> / \
>> o antenna
```

>>
>> If this doesn't work, you need a bigger antenna.
>>
>> Mike G0ULI
>>
>>
>
> I saw this post this afternoon and tried it at the office. Works great, I
> can get into the free wifi from the airport. I just taped a piece of
> aluminum foil to the wall in a corner and set my USB wifi transceiver in
> front of it. Took about 5 minutes to rig up. Unfortunately I can only use
> it in the evenings as there is too much ground traffic between my location
> and the WIFI source the rest of the day.
>
Thank you. It's one of my all time favourite work arounds.

Mike G0ULI

2051. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 02:11:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qkq75g7aken6e@corp.supernews.com>
Source record: 28273

K7ITM wrote:
> . . .
> But a better way to do a broadband vertical collinear is to feed
> several dipoles, stacked end-to-end (with some gap from one to the
> next), each fed with the same electrical length of feedline, with the
> far ends of all the feedlines paralleled. If the gap from one dipole
> to the next is enough that the mutual impedances among the dipoles are
> all small, then each dipole will have current very nearly in phase
> with the others and the radiation pattern will be perpendicular to the
> axis of the dipoles. It's a messier feed arrangement, but it's much
> better for keeping the antenna currents in phase along the whole
> antenna across a relatively wide frequency range.

You can avoid the problem of different feedpoint impedances due to mutual coupling by using lines of an odd number of quarter wavelengths to feed the elements. If you use lines of those lengths all going back to a common point, the currents in the elements will forced to be equal in amplitude and phase regardless of differences in their feedpoint impedances. There's more about this in Chapter 8 of the _ARRL Antenna Book_. It's become known as the "current forcing" method.

Roy Lewallen, W7EL

2052. Re: DAB antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 02:15:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qkqe8t0qc56b9@corp.supernews.com>
Source record: 28274

So those guys wearing the foil hats are concentrating in their brains
the emanations from their. . . ?

Roy Lewallen, W7EL

2053. Transmissions on Helical Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 04:29:12 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13ql21ngggkgud5@corp.supernews.com>
Source record: 28275

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

Has anybody had any experience using a helical antenna for
transmissions. I put a small helical antenna (65' 14# wire, 172 turns
on 1-3/8" dowel) on my antenna tuner: on 40 meters (7MHz) the SWR was
about 8:1; on 15 meters (21MHz) the SWR was 1.6:1). I thought the 40M
would tune better than the 15M because 65' is about 40M's 1/2 wl.

My antenna tuner manual suggested a balun to tune in any band that
doesn't initially tune-up. I'm thinking the ubiquitous 4:1 balun.

Suggestions, comments?

Tnx,
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net (KI6OFN)
Oakland, CA (USA)
** Respond only to this newsgroup. I DO NOT respond to emails **

-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR6qI8IechKqOuFEgEQKzawCgwPU9ErKBDDE1xamd8J7VsGTMoA8AnA8D
E6yD+U7jazXUrjjny0PRX74g
=8JHd
-----END PGP SIGNATURE-----
```

2054. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 05:14:23 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <70e4b90b-7e74-46a4-8710-9f1e2c66fa7a@v17g2000hsa.googlegroups.com>
Source record: 28276

On Feb 6, 6:11 pm, Roy Lewallen <w...@eznec.com> wrote:
> K7ITM wrote:
> > . . .
> > But a better way to do a broadband vertical collinear is to feed
> > several dipoles, stacked end-to-end (with some gap from one to the
> > next), each fed with the same electrical length of feedline, with the
> > far ends of all the feedlines paralleled. If the gap from one dipole
> > to the next is enough that the mutual impedances among the dipoles are
> > all small, then each dipole will have current very nearly in phase
> > with the others and the radiation pattern will be perpendicular to the
> > axis of the dipoles. It's a messier feed arrangement, but it's much
> > better for keeping the antenna currents in phase along the whole
> > antenna across a relatively wide frequency range.
>
> You can avoid the problem of different feedpoint impedances due to
> mutual coupling by using lines of an odd number of quarter wavelengths
> to feed the elements. If you use lines of those lengths all going back
> to a common point, the currents in the elements will forced to be equal
> in amplitude and phase regardless of differences in their feedpoint
> impedances. There's more about this in Chapter 8 of the _ARRL Antenna
> Book_. It's become known as the "current forcing" method.
>
> Roy Lewallen, W7EL

Yes, I thought about mentioning this, except that in this case it won't (or at least may not) work very well. I like to think that a practical antenna of this sort is nicely built with nominally one wave long doublets; it saves on feedpoints. Then, assuming the the feedlines go perpendicular at least 1/4 wave away from the feedpoints, that means the feedlines are at least 3/4 wave long, for just a two-dipole antenna. Taking into account the fact that the velocity factor in the line is likely going to be noticably less than 1, it's probably 5/4 wave minimum we're faced with, and more if there are going to be more elements than four half-waves. But if Dave99 wants to cover 100MHz centered around 500MHz, or maybe even more, as I got from one of his postings in this thread, and we make the lines 5/4 wave long on 500MHz, then 10% removed in frequency from that, they'll be 5/40 or 1/8 of a wave off from 5/4. If the lines were 11/4 wave long, a 10% change in frequency would result in more than a quarter wave change in electrical line length. At least this is an issue to be aware of. In general, lines that are long in terms of number of wavelengths change length by electrical quarter waves rather rapidly with changes in frequency, and it's easy to forget about that till it bites you and leaves a scar for you to remember.

But after all that, I don't think the mutual impedance thing is all that much of a problem for vertically stacked antennas, if you provide even a little space between them. My recollection from modeling this sort of antenna (and fairly careful modeling of the coaxial collinear) is that it's not much of an issue in a practical antenna. "YMMV," but it's easy enough to model in Roy's kindly provided free version of EZNEC, so long as you don't have to go to too many elements, and then I think the licensed-for-a-fee version with way more capability than you'll need for this is still a pretty economical solution for the time it saves.

Cheers,
Tom

2055. Seeking New FAQ/Intro Maintainers for rec.radio.amateur.*

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 07:05:01 UTC
From: rram@panix.com
Message-ID: <radio/ham-radio/recruitment-1-1202367901@panix.com>
Source record: 28277
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.info

```
Posted-By: auto-faq 3.3.2 beta (PGPMoose V2.0, Perl 5.005)
Archive-name: radio/ham-radio/recruitment
Revision: 1.1 2007/09/29 18:42:47
Posting-Frequency: posted monthly
URL: http://www.faqs.org/faqs/radio/personal-intro/

Changes followed by "|".

The rec.radio.info newsgroup, first established in 1993, has been
recently revived by an active moderation team. We are currently seeking
suitable information, FAQ, and bulletin articles from the entire
rec.radio.* newsgroup hierarchy for simultaneous cross-posting to our
newsgroup.

We are seeking a replacement maintainer for the following information
bulletin formerly posted to rec.radio.amateur.* (and currently archived
at http://www.faqs.org/faqs/radio/personal-intro/ ):

radio/personal-intro
Subject: Guide to the rec.radio Newsgroups
Maintainer: jeffreyh@Hawaii.Edu (Jeffrey Herman)
Last Posted: 9 Nov 2001 06:18:17 GMT
Posting-Frequency: 15th of each month

We are willing to provide any technical support necessary to get this
article updated and automatically posted again at a regular interval.
This would include establishing contact with the original maintainer for
any necessary permissions. We would prefer to seek a new, dedicated
maintainer at this time, rather than start auto-posting the original
article ourselves.

For more information about our newsgroup, see:

http://www.panix.com/~rram/usenet/rri/index.html

Please direct any comments, questions, or criticisms to
rec-radio-info-request@panix.com.
```

2056. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 07:07:26 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qlbhhgrl2it70@corp.supernews.com>
Source record: 28278

K7ITM wrote:
>
> Yes, I thought about mentioning this, except that in this case it
> won't (or at least may not) work very well. I like to think that a
> practical antenna of this sort is nicely built with nominally one wave
> long doublets; it saves on feedpoints. Then, assuming the the
> feedlines go perpendicular at least 1/4 wave away from the feedpoints,
> that means the feedlines are at least 3/4 wave long, for just a two-
> dipole antenna. Taking into account the fact that the velocity factor
> in the line is likely going to be noticably less than 1, it's probably
> 5/4 wave minimum we're faced with, and more if there are going to be
> more elements than four half-waves. But if Dave99 wants to cover
> 100MHz centered around 500MHz, or maybe even more, as I got from one
> of his postings in this thread, and we make the lines 5/4 wave long on
> 500MHz, then 10% removed in frequency from that, they'll be 5/40 or
> 1/8 of a wave off from 5/4. If the lines were 11/4 wave long, a 10%
> change in frequency would result in more than a quarter wave change in
> electrical line length. At least this is an issue to be aware of. In
> general, lines that are long in terms of number of wavelengths change
> length by electrical quarter waves rather rapidly with changes in
> frequency, and it's easy to forget about that till it bites you and
> leaves a scar for you to remember.
>
> But after all that, I don't think the mutual impedance thing is all
> that much of a problem for vertically stacked antennas, if you provide
> even a little space between them. My recollection from modeling this
> sort of antenna (and fairly careful modeling of the coaxial collinear)
> is that it's not much of an issue in a practical antenna. "YMMV," but
> it's easy enough to model in Roy's kindly provided free version of
> EZNEC, so long as you don't have to go to too many elements, and then
> I think the licensed-for-a-fee version with way more capability than
> you'll need for this is still a pretty economical solution for the
> time it saves.

Thanks for the kind words about EZNEC. I agree that the problems, if any, can be identified and probably overcome by modeling, whether with EZNEC or some other program. I honestly haven't done it for a group of collinear dipoles, so don't know how much feedpoint impedance alteration takes place due to coupling in that sort of array. I'll certainly defer to your recollection. In any case, if the effect is significant at all, it would only affect the top and bottom elements to any degree, and very possibly not enough to have much of an impact on the overall pattern. You're absolutely right about the potentially severe bandwidth reduction due to using long feedlines. EZNEC and other programs allow you to

include the feedlines in the model, so you can see exactly what the impact would be on both the pattern and feedpoint impedance, for whatever lengths you choose.

Roy Lewallen, W7EL

2057. Re: Transmissions on Helical Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 07:17:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qlc4dgr1qsl16@corp.supernews.com>
Source record: 28279

MGFoster wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> Has anybody had any experience using a helical antenna for
> transmissions. I put a small helical antenna (65' 14# wire, 172 turns
> on 1-3/8" dowel) on my antenna tuner: on 40 meters (7MHz) the SWR was
> about 8:1; on 15 meters (21MHz) the SWR was 1.6:1). I thought the 40M
> would tune better than the 15M because 65' is about 40M's 1/2 wl.
>
> My antenna tuner manual suggested a balun to tune in any band that
> doesn't initially tune-up. I'm thinking the ubiquitous 4:1 balun.
>
> Suggestions, comments?
>
> Tnx,

Only a couple of comments.

1. Winding a half wavelength of wire doesn't make an antenna which acts like a half wavelength antenna. Turn-to-turn coupling makes the total wire length a lot less important than other factors like turn diameter and spacing.
2. My experience with using helical antennas is very limited, so other folks can much better tell you what combinations might provide you with a good match. But a helical antenna that's physically quite a bit shorter than a half wavelength will have a low radiation resistance. So if you get a good match without a tuner, it means that there's enough loss to raise the feedpoint resistance to 50 ohms. Another good indication of loss is the bandwidth. If it has low loss, the bandwidth will be very narrow; a wide bandwidth means more loss. Most people, though, run at least several times the power needed to communicate, so trading some efficiency for bandwidth, easy matching, and compact size might be a worthwhile exchange in a lot of cases.

If the loss is low, the feedpoint resistance at resonance would be considerably less than 50 ohms, so a 4:1 balun, with the high impedance side toward the tuner, might make things easier for the tuner.

Roy Lewallen, W7EL

2058. Re: How does it feel to use a commercial high gain curtain antenna and being a HF big gun for a weekend..

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 09:41:47 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47aad258$0$17370$4c368faf@roadrunner.com>
Source record: 28280

"The Shadow" <Cranston@CobaltClub.com> wrote in message
news:VFKpj.6901$Nz7.208@newsfe11.phx...
>
> "pa3abk" <pa3abk@tenalp.ln> wrote in message
> news:roqeq3h1a592inrtofep8iq5netvh82fa5@4ax.com...
>> After 60 years of operating from Dutch soil, Radio Netherlands
>> shortwave has left the country seeking better (cheaper) propagation
>> outlets to serve their listeners. For hamradio there was an unique
>> opportunity to use the idle antennas. PA3GVI had such an opportunity
>> his small hamradio next to the 500kW big brother connected to
>> curtainantennas of 22dB gain. In practice the 100W of the trx, gave
>> him an ERP of 8kW. The low angle of the system gave him an ease to
>> work other hams working on a broomestick at the other and of the
>> world.
>> He uploaded on YouTube the following teaser:
>> http://nl.youtube.com/watch?v=3vE1zk60v3E
>> Thanks to the original poster (Joop!) from Dutch hamradio usenetgroup.
>> Jan/pa3abk
>
> WOW
>
> -- MORE HAM RADIO VIDEOS ON YOUTUBE.COM
>
> http://nl.youtube.com/results?search_query=HAM+RADIO&search_type=
>
> DX IS
> Lamont
>
>
>
>
>

I got a little taste of what its like to do that a few years ago when I was
able to hook my rig up to an old of the air AM broadcast antenna.
Unfortuately I was not licensed at the time for 160M and could only listen.
Now the antenna is gone.

Jimmie

2059. Re: Transmissions on Helical Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 12:43:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <O1Dqj.4048$uE.3015@newssvr22.news.prodigy.net>
Source record: 28281

Roy Lewallen wrote:
> 1. Winding a half wavelength of wire doesn't make an antenna which acts
> like a half wavelength antenna.

A helical antenna section can be treated as a piece
of transmission line with a velocity factor and a
characteristic impedance. Knowing the velocity factor
allows one to calculate the approximate length of
the section. On my web page, I have an EXCEL file
that will estimate the VF and Z0 of a helical
antenna: http://www.w5dxp.com/coilZ0VF.xls

To see how this might work, let's assume a 1/2WL
helical dipole for 40m using a helical of 2 inches
diameter and 2 turns per inch on 7.2 MHz. If the
value at A7 on the spreadsheet is less than one,
the VF and Z0 will be in the correct ballpark
- probably within 15%.

For such a coil, the VF is calculated to be 0.207.
1/2WL at 7.2 MHz is 68.3 feet. So how long should
the coil be to be 1/2WL long?

68.3 feet times 0.207 = ~14 feet

Of course, this is not an exact length and must
have turns subtracted (or added) to bring it to
resonance on 7.2 MHz. Since end effects are not
included, the dipole will probably resonate on
a frequency lower than 7.2 MHz. Removing turns
will then bring it to resonance.

Use half of the above for a 1/4WL vertical
section approximately 7 feet high.
--
73, Cecil http://www.w5dxp.com

2060. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 16:28:43 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <yuOdneJzy74nrDbanZ2dnUVZ_v2pnZ2d@neonova.net>
Source record: 28282

```
Cecil Moore wrote:
> Keith Dysart wrote:
>> Cecil Moore <nos...@w5dxp.com> wrote:
>>>
>>> Rs Vg Pfor-->25w Vl
>>> +----/\/\/-----+----------------------+
>>> | 50 ohm ~23w<--Pref |
>>> | 0.04w / 1.92w
>>> Vs 90 degrees \ Rl
>>> 100 cos(wt) 1.96w 50 ohm line / 1 ohm
>>> | \ load
>>> | |
>>> +--------------+----------------------+
>>> gnd
>
>> When you find (as you will), that Pfor and Vfor
>> do not change when the reflected wave returns,
>> it should be difficult to assert that the
>> reflected wave is re-reflected at Vg.
>
> Not difficult at all. I've added the powers to the
> diagram above. The reflected power is ~23 watts.
> The power dissipated in the source resistor is
> ~0.04 watts. The reflected power is obviously *NOT*
> being dissipated in the source resistor so where
> is it going instead? The answer is destructive
> interference at the source resistor is redistributing
> the reflected energy back toward the load as an
> equal magnitude of constructive interference.
> I call that a reflection. The redistribution of
> energy due to interference is a well known and
> well understood phenomenon in optical physics but has
> been virtually ignored in the field of RF engineering.
>
> It is not a conventional reflection. It is wave
> cancellation in action. It is obeying the following
> equation:
>
> Ptot = P1 + P2 - 2*SQRT(P1*P2) where
> -2*SQRT(P1*P2) is the destructive interference term.

Is this the total applied power or the remaining power (Prem)(which is
really the reflected power), where
```

Prem = Z0(If - Ir)^2
= Z0((If^2) +(Ir^2) - 2(If*Ir))

I think these (yours and mine) are both the same equation except that I changed the terms so that we could use it on a transmission line. Z0 is transmission line impedance, If is forward current, Ir is reflected current

Just to clarify,
2*SQRT(P1*P2)
= 2*SQRT((Z*I1^2)*(Z*I2^2)
= 2*Z(I1*I2)

The equation should apply at all locations on the transmission line.

>
>> If the reflected wave was re-reflected at Vg,
>> there would necessarily be a change to Vfor
>> and Pfor.
>
> Nope, not true. The phase angle
> between the voltages determines which direction the
> energy flows. If the above example is changed to
> 1/2WL instead of 1/4WL, the forward and reflected
> voltages and powers remain the same but the interference
> at the source resistor changes from destructive to
> constructive and the source resistor heats up.

73, Roger, W7WKB

2061. Re: Transmissions on Helical Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 21:13:26 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13qmssjk5ct5k2e@corp.supernews.com>
Source record: 28283

Cecil Moore wrote:
> Roy Lewallen wrote:
>> 1. Winding a half wavelength of wire doesn't make an antenna which
>> acts like a half wavelength antenna.
>
> A helical antenna section can be treated as a piece
> of transmission line with a velocity factor and a
> characteristic impedance. Knowing the velocity factor
> allows one to calculate the approximate length of
> the section. On my web page, I have an EXCEL file
> that will estimate the VF and Z0 of a helical
> antenna: http://www.w5dxp.com/coilZ0VF.xls
>
> To see how this might work, let's assume a 1/2WL
> helical dipole for 40m using a helical of 2 inches
> diameter and 2 turns per inch on 7.2 MHz. If the
> value at A7 on the spreadsheet is less than one,
> the VF and Z0 will be in the correct ballpark
> - probably within 15%.
>
> For such a coil, the VF is calculated to be 0.207.
> 1/2WL at 7.2 MHz is 68.3 feet. So how long should
> the coil be to be 1/2WL long?
>
> 68.3 feet times 0.207 = ~14 feet
>
> Of course, this is not an exact length and must
> have turns subtracted (or added) to bring it to
> resonance on 7.2 MHz. Since end effects are not
> included, the dipole will probably resonate on
> a frequency lower than 7.2 MHz. Removing turns
> will then bring it to resonance.
>
> Use half of the above for a 1/4WL vertical
> section approximately 7 feet high.

-----BEGIN PGP SIGNED MESSAGE-----
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Thanks Roy and Cecil. I'll work on this using your
comments/suggestions.

I'm in a vy antenna unfriendly area: an apartment in the air shaft of
the bldg. So I'm abt 40' from free-air on all four sides. Fortunately,
I'm on the top floor, so I'm trying to get a "stealth" antenna to place

on the roof: something that would be easy to set up/take down. The helical fit that description. But, I'm running QRP (abt 5W) and, taking into consideration what Roy said abt power & efficiency, I'm probably not getting anything out.

One good thing abt this antenna is, for it's size, it does receive better than the random-length wire (abt a 50' rectangle) I had been using inside my apartment. It does have good bandwith - but, as Roy stated this indicates low radiation resistance.

Cecil, I'll work w/ your s/s and play around some more w/ the helical (just for the fun of it, ya know ;-)).

If this doesn't work out I'll try a linearly loaded dipole that N5ESE has on his website.

Thanks to both for your advice.

73

--
MGFoster:::mgf00 <at> earthlink <decimal-point> net (KI6OFN)
Oakland, CA (USA)

-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR6t0ZoechKqOuFEgEQIP2gCeJNZwXLJBiYBobUw+092wRMX8EZMAmwWx
R2zVVJ6RDCN+KlrEm4TopHxP
=9XiC
-----END PGP SIGNATURE-----

2062. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 23:07:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <raMqj.54873$Pv2.48630@newssvr23.news.prodigy.net>
Source record: 28284

Roger Sparks wrote:
> The equation should apply at all locations on the transmission line.

What you say is true but there is a caveat. Remember
that I have previously said that interference can exist
without wave cancellation. As long as Z0 remains constant
up and down a transmission line, there is no forward and
reflected wave interaction. They pass each other like
"ships in the night".

The resistor is a physical object. When the forward and
reflected waves superpose at the *resistor*, there is
an obvious interaction, i.e., a permanent interference.
One only has to observe the power dissipated in the resistor
to ascertain that it is not the same as the forward power
plus the reflected power unless the E-fields of the two
waves are 90 degrees apart, a condition for which zero
interference exists.

What is interesting is a procedure for determining the
current through Rs using only powers. We have to be
pretty accurate with the powers to do that. We know
the forward power is 25w. The power reflection coefficient
at the load is [(50-1)/(50+1)]^2 = 0.92311. That makes
the reflected power from the load equal to 23.077 watts.
When the forward wave and reflected wave superpose at
the 50 ohm source resistor, they are 180 degrees out of
phase which makes the interference term minus and
therefore destructive.

25w + 23.077w - 2*SQRT(25w*23.077w) = 0.03845w

That's the dissipation in the 50 ohm source resistor.
So the RMS current is SQRT(0.03845w/50ohm)= 0.02773a

Ig(t) = 1.414(0.02773)cos(wt) = 0.039216 cos(wt)

And that is, indeed, the current through the 50 ohm
source resistor, Rs, using only an energy analysis.

All energy, except 0.03845w, is "redistributed", i.e.
reflected back toward the load. This is all explained
in my energy analysis article at:

http://www.w5dxp.com/energy.htm
--
73, Cecil http://www.w5dxp.com

2063. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 23:24:26 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <KqMqj.11863$M71.2163@trnddc08>
Source record: 28285

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:raMqj.54873$Pv2.48630@newssvr23.news.prodigy.net...
> Roger Sparks wrote:
>> The equation should apply at all locations on the transmission line.
>
> What you say is true but there is a caveat. Remember
> that I have previously said that interference can exist
> without wave cancellation. As long as Z0 remains constant
> up and down a transmission line, there is no forward and
> reflected wave interaction. They pass each other like
> "ships in the night".
>
> The resistor is a physical object. When the forward and
> reflected waves superpose at the *resistor*, there is
> an obvious interaction, i.e., a permanent interference.
> One only has to observe the power dissipated in the resistor
> to ascertain that it is not the same as the forward power
> plus the reflected power unless the E-fields of the two
> waves are 90 degrees apart, a condition for which zero
> interference exists.
>
> What is interesting is a procedure for determining the
> current through Rs using only powers. We have to be
> pretty accurate with the powers to do that. We know
> the forward power is 25w. The power reflection coefficient
> at the load is [(50-1)/(50+1)]^2 = 0.92311. That makes
> the reflected power from the load equal to 23.077 watts.
> When the forward wave and reflected wave superpose at
> the 50 ohm source resistor, they are 180 degrees out of
> phase which makes the interference term minus and
> therefore destructive.
>
> 25w + 23.077w - 2*SQRT(25w*23.077w) = 0.03845w
>
> That's the dissipation in the 50 ohm source resistor.
> So the RMS current is SQRT(0.03845w/50ohm)= 0.02773a
>
> Ig(t) = 1.414(0.02773)cos(wt) = 0.039216 cos(wt)
>
> And that is, indeed, the current through the 50 ohm
> source resistor, Rs, using only an energy analysis.
>
> All energy, except 0.03845w, is "redistributed", i.e.
> reflected back toward the load. This is all explained

> in my energy analysis article at:
>
> http://www.w5dxp.com/energy.htm
> --
> 73, Cecil http://www.w5dxp.com

I disagree. If the current through the 50 ohm source resistor is 0.039216, then the power in the 50 ohm source resistor cannot be 0.03845w. Namely because 0.039216 * 0.039216 * 50 = 0.076895w (eye-squared-are, matey). Either your power is wrong or your current is wrong. My own calculations show that your current is correct. Therefore, your energy analysis appears to be in error.

John

2064. Re: Transmissions on Helical Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 23:25:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <asMqj.3801$xq2.1723@newssvr21.news.prodigy.net>
Source record: 28286

MGFoster wrote:
> Cecil, I'll work w/ your s/s and play around some more w/ the helical
> (just for the fun of it, ya know ;-)).

You will radiate more power if you make the center half
of the antenna straight wire and use the ends of the
antenna for the helical part. If you haven't considered
top hats on the antenna ends, please do so. The following
would be a pretty good antenna, in fixed font with top
hat loading at the ends.

```
| coil coil |
+---////////--------FP--------////////---+
| |
```

--
73, Cecil http://www.w5dxp.com

2065. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-07 23:33:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <szMqj.3802$xq2.230@newssvr21.news.prodigy.net>
Source record: 28287

John KD5YI wrote:
> I disagree. If the current through the 50 ohm source resistor is 0.039216,
> then the power in the 50 ohm source resistor cannot be 0.03845w. Namely
> because 0.039216 * 0.039216 * 50 = 0.076895w (eye-squared-are, matey).
> Either your power is wrong or your current is wrong. My own calculations
> show that your current is correct. Therefore, your energy analysis appears
> to be in error.

You seem to have forgotten that since 0.039216 is the maximum
value of current you need to divide the 0.076895w by two.

0.076895w/2 = 0.03845 watts

If we used the RMS value of the current, i.e. 0.039216/1.414
equals 0.027734a, then 50(0.027734)^2 = 0.03845 watts and
all is well.
--
73, Cecil http://www.w5dxp.com

2066. Extreme WebPage

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 02:20:15 UTC
From: KF4DNA <kf4dna@kf4dna.net>
Message-ID: <y%Oqj.62883$k27.1922@bignews2.bellsouth.net>
Source record: 28288

Updated content to include data from the February 5, 2008 "Tornado Outbreak"
in the mid-south. Damage photos and radar images of the storms that roared
thru
several southern states.

http://www.kf4dna.net

2067. Re: Extreme WebPage

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 02:46:45 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47ABC295.50002@taring.org>
Source record: 28289

KF4DNA wrote:
> Updated content to include data from the February 5, 2008 "Tornado Outbreak"
> in the mid-south. Damage photos and radar images of the storms that roared
> thru
> several southern states.
>
> http://www.kf4dna.net
>
>

This "gentleman" is spamming several amateur radio newsgroups. If this
bothers you contact

webmaster@bellsouth-hosting.net

and include his web page address.

tom
K0TAR

2068. Re: WebPage

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 02:52:29 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47abc3ed$0$1121$8046368a@newsreader.iphouse.net>
Source record: 28290

KF4DNA wrote:
> This webpage is dedicated to Everything that can be called EXTREME !
>
> Skydiving, Storm Chasing, Rocketry, WebPage Resources and Amateur Radio
>
> There is also a huge collection of resources for webpage development and
> promotion.
>
> http://www.kf4dna.net
>
>
>
>

This "gentleman" is spamming several amateur radio newsgroups. If this
bothers you contact

webmaster@bellsouth-hosting.net

and include his web page address.

tom
K0TAR

2069. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 02:56:26 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f2c7feb5-57c8-4700-9bc4-0ec3e2aa61ed@m34g2000hsf.googlegroups.com>
Source record: 28291

On Feb 6, 8:02 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
>
> >>   Rs   Vg   Pfor-->25w   Vl
> >>   +----/\/\/-----+----------------------+
> >> | 50 ohm   ~23w<--Pref |
> >> | 0.04w   / 1.92w
> >>   Vs   90 degrees   \   Rl
> >>   100 cos(wt) 1.96w   50 ohm line   / 1 ohm
> >> | \ load
> >> | |
> >>   +--------------+----------------------+
> >>   gnd
> > When you find (as you will), that Pfor and Vfor
> > do not change when the reflected wave returns,
> > it should be difficult to assert that the
> > reflected wave is re-reflected at Vg.
>
> Not difficult at all. I've added the powers to the
> diagram above. The reflected power is ~23 watts.
> The power dissipated in the source resistor is
> ~0.04 watts. The reflected power is obviously *NOT*
> being dissipated in the source resistor so where
> is it going instead? The answer is destructive
> interference at the source resistor is redistributing
> the reflected energy back toward the load as an
> equal magnitude of constructive interference.
> I call that a reflection.

When we analyze this circuit we find that there is
no voltage re-reflection when the wave gets back
to the generator. This is clear because Vf does not
change, which it would have to do if any of Vr was
re-reflected.

And yet it appears that you are claiming that power
is reflected at the generator. How can power be
reflected if voltage is not?

You may find the Excel spreadsheet on this page
http://keith.dysart.googlepages.com/generator,line,load,reflection
interesting.

It computes the various results for the circuit we have been discussing. Input Vs, Rs, Rl and line length and it will compute the various voltages, currents and powers.

After entering the circuit parameters, click "First". The circuit conditions at the end of the first round trip will be computed. Click "Next" to have any re-reflection included into the forward conditions for the next round trip.

When Rs is 50 ohms (i.e. it matches the line impedance), the circuit conditions settle to their final state immediately, as would be expected when there is no reflection at the generator. Change Rs to a value other than 50 and it takes many clicks of "Next" before the conditions settle. At each click, Vf changes as some of Vr is re-reflected and added to Vf.

...Keith

2070. Re: Diodes for UHF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 04:37:39 UTC
From: Jim-NN7K
Message-ID: <n0Rqj.5687$5K1.532@newssvr12.news.prodigy.net>
Source record: 28292

AI4QJ wrote:
> "Bryan" <bryan.swadenerNOSPAM@comcast.net> wrote in message
> news:GK2dnawmofw9DjvanZ2dnUVZ_tqtnZ2d@giganews.com...
>> Suzy wrote:
>>> Looking for a website that gives comparative performance of diodes (max
>>> frequency for UHF use)
>> A recollection from decades back are the 1N21, 1N23, 1N32, 1N53, 1N60, and
>> 1N78 point-contact silicon diodes that were used as mixers well into the
>> microwave spectrum. Googling 1N23 produces 8000+ hits... including a
>> "Simple 2.4 GHz SWR Meter": (http://www.qsl.net/n9zia/24swr/index.html). I
>> see RF Parts (http://www.rfparts.com/) sells the 1N21 and 1N23.
>> MicroMetrics (http://www.micrometrics.com/) makes them, as well as various
>> schottky diodes suitable for sampling.
>> 73,
>> Bryan WA7PRC
>
> Interesting but this is not what was requested.
>
>
Also, try "Hot Carrier Diodes" HP had some that wetn't too bad -- Jim

2071. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 05:20:06 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <b087e4dd-9461-4e79-b0b4-924883cde01e@v4g2000hsf.googlegroups.com>
Source record: 28293

On Feb 2, 2:56 pm, K7ITM <k7...@msn.com> wrote:
...
> Since this thread started on the premise that a photon is a particle,
> which it clearly is not, what did you expect?

"A photon is not a particle."

For those who might seriously wonder why I would make such an outrageous--some may say idiotic or insane--statement... For those that haven't dismissed it as lunacy... Let me first point out that I did NOT say that a photon isn't a quantum. Indeed, I believe that everything physical in our universe is quantized. But I also believe that until you really get to know photons (and electrons and neutrons and various other things we can only sense and never see directly), you are doing yourself a disservice by calling them by names like "particle" or "wave." That is because, by thinking of them in that way, as particles or as waves, you will miss seeing what they really are. On the other hand, if you call a photon a "quantum of electromagnetic energy," then you may wonder just what THAT is, and may get interested enough to study it in the language that describes it more accurately: the language of quantum theory or the language of quantum electrodynamics.

I was asked for references. I would suggest as a starting point Richard P. Feynman's lecture of April 3, 1962, which was an introduction to quantum behavior. I think the whole of the lecture is worthwhile, but especially the following paragraph:

" 'Quantum mechanics' is the description of the behavior of matter in all its details and, in particular, of the happenings on an atomic scale. Things on a very small scale behave like nothing that you have any direct experience about. They do not behave like waves, they do not behave like particles, they do not behave like clouds, or billiard balls, or weights on springs, or like anything that you have ever seen."

In the lecture, he offers an example of an experiment that, he says, you can NOT explain by using either waves or particles, but it's explained completely and accurately through quantum mechanics. So why talk about photons as if they are particles or as if they are waves, when they behave in total like neither? Why not talk about them as if they are quanta of electromagnetic radiation, which I believe they are?

There's more about this in other Feynman lectures; there's lots more about it in the many quantum mechanics texts that are available.

Although the word 'particle' may be used, I believe it's only through something like quantum mechanics that we can hope to get an accurate picture of how these entities (photons, electrons, mesons, pions, etc.) behave.

The question gave me an excuse to refresh my memory about some books on my own bookshelf:
V. Kondratyev, "The Structure of Atoms and Molecules."
M. W. Hanna, "Quantum Mechanics in Chemistry."
H. A. Kramers, "Quantum Mechanics."
H. G. Kuhn, "Atomic Spectra."
R. E. Dodd, "Chemical Spectroscopy."
In the context of this posting, I did not find in these books a disagreement with the thought that a photon is not a particle.

You may notice a slight interest in photons there among those titles, typically photons of shorter wavelength than we generally use on the ham bands. If you're going to accuse me of not knowing anything about them, perhaps you should get to know me a bit better first.

I'm quite sure I don't really completely know a photon, on its own turf. Feynman in that same lecture told us that HE didn't either. But I do know better than to claim it's either a "wave" OR a "particle." There are plenty of times I don't have to deal with or think about its quantized nature to get valid practical answers to questions dealing with electromagnetic radiation, but there's also no need to waste time discussing whether a photon is something or other when it's clear that it's neither.

Cheers,
Tom
(aargh! no! they're coming to take me back to the asylum! HELP! Now I won't be able to check if there are any responses to this posting...)

2072. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 06:29:20 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47abf6c0$0$22585$4c368faf@roadrunner.com>
Source record: 28294

"K7ITM" <k7itm@msn.com> wrote in message
news:b087e4dd-9461-4e79-b0b4-924883cde01e@v4g2000hsf.googlegroups.com...
> On Feb 2, 2:56 pm, K7ITM <k7...@msn.com> wrote:
> ...
>> Since this thread started on the premise that a photon is a particle,
>> which it clearly is not, what did you expect?
>
>
> "A photon is not a particle."
>
> For those who might seriously wonder why I would make such an
> outrageous--some may say idiotic or insane--statement... For those
> that haven't dismissed it as lunacy... Let me first point out that I
> did NOT say that a photon isn't a quantum. Indeed, I believe that
> everything physical in our universe is quantized. But I also believe
> that until you really get to know photons (and electrons and neutrons
> and various other things we can only sense and never see directly),
> you are doing yourself a disservice by calling them by names like
> "particle" or "wave." That is because, by thinking of them in that
> way, as particles or as waves, you will miss seeing what they really
> are. On the other hand, if you call a photon a "quantum of
> electromagnetic energy," then you may wonder just what THAT is, and
> may get interested enough to study it in the language that describes
> it more accurately: the language of quantum theory or the language of
> quantum electrodynamics.
>
> I was asked for references. I would suggest as a starting point
> Richard P. Feynman's lecture of April 3, 1962, which was an
> introduction to quantum behavior. I think the whole of the lecture is
> worthwhile, but especially the following paragraph:
>
> " 'Quantum mechanics' is the description of the behavior of matter in
> all its details and, in particular, of the happenings on an atomic
> scale. Things on a very small scale behave like nothing that you have
> any direct experience about. They do not behave like waves, they do
> not behave like particles, they do not behave like clouds, or billiard
> balls, or weights on springs, or like anything that you have ever
> seen."
>
> In the lecture, he offers an example of an experiment that, he says,
> you can NOT explain by using either waves or particles, but it's
> explained completely and accurately through quantum mechanics. So why
> talk about photons as if they are particles or as if they are waves,
> when they behave in total like neither? Why not talk about them as if

> they are quanta of electromagnetic radiation, which I believe they
> are?
>
> There's more about this in other Feynman lectures; there's lots more
> about it in the many quantum mechanics texts that are available.
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> something like quantum mechanics that we can hope to get an accurate
> picture of how these entities (photons, electrons, mesons, pions,
> etc.) behave.
>
> The question gave me an excuse to refresh my memory about some books
> on my own bookshelf:
> V. Kondratyev, "The Structure of Atoms and Molecules."
> M. W. Hanna, "Quantum Mechanics in Chemistry."
> H. A. Kramers, "Quantum Mechanics."
> H. G. Kuhn, "Atomic Spectra."
> R. E. Dodd, "Chemical Spectroscopy."
> In the context of this posting, I did not find in these books a
> disagreement with the thought that a photon is not a particle.
>
> You may notice a slight interest in photons there among those titles,
> typically photons of shorter wavelength than we generally use on the
> ham bands. If you're going to accuse me of not knowing anything about
> them, perhaps you should get to know me a bit better first.
>
> I'm quite sure I don't really completely know a photon, on its own
> turf. Feynman in that same lecture told us that HE didn't either.
> But I do know better than to claim it's either a "wave" OR a
> "particle." There are plenty of times I don't have to deal with or
> think about its quantized nature to get valid practical answers to
> questions dealing with electromagnetic radiation, but there's also no
> need to waste time discussing whether a photon is something or other
> when it's clear that it's neither.
>
> Cheers,
> Tom

Yes, it is a quantum that contains mass and energy.

If you want to call it a particle, you can make a measurement that shows it behaves as a particle (photoelectric effect).

If you want to call it a wave, you can make a measurement that shows it behaves as a wave.

It is either or both, depending upon how you measure it. I agree, it is really up for grabs.

Certainly there are many experiments that will prove it is a quanta.

AI4QJ

2073. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 07:11:51 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <TgTqj.79686$N67.45935@bignews5.bellsouth.net>
Source record: 28295

```
"AI4QJ" <nospam@yahoo.com> wrote in message
news:47abf6c0$0$22585$4c368faf@roadrunner.com...
>
> "K7ITM" <k7itm@msn.com> wrote in message
> news:b087e4dd-9461-4e79-b0b4-924883cde01e@v4g2000hsf.googlegroups.com...
>> On Feb 2, 2:56 pm, K7ITM <k7...@msn.com> wrote:
>> ...
>>> Since this thread started on the premise that a photon
>>> is a particle,
>>> which it clearly is not, what did you expect?
>>
>>
>> "A photon is not a particle."
>>
>> For those who might seriously wonder why I would make
>> such an
>> outrageous--some may say idiotic or insane--statement...
>> For those
>> that haven't dismissed it as lunacy... Let me first
>> point out that I
>> did NOT say that a photon isn't a quantum. Indeed, I
>> believe that
>> everything physical in our universe is quantized. But I
>> also believe
>> that until you really get to know photons (and electrons
>> and neutrons
>> and various other things we can only sense and never see
>> directly),
>> you are doing yourself a disservice by calling them by
>> names like
>> "particle" or "wave." That is because, by thinking of
>> them in that
>> way, as particles or as waves, you will miss seeing what
>> they really
>> are. On the other hand, if you call a photon a "quantum
>> of
>> electromagnetic energy," then you may wonder just what
>> THAT is, and
>> may get interested enough to study it in the language
>> that describes
>> it more accurately: the language of quantum theory or
>> the language of
>> quantum electrodynamics.
>>
```

>> I was asked for references. I would suggest as a
>> starting point
>> Richard P. Feynman's lecture of April 3, 1962, which was
>> an
>> introduction to quantum behavior. I think the whole of
>> the lecture is
>> worthwhile, but especially the following paragraph:
>>
>> " 'Quantum mechanics' is the description of the behavior
>> of matter in
>> all its details and, in particular, of the happenings on
>> an atomic
>> scale. Things on a very small scale behave like nothing
>> that you have
>> any direct experience about. They do not behave like
>> waves, they do
>> not behave like particles, they do not behave like
>> clouds, or billiard
>> balls, or weights on springs, or like anything that you
>> have ever
>> seen."
>>
>> In the lecture, he offers an example of an experiment
>> that, he says,
>> you can NOT explain by using either waves or particles,
>> but it's
>> explained completely and accurately through quantum
>> mechanics. So why
>> talk about photons as if they are particles or as if they
>> are waves,
>> when they behave in total like neither? Why not talk
>> about them as if
>> they are quanta of electromagnetic radiation, which I
>> believe they
>> are?
>>
>> There's more about this in other Feynman lectures;
>> there's lots more
>> about it in the many quantum mechanics texts that are
>> available.
>> Although the word 'particle' may be used, I believe it's
>> only through
>> something like quantum mechanics that we can hope to get
>> an accurate
>> picture of how these entities (photons, electrons,
>> mesons, pions,
>> etc.) behave.
>>
>> The question gave me an excuse to refresh my memory about
>> some books

>> on my own bookshelf:
>> V. Kondratyev, "The Structure of Atoms and Molecules."
>> M. W. Hanna, "Quantum Mechanics in Chemistry."
>> H. A. Kramers, "Quantum Mechanics."
>> H. G. Kuhn, "Atomic Spectra."
>> R. E. Dodd, "Chemical Spectroscopy."
>> In the context of this posting, I did not find in these
>> books a
>> disagreement with the thought that a photon is not a
>> particle.
>>
>> You may notice a slight interest in photons there among
>> those titles,
>> typically photons of shorter wavelength than we generally
>> use on the
>> ham bands. If you're going to accuse me of not knowing
>> anything about
>> them, perhaps you should get to know me a bit better
>> first.
>>
>> I'm quite sure I don't really completely know a photon,
>> on its own
>> turf. Feynman in that same lecture told us that HE
>> didn't either.
>> But I do know better than to claim it's either a "wave"
>> OR a
>> "particle." There are plenty of times I don't have to
>> deal with or
>> think about its quantized nature to get valid practical
>> answers to
>> questions dealing with electromagnetic radiation, but
>> there's also no
>> need to waste time discussing whether a photon is
>> something or other
>> when it's clear that it's neither.
>>
>> Cheers,
>> Tom
>
> Yes, it is a quantum that contains mass and energy.
>
> If you want to call it a particle, you can make a
> measurement that shows it behaves as a particle
> (photoelectric effect).
>
> If you want to call it a wave, you can make a measurement
> that shows it behaves as a wave.
>
> It is either or both, depending upon how you measure it. I
> agree, it is really up for grabs.

>
> Certainly there are many experiments that will prove it is
> a quanta.
>
> AI4QJ

I sometimes wonder if other species exist elsewhere that can experience, through their own sensory receptors, what quanta/quantum phenomenon really and truly are? Think of the advantage they would have, assuming they had at least equal intelligence to the human species.

Ed, NM2K

2074. Re: Transmissions on Helical Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 08:49:37 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13qo5lt8oe353e3@corp.supernews.com>
Source record: 28296

Cecil Moore wrote:
> MGFoster wrote:
>> Cecil, I'll work w/ your s/s and play around some more w/ the helical
>> (just for the fun of it, ya know ;-)).
>
> You will radiate more power if you make the center half
> of the antenna straight wire and use the ends of the
> antenna for the helical part. If you haven't considered
> top hats on the antenna ends, please do so. The following
> would be a pretty good antenna, in fixed font with top
> hat loading at the ends.
>
> | coil coil |
> +---////////--------FP--------////////---+
> | |
>

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

Isn't that a linearly loaded dipole?

I saw a picture of a similar antenna in some book I was browsing - the illustration didn't show a center wire, just the coils and the top-hats.

Would you keep the wooden dowel form (for the coils), or would you let them be air-coils (how to keep them from separating [tape])? What lengths would you use for the wire/coils? What type feed line would you use: twin lead or coax? Am I asking too many Qs?

Wait a minute... I've seen examples of this type of ant. on other websites. I'll look those up and you won't have to answer these Qs, which have probably been asked many times before.

N5ESE shows a linearly load dipole that is about 12 feet long (6 ft per pole), twin lead fed with 14 inches of zig-zag wire at the ends. He reports that he had pretty good results w/ this ant. on 15M and 20M (the ant. was inside his bedroom at the time of the test).

http://www.io.com/~n5fc/notebk_ant.htm

Thanks,
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net (KI6OFN)
Oakland, CA (USA)
** Respond only to this newsgroup. I DO NOT respond to emails **

```
-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR6wXdoechKqOuFEgEQKvWACfUWPdBpRwvusDgfYOAf6OnlwLw+EAoIdT
9XcUkSlSyEUA8kxgB/Bfb9bg
=2X/9
-----END PGP SIGNATURE-----
```

2075. Re: Transmissions on Helical Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 13:22:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nIYqj.54921$Pv2.15265@newssvr23.news.prodigy.net>
Source record: 28297

MGFoster wrote:
> Cecil Moore wrote:
>> | coil coil |
>> +---////////--------FP--------////////---+
>> | |
>>
> Isn't that a linearly loaded dipole?

No, it is a loaded dipole. It uses inductive loading
and top hat capacitive loading. "Linear", in this
context, means "evenly distributed" loading.

> Would you keep the wooden dowel form (for the coils), or would you let
> them be air-coils (how to keep them from separating [tape])? What
> lengths would you use for the wire/coils? What type feed line would you
> use: twin lead or coax?

I would use PVC pipe and run a Dacron "messenger line"
through the center for mechanical support.

For the coils, you will need approximately double the
length of the straight wire. Design the coils so you
can add or subtract turns. Or design the top hats to
be adjustable. Or adjust the length of the straight
wires.

The feedpoint impedance will probably be lower than
50 ohms. For single-band operation, coax will probably
work well with an antenna tuner.
--
73, Cecil http://www.w5dxp.com

2076. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 13:26:32 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A3E5638310C4jxp16psuedu@128.118.141.40>
Source record: 28298

> -------------
>
>
> I sometimes wonder if other species exist elsewhere that can
> experience, through their own sensory receptors, what
> quanta/quantum phenomenon really and truly are? Think of the
> advantage they would have, assuming they had at least equal
> intelligence to the human species.
>
> Ed, NM2K
>
>
>
Sometimes I wonder if there is any intelligent life on earth. Some of the discussions in this news group are an example. The good news is its worse in other news groups.

John W3JXP

2077. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 13:42:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <X_Yqj.6461$0w.2703@newssvr27.news.prodigy.net>
Source record: 28299

K7ITM wrote:
> I was asked for references. I would suggest as a starting point
> Richard P. Feynman's lecture of April 3, 1962, which was an
> introduction to quantum behavior. I think the whole of the lecture is
> worthwhile, but especially the following paragraph:

In Feynman's introductory lecture number 1, he
says: "I want to emphasize that light comes in
this form - *particles*." Also: "... light is
made of *particles*." emphasis mine

Feynman's lecture number 2 is titled
"Photons" *Particles* of Light" He says:
"Quantum electrodynamics 'resolves' this wave-
particle duality by saying that light is made
of *particles*, ..." emphasis mine

If I understand it correctly, a cornerstone
concept of QED is that nothing exists except
particles.
--
73, Cecil http://www.w5dxp.com

2078. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 13:53:14 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <e9Zqj.11974$M71.7153@trnddc08>
Source record: 28300

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:szMqj.3802$xq2.230@newssvr21.news.prodigy.net...
> John KD5YI wrote:
>> I disagree. If the current through the 50 ohm source resistor is
>> 0.039216, then the power in the 50 ohm source resistor cannot be
>> 0.03845w. Namely because 0.039216 * 0.039216 * 50 = 0.076895w
>> (eye-squared-are, matey). Either your power is wrong or your current is
>> wrong. My own calculations show that your current is correct. Therefore,
>> your energy analysis appears to be in error.
>
> You seem to have forgotten that since 0.039216 is the maximum
> value of current you need to divide the 0.076895w by two.

Yes, I forgot to use the RMS value of the source.

John

2079. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 14:15:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MtZqj.8703$Ch6.7932@newssvr11.news.prodigy.net>
Source record: 28151

Keith Dysart wrote:
> When we analyze this circuit we find that there is
> no voltage re-reflection when the wave gets back
> to the generator. This is clear because Vf does not
> change, which it would have to do if any of Vr was
> re-reflected.

Nope, Vf doesn't have to change for there to be a
reflection. Looking at what happens to the power
dissipation in the source resistor, Rs, when the
reflected wave arrives, we see that the energy being
supplied by the source drops by 99.85%. Most of
the energy in the forward wave is supplied by the
reflected wave, starting at the time the reflected
wave arrives and causes destructive interference.

> And yet it appears that you are claiming that power
> is reflected at the generator. How can power be
> reflected if voltage is not?

To be technically correct, reflected energy is redistributed
back toward the load during the process of destructive
interference.

The conditions before the reflected wave arrives and
after the reflected wave arrives are extremely different.

Before the reflected wave arrives, the source resistor,
Rs, is dissipating 25 watts.

After the reflected wave arrives, the source resistor,
Rs, is dissipating 0.03845 watts.

Clearly, something drastic has happened and that is:
99.85% of the forward energy originally supplied by the
source has been replaced with reflected energy being
redistributed back toward the load.

Because of destructive interference, reflected energy
never flows through the source resistor, Rs, and is
instead redistributed back toward the load.

Nothing else is possible since the source is supplying
only 1.9608 watts during steady-state. 92.3% of the forward
power is not being supplied by the source during steady-state.

The energy incident upon a point must equal the energy exiting the point. The energy incident upon the generator terminals is 1.92234 joules/sec from the source and 23.0777 joules/sec from the reflected wave. The energy exiting that point is 25 joules/sec. The reflected wave energy obviously reverses direction and joins the forward wave and that is what we call a "reflection".
--
73, Cecil http://www.w5dxp.com

2080. Re: Transmissions on Helical Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 16:22:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jmvoq31ccrbcip9u6u8hqdi0cmu4k6nk0r@4ax.com>
Source record: 28152

On Thu, 07 Feb 2008 13:13:26 -0800, MGFoster <me@privacy.com> wrote:

>I'm in a vy antenna unfriendly area: an apartment in the air shaft of
>the bldg. So I'm abt 40' from free-air on all four sides. Fortunately,
>I'm on the top floor, so I'm trying to get a "stealth" antenna to place
>on the roof: something that would be easy to set up/take down. The
>helical fit that description. But, I'm running QRP (abt 5W) and, taking
>into consideration what Roy said abt power & efficiency, I'm probably
>not getting anything out.

You are getting out, however, by your low enthusiasm, it sounds like
you don't get much back in response for tossing out CQs. This may be
simply a matter of persistence because what you say more below
suggests not all is for naught:

>One good thing abt this antenna is, for it's size, it does receive
>better than the random-length wire (abt a 50' rectangle) I had been
>using inside my apartment. It does have good bandwith - but, as Roy
>stated this indicates low radiation resistance.

If you are receiving well, then you are not entirely boxed in - so to
speak (although it does sound like your apartment interior is shielded
by the building structure). You do sound like you have a lot of
height even if it is a air shaft.

Try an end-fed antenna (or work it against the ground of your three
prong plug). For that end-fed antenna, get a long fishing pole with a
reel full of flex-weave wire and a sinker. Mount the pole into a flag
mount so that it points out into the air shaft. Let the sinker loaded
wire drop into the shaft and drive the wire through your tuner.
Naturally, the longer the pole, the better - the more wire, the
better. Who knows, you might be able to tune-up by adjusting the
wire length. You can keep your existing antenna for listening (use a
T/R switch) and you are off and running. Don't worry about anyone
seeing it (especially at night) - they won't.

73's
Richard Clark, KB7QHC

2081. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 18:00:37 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <9N0rj.5312$R84.1293@newssvr25.news.prodigy.net>
Source record: 28153

Cecil Moore wrote:
> K7ITM wrote:
>> I was asked for references. I would suggest as a starting point
>> Richard P. Feynman's lecture of April 3, 1962, which was an
>> introduction to quantum behavior. I think the whole of the lecture is
>> worthwhile, but especially the following paragraph:
>
> In Feynman's introductory lecture number 1, he
> says: "I want to emphasize that light comes in
> this form - *particles*." Also: "... light is
> made of *particles*." emphasis mine
>
> Feynman's lecture number 2 is titled
> "Photons" *Particles* of Light" He says:
> "Quantum electrodynamics 'resolves' this wave-
> particle duality by saying that light is made
> of *particles*, ..." emphasis mine
>
> If I understand it correctly, a cornerstone
> concept of QED is that nothing exists except
> particles.

Cecil, get Feynman's _Lectures on Physics_ Volume I, and
read the entirety of Chapter 38, "The Relation of Wave and
Particle Viewpoints." Quantum mechanics is a very successful attempt,
using statistical methods, to explain the behavior of very small things.
In order to do that, it has to look at those things in very strange
ways. If you want to read about the philosophical underpinnings
you should read chapter 8 of _Quantum Theory_
by David Bohm (a Dover reprint).
73,
Tom Donaly, KA6RUH

2082. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-08 18:26:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <O91rj.10040$Ej5.7398@newssvr29.news.prodigy.net>
Source record: 28154

Tom Donaly wrote:
> Cecil, get Feynman's _Lectures on Physics_ Volume I, and
> read the entirety of Chapter 38, "The Relation of Wave and
> Particle Viewpoints." Quantum mechanics is a very successful attempt,
> using statistical methods, to explain the behavior of very small things.
> In order to do that, it has to look at those things in very strange
> ways. If you want to read about the philosophical underpinnings
> you should read chapter 8 of _Quantum Theory_
> by David Bohm (a Dover reprint).

Thanks Tom, I will do that as time permits.
--
73, Cecil http://www.w5dxp.com

2083. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 01:08:36 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f706fb77-444a-4fab-a09e-30495c75fdad@i72g2000hsd.googlegroups.com>
Source record: 28155

On Feb 8, 9:15 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > When we analyze this circuit we find that there is
> > no voltage re-reflection when the wave gets back
> > to the generator. This is clear because Vf does not
> > change, which it would have to do if any of Vr was
> > re-reflected.
>
> Nope, Vf doesn't have to change for there to be a
> reflection. Looking at what happens to the power
> dissipation in the source resistor, Rs, when the
> reflected wave arrives, we see that the energy being
> supplied by the source drops by 99.85%. Most of
> the energy in the forward wave is supplied by the
> reflected wave, starting at the time the reflected
> wave arrives and causes destructive interference.
>
> > And yet it appears that you are claiming that power
> > is reflected at the generator. How can power be
> > reflected if voltage is not?
>
> To be technically correct, reflected energy is redistributed
> back toward the load during the process of destructive
> interference.
>
> The conditions before the reflected wave arrives and
> after the reflected wave arrives are extremely different.
>
> Before the reflected wave arrives, the source resistor,
> Rs, is dissipating 25 watts.
>
> After the reflected wave arrives, the source resistor,
> Rs, is dissipating 0.03845 watts.
>
> Clearly, something drastic has happened and that is:
> 99.85% of the forward energy originally supplied by the
> source has been replaced with reflected energy being
> redistributed back toward the load.
>
> Because of destructive interference, reflected energy
> *never* flows through the source resistor, Rs, and is
> instead redistributed back toward the load.
>
> Nothing else is possible since the source is supplying

> only 1.9608 watts during steady-state. 92.3% of the forward
> power is not being supplied by the source during steady-state.
>
> The energy incident upon a point must equal the energy
> exiting the point. The energy incident upon the
> generator terminals is 1.92234 joules/sec from the
> source and 23.0777 joules/sec from the reflected wave.
> The energy exiting that point is 25 joules/sec. The
> reflected wave energy obviously reverses direction and
> joins the forward wave and that is what we call a
> "reflection".

Are you sure? I thought a reflection was something that
occurred at an impedance discontinuity and the magnitude
of the voltage reflection was defined by

Vr = Vincident * ReflectionCoefficient
= Vincident * (Z2-Z1)/(Z2+Z1)

and that the reflected voltage then added to any wave
already travelling in that direction.

But you are claiming that power can be reflected when
voltage is not. I have never encountered this claim before.

Are you sure?

...Keith

2084. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 02:06:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <1V7rj.14253$EZ3.4939@nlpi070.nbdc.sbc.com>
Source record: 28156

Keith Dysart wrote:
> Are you sure? I thought a reflection was something that
> occurred at an impedance discontinuity and the magnitude
> of the voltage reflection was defined by
>
> Vr = Vincident * ReflectionCoefficient
> = Vincident * (Z2-Z1)/(Z2+Z1)

That's true for normal reflections which involve only
one wave. Wave cancellation is a different kind of
energy reflection involving two waves. The energy flow is
canceled in one direction and therefore flows in the
other direction. In optics, it is known as a redistribution
of energy in directions that allow constructive interference.
In a transmission line, there are only two possible directions
so any redistribution of energy due to destructive interference
can be considered to be a reflection in the opposite direction,
the only direction available to constructive interference.

> and that the reflected voltage then added to any wave
> already travelling in that direction.

True for a single wave reflection. For two interacting
waves, the voltage in one of the waves can simply replace
the voltage in the other wave. In our example, the reflected
voltage simply replaces the source voltage component.

> But you are claiming that power can be reflected when
> voltage is not. I have never encountered this claim before.

When the reflected wave arrives, it cancels most of the
existing forward wave from the source. The reflected
voltage exactly equals the canceled source voltage in
our example because the source resistance is the same
as the Z0 of the line.

> Are you sure?

It is obvious that reflected energy never flows in the
source resistor so it must go in the only other direction
possible. Yes, I am sure. The conservation of energy
principle will allow nothing else.
--
73, Cecil http://www.w5dxp.com

2085. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 03:06:08 UTC
From: Tom Horne <hornetd@gmail.com>
Message-ID: <83b2bb2d-91b2-47a3-9df0-81b5ff1c06a6@l1g2000hsa.googlegroups.com>
Source record: 28157

Brian
The antenna being asked about is the Spiderbeam not the Hexbeam.
--
Tom Horne, W3TDH

On Feb 6, 8:05 pm, Brian Kelly <ke...@dvol.com> wrote:
> On Feb 6, 10:41 am, john Wiener <ja...@fuse.net> wrote:
>
>
>
> > Brian Kelly wrote:
> > > On Feb 4, 7:14 pm, jawod <ja...@fuse.net> wrote:
> > >> Sorry to interrupt the WAVE-PARTICLE Duality seminar but...
>
> > >> Any comments on the SpiderBeam antenna?
>
> > > Seehttp://www.eham.net/reviews/detail/860
>
> > > $1100 for six fiberglass poles, some wire and a center plate. No
> > > thanks.
>
> > >> It's a sort of maxed-out Moxon such that the director and reflector
> > >> elements are bent toward the center of the antenna.
>
> > >> Apparently it is frequently used on DXpeditions.
>
> > >> There is a version for home use...a kit and the elements are wires.
>
> > >> Anyone using one or care to comment?
>
> > >> (My understanding is that it can send and receive both waves and particles.)
>
> > >> 73
>
> > >> John
> > >> AB8O
>
> > > Brian w3rv
>
> > Brian
>
> > I think the cost is just north of $600 but I agree.
>
> http://www.hexbeam.com/pricelist.shtml

>
> The way I read it the 5-band HX5Bi is 1129 Yankee bucks. Or we're
> talking about different versions.
>
> > John
> > AB8O
>
> w3rv

2086. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 03:14:40 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <70c62f5f-2211-4f9e-9e71-9f1882c0ee72@m34g2000hsb.googlegroups.com>
Source record: 28158

On Feb 8, 10:06 pm, Tom Horne <horn...@gmail.com> wrote:
> Brian
> The antenna being asked about is the Spiderbeam not the Hexbeam.
> --
> Tom Horne, W3TDH

Agreed but see my post of Feb 6, 4:04 am in response to one of Ian
White's posts. on the subject.

w3rv

2087. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 03:40:26 UTC
From: Tom Horne <hornetd@gmail.com>
Message-ID: <0a6e894f-2cef-4660-90e4-2583c1f14c14@q77g2000hsh.googlegroups.com>
Source record: 28159

Brian
You have my undivided attention on this one. Can you steer me to a design for the Cubical Quad that you were referring to? I have all of the parts for a three element quad out in my shed. It came to me from the clean off of an antenna tower removal. I'm unfamiliar with the merits of that antenna but I am interested. The Forty Two Foot Tower will probably end up at field day this year if I don't sell or trade it but that will have the tribander three element beam on it. I am planning to have a forty eight foot mast comprised of 1/4" wall thickness two inch tubing and I was looking at the Spiderbeam as one possible choice for the antenna on it. The original plan was to use the mast for stacked VHF UHF array to go after the extra points available by working those bands without changing our class. This because a VHF / UHF station's contacts count but the transceiver does not count as a station for class. The reason I was looking at the possibility of another beam was that our GOTA station will need a directional antenna that it does not have to share with the Two HF Stations. That begs the question of what will I mount the VHF / UHF stuff on but I digress.
--
Tom

On Feb 8, 10:14 pm, Brian Kelly <ke...@dvol.com> wrote:
> On Feb 8, 10:06 pm, Tom Horne <horn...@gmail.com> wrote:
>
> > Brian
> > The antenna being asked about is the Spiderbeam not the Hexbeam.
> > --
> > Tom Horne, W3TDH
>
> Agreed but see my post of Feb 6, 4:04 am in response to one of Ian
> White's posts. on the subject.
>
> w3rv

2088. Re: Determining velocity factor for metal tube?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 04:12:20 UTC
From: Dave99 <dpdphoto@aol.com>
Message-ID: <b8e4e2d7-e315-48cb-b86c-4a3408dda125@i7g2000prf.googlegroups.com>
Source record: 28160

On Feb 6, 3:56 pm, K7ITM <k7...@msn.com> wrote:
> > Dave
>
> I really like the coaxial collinear design for relatively narrowband
> work. The coaxial connecting stubs (whose outside surfaces are also
> the radiating elements) keep the phasing locked down tightly.
> Unfortunately for your application, that very advantage for narrowband
> designs is a killer for broadband. That is, the pattern will change
> from a "flat pancake" at the nominal design center frequency to a cone
> up or down, above or below the design center frequency.
>
> You can mitigate that to some extent by feeding the coaxial collinear
> antenna in the center (with the feedline balanced and perpendicular to
> the antenna axis for some distance) instead of at an end; in that
> case, you can think of the pattern as a cone going one way for the
> section above the feedpoint, and by symmetry, a cone going the
> opposite direction for the section below, and the sum of the two
> results in just a lowering of the gain--not so flat a pancake--when
> operating off the design center frequency.
>
> But a better way to do a broadband vertical collinear is to feed
> several dipoles, stacked end-to-end (with some gap from one to the
> next), each fed with the same electrical length of feedline, with the
> far ends of all the feedlines paralleled. If the gap from one dipole
> to the next is enough that the mutual impedances among the dipoles are
> all small, then each dipole will have current very nearly in phase
> with the others and the radiation pattern will be perpendicular to the
> axis of the dipoles. It's a messier feed arrangement, but it's much
> better for keeping the antenna currents in phase along the whole
> antenna across a relatively wide frequency range.
>
> Cheers,
> Tom

OK, thanks... The stacked dipoles was actually my first idea when I
started thinking about it a while back. But then I wondered if the
collinear would work. I guess there's a reason why nobody has done
that before. I do believe I've seen some fat stacked dipoles before
though.

Dave

2089. Re: Derivation of Reflection Coefficient vs SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 06:49:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <32crj.4445$uE.472@newssvr22.news.prodigy.net>
Source record: 28161

Keith Dysart wrote:
> Are you sure?

```
Rs Vg Pfor-->25w Vl
+----/\/\/-----+----------------------+
| 50 ohm 23.08w<--Pref |
| 48.08w / 1.92w
Vs 45 degrees \ Rl
100 cos(wt) 50 ohm line / 1 ohm
50w \ load
| |
+--------------+----------------------+
gnd
```

As a matter of interest, let's return to the 45 degree line, the one to which I objected previously.

The forward power and reflected power are the same as in the previous example but now the dissipation in Rs is equal to the sum of the forward power and reflected power. (It would be nice if all cases were as straight forward as this special case.)

This is indeed the one special case where everything you have been saying is true. There is no redistribution of energy because there is no interference. There is no interference because at Vg, Vfor and Vref are 90 degrees out of phase.

These concepts are covered in my magazine article at:

http://www.w5dxp.com/energy.htm
--
73, Cecil http://www.w5dxp.com

2090. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 08:36:55 UTC
From: Eric Oyen - N7ZZT <n7zzt@hotmail.com>
Message-ID: <fojop9$k9h$2@aioe.org>
Source record: 28162

John Smith wrote:

> This article:
>
http://www.nydailynews.com/lifestyle/2008/02/02/2008-02-02_low_blow_for_highdef_tv_service
_users-2.html
>
> claims that a special antenna is needed to get HDTV (over the air, as
> opposed to cable/sat box.) I was not aware of that fact. Are they
> revamping all TV freqs.

heh. more hype from the TV industry to separate fools from their money.
the truth is, all you need is a standard UHF capable TV antenna (as this is
where most if not all the DTV/HDTV signals will be present).

A standard vhf/uhf mast mounted antella will work for nearly 99% of all
urban environments in large urban centers.

>
> I am just beginning to search if this article is bogus or not. Was
> hoping someone here was in the industry and give us a
> "quick-start-guru-tutorial."
>
> Regards,
> JS

not sure that such a thing exists. However, the ARRL has some nice
publications on UHF style antennas.

--
Sometimes, you just gotta come right out and say whats on your mind and be
damned those who would ridicule you for it!

2091. Re: WebPage

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 18:11:00 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47adecb4$0$16657$4c368faf@roadrunner.com>
Source record: 28163

"Tom Ring" <news0004@taring.org> wrote in message
news:47abc3ed$0$1121$8046368a@newsreader.iphouse.net...
> KF4DNA wrote:
>> This webpage is dedicated to Everything that can be called EXTREME !
>>
>> Skydiving, Storm Chasing, Rocketry, WebPage Resources and Amateur Radio
>>
>> There is also a huge collection of resources for webpage development and
>> promotion.
>>
>> http://www.kf4dna.net
>>
>>
>>
>>
>
> This "gentleman" is spamming several amateur radio newsgroups. If this
> bothers you contact
>
> webmaster@bellsouth-hosting.net
>
> and include his web page address.
>
> tom
> K0TAR

I only see one newsgroup on his post so I don't know why you say 'spamming several newsgroups'. He takes the time to post to each group individually if he appears in other groups. Also, he is not selling anything. Why do you call this 'spam', just because the guy wants to show people his website? Why do you have this tendency to attack other hams, bro? Chill.

73 AI4QJ

2092. Re: Extreme WebPage

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 18:12:13 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47adecfd$0$16652$4c368faf@roadrunner.com>
Source record: 28164

"Tom Ring" <news0004@taring.org> wrote in message
news:47ABC295.50002@taring.org...
> KF4DNA wrote:
>> Updated content to include data from the February 5, 2008 "Tornado
>> Outbreak"
>> in the mid-south. Damage photos and radar images of the storms that
>> roared thru
>> several southern states.
>>
>> http://www.kf4dna.net
>
> This "gentleman" is spamming several amateur radio newsgroups. If this
> bothers you contact
>
> webmaster@bellsouth-hosting.net
>
> and include his web page address.
>
> tom
> K0TAR

K0TAR: Chill out bro. He is a fellow ham.

2093. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 19:20:55 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <9cf64cac-c592-40ee-9f58-c4a674fc385f@f10g2000hsf.googlegroups.com>
Source record: 28165

On Feb 8, 10:40 pm, Tom Horne <horn...@gmail.com> wrote:
> Brian
> You have my undivided attention on this one. Can you steer me to a
> design for the Cubical Quad that you were referring to?

Oops. There's some confusion here but I don't know which one of us is confused Tom. Maybe both of us. I wasn't referring to a specific quad. My point was that any properly tuned unnamed generic quad should be a better-performing antenna than a Spiderbeam. However the usual HF quad is not a lightweight antenna, they're designed/built to take a beating out in the weather for the long run and as you know fiberglass ain't feathers.

However for applications like dxpeditions, Field Day and other temporary locations where weight matters one should be able to design/build a very lightweight quad by using small diameter spreaders which would not be acceptable for use in permanent antennas. If done right a "portable quad" ought to be able to compete with the Spiderbeam as far as weight is concerned.

QSL?

Miles and miles of spreaders:

http://www.mgs4u.com/fiberglass-tube-rod.htm

Brian w3rv

2094. Re: Extreme WebPage

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 21:36:56 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47ae1cf8$0$1119$8046368a@newsreader.iphouse.net>
Source record: 28166

AI4QJ wrote:
> "Tom Ring" <news0004@taring.org> wrote in message
> news:47ABC295.50002@taring.org...
>> KF4DNA wrote:
>>> Updated content to include data from the February 5, 2008 "Tornado
>>> Outbreak"
>>> in the mid-south. Damage photos and radar images of the storms that
>>> roared thru
>>> several southern states.
>>>
>>> http://www.kf4dna.net
>> This "gentleman" is spamming several amateur radio newsgroups. If this
>> bothers you contact
>>
>> webmaster@bellsouth-hosting.net
>>
>> and include his web page address.
>>
>> tom
>> K0TAR
>
> K0TAR: Chill out bro. He is a fellow ham.
>
>
And if every ham with a webpage did it, we wouldn't even be able to find
the rest of the newsgroup.

And it's still spam, even if he is a fellow ham.

tom
K0TAR

2095. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 22:41:22 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <47ae2c1b@clear.net.nz>
Source record: 28167

Cecil Moore wrote:
> Tom Donaly wrote:
>
>> Cecil, get Feynman's _Lectures on Physics_ Volume I, and
>> read the entirety of Chapter 38, "The Relation of Wave and
>> Particle Viewpoints." Quantum mechanics is a very successful attempt,
>> using statistical methods, to explain the behavior of very small things.
>> In order to do that, it has to look at those things in very strange
>> ways. If you want to read about the philosophical underpinnings
>> you should read chapter 8 of _Quantum Theory_
>> by David Bohm (a Dover reprint).
>
>
> Thanks Tom, I will do that as time permits.
Now consider this! When a quantum of energy, of any wavelength is emitted from an atom or a nucleus then time and space ceases to exist for that "wave packet" until it is absorbed again, or passes through a medium where the velocity of light is less than c (glass for example, or coaxial cable!!!). Since it is always travelling at c in "space" then time ceases to pass for the quantum and/or the universe appears to be a single point from the quantum's point of view.
A possible corrollary of this might perhaps be that there is only one "real" quantum of a particular energy in the universe at a time!!!
This is pretty well where Relativity leaves Quantum Mechanics I reckon.
Now this may be philosophy but what is the answer that both quantum mechanics and relativity have for this apparent absurdity?
If it perhaps not so absurd, perhaps this explains some of the results of the famous single quantum slit experiment?
BTW surely FTL communication only destroys causality if the speed of information is infinite. Just faster than light by say 1,000 times would simply mean that it got there faster not before it was transmitted?
Cliff Wright ZL1BDA.

2096. Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 23:16:07 UTC
From: "Bruce W. Ellis" <ellis@means.net>
Message-ID: <lubsq35e6iv4hk0c8js6foktqpsf5movee@4ax.com>
Source record: 28168

I am considering a horizontal loop antenna that would be "squarish" (depending on tree locations) and about 400' in circumference. My (automatic) tuner is located in my garage (with 100' of coax going to the shack in the house). The lead wires for the antenna and ground are short and direct through the garage wall - I don't envision any feedline from tuner to the wire loop. I don't want to use a balun since there isn't really any feedline to balance and the impedances presented to the balun would be all over the (Smith) chart. Would it make sense to feed one end of the loop from the tuner and connect the other loop end to the ground connection near the tuner or just leave it open (essentially a square longwire antenna)? I would also have three counterpoise wires following the loop lying on the surface of the ground. The articles that I can find all use openwire feedlines and balanced tuners (or baluns) but that arrangement doesn't fit my situation. Thanks W0BF

2097. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 23:35:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <obdsq3lvovbjhle2q2jc81j10al5lum4il@4ax.com>
Source record: 28169

On Sat, 09 Feb 2008 17:16:07 -0600, Bruce W. Ellis <ellis@means.net>
wrote:

>I am considering a horizontal loop antenna that would be "squarish"
>(depending on tree locations) and about 400' in circumference. My
>(automatic) tuner is located in my garage (with 100' of coax going to
>the shack in the house). The lead wires for the antenna and ground
>are short and direct through the garage wall - I don't envision any
>feedline from tuner to the wire loop. I don't want to use a balun
>since there isn't really any feedline to balance and the impedances
>presented to the balun would be all over the (Smith) chart.

Hi Bruce,

Well, in fact you have described a feedline - the one going to the
automatic tuner. This one has every need for choking as any line that
left the tuner (which is, by and large, not recommended by most
automatic tuner vendors). You probably also have DC power or control
lines going to that tuner as well. They need choking too.

However, given you also mention a 100 run, then this presumably means
along or under ground. Ground proximity would probably snub any
Common Mode currents which would then reduce your specific need for
choking.

>Would it
>make sense to feed one end of the loop from the tuner and connect the
>other loop end to the ground connection near the tuner or just leave
>it open (essentially a square longwire antenna)?

You might want to make it switchable.

>I would also have
>three counterpoise wires following the loop lying on the surface of
>the ground.

This technique falls outside of the canon of most lore, but not
without its benefits. However, three wires will not provide much
efficiency gain. On the plus side, it could make a difference for
NVIS.

You don't mention much about frequencies of operation nor about
directionality.

>The articles that I can find all use openwire feedlines
>and balanced tuners (or baluns) but that arrangement doesn't fit my
>situation. Thanks W0BF

You have enough to work with as it is. As for openwire or coax feedlines; to my knowledge, autotuners are built to feed unbalanced antennas directly (at the feedpoint) rather than as traditional hand adjusted tuners being used away from the antenna. This is, perhaps, a bias from seeing too many SGCs. Anyway, I don't see a downside to your plan.

73's
Richard Clark, KB7QHC

2098. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-09 23:51:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <k9esq35kvgoqa7erret2r1imgr6gvimcs4@4ax.com>
Source record: 28170

On Sun, 10 Feb 2008 11:41:22 +1300, cliff wright
<c.c.wright@paradise.net.nz> wrote:

>Now consider this! When a quantum of energy, of any wavelength is
>emitted from an atom or a nucleus then time and space ceases to exist
>for that "wave packet" until it is absorbed again, or passes through a
>medium where the velocity of light is less than c (glass for example, or
>coaxial cable!!!). Since it is always travelling at c in "space" then
>time ceases to pass for the quantum and/or the universe appears to be a
>single point from the quantum's point of view.
>A possible corrollary of this might perhaps be that there is only one
>"real" quantum of a particular energy in the universe at a time!!!

Hi Cliff,

You have contradicted yourself. Your second sentence above has the
premise there is no time. Your last sentence ends with time
explicitly allowed.

>This is pretty well where Relativity leaves Quantum Mechanics I reckon.

How so?

>Now this may be philosophy but what is the answer that both quantum
>mechanics and relativity have for this apparent absurdity?

The contradiction offered.

>If it perhaps not so absurd, perhaps this explains some of the results
>of the famous single quantum slit experiment?

Dismissing absurdities, the single slit experiment has its own
explanation.

>BTW surely FTL communication only destroys causality if the speed of
>information is infinite.

As the lawyers would say "FTL communication" is a fact not shown in
the evidence offered here; so the rest of the statement does not
logically follow.

>Just faster than light by say 1,000 times would
>simply mean that it got there faster not before it was transmitted?

It would be more meaningful to demonstrate it got there 1.00000000001
times faster. If you cannot establish this mark, 1000 time faster
isn't on the horizon.

As one other poster was abashed to discover, you probably could witness that first demonstration if you were a fish. A fish swimming in the cooling pond of a nuclear reactor would be hit by a neutron (one bit of information) before the radiation (light, the other same bit of information) that catapulted it from the pile. Now, getting that neutron up to 1000 times faster (in terms of information flow) is unlikely; but if you were to choose to inhabit a pool of somewhat greater density (1000 times more so?) - then perhaps arguably so. I don't think we need hold our breaths and wait for AT&T stock to mature into Billion$ on that idea.

73's
Richard Clark, KB7QHC

2099. Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 00:08:33 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A40713B6BDEAnonenowhere@61.9.191.5>
Source record: 28171

I have found two common expressions for the Zo of a two wire line in space.

One expression is Zo=276log(D/d).

The second is Zo=120acosh(D/d).

I have been searching for information on whether the acosh expression takes into account proximity effect. Because it does not consider conductivity or permeability of the conductors, one wonders if it does.

Laport has a graph that shows the log expression and a proximity corrected line which turns out to be a very close fit to the acosh line over the range that he plots. The curves are compared in http://www.vk1od.net/balun/Ruthroff/R07.png .

I have another reference, Marchand (1947), which gives the log expression then, the acosh expresssion and says "The hyperbolic cosine is obtained because the currents are attracted to one another and become more and more confined to the inside surface as the wires are brought closer together."

This suggests (states) that the acosh expression (fully) accounts for proximity effect on Zo.

Comments?

Owen

2100. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 01:02:49 UTC
From: John KD5YI <groups1.jocjo@xoxy.net>
Message-ID: <Z2srj.1036$qw4.677@trnddc02>
Source record: 28172

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A40713B6BDEAnonenowhere@61.9.191.5...
>
> I have found two common expressions for the Zo of a two wire line in
> space.
>
> One expression is Zo=276log(D/d).
>
> The second is Zo=120acosh(D/d).
>
> I have been searching for information on whether the acosh expression
> takes into account proximity effect. Because it does not consider
> conductivity or permeability of the conductors, one wonders if it does.
>
> Laport has a graph that shows the log expression and a proximity
> corrected line which turns out to be a very close fit to the acosh line
> over the range that he plots. The curves are compared in
> http://www.vk1od.net/balun/Ruthroff/R07.png .
>
> I have another reference, Marchand (1947), which gives the log expression
> then, the acosh expresssion and says "The hyperbolic cosine is obtained
> because the currents are attracted to one another and become more and
> more confined to the inside surface as the wires are brought closer
> together."
>
> This suggests (states) that the acosh expression (fully) accounts for
> proximity effect on Zo.
>
> Comments?
>
> Owen

I must be doing something wrong. 276log(2)=83 but looks like about 150 on
your graph. No?

John

2101. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 01:16:06 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A407CAF51656nonenowhere@61.9.191.5>
Source record: 28174

"John KD5YI" <groups1.jocjo@xoxy.net> wrote in
news:Z2srj.1036$qw4.677@trnddc02:

> I must be doing something wrong. 276log(2)=83 but looks like about 150
> on your graph. No?

Sorry, that expression should be 276log(2D/d) for a consistent meaning of D
and d. (Some people use wire radius and some, diameter... so D here is
centre to centre distance, and d is diameter.)

Owen

2102. Re: Extreme WebPage

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 01:18:06 UTC
From: KF4DNA <kf4dna@kf4dna.net>
Message-ID: <7hsrj.70638$Mu4.17029@bignews7.bellsouth.net>
Source record: 28173

I'd hate to see how someone is treated that's not an Amateur Radio Operator.
All hams should know the importance of the Skywarn program. Last Tuesday
night, hams from three states and the Skywarn program here in Memphis saved
lives by getting information about the weather in our area out to the
general public.
My webpage promotes ham radio and Skywarn. I personally don't care what
someone says about my webpage or me. It just doesn't matter. I will
continue
to post messages to this newsgroup and others that are related to ham radio,
storm chasing, model rocketry and skydiving.

KF4DNA
http://www.kf4dna.net

"Tom Ring" <news0004@taring.org> wrote in message
news:47ae1cf8$0$1119$8046368a@newsreader.iphouse.net...
> AI4QJ wrote:
>> "Tom Ring" <news0004@taring.org> wrote in message
>> news:47ABC295.50002@taring.org...
>>> KF4DNA wrote:
>>>> Updated content to include data from the February 5, 2008 "Tornado
>>>> Outbreak"
>>>> in the mid-south. Damage photos and radar images of the storms that
>>>> roared thru
>>>> several southern states.
>>>>
>>>> http://www.kf4dna.net
>>> This "gentleman" is spamming several amateur radio newsgroups. If this
>>> bothers you contact
>>>
>>> webmaster@bellsouth-hosting.net
>>>
>>> and include his web page address.
>>>
>>> tom
>>> K0TAR
>>
>> K0TAR: Chill out bro. He is a fellow ham.
> And if every ham with a webpage did it, we wouldn't even be able to find
> the rest of the newsgroup.
>
> And it's still spam, even if he is a fellow ham.
>
> tom
> K0TAR

2103. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 01:28:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <viksq396g89u78he3g0dsldjba7m5bvi82@4ax.com>
Source record: 28175

On Sun, 10 Feb 2008 00:08:33 GMT, Owen Duffy <none@no.where> wrote:

>I have found two common expressions for the Zo of a two wire line in
>space.
>
>One expression is Zo=276log(D/d).
>
>The second is Zo=120acosh(D/d).

Hi Owen,

I have the following expressions found in "Reference Data for Radio
Engineers," 22-22 Transmission Lines:

Zo = 120 acosh(D/d)
Zo ~ 276 log(2D/d)
Zo ~ 120 Ln(2D/d)

where the symbol ~ means "approximately equal to."

73's
Richard Clark, KB7QHC

2104. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 01:42:12 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A40811C9757Dnonenowhere@61.9.191.5>
Source record: 28176

Richard Clark <kb7qhc@comcast.net> wrote in
news:viksq396g89u78he3g0dsldjba7m5bvi82@4ax.com:

> On Sun, 10 Feb 2008 00:08:33 GMT, Owen Duffy <none@no.where> wrote:
>
>>I have found two common expressions for the Zo of a two wire line in
>>space.
>>
>>One expression is Zo=276log(D/d).
>>
>>The second is Zo=120acosh(D/d).
>
> Hi Owen,
>
> I have the following expressions found in "Reference Data for Radio
> Engineers," 22-22 Transmission Lines:
>
> Zo = 120 acosh(D/d)
> Zo ~ 276 log(2D/d)
> Zo ~ 120 Ln(2D/d)
>
> where the symbol ~ means "approximately equal to."

Thanks Richard.

Yes, I saw those in that publication.

ln(x) is a good approximation of acosh(x) for large x, so that explains one approximation, and the log expression is just a scaling of the ln expression.

I put some importance on the difference between the approximately equal and unqualified equal signs.

If the acosh expression fully accounts for proximity effect, it is interesting that it is independent of frequency, conductivity, and permeability. It would be nice to find a derivation.

I think if you derive C and L from first principles, you don't get the same curve as acosh... which suggests that acosh is account for something that L and C from first principles (assuming uniform current distribution) doesn't.

Owen

2105. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 01:59:18 UTC
From: Tom Horne <hornetd@veriqrmzon.net>
Message-ID: <WTsrj.3961$Wr4.2590@trnddc05>
Source record: 28177

Brian Kelly wrote:
> On Feb 8, 10:40 pm, Tom Horne <horn...@gmail.com> wrote:
>> Brian
>> You have my undivided attention on this one. Can you steer me to a
>> design for the Cubical Quad that you were referring to?
>
> Oops. There's some confusion here but I don't know which one of us is
> confused Tom. Maybe both of us. I wasn't referring to a specific quad.
> My point was that any properly tuned unnamed generic quad should be a
> better-performing antenna than a Spiderbeam. However the usual HF quad
> is not a lightweight antenna, they're designed/built to take a beating
> out in the weather for the long run and as you know fiberglass ain't
> feathers.
>
> However for applications like dxpeditions, Field Day and other
> temporary locations where weight matters one should be able to design/
> build a very lightweight quad by using small diameter spreaders which
> would not be acceptable for use in permanent antennas. If done right a
> "portable quad" ought to be able to compete with the Spiderbeam as far
> as weight is concerned.
>
> QSL?
>
> Miles and miles of spreaders:
>
> http://www.mgs4u.com/fiberglass-tube-rod.htm
>
> Brian w3rv

Brian
I'm afraid that I'm the one that was confused I was hoping that you had a specific design in mind. I have all of the parts for the one that was on the site of the clean off that I got a forty two foot tower from but I got it disassembled. It just needs a plan for reassembly. I guess I will have to ask around at the club and find an antenna Elmer that would be willing to help with guiding the reassembly so that we can test it well before field day. I've forgotten so much in the thirty years I have been out of Radio that it is almost like starting over.

Thank you very much for that link. I'm sure that will come in mighty handy as field day plans go forward.
--
Tom Horne

"This alternating current stuff is just a fad. It is much too dangerous for general use." Thomas Alva Edison

2106. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 03:23:21 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qsrhb2mr3d383@corp.supernews.com>
Source record: 28178

The acosh formula includes the effect of skin effect on inductance and capacitance(*), while the simplified log formula is equivalent to considering the currents concentrated along lines at the conductor centers. Neither includes proximity effect.

Derivations of the acosh formula can be found in Johnson, _Transmission Lines and Networks_, Sec. 3.8; Chipman, _Transmission Lines_ (Schaum's Outline Series), Sec. 6.6; and other references.

I'm sure that a formula taking proximity effect into account would be much more complicated, judging by approximate formulas I've seen for calculating resistance change due to proximity effect.

From Chipman (p. 114), about the lack of published coverage of proximity effect:

"Fortunately, the combination of circumstances that would require accurate information about th eproximity effect factor for distributed internal inductance occurs rather rarely in transmission line practice. The most unfavorable situation would be a parallel wire line with solid circular conductors, the facing suraces of the conductors being separated by only a few percent of a conductor radius, operating at a frequency to have a/[delta] have a value near 2. These conditions make the distributed internal inductance comparable in magnitude to the distributed external inductance, with a proximity factor that might be as small as 0.8 or 0.85. There is no recognized basis for making an accurate analysis of the total distributed inductance of a line for such a case.

. . . When the facing conductor surfaces are at least a conductor diameter apart (s/2a = 2), the distributed internal inductance will be less than 20% of the total distributed inductance, and the proximity effect factor will me not less that 0.87. . . Proximity effect can then not modify the total distributed inductance value by more than about 2%, and the factor need be known only very roughly. . ."

(*)And even this is a high-frequency approximation which assumes that the conductors are at least several skin depths thick. Expressions for line inductance without this assumption involve Bessel functions, which I assume would also appear in expressions for Z0.

Roy Lewallen, W7EL

Owen Duffy wrote:
> I have found two common expressions for the Zo of a two wire line in
> space.
>

> One expression is Zo=276log(D/d).
>
> The second is Zo=120acosh(D/d).
>
> I have been searching for information on whether the acosh expression
> takes into account proximity effect. Because it does not consider
> conductivity or permeability of the conductors, one wonders if it does.
>
> Laport has a graph that shows the log expression and a proximity
> corrected line which turns out to be a very close fit to the acosh line
> over the range that he plots. The curves are compared in
> http://www.vk1od.net/balun/Ruthroff/R07.png .
>
> I have another reference, Marchand (1947), which gives the log expression
> then, the acosh expresssion and says "The hyperbolic cosine is obtained
> because the currents are attracted to one another and become more and
> more confined to the inside surface as the wires are brought closer
> together."
>
> This suggests (states) that the acosh expression (fully) accounts for
> proximity effect on Zo.
>
> Comments?
>
> Owen

2107. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 03:26:26 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qsrn4ga5j7cfa@corp.supernews.com>
Source record: 28179

Sorry, I clicked Send before fixing up my typos in the Chipman quotation. Here's how it's really written:

"Fortunately, the combination of circumstances that would require accurate information about th proximity effect factor for distributed internal inductance occurs rather rarely in transmission line practice. The most unfavorable situation would be a parallel wire line with solid circular conductors, the facing surfaces of the conductors being separated by only a few percent of a conductor radius, operating at a frequency to have a/[delta] have a value near 2. These conditions make the distributed internal inductance comparable in magnitude to the distributed external inductance, with a proximity factor that might be as small as 0.8 or 0.85. There is no recognized basis for making an accurate analysis of the total distributed inductance of a line for such a case.

. . . When the facing conductor surfaces are at least a conductor diameter apart (s/2a = 2), the distributed internal inductance will be less than 20% of the total distributed inductance, and the proximity effect factor will me not less that 0.87. . . Proximity effect can then not modify the total distributed inductance value by more than about 2%, and the factor need be known only very roughly. . ."

(*)And even this is a high-frequency approximation which assumes that the conductors are at least several skin depths thick. Expressions for line inductance without this assumption involve Bessel functions, which I assume would also appear in expressions for Z0.

Roy Lewallen, W7EL

2108. Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 03:46:14 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13qssksignhje0f@corp.supernews.com>
Source record: 28180

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

I've made some Al foil cap. hats for a 34ish foot linearly loaded dipole (based on NN0F's antenna in the ARRL Antenna book, 21st ed, p. 6-35 - he used 6ft wires as cap. hats and 450 ohm ladder wire as the radiator, w/ coax feed). I was wondering if Al foil has enough "umpffh" to act as cap. hat material?

Cap hat construction: 45 inch cardboard rolls wrapped in 1-1/2 layers of Al foil (shiny side out). 300 ohm twin-lead (the ant. radiator) leads soldered to copper tape, which was stuck to the Al foil (I check for continuity between the foil & the copper tape & between leads & Al foil they were OK). Final version wrapped in clear packing tape.

I attached this ant. to my Elecraft K1 & got 4.7:1 SWR on 80 meters (where I expected it to resonate). On 15 meters got 1.2:1 SWR. Ant. is abt 45 ft above ground, fed by RG58 coax. Ground is concrete. Actually, the ant. is on my apartment bldg roof. That roof is covered in a silver paint or metallic weather-proofing (I don't know). The ground surrounding the apartment bldg is concrete and asphalt. I always select "Very poor - cities, industrial" as a ground description when using the EZNEC pgm.

Thanks for any comments.
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net
Oakland, CA (USA)
** Respond only to this newsgroup. I DO NOT respond to emails **

-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR65zgIechKqOuFEgEQIMuQCgrOJElbBHN76ZhqGRp8yZO9QB4ZcAoJeR
fhsycR874iMwUFrSFk3Mmb39
=0zts
-----END PGP SIGNATURE-----

2109. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 04:00:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qstmk4qu5sp45@corp.supernews.com>
Source record: 28181

Aluminum foil is fine for the purpose, electrically, but I think you'll have a dickens of the time maintaining good contact to it. You might even end up creating a rectifying junction which could generate harmonics when transmitting and intermod when receiving.

Roy Lewallen, W7EL

MGFoster wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I've made some Al foil cap. hats for a 34ish foot linearly loaded dipole
> (based on NN0F's antenna in the ARRL Antenna book, 21st ed, p. 6-35 - he
> used 6ft wires as cap. hats and 450 ohm ladder wire as the radiator, w/
> coax feed). I was wondering if Al foil has enough "umpffh" to act as
> cap. hat material?
>
> Cap hat construction: 45 inch cardboard rolls wrapped in 1-1/2 layers
> of Al foil (shiny side out). 300 ohm twin-lead (the ant. radiator)
> leads soldered to copper tape, which was stuck to the Al foil (I check
> for continuity between the foil & the copper tape & between leads & Al
> foil they were OK). Final version wrapped in clear packing tape.
>
> I attached this ant. to my Elecraft K1 & got 4.7:1 SWR on 80 meters
> (where I expected it to resonate). On 15 meters got 1.2:1 SWR. Ant. is
> abt 45 ft above ground, fed by RG58 coax. Ground is concrete.
> Actually, the ant. is on my apartment bldg roof. That roof is covered
> in a silver paint or metallic weather-proofing (I don't know). The
> ground surrounding the apartment bldg is concrete and asphalt. I always
> select "Very poor - cities, industrial" as a ground description when
> using the EZNEC pgm.
>
> Thanks for any comments.

2110. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 04:05:27 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A4099661B6E7nonenowhere@61.9.191.5>
Source record: 28182

Roy Lewallen <w7el@eznec.com> wrote in
news:13qsrn4ga5j7cfa@corp.supernews.com:

Thanks Roy.

I was suspicious that proximity correction could ignore conductivity, permeability, frequency and the actual diameter and distance.

Chipman paints a picture that it is pretty messy mathematically, and the flow into Zo would be really messy.

What I do glean is that for D/d>2, the error is small. That is a whole lot better than the log formula which is poor for D/d<10.

I have two immediate applications, one is a model for a 1:1 choke balun (http://www.vk1od.net/balun/Guanella/G.1-1.htm) and the other is yet another transmission line loss calculator, along the lines of my existing calculator that is aware of about 100 standard transmission line types, but this one allowing specification of an arbitrary two wire line (http://www.vk1od.net/tl/twllc.htm).

For the balun cases, I am very interested in D/d<<2.

I think I will continue to use the acosh expression, and let it calculate without limit on D/d, but qualify the results with a note that proximity effect is not included in Zo, Zo is underestimated for D/d<2 and the error may be significant.

Roy, thanks for your time to research and type the notes up.

Owen

2111. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 04:45:23 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47ae8223$0$6164$4c368faf@roadrunner.com>
Source record: 28183

"cliff wright" <c.c.wright@paradise.net.nz> wrote in message
news:47ae2c1b@clear.net.nz...
> Cecil Moore wrote:
>> Tom Donaly wrote:
>>
>>> Cecil, get Feynman's _Lectures on Physics_ Volume I, and
>>> read the entirety of Chapter 38, "The Relation of Wave and
>>> Particle Viewpoints." Quantum mechanics is a very successful attempt,
>>> using statistical methods, to explain the behavior of very small things.
>>> In order to do that, it has to look at those things in very strange
>>> ways. If you want to read about the philosophical underpinnings
>>> you should read chapter 8 of _Quantum Theory_
>>> by David Bohm (a Dover reprint).
>>
>>
>> Thanks Tom, I will do that as time permits.
> Now consider this! When a quantum of energy, of any wavelength is emitted
> from an atom or a nucleus then time and space ceases to exist for that
> "wave packet" until it is absorbed again, or passes through a medium where
> the velocity of light is less than c (glass for example, or coaxial
> cable!!!). Since it is always travelling at c in "space" then time ceases
> to pass for the quantum and/or the universe appears to be a single point
> from the quantum's point of view.

With all due respect, this is not correct. From the quantum's point of view,
time passes as it normally does when moving at c. From the observer's point
of view, the time that the quantum is experiencing is zero relative to the
time that the observer is experiencing. If your twin brother moves at c for
twenty years, your twin will experience time as normal in his own frame of
reference but in your frame of reference as an observer, he will be twenty
years younger (and would look it too). Part of the dilemma is that he should
have 20 years of memory in hisown time frame but when he returns back to
this time frame it will seems as just an instant has passed.

> A possible corrollary of this might perhaps be that there is only one
> "real" quantum of a particular energy in the universe at a time!!!

Where did you read that? I do not believe this is a widely accepted notion.

> This is pretty well where Relativity leaves Quantum Mechanics I reckon.
> Now this may be philosophy but what is the answer that both quantum
> mechanics and relativity have for this apparent absurdity?
> If it perhaps not so absurd, perhaps this explains some of the results of
> the famous single quantum slit experiment?

> BTW surely FTL communication only destroys causality if the speed of
> information is infinite.

No, FTL communication itself does not destroy causality. However, if it involves mass or quanta in motion between point A and point B, those entities must behave according to causality which means basically that they can never travel faster than c. Thus, FTL "communication" cannot involve the motion of such entities. At IBM a few years ago, theories began to arise in their R&D labs in Switzerland about super fast communication that could travel 7 or 8 times c or even more. It doesn't involve motion of mass or photons or fields (or certainly not electrons or holes), rather it involves statistics. For example, suppose I have a pair of quarks where if one is oriented as top, the other must be oritented as top. Call this condition 1. Now separate the quarks and put one on earth and the other on say mars. Now, Everytime I reorient my top quark on earth to become a bottom quark (call this 0), then the quark on mars must, statistically, become a bottom quark (value = 0) in nearly zero time. Compare that against the 15 minutes that a light wave takes to travel from mars to earth. I know that a lot of theoretical progress has been made on communications by statistics using quantum theeory and subatomic particles and prototypes have been made. However, IBM has lately been investing less and less in R&D these days as it moves into becoming a software company. You may concede that FTL communication is already possible in this way and it does not produce a causality dilemma at all.

de AI4QJ

Just faster than light by say 1,000 times would
> simply mean that it got there faster not before it was transmitted?
> Cliff Wright ZL1BDA.

2112. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 05:04:42 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47ae85ea$0$6156$4c368faf@roadrunner.com>
Source record: 28184

"Richard Clark" <kb7qhc@comcast.net> wrote in message
>
> As one other poster was abashed to discover, you probably could
> witness that first demonstration if you were a fish. A fish swimming
> in the cooling pond of a nuclear reactor would be hit by a neutron
> (one bit of information) before the radiation (light, the other same
> bit of information) that catapulted it from the pile. Now, getting
> that neutron up to 1000 times faster (in terms of information flow) is
> unlikely; but if you were to choose to inhabit a pool of somewhat
> greater density (1000 times more so?) - then perhaps arguably so. I
> don't think we need hold our breaths and wait for AT&T stock to mature
> into Billion$ on that idea.
>
> 73's
> Richard Clark, KB7QHC

Richard, I think you are making a bit too much out of the nuclear reaction cooling pond event. It is not a paradox, causality is preserved. However, it does make for a nice light show.

What happens in the cooling pond is that the neutrons only move faster than light can move in the medium (water). If "c" is the speed on light in a vacuum, then even light moves slower than "c" in water. What does not happen is the neutrons moving in the cooling pond water faster than "c" in a vacuum. The equations that present causality dilemmas all involve "c" being the speed of light in a vacuum, which NOTHING can exceed.

Where delta T' = change of time experienced by a moving particle of velocity v.

and delta T = change of time experienced by a relatively stationary observer,

delta T' = (delta T)*(SQRT(1 - v**2/c**2))

Where c = the speed of light in a vacuum.

If v of the neutron = c in a vacuum (which it cannot), then it experiences zero time relative to the observer. The causality dilemma occurs when v > c (in a vacuum) and it is just as impossible to occur as it is impossible to have the square root of a negative number).

73 de AI4QJ

2113. Reg: get free loans

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 05:20:42 UTC
From: randdy.syrus@gmail.com
Message-ID: <e02fc45e-5bc1-463c-af6f-df5d3f71cbac@v4g2000hsf.googlegroups.com>
Source record: 28185

We provide free loans according to your property value.If you''re thinking about making minor upgrades or improvements to your home and you can handle the expense from your income or savings, you shouldn''t concern yourself with taking out a loan.

http://getfreeloans.blogspot.com/

2114. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 11:18:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qtnd5sgcp0q12@corp.supernews.com>
Source record: 28187

This might be useful:

King, in _Electromagnetic Engineering_, Vol. 1, says (pp. 467-8):

". . .the problem may be analyzed for wires sufficiently far apart and so small in radius that rotational symmetry in the interior and on the surface of each conductor is a good approximation, and then generalized to closely spaced conductors of large radius simply by writing

ae= a * sqrt(1 - (2a/b)^2)
be = b/2 * (1 + sqrt(1 - (2a/b)^2))

instead of a and b in formulas for the external impedance."

a is the wire radius, b the center-center spacing, ae is the radius to be substituted and b is the spacing to be substituted. He's saying that you can account for proximity effect just by substituting equivalent wires of smaller diameter and closer spacing which have idealized evenly distributed current around the outside.

He introduces the equation for ae earlier without proof, but references a 1921 paper in an obscure publication, as a way to adjust internal inductance for the proximity effect. The method is much simpler than the approximate equations for added loss due to proximity effect I've come across, so I suspect it's an approximation, but I don't know the applicability limits. But you might try incorporating it and see how it compares with measurements and with calculations based on the more complicated equations.

I see that when the wires are just touching (b = 2a), you end up substituting wires of radius zero, spaced at half the actual distance. I suppose that's reasonable.

Roy Lewallen, W7EL

2115. Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 13:20:21 UTC
From: Marcus Tait <marcus_taitNOSPAM@hotmail.com>
Message-ID: <AL-dnUDxSdmKZzPanZ2dneKdnZydnZ2d@bt.com>
Source record: 28188

Hi,
I have just been tuning a 400MHz 1/4 wave antenna (approx 170mm length of wire). I connect a receive antenna to a spectum analyser and the antenna to be tuned to the signal generators 50ohm output. I set the signal generator to 400MHz and adjusted the length of the antenna to get a maximum peak on the spectrum analyser. My question is when i have tuned the antenna for maximum output at 400MHz is the antenna then tuned to 400MHz or is the antenna's impeadance tuned to 50ohm or both?

2116. Re: Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 13:49:08 UTC
From: ltdoc@yahoo.com
Message-ID: <68645282-3bb9-48fe-980f-117b869ad316@d70g2000hsb.googlegroups.com>
Source record: 28189

Marcus,
I think the 'right' answer would be "both", sort of, since what you are doing is looking for the maximum signal strength. Since the input impedance of a 1/4 wave radiator isn't 50 ohms to start with, you are also doing some impedance matching by length of radiator adjustment. You seem to be getting the most benefit (signal strength) from using 'different' measuring devices than 'normal', but it's working, right? And when you think about it, that's what most people do when they 'tune' an antenna, just different measuring devices. 'Resonance' and impedance matching trade off, sort of. Is that the 'best' possible way to do it? Mmmm, no. Is it a practical way to do it? Mmmm, yes, sort of, if you've got the required devices.
- 'Doc

(Lots of 'wiggle-room' in that answer, not very satisfying huh? Oh well...)

2117. Re: Reg: get free loans

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 13:51:13 UTC
From: ltdoc@yahoo.com
Message-ID: <abbc8adf-5ce7-4bb0-ab30-2a4d9f790da0@s19g2000prg.googlegroups.com>
Source record: 28190

Don't want a 'free' loan, want 'free' money! 'Loan' means you gotta
pay it back, bummer. Also 'spam'. Are you really that desperate?
- 'Doc

2118. Re: Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 14:12:42 UTC
From: "Helmut Wabnig"
Message-ID: <tgvtq3deja6l30emrl712b6fd8f8fkjc1s@4ax.com>
Source record: 28191

On Sun, 10 Feb 2008 13:20:21 -0000, "Marcus Tait"
<marcus_taitNOSPAM@hotmail.com> wrote:

>Hi,
>I have just been tuning a 400MHz 1/4 wave antenna (approx 170mm length of
>wire). I connect a receive antenna to a spectum analyser and the antenna to
>be tuned to the signal generators 50ohm output. I set the signal generator
>to 400MHz and adjusted the length of the antenna to get a maximum peak on
>the spectrum analyser. My question is when i have tuned the antenna for
>maximum output at 400MHz is the antenna then tuned to 400MHz or is the
>antenna's impeadance tuned to 50ohm or both?
>
Well, it could be, both, most times for practical use it's ok.

But antennas also have directional senitivity, and you may just
have optimized the direction diagrams for your experimental setup,
and not for DX wide distance connections. There is impedance match,
resonance and directional characteristics which we have to care for,
all three parameters!
The antenna may be in resonance, but Z not necessarily at 50 Ohms,
or it may have 50 ohms but be out of resonance and thus loose
efficiency and/or it may be radiating down to the earthworms.

Everything in the vicinity influences the impedance and resonance
parameters. Therefore normally we mount the antenna at it's proper
place, on the roof, on the mast or where we want it to use.
Then we measure either at the antenna footpoint or the bottom cable
end. I have seen people mounting an SWR meter at the antenna
in 10 meter height and then take readings with a telescope
from down under.

To optimize transmitter to antenna coupling we need a directional
coupler for 50 Ohm
http://en.wikipedia.org/wiki/Power_dividers_and_directional_couplers
and connect the antenna to the output port, the signal generator to
the input port, and the analyzer to the coupled port.
The isolated port must be terminated with a 50 Ohm resistor.
Then the antenna is optimally tuned for transmission when the
reflected signal gets to a minimum, that is, nothing is reflected back
to the analyzer.
The easier way is to use a SWR meter
http://en.wikipedia.org/wiki/SWR_meter where the signal generator is
connected to the input, the antenna to the output, and the reflected
signal is show on the meter instead of an analyzer.
This way we make sure the transmitter feeds all the power to the

transmitting antenna.

But where does the energy go?
Worst case, straight up to heaven.
We need a remote antenna to make sure we did everything right.

w.

2119. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 16:12:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <sn7uq3hb4hn3ufie96vnsre4qhao45jhs8@4ax.com>
Source record: 28192

On Sun, 10 Feb 2008 00:04:42 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>What happens in the cooling pond is that the neutrons only move faster than
>light can move in the medium (water). If "c" is the speed on light in a
>vacuum, then even light moves slower than "c" in water. What does not happen
>is the neutrons moving in the cooling pond water faster than "c" in a
>vacuum. The equations that present causality dilemmas all involve "c" being
>the speed of light in a vacuum, which NOTHING can exceed.

Hi Don,

This has been pointed out by me in my own quote - so nothing new here.
However, the distinction of faster than light is simply that, and it
has been demonstrated. Instead, what you are arguing is NO-THING
travels faster than 299,792,458 meters per second. I will leave that
to others.

73's
Richard Clark, KB7QHC

2120. Re: Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 16:31:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0s8uq3h98k6uboj9h9l6fnogh2qik4spid@4ax.com>
Source record: 28193

On Sun, 10 Feb 2008 13:20:21 -0000, "Marcus Tait"
<marcus_taitNOSPAM@hotmail.com> wrote:

>Hi,
>I have just been tuning a 400MHz 1/4 wave antenna (approx 170mm length of
>wire). I connect a receive antenna to a spectum analyser and the antenna to
>be tuned to the signal generators 50ohm output. I set the signal generator
>to 400MHz and adjusted the length of the antenna to get a maximum peak on
>the spectrum analyser. My question is when i have tuned the antenna for
>maximum output at 400MHz is the antenna then tuned to 400MHz or is the
>antenna's impeadance tuned to 50ohm or both?
>

Hi Marcus,

You have tuned a system with a variable stub. To replicate its use in
a practical application, you would replace the generator with an equal
length line terminated in 50 Ohms shielded in a box the size of the
generator (with a dummy line going to the AC wiring to complete the
ground path). You would then have to replace the spectrum analyzer
with your transmitter/receiver in a similar sized box at the end of a
similar length of transmission line. Also during operation, you would
have to inhabit the same vicinity/volume of space as you did when you
clipped the wire. However, precision and resolution may not be that
demanding as you imply by asking for two places: 50 ï¿½j0 Ohms.

In other words, your work would suffer compounding issues of proximity
and parasitic relations - lack of isolation. As a quarterwave antenna
does not present 50 Ohms without extenuating factors, achieving that
figure away from the bench would be more luck than engineering.

73's
Richard Clark, KB7QHC

2121. Re: Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 16:57:22 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <edd11f69-7c1d-4b01-8f77-6295d6a6dd15@l32g2000hse.googlegroups.com>
Source record: 28194

On 10 feb, 14:20, "Marcus Tait" <marcus_taitNOS...@hotmail.com> wrote:
> Hi,
> I have just been tuning a 400MHz 1/4 wave antenna (approx 170mm length of
> wire). I connect a receive antenna to a spectum analyser and the antenna to
> be tuned to the signal generators 50ohm output. I set the signal generator
> to 400MHz and adjusted the length of the antenna to get a maximum peak on
> the spectrum analyser. My question is when i have tuned the antenna for
> maximum output at 400MHz is the antenna then tuned to 400MHz or is the
> antenna's impeadance tuned to 50ohm or both?

Hello Marcus,

You method does not guarantee optimum match (hence maximum radiated power). Matching involves reactive component = 0, resistive component = 50 Ohm (for a 50 Ohms generator).

When your quarter wave wire (connected to RF generator) has a real impedance (Im(Z) = 0). The impedance can be anything between about 18 Ohm and > 50 Ohms. It depends on the termination of the coax shield at the quarter wave wire connection. So resonance (generally spoken, no reactive components), does not guarantee maximum power transfer.

Only when you can prove by other means that your quarter wave antenna is 50+j0 Ohms when in resonance, maximum reading on the analyzer corresponds to optimum match and maximum radiated power (assuming no ohmic losses in the antenna). As a first approximation, you can see the quarter wave antenna as a series resonant circuit with a series resistor that represents the "losses" due to electro-magnetic field radiation.

Best regards,

Wim
PA3DJS
www.tetech.nl

2122. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 16:58:31 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47af2d2a$0$6487$4c368faf@roadrunner.com>
Source record: 28195

"Richard Clark" <kb7qhc@comcast.net> wrote in message
>
(cut)
> Instead, what you are arguing is NO-THING
> travels faster than 299,792,458 meters per second. I will leave that
> to others.
>
> 73's
> Richard Clark, KB7QHC

Correct. However, why don't you just leave it to Einstein who has confirmed this, rather than leaving it to others, particularly a bunch of ham radio operators who sometimes have their own 'theories' ;-)

2123. Re: Extreme WebPage

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 17:10:14 UTC
From: funkbastler <nobody@nowhere.somewhere.us>
Message-ID: <trbuq3tm7v7tpap27fqo2t9t4mm27pt42s@4ax.com>
Source record: 28196

On Sat, 9 Feb 2008 19:18:06 -0600, "KF4DNA" <kf4dna@kf4dna.net> wrote:

>I'd hate to see how someone is treated that's not an Amateur Radio Operator.
>All hams should know the importance of the Skywarn program. Last Tuesday
>night, hams from three states and the Skywarn program here in Memphis saved
>lives by getting information about the weather in our area out to the
>general public.
>My webpage promotes ham radio and Skywarn. I personally don't care what
>someone says about my webpage or me. It just doesn't matter. I will
>continue
>to post messages to this newsgroup and others that are related to ham radio,
>storm chasing, model rocketry and skydiving.
>

DUDE! This group is about antennas - not Skywarn. Stay on topic or
take the heat!

--
-fb-

2124. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 17:41:15 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <9bc37a40-f53d-4053-aed8-860da510aa5c@u10g2000prn.googlegroups.com>
Source record: 28197

Hello Owen,

In electromagnetic waves & antennas (Orfanidis, paragraph 9.5), they calculate the electrostatic capacitance of a two wire conductor assuming the wires as equipotential surfaces (so no E-field components parallel to the conductor surface). This implies non-uniform charge distribution for close distance (so proximity effect). Also when you look in the graph, the charge centers are closer to each other then the center to center distance of the parallel wires.

From the capacitance you can directly calculate the characteristic impedance based on c0 propagation speed.

The exact solution (based on the capacitor approach) comes with the Acosh function. So I think that (some or all) proximity effect is taken into account. Off course they assume all charge on the surface, so skin depth << diameter of wire.

The formula with the "ln" is just an approximation for the "acoh" function when D/d is large. The acosh formula gives zero for touching wires. This is correct for the assumption that all charge is on the surface (so no magnetic field will penetrate the wires).

Hope this will help you a bit.

Best regards,

Wim
PA3DJS
www.tetech.nl (Dutch)

Owen Duffy ha escrito:
> I have found two common expressions for the Zo of a two wire line in
> space.
>
> One expression is Zo=276log(D/d).
>
> The second is Zo=120acosh(D/d).
>
> I have been searching for information on whether the acosh expression
> takes into account proximity effect. Because it does not consider
> conductivity or permeability of the conductors, one wonders if it does.
>
> Laport has a graph that shows the log expression and a proximity
> corrected line which turns out to be a very close fit to the acosh line
> over the range that he plots. The curves are compared in
> http://www.vk1od.net/balun/Ruthroff/R07.png .

>
> I have another reference, Marchand (1947), which gives the log expression
> then, the acosh expresssion and says "The hyperbolic cosine is obtained
> because the currents are attracted to one another and become more and
> more confined to the inside surface as the wires are brought closer
> together."
>
> This suggests (states) that the acosh expression (fully) accounts for
> proximity effect on Zo.
>
> Comments?
>
> Owen

2125. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 17:58:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rvduq3tv906qld746ud6m1keimkmmq2qjf@4ax.com>
Source record: 28198

On Sun, 10 Feb 2008 11:58:31 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>
>(cut)
>> Instead, what you are arguing is NO-THING
>> travels faster than 299,792,458 meters per second. I will leave that
>> to others.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Correct. However, why don't you just leave it to Einstein who has confirmed
>this, rather than leaving it to others, particularly a bunch of ham radio
>operators who sometimes have their own 'theories' ;-)
>

Do you have some reference for Einstein's personal confirmation?
Something distinct from his having presented a theory? The truth of
the matter is for Einstein's, "light" went slower than "the speed of
light" which historically, and following his major work, was 299,796
kilometers per second. This too, illustrates a speed at which
NO-THING travels faster than (not even light).

No doubt you have some reference to Einstein's later lab work (new
theory?) that eclipsed the accuracy of measurements by Michelson in
1926. Cherenkov's observation in the late 30s would further move the
goal post.

73's
Richard Clark, KB7QHC

2126. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 19:08:35 UTC
From: Alan Peake <adpeake@killspam.internode.on.net>
Message-ID: <47AF4BB3.3040409@killspam.internode.on.net>
Source record: 28186

PMG, Course of Technical Instruction (old) says that the 276Log(2D/d) is inaccurate when the clearance between the wires is small compared with the wire diameter. The book goes on to say that the acosh formula is an accurate one for all spacings. No mention is made of efffects of skin depth et al on Zo.
Alan

Owen Duffy wrote:
> I have found two common expressions for the Zo of a two wire line in
> space.
.............>
> This suggests (states) that the acosh expression (fully) accounts for
> proximity effect on Zo.
>
> Comments?
>
> Owen

2127. Re: Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 21:04:45 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-4EE3F8.12064410022008@netnews.worldnet.att.net>
Source record: 28199

In article <AL-dnUDxSdmKZzPanZ2dneKdnZydnZ2d@bt.com>,
"Marcus Tait" <marcus_taitNOSPAM@hotmail.com> wrote:

> Hi,
> I have just been tuning a 400MHz 1/4 wave antenna (approx 170mm length of
> wire). I connect a receive antenna to a spectum analyser and the antenna to
> be tuned to the signal generators 50ohm output. I set the signal generator
> to 400MHz and adjusted the length of the antenna to get a maximum peak on
> the spectrum analyser. My question is when i have tuned the antenna for
> maximum output at 400MHz is the antenna then tuned to 400MHz or is the
> antenna's impeadance tuned to 50ohm or both?

The way the "Big Boys" do this is with an Impedance Bridge connected
to the Spectrum Analyzer, Tracking Generator, Antenna, and 50 Ohm
Termination Load. Then prune the antenna for the biggest NULL, at the
desired Operating Frequency. Been using this method for years on
MF/HF/VHF Marine Coast Station Antennas. sure takes the guesswork out
of the system.

--
Bruce in alaska
add <path> after <fast> to reply

2128. Re: Zo of two wire open line

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 21:11:14 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A41532B2AD1Cnonenowhere@61.9.191.5>
Source record: 28200

Roy Lewallen <w7el@eznec.com> wrote in
news:13qtnd5sgcp0q12@corp.supernews.com:

> This might be useful:
>
> King, in _Electromagnetic Engineering_, Vol. 1, says (pp. 467-8):
>
> ". . .the problem may be analyzed for wires sufficiently far apart and
> so small in radius that rotational symmetry in the interior and on the
> surface of each conductor is a good approximation, and then
> generalized to closely spaced conductors of large radius simply by
> writing
>
> ae= a * sqrt(1 - (2a/b)^2)
> be = b/2 * (1 + sqrt(1 - (2a/b)^2))
>
> instead of a and b in formulas for the external impedance."
>
> a is the wire radius, b the center-center spacing, ae is the radius to
> be substituted and b is the spacing to be substituted. He's saying
> that you can account for proximity effect just by substituting
> equivalent wires of smaller diameter and closer spacing which have
> idealized evenly distributed current around the outside.
>
> He introduces the equation for ae earlier without proof, but
> references a 1921 paper in an obscure publication, as a way to adjust
> internal inductance for the proximity effect. The method is much
> simpler than the approximate equations for added loss due to proximity
> effect I've come across, so I suspect it's an approximation, but I
> don't know the applicability limits. But you might try incorporating
> it and see how it compares with measurements and with calculations
> based on the more complicated equations.

Hi Roy,

Thanks again for the research.

I would have thought that current would distribute itself in the
conductors for the least voltage drop along the conductor due to
inductance and bulk resistance. That suggests that as the conductors are
brought very close together, one expects that Zo should decrease
smoothly(ie the Zo is a monotonically increasing funtion of distance
between conductors for all positive distance).

If I take acosh(be/(2*ae)), it has a minimum around be/(2*ae)=1.3.

In the expression ae= a * sqrt(1 - (2a/b)^2), ae goes to infinity as b approaches 2a. This would drive acosh(be/(2*ae)) towards infinity as the wires are bought together.

> I see that when the wires are just touching (b = 2a), you end up
> substituting wires of radius zero, spaced at half the actual distance.
> I suppose that's reasonable.

I think there are probably limits for use of these formula.

The turning point in the region of (2*ae)=1.3 concerns me. I cannot intuitively see an explanation for such a behaviour.

Owen

2129. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 22:45:25 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47af7e86$0$6146$4c368faf@roadrunner.com>
Source record: 28101

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:rvduq3tv906qld746ud6m1keimkmmq2qjf@4ax.com...
> On Sun, 10 Feb 2008 11:58:31 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>
>>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>>
>>(cut)
>>> Instead, what you are arguing is NO-THING
>>> travels faster than 299,792,458 meters per second. I will leave that
>>> to others.
>>>
>>> 73's
>>> Richard Clark, KB7QHC
>>
>>Correct. However, why don't you just leave it to Einstein who has
>>confirmed
>>this, rather than leaving it to others, particularly a bunch of ham radio
>>operators who sometimes have their own 'theories' ;-)
>>
>
> Do you have some reference for Einstein's personal confirmation?
> Something distinct from his having presented a theory? The truth of
> the matter is for Einstein's, "light" went slower than "the speed of
> light" which historically, and following his major work, was 299,796
> kilometers per second. This too, illustrates a speed at which
> NO-THING travels faster than (not even light).
>
> No doubt you have some reference to Einstein's later lab work (new
> theory?) that eclipsed the accuracy of measurements by Michelson in
> 1926. Cherenkov's observation in the late 30s would further move the
> goal post.
>
> 73's
> Richard Clark, KB7QHC

Richard, all you have to do is look ar the lorentz transformation, SQRT(1 -
v**2/c**2). The lorentz transformation is the basic for the special theory
of relativity. This "theory" has been confirmed by many experiments of which
I definitely could give many examples. I hope you are not challenging the
scientific credence of this "theory" which is really thought of as fact. If
I give you one example, then will you require two, then three and so on
(similar to the 'prove a negative' technique)? I don't think so. I think you
really do believe that the special theory is in fact, a fact accomplii.

Now, if I am to assume that you give high credibility to the special theory of relativity, then you give credibility to the loretz transformation that forms its basis (and which Michelson used himself). So let me take a big leap and assume that you believe the lorentz transfromation has a high probability of defining time dilation. If we can get that far, then by simple examination, velocities greater than "c" cause the nummerical value under the square root radical to become a negative number. As you know, this is an impossibility because the square of any number must be a positive, in the real world.

One experiment I will mention is an easy one, conducted at MIT. It was well known that cosmic rays were mu mesons that have a defined decay rate when resting still in a laboratory setting. When traveling they should have the same decay rate.Therefore, if you know the velocity of the mu mesons and you measure the density at the top of a high mountain, you should know how long it takes them to reach the bottom of a mountain and by knowing the time it takes, you should know the density (a smaller number) that you should measure at the bottom. However, the measurements of the mu meson densities at the bottom were nearly the same as at the top. When perhaps 40% less should have been measured as decayed, only a very small percentage had decayed, EXACTLY in accordance with the lorentz transformation as described above.

By virtue of the impossibility of having a real situation of the square root of a negative number, or time multiplied by "j" (SQRT -1), it is impossible for v to exceed c in the real world. I will admit that it could "true" in the "imaginary" world of "j". which is the same world as power that is not dissipated etc. etc.. Nobody in the business really believes in tacghyons or other such particles that allegedly exceed "c"....that is all X-files stuff and to be dismissed by real world scientists.

AI4QJ

2130. k0tar - Tom Ring

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 22:46:36 UTC
From: KF4DNA <kf4dna@kf4dna.net>
Message-ID: <R8Lrj.83760$rc2.31317@bignews1.bellsouth.net>
Source record: 28102

To all,

I don't know what Mr. Ring's problem is, but I'm sure that it is hard to spell. He sent me this email today falsely accusing me of something that I did not do. If anyone on this newsgroup knows him personally, someone needs to talk to him. Before I make phone calls myself.

KF4DNA

---------- Start of Tom Ring's Message To Me ----------

You will want to read the following carefully.

The federal government passed a law several years ago that makes your callsign equivalent to your name. For instance, you can legally sign a check with it.

You made an account on hotmail that is mine. That is probably identity theft. A federal crime, by the way. Proving it was you that did it is trivial. It's called logfiles and IP addresses.

I'm going to call a friend of mine in downtown Minneapolis who works on an internet crime task force, and whose title is "Special Agent". I'm sure he won't mind, as I spent an hour talking to him just last week. You see, I've done networking and systems for a very long time.

You might want to think for a while on how you might be able to avoid me making that call.

On 9 Feb 2008 at 23:28, Tom Ring wrote:

>
> Hey you chunk of dog crap. I have you now! I am coming to see you!
>
>
> First Name .....: TomLast Name ......: RingAddress ....: 7713 Knoll St
> NCity ....: Golden ValleyState ....: MNPostal Code ....:
> 55427-4030Phone Number ...: (763) 595-0751
> ____
> Connect and share in new ways with Windows Live.
> http://www.windowslive.com/share.html?ocid=TXT_TAGHM_Wave2_sharelife_012008

Tom Ring K0TAR, ex-WA2PHW EN34hx
85 Westphalia GL Albert
96 Jetta GL The Intimidator
taring@taring.org

For every problem there is one solution which is simple, neat, and
wrong. -- H. L. Mencken

--
Internal Virus Database is out-of-date.
Checked by AVG Free Edition.
Version: 7.5.516 / Virus Database: 269.19.19/1256 - Release Date: 2/2/2008
1:50 PM

2131. Re: Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 22:59:23 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A4165815E0Fnonenowhere@61.9.191.5>
Source record: 28103

"Marcus Tait" <marcus_taitNOSPAM@hotmail.com> wrote in
news:AL-dnUDxSdmKZzPanZ2dneKdnZydnZ2d@bt.com:

> Hi,
> I have just been tuning a 400MHz 1/4 wave antenna (approx 170mm length
> of wire). I connect a receive antenna to a spectum analyser and the
> antenna to be tuned to the signal generators 50ohm output. I set the
> signal generator to 400MHz and adjusted the length of the antenna to
> get a maximum peak on the spectrum analyser. My question is when i
> have tuned the antenna for maximum output at 400MHz is the antenna
> then tuned to 400MHz or is the antenna's impeadance tuned to 50ohm or
> both?

My view is that you have adjusted the antenna to accept the maximum power from your source which should in this case have an equivalent source impedance of 50+j0.

Contrary to popular belief, radio transmitters do not necessarily or even usually have an equivalent source impedance close to 50+j0.

You should not be surprised if you replaced the generator with a transmitter and performed the same procedure, that the optimum length might be a little different, and that if changed the feed line length a little, the optimum length might be a little different again.

You would more usually want to adjust the antenna to be within a given VSWR tolerance, and to know the final VSWR, you will need some form of directional coupler on the signal source to determine rho etc.

Owen

2132. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-10 23:49:15 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <%3Mrj.6755$R84.2195@newssvr25.news.prodigy.net>
Source record: 28104

AI4QJ wrote:
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:rvduq3tv906qld746ud6m1keimkmmq2qjf@4ax.com...
>> On Sun, 10 Feb 2008 11:58:31 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>>> (cut)
>>>> Instead, what you are arguing is NO-THING
>>>> travels faster than 299,792,458 meters per second. I will leave that
>>>> to others.
>>>>
>>>> 73's
>>>> Richard Clark, KB7QHC
>>> Correct. However, why don't you just leave it to Einstein who has
>>> confirmed
>>> this, rather than leaving it to others, particularly a bunch of ham radio
>>> operators who sometimes have their own 'theories' ;-)
>>>
>> Do you have some reference for Einstein's personal confirmation?
>> Something distinct from his having presented a theory? The truth of
>> the matter is for Einstein's, "light" went slower than "the speed of
>> light" which historically, and following his major work, was 299,796
>> kilometers per second. This too, illustrates a speed at which
>> NO-THING travels faster than (not even light).
>>
>> No doubt you have some reference to Einstein's later lab work (new
>> theory?) that eclipsed the accuracy of measurements by Michelson in
>> 1926. Cherenkov's observation in the late 30s would further move the
>> goal post.
>>
>> 73's
>> Richard Clark, KB7QHC
>
> Richard, all you have to do is look ar the lorentz transformation, SQRT(1 -
> v**2/c**2). The lorentz transformation is the basic for the special theory
> of relativity. This "theory" has been confirmed by many experiments of which
> I definitely could give many examples. I hope you are not challenging the
> scientific credence of this "theory" which is really thought of as fact. If
> I give you one example, then will you require two, then three and so on
> (similar to the 'prove a negative' technique)? I don't think so. I think you
> really do believe that the special theory is in fact, a fact accomplii.
>
> Now, if I am to assume that you give high credibility to the special theory
> of relativity, then you give credibility to the loretz transformation that

> forms its basis (and which Michelson used himself). So let me take a big
> leap and assume that you believe the lorentz transfromation has a high
> probability of defining time dilation. If we can get that far, then by
> simple examination, velocities greater than "c" cause the nummerical value
> under the square root radical to become a negative number. As you know, this
> is an impossibility because the square of any number must be a positive, in
> the real world.
>
> One experiment I will mention is an easy one, conducted at MIT. It was well
> known that cosmic rays were mu mesons that have a defined decay rate when
> resting still in a laboratory setting. When traveling they should have the
> same decay rate.Therefore, if you know the velocity of the mu mesons and you
> measure the density at the top of a high mountain, you should know how long
> it takes them to reach the bottom of a mountain and by knowing the time it
> takes, you should know the density (a smaller number) that you should
> measure at the bottom. However, the measurements of the mu meson densities
> at the bottom were nearly the same as at the top. When perhaps 40% less
> should have been measured as decayed, only a very small percentage had
> decayed, EXACTLY in accordance with the lorentz transformation as described
> above.
>
> By virtue of the impossibility of having a real situation of the square root
> of a negative number, or time multiplied by "j" (SQRT -1), it is impossible
> for v to exceed c in the real world. I will admit that it could "true" in
> the "imaginary" world of "j". which is the same world as power that is not
> dissipated etc. etc.. Nobody in the business really believes in tacghyons or
> other such particles that allegedly exceed "c"....that is all X-files stuff
> and to be dismissed by real world scientists.
>
> AI4QJ
>
>
"...a fact accomplii." Look that one up in the dictionary.

"As you know, this
is an impossibility because the square of any number must be a positive,
in the real world." (O + j1)^2 is -1. (0 + j1) is part of the set of
complex numbers.

Anyone who won't use complex numbers in physical analysis is
going to have a hard time understanding physics texts, or, for that
matter, simple network theory.

73,
Tom Donaly, KA6RUH

2133. Re: Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 00:49:18 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <__ydnQLIOJfwBjLanZ2dnUVZ_u6rnZ2d@comcast.com>
Source record: 28105

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A4165815E0Fnonenowhere@61.9.191.5...
> "Marcus Tait" <marcus_taitNOSPAM@hotmail.com> wrote in
> news:AL-dnUDxSdmKZzPanZ2dneKdnZydnZ2d@bt.com:
>
>> Hi,
>> I have just been tuning a 400MHz 1/4 wave antenna (approx 170mm length
>> of wire). I connect a receive antenna to a spectum analyser and the
>> antenna to be tuned to the signal generators 50ohm output. I set the
>> signal generator to 400MHz and adjusted the length of the antenna to
>> get a maximum peak on the spectrum analyser. My question is when i
>> have tuned the antenna for maximum output at 400MHz is the antenna
>> then tuned to 400MHz or is the antenna's impeadance tuned to 50ohm or
>> both?
>
> My view is that you have adjusted the antenna to accept the maximum power
> from your source which should in this case have an equivalent source
> impedance of 50+j0.
>
> Contrary to popular belief, radio transmitters do not necessarily or even
> usually have an equivalent source impedance close to 50+j0.
>
> You should not be surprised if you replaced the generator with a
> transmitter and performed the same procedure, that the optimum length
> might be a little different, and that if changed the feed line length a
> little, the optimum length might be a little different again.
>
> You would more usually want to adjust the antenna to be within a given
> VSWR tolerance, and to know the final VSWR, you will need some form of
> directional coupler on the signal source to determine rho etc.
>
> Owen

The corollary to what you are saying is that a particular transmitter might put out more power when presented with a load other than 50 Ohms. Assuming the output is voltage limited, as to 13.8 V at the drain, more than likely a hot (high gain) transistor will put out more power into a lower impedance. This would also increase the temperature rise in the transistor.

Tam/WB2TT

2134. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 01:29:30 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ms8vq3pkekq4vg0ph99nmk098pa0m88c0s@4ax.com>
Source record: 28106

On Sun, 10 Feb 2008 17:45:25 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>>>Correct. However, why don't you just leave it to Einstein who has
>>>confirmed
>>>this

>By virtue of the impossibility of having a real situation of the square root
>of a negative number, or time multiplied by "j" (SQRT -1), it is impossible
>for v to exceed c in the real world.

Hi Dan,

Well, this is not confirmation merely exposition - and not even unique
to Einstein. It is demonstrated that v can exceed c (you have
replicated my observations there, so that cannot be in dispute), but
it cannot exceed 299,792,458 meters per second (which bares scant
relationship to complex numbers). This is not a remarkable
observation because neither can v exceed 300,000,000 meters per
second, nor 300,000,001 meters per second and so on.

73's
Richard Clark, KB7QHC

2135. Re: k0tar - Tom Ring

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 01:42:56 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47afa820$0$1120$8046368a@newsreader.iphouse.net>
Source record: 28107

KF4DNA wrote:

> On 9 Feb 2008 at 23:28, Tom Ring wrote:
>
>> Hey you chunk of dog crap. I have you now! I am coming to see you!
>>
>>
>> First Name .....: TomLast Name ......: RingAddress ....: 7713 Knoll St
>> NCity ....: Golden ValleyState ....: MNPostal Code ....:
>> 55427-4030Phone Number ...: (763) 595-0751

Interesting how I threatened myself. :)

tom
K0TAR

2136. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 01:58:41 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47afabd3$0$6154$4c368faf@roadrunner.com>
Source record: 28108

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:ms8vq3pkekq4vg0ph99nmk098pa0m88c0s@4ax.com...
> On Sun, 10 Feb 2008 17:45:25 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>>>Correct. However, why don't you just leave it to Einstein who has
>>>>confirmed
>>>>this
>
>>By virtue of the impossibility of having a real situation of the square
>>root
>>of a negative number, or time multiplied by "j" (SQRT -1), it is
>>impossible
>>for v to exceed c in the real world.
>
> Hi Dan,
>
> Well, this is not confirmation merely exposition - and not even unique
> to Einstein. It is demonstrated that v can exceed c

It cannot. You have too broad of a definition of "c". See nelow.

(you have
> replicated my observations there, so that cannot be in dispute), but
> it cannot exceed 299,792,458 meters per second >(which bares scant

(sorry .... cut)

Looks like semamntics to me. Whenever you see "c" in the special or general theories, it means exactly 299,792,458 meters/sec. You should not use the designator "c" to express the speed of light in other media such as water. It will always be a smaller number. The designator "c", meaning "constant", is indeed a universal constant designating the speed of light in a vacuum. The lorentz transformation and resultant time dilation derivations have only to do with "c", i.e the speed of light in a vacuum, not the speed of light in water or solid acrylic, glass or any other media.

I must admit, you made a very good point, i.e. that in some media there are particles that travel faster than light can travel in the same media even if they can never reach or exceed 299,792,458 meters/sec in any media. But I will remind the reader that this in itself does provide any causality dilemmas or prove the existence of God because the universal constants (like "c") still hold true.Particles that travel in water faster than light travels in water still travel at a velocity less than 299,792,458 meters/sec so the quantity in the square root radical is still positive. However, it does make for a nice light show for tourists who visit nuclear power plants. I wonder if the tour guides are able to explain what I just said?

AI4QJ

2137. Re: Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 01:59:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13qvb0l75klaga4@corp.supernews.com>
Source record: 28109

You've gotten several answers, but let me add one more, from perhaps a little different point of view.

The question of whether the antenna is "tuned to 400 MHz" isn't an easy one to answer, because it doesn't have any real single meaning. As you adjust an antenna's length in the vicinity of a quarter wavelength, there's no magic length where the antenna is "tuned" to work better than for another length. You can change the length a fair amount in this region without having any appreciable effect on the pattern or gain. So your adjusting isn't impacting the pattern or gain of the antenna to any appreciable degree.

What you are doing is changing the impedance at the base of the antenna. That impedance is transformed through whatever length of transmission line you have connected to it, and that transformed impedance is what the signal generator sees. The signal generator, having a fixed output impedance of 50 ohms, will deliver the most power when it sees 50 ohms resistive, causing the spectrum analyzer to show the maximum received signal. So what you've done is to adjust the antenna feedpoint impedance so that, when transformed through the line, it provides the best match to the signal generator output impedance of 50 + j0 ohms. You could say that the antenna itself is "tuned to 400 MHz" when its feedpoint is purely resistive (that is, the antenna is resonant). If you have a perfect 50 ohm match at the signal generator, then you know that the antenna impedance is 50 + j0 ohms (assuming you're using 50 ohm transmission line between the generator and antenna). But if you don't have a perfect match at the generator, the antenna might or might not be resonant at the point where the match at the generator is best. In practice, for a 1/4 wave antenna, it'll be very close. But as I said in the beginning, that's of really no importance in determining the antenna performance.

If you were to put an adjustable matching network between the signal generator and antenna so you could assure that the signal generator always sees 50 + j0 ohms, you'd find that the antenna length adjustment (over a moderate range) has virtually no effect on the received signal strength as long as you adjust the matching network for maximum received signal after each length adjustment. But most VHF transmitters and receivers are designed to work with a 50 ohm load and don't have any built in adjustable matching capability, so the adjustment you've done will result in the best overall performance when connected to such a transmitter or receiver.

Roy Lewallen, W7EL

Marcus Tait wrote:
> Hi,
> I have just been tuning a 400MHz 1/4 wave antenna (approx 170mm length of
> wire). I connect a receive antenna to a spectum analyser and the antenna to
> be tuned to the signal generators 50ohm output. I set the signal generator
> to 400MHz and adjusted the length of the antenna to get a maximum peak on
> the spectrum analyser. My question is when i have tuned the antenna for
> maximum output at 400MHz is the antenna then tuned to 400MHz or is the
> antenna's impeadance tuned to 50ohm or both?
>
>

2138. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 02:24:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <a6cvq31gd0peubqudemnpg6j0qrccepe8t@4ax.com>
Source record: 28110

On Sun, 10 Feb 2008 20:58:41 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>Looks like semamntics to me. Whenever you see "c" in the special or general
>theories,

Hi Dan,

It is not semantics, it is circumstance, and clearly the phenomenon of
v exceeding c follows circumstance - it is regarded so by many
competent authorities and circumstance is the cornerstone of
"relativity" through the metaphor of gedanken experiment.

> it means exactly 299,792,458 meters/sec.

Now, THIS is semantics.

>You should not use the
>designator "c" to express the speed of light in other media such as water.
>It will always be a smaller number. The designator "c", meaning "constant",

Actually, the historical basis of c comes from the latin celeritous
(or some such spelling) explicitly meaning fast or speedy.

73's
Richard Clark, KB7QHC

2139. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 03:20:56 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <saPrj.9638$J41.1352@newssvr14.news.prodigy.net>
Source record: 28111

Richard Clark wrote:
> On Sun, 10 Feb 2008 20:58:41 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>> Looks like semamntics to me. Whenever you see "c" in the special or general
>> theories,
>
> Hi Dan,
>
> It is not semantics, it is circumstance, and clearly the phenomenon of
> v exceeding c follows circumstance - it is regarded so by many
> competent authorities and circumstance is the cornerstone of
> "relativity" through the metaphor of gedanken experiment.
>
>> it means exactly 299,792,458 meters/sec.
>
> Now, THIS is semantics.
>
>> You should not use the
>> designator "c" to express the speed of light in other media such as water.
>> It will always be a smaller number. The designator "c", meaning "constant",
>
> Actually, the historical basis of c comes from the latin celeritous
> (or some such spelling) explicitly meaning fast or speedy.
>
> 73's
> Richard Clark, KB7QHC

From _Latin For Today_ by Mason D. Gray, and Thornton Jenkins (1927),
Celeritas; speed, swiftness.

(In the flyleaf is written in a female hand:

Latin is a dead language.
It's as dead as it can be.
It killed off all the Romans.
Now it's killing me.
-Shakespeare-

)
73,
Tom Donaly, KA6RUH

2140. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 03:43:26 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47afc45e$0$24096$4c368faf@roadrunner.com>
Source record: 28112

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:a6cvq31gd0peubqudemnpg6j0qrccepe8t@4ax.com...
> On Sun, 10 Feb 2008 20:58:41 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>Looks like semamntics to me. Whenever you see "c" in the special or
>>general
>>theories,
>
> Hi Dan,
>
> It is not semantics, it is circumstance, and clearly the phenomenon of
> v exceeding c follows circumstance - it is regarded so by many
> competent authorities and circumstance is the cornerstone of
> "relativity" through the metaphor of gedanken experiment.

Any gedanken experminent involving a mass with a velocity being greater than 299,792,458 meters/sec leads directly to the quantity under the square root sign for (1 - v**2/c**2) [where c = 299,792,458 meters/sec] to become a negative number. Impossibly absurd. So there you have it. The gedanken experiment involving FTL has been performed and the result of the challenge as to whether it can happen is reductio ad absurdum. Impossible. We cannot have the square root of a negative number in this universe.

QED ;-)

de AI4QJ

>
>> it means exactly 299,792,458 meters/sec.
>
> Now, THIS is semantics.

I meant it to indicate fact and the commonly accepted scientific designation for the speed of light in a vacuum.

>
>>You should not use the
>>designator "c" to express the speed of light in other media such as water.
>>It will always be a smaller number. The designator "c", meaning
>>"constant",
>
> Actually, the historical basis of c comes from the latin celeritous
> (or some such spelling) explicitly meaning fast or speedy.

I will give you that one! In these case I must have assumed all these years that "c" was for "constant" but your explantion is probably much more

accurate and certainly more colorful.

2141. Re: k0tar - Tom Ring

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 04:00:04 UTC
From: KF4DNA <kf4dna@kf4dna.net>
Message-ID: <JKPrj.72324$k27.34816@bignews2.bellsouth.net>
Source record: 28113

What is your major malfunction? Were you potty trained at gun point? Look
I have never met you and you have never met
me. I bet you would be the first one to tell a ham traveling thru your neck
of the woods not to talk on your repeater. Well,
where I come from hams don't treat each other like this. So you can stomp
your feet and throw your little temper tantrum all
you want to. But, keep me out of your paranoid delusions and seek out
professional help... Because you sure need it.

You might also want to consider medication.

"Tom Ring" <news0004@taring.org> wrote in message
news:47afa820$0$1120$8046368a@newsreader.iphouse.net...
> KF4DNA wrote:
>
>> On 9 Feb 2008 at 23:28, Tom Ring wrote:
>>
>>> Hey you chunk of dog crap. I have you now! I am coming to see you!
>>>
>>>
>>> First Name .....: TomLast Name ......: RingAddress ....: 7713 Knoll
>>> St NCity ....: Golden ValleyState ....: MNPostal Code ....:
>>> 55427-4030Phone Number ...: (763) 595-0751
>
> Interesting how I threatened myself. :)
>
> tom
> K0TAR

2142. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 05:32:03 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13qvn76ovmkq158@corp.supernews.com>
Source record: 28114

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

What do you mean "maintaining good contact to it"? The copper tape adheres well & doesn't move. The foil is secured in place by the packing tape (it completely covers all of the foil surface and copper tape connections). The tubes propeller a bit in the wind, but I don't think that causes any disruptive flexing of the foil; at least not enough to cause the soldered/taped connection to break/discontinue.

I couldn't xmt on 40M cause of the high SWR, but I could rcv &, except for the noisy conditions, it sounded fine.

Thanks for your comments.
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net
Oakland, CA (USA)
KI6OFN

Roy Lewallen wrote:
> Aluminum foil is fine for the purpose, electrically, but I think
you'll
> have a dickens of the time maintaining good contact to it. You might
> even end up creating a rectifying junction which could generate
> harmonics when transmitting and intermod when receiving.
>

-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR6/dr4echKqOuFEgEQI8kwCgwEtTPufV3CntPuijUrZlyUQVsBYAn0+U
98QGrHvI1noU4MSeDJm9Dwvx
=lgr+
-----END PGP SIGNATURE-----

2143. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 08:13:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <dltvq3dpjagv87il5mai6pdlore9o5e37p@4ax.com>
Source record: 28115

On Sun, 10 Feb 2008 22:43:26 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>Any gedanken experminent involving a mass with a velocity being greater than
>299,792,458 meters/sec leads directly to the quantity under the square root
>sign for (1 - v**2/c**2) [where c = 299,792,458 meters/sec] to become a
>negative number. Impossibly absurd.

We have progressed from your statement that:
>>> Instead, what you are arguing is NO-THING
>>> travels faster than 299,792,458 meters per second. I will leave that
>>> to others.
>>
>>Correct. However, why don't you just leave it to Einstein who has confirmed
>>this, rather than leaving it to others, particularly a bunch of ham radio
>>operators who sometimes have their own 'theories' ;-)
to an absurdity where at the time of Einstein's theory (or in the historical neighborhood of 1926 which I have pegged at Michaelson's most accurate determination) that light at 299,796 kilometers per second most certainly is a speed sufficiently in excess of the speed of light (by later accurate determinations), and yet this present speed proves nothing could exceed the speed of light (begging the question, of course, which speed of which light) whereby we are inescapably faced with the prospect of a negative number dashing one proof of Einstein's or another (the same one?).

For those confounded by the turns in the road for a varying constant (you have every reason to be confused): The speed of light in 1926 clearly results in a -1 solution for today's speed of light proving that light traveled faster than the speed of light in 1926.

Imagine the egg on Einstein's face for thinking c = 299,796 kilometers per second for the identical gendanken experiment at its inception so it appears that -1 has no particular significance rooted in a fundamental law to be so accommodating to a wide variety of assigned constants for the identical, immutable law of the universe. It would only take another measurement, adding a jot to the decimal place, to dash all other proofs which hinged upon those prior determinations. It would be safer to simply express that NO-THING can travel faster than some suitably buffered number with a margin added such as 305,000,001 m/s (ï¿½3dB). Something that a greater number of reasonably minded folk could agree with (or simply bump the number higher to achieve consensus).

Summing it up: a negative outcome seems to be more fashion than proof if the logic follows the historical whim of error.

So, as to your assignment to Einstein's confirmation of "this." What "this" were you speaking of, when was "this," and which Einstein?

73's
Richard Clark, KB7QHC

2144. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 10:07:17 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <47b01e50$1@clear.net.nz>
Source record: 28116

Richard Clark wrote:
> On Sun, 10 Feb 2008 11:41:22 +1300, cliff wright
> <c.c.wright@paradise.net.nz> wrote:
>
>
>>Now consider this! When a quantum of energy, of any wavelength is
>>emitted from an atom or a nucleus then time and space ceases to exist
>>for that "wave packet" until it is absorbed again, or passes through a
>>medium where the velocity of light is less than c (glass for example, or
>>coaxial cable!!!). Since it is always travelling at c in "space" then
>>time ceases to pass for the quantum and/or the universe appears to be a
>>single point from the quantum's point of view.
>>A possible corrollary of this might perhaps be that there is only one
>>"real" quantum of a particular energy in the universe at a time!!!
>
>
> Hi Cliff,
>
> You have contradicted yourself. Your second sentence above has the
> premise there is no time. Your last sentence ends with time
> explicitly allowed.
>
>
>>This is pretty well where Relativity leaves Quantum Mechanics I reckon.
>
>
> How so?
>
>
>>Now this may be philosophy but what is the answer that both quantum
>>mechanics and relativity have for this apparent absurdity?
>
>
> The contradiction offered.
>
>
>>If it perhaps not so absurd, perhaps this explains some of the results
>>of the famous single quantum slit experiment?
>
>
> Dismissing absurdities, the single slit experiment has its own
> explanation.
>
>

>>BTW surely FTL communication only destroys causality if the speed of
>>information is infinite.
>
>
> As the lawyers would say "FTL communication" is a fact not shown in
> the evidence offered here; so the rest of the statement does not
> logically follow.
>
>
>>Just faster than light by say 1,000 times would
>>simply mean that it got there faster not before it was transmitted?
>
>
> It would be more meaningful to demonstrate it got there 1.00000000001
> times faster. If you cannot establish this mark, 1000 time faster
> isn't on the horizon.
>
> As one other poster was abashed to discover, you probably could
> witness that first demonstration if you were a fish. A fish swimming
> in the cooling pond of a nuclear reactor would be hit by a neutron
> (one bit of information) before the radiation (light, the other same
> bit of information) that catapulted it from the pile. Now, getting
> that neutron up to 1000 times faster (in terms of information flow) is
> unlikely; but if you were to choose to inhabit a pool of somewhat
> greater density (1000 times more so?) - then perhaps arguably so. I
> don't think we need hold our breaths and wait for AT&T stock to mature
> into Billion$ on that idea.
>
> 73's
> Richard Clark, KB7QHC
Ah Richard! I see where I didn't make myself clear.
There are 2 points of view here (or 2 observers).
For the mythical observer on the "wave packet" as special relativity
tells us, at c time ceases to pass. The corollary of this is that the 40
million years it takes a quantum of light from M104, for example, to
reach my eye at the eyepiece of my telescope does NOT exist from the
Quantum's point of view. Or from another aspect the space between the
galaxy and Earth doesn't exist from the same point of view since it was
traversed in zero time.
From my point of view at relatively zero velocity there is a 40 million
LY gap to traverse in ~40MY but surely if special relativity is correct
this is not what the quantum "experiences" at all. Presumably it
"experiences" emission from an atom in M104 and absorbtion by an atom in
my retina as extremely (perhaps 2x Planck times) close events, unless it
passea through a medium in which the velocity of light is less than c on
the way.

Certainly I agree with you that electromagnetic radiation cannot travel
faster than c in this universe. But that is not to presume that other
forms of energy tranfer may not be possible at higher velocties.

A possible example is "gravitational radiation" which although it is one possible explanation for certain astrnomical phaenomena has NOT yet been detected. My research into such instruments as LIGO shows that a major factor in the hoped for detection is an assumption that this radiation travels at c. This is neccessary for correlation of signals and observed events. If this quadrapole radiation travels at some other velocity then null results are just what one would expect.
The null results of SETI do not surprise me for a similar reason. If there are advanced starfaring races out there radio or other EM communication would be woefully inadequate and either not used at all or only for very specialised (and slow) directional links which are unlikely to send data towards Earth. If not then we are just an anomally and we won't be around for long enough to matter on the cosmic scale.
Cliff Wright ZL1BDA

2145. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 11:01:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r0aoks3p8hk87@corp.supernews.com>
Source record: 28117

MGFoster wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> What do you mean "maintaining good contact to it"? The copper tape
> adheres well & doesn't move. The foil is secured in place by the
> packing tape (it completely covers all of the foil surface and copper
> tape connections). The tubes propeller a bit in the wind, but I don't
> think that causes any disruptive flexing of the foil; at least not
> enough to cause the soldered/taped connection to break/discontinue.
>
> I couldn't xmt on 40M cause of the high SWR, but I could rcv &, except
> for the noisy conditions, it sounded fine.
>
> Thanks for your comments.

The instant aluminum comes in contact with air, an oxide layer forms on it. The oxide layer is a hard, brittle ceramic which is an excellent insulator. Making electrical contact to aluminum requires breaking through the oxide to the metal underneath. This causes broken pieces of the oxide to dig into the aluminum. If pressure is maintained and no air ever strikes the aluminum again, the contact will remain sound. That is, in fact, how aluminum house wiring is (properly) handled -- a high pressure contact, with a generous amount of grease to prevent contact with air.

If your contact jiggles a bit in the wind or for any other reason, the physical contact in various places will be broken at times. Each time, more oxide is formed and, when pressure is reapplied, it breaks and gets pushed into the aluminum. Eventually, you have a surface that's mostly shards of oxide and little or no metallic aluminum. (This is also why tin plated contacts always inevitably fail.)

In addition, copper and aluminum form an electrolytic cell. So if any moisture is present, corrosion of the joint will occur and contact will eventually become bad or lost altogether.

That's what I mean by the difficulty of "maintaining good contact". Your system will work fine. For a while.

Roy Lewallen, W7EL

2146. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 12:12:59 UTC
From: Denny <k8do@mailblocks.com>
Message-ID: <8fc82759-6b76-4342-b688-1caeae558605@e25g2000prg.googlegroups.com>
Source record: 28118

Try it...
Maybe you will like it...
And if you don't, THEN we will say you should have known better in the
first place :)

denny / k8do

2147. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 13:41:38 UTC
From: William O'Hara <whoohara@yahoo.com>
Message-ID: <Xns9A4158750B46BKB1IUB223223n1eyLOCK@216.196.97.136>
Source record: 28119
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

I would like to point out as a former Assistant RACES Officer for a local community in Massachusetts, that Mr. Romney is absolutely correct.

The current EMA-ARRL structure co-exists with the STATE RACES Officer and going nothing.

ARES has nets that do NOTHING. RACES does nothing. 85% of the communities south of Boston do not have any active participation in the RACES drills.

One of the studio engineers was a ham and threw out the question to Jacobsen as something to hit Mr. Romney.

Frankly, MEMA is much better organized than everyone would think. A total communications melt-down is impossible in Massachusetts due to MEMA, SP and SG preparations. The Air Wing is ready to roll out portable towers for cell phones. The SP has several rolling CC and backup towers for the 800 Mhz system. Each town has the 800 Mhz radios provided by the state.

Just so you know that some of those guys actually doing things are HAMs. They learned by being hams. Yet, we don't need hams as a massive fodder to materialize for the day of rescue. I would like to think Mr. Romney is right about this as we are paying our TAX DOLLARS for service!

"laborkei" <laborkeiNOSPAM@hotmail.com> wrote in news:I6sjj.51910$Mu4.41373@bignews7.bellsouth.net:

> Attention all Amateur Operators.
> Please Read, and send your comments to the ARRL and Romney Website.
>
>
> Wednesday 16 November 2005 @ 15:48:10 | Eastern Massachusetts ARRL
> Romney 'Disses' Amateur Radio In
> Televised Town Meeting Posted on Wednesday16 November 2005 @ 15:48:10

--

William O'Hara
www.N1ey.com - Amateur Radio and Railfan Blog
www.yahoogroups.com/group/illinoiscentral - premier discussion list re: ICRR

2148. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 14:29:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <jZYrj.8507$nK5.5887@nlpi069.nbdc.sbc.com>
Source record: 28120

cliff wright wrote:
> The null results of SETI do not surprise me for a similar reason. If
> there are advanced starfaring races out there radio or other EM
> communication would be woefully inadequate and either not used at all or
> only for very specialised (and slow) directional links which are
> unlikely to send data towards Earth.

If I was a member of an advanced race, I would be using
entangled particles for FTL communications. However, I
would also be listening for those primitive slow obsolete
EM waves.
--
73, Cecil http://www.w5dxp.com

2149. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 14:38:33 UTC
From: tclay@qmc.ph.msstate.edu
Message-ID: <86zlu7pnh2.fsf@qmc.ph.msstate.edu>
Source record: 28121

>My point was that any properly tuned unnamed generic quad should be a
>better-performing antenna than a Spiderbeam. However the usual HF quad

free space NEC calculations for both:

Spiderbeam (from www.spiderbeam.net)

20: 6.7 dBi gain
15: 6.9 dBi gain
10: 7.1 dBi gain

full-size 2 el quad (from www.cebik.com)

6.8-7.2 dBi (at freq where f/B is peak, also depends on boom length)

I'd say in practice they are pretty much equal...the quad being three-
dimensional will be much harder for one or two people person to put up.

Tor
N4OGW

2150. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 14:47:58 UTC
From: Sum Ting Wong <sumtingwong@privacy.net>
Message-ID: <00o0r3hq8bq5utlskec4se1ehjd2376m19@4ax.com>
Source record: 28122

On Mon, 11 Feb 2008 07:41:38 -0600, "William O'Hara"
<whoohara@yahoo.com> wrote:

>I would like to point out as a former Assistant RACES Officer for a local
>community in Massachusetts, that Mr. Romney is absolutely correct.

Sort of dropped the ball, huh?

S.T.W.

2151. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 15:05:28 UTC
From: tclay@qmc.ph.msstate.edu
Message-ID: <86hcgfbkjr.fsf@qmc.ph.msstate.edu>
Source record: 28123

>I'd say in practice they are pretty much equal...the quad being three-
>dimensional will be much harder for one or two people to put up.

Tor
N4OGW

2152. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 15:28:16 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <_VZrj.8512$nK5.7551@nlpi069.nbdc.sbc.com>
Source record: 28124

Richard Clark wrote:
> On Sun, 10 Feb 2008 22:43:26 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>> Any gedanken experminent involving a mass with a velocity being greater than
>> 299,792,458 meters/sec leads directly to the quantity under the square root
>> sign for (1 - v**2/c**2) [where c = 299,792,458 meters/sec] to become a
>> negative number. Impossibly absurd.
>
> We have progressed from your statement that:
>>>> Instead, what you are arguing is NO-THING
>>>> travels faster than 299,792,458 meters per second. I will leave that
>>>> to others.
>>> Correct. However, why don't you just leave it to Einstein who has confirmed
>>> this, rather than leaving it to others, particularly a bunch of ham radio
>>> operators who sometimes have their own 'theories' ;-)
> to an absurdity where at the time of Einstein's theory (or in the
> historical neighborhood of 1926 which I have pegged at Michaelson's
> most accurate determination) that light at 299,796 kilometers per
> second most certainly is a speed sufficiently in excess of the speed
> of light (by later accurate determinations), and yet this present
> speed proves nothing could exceed the speed of light (begging the
> question, of course, which speed of which light) whereby we are
> inescapably faced with the prospect of a negative number dashing one
> proof of Einstein's or another (the same one?).
>
> For those confounded by the turns in the road for a varying constant
> (you have every reason to be confused): The speed of light in 1926
> clearly results in a -1 solution for today's speed of light proving
> that light traveled faster than the speed of light in 1926.
>

Einstein's equations use the speed of light in a vacuum, Michaelson
conducted his experiments in unstandardized air. c in air does change
and c(air) can be exceeded.

> Imagine the egg on Einstein's face for thinking c = 299,796
> kilometers per second for the identical gendanken experiment at its
> inception so it appears that -1 has no particular significance rooted
> in a fundamental law to be so accommodating to a wide variety of
> assigned constants for the identical, immutable law of the universe.
> It would only take another measurement, adding a jot to the decimal
> place, to dash all other proofs which hinged upon those prior
> determinations. It would be safer to simply express that NO-THING can
> travel faster than some suitably buffered number with a margin added
> such as 305,000,001 m/s (ï¿½3dB). Something that a greater number of

> reasonably minded folk could agree with (or simply bump the number
> higher to achieve consensus).
>
> Summing it up: a negative outcome seems to be more fashion than proof
> if the logic follows the historical whim of error.
>
> So, as to your assignment to Einstein's confirmation of "this." What
> "this" were you speaking of, when was "this," and which Einstein?
>
> 73's
> Richard Clark, KB7QHC

2153. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 15:43:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hoq0r313cf3l92kl9u0c91bcumdailabqb@4ax.com>
Source record: 28125

On Mon, 11 Feb 2008 09:28:16 -0600, "David G. Nagel"
<nagel.david@sbcglobal.net> wrote:

>Einstein's equations use the speed of light in a vacuum, Michaelson
>conducted his experiments in unstandardized air. c in air does change
>and c(air) can be exceeded.

Hi David,

And thus it follows that Michaelson's "faster than light" speed is due to the effects of the atmosphere? I would believe from the conventions offered by Snell's law, predating this work, that all the scientists would have been astonished at this inversion of expectations.

But we know better. The speed of light's shift in speed would have been far in excess of the difference found between 1926 and 1956, if due to the presence of the atmosphere - and its effects were well considered at the time.

No, this is simply a matter of experimental error as the range of speed has over the years tightened. However, all of this begs the issue why would Einstein's work (theoretical not experimental) pivot on a number that fluctuates with time, over time? In fact it does not, and Einstein did not confirm the speed of light, nor did his theory preclude nor deny Cherenkov's observation of solid matter (neutrons albeit) traveling faster than quite obvious light (irrespective of how fast it was "defined" to travel). Einstein has not been limited to the vagaries of observation from any experimenter and that is his accomplishment.

73's
Richard Clark, KB7QHC

2154. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 16:11:15 UTC
From: Karl Beckman <karl.beckman@motorola.com>
Message-ID: <fops34$d51$1@engnntp2.cig.mot.com>
Source record: 28145

Actually there ARE numerous VHF TV stations running digital (HD) today,
right along with their SD NTSC broadcasts on a different channel. In
Cleveland OH all the major networks have their HD on the air in addition to
analog, though not all of them are broadcasting digital on the channels they
will use starting Feb 17, 2009. Asd an example, NBC is analog on 3, digital
on 2 today; their digital will move to 17 during the cutover and both 2 and
3 will be abandoned. FYI, the FCC has advised the cable companies that they
are required to carry the HD as non-encrypted ATSC, in addition to analog.
Both have to be in the basic tier of channels. Some digital TV
manufacturers sets, but not all, include the ATSC cable HD 1080 digital
modes in their built-in tuners.

WA8NVW

"Dave Heil" <k8mn@frontiernet.net> wrote in message
news:DE1pj.3175$Sa1.1089@news02.roc.ny...
> Cecil Moore wrote:
>> John Smith wrote:
>>> This article:
>>> http://www.nydailynews.com/lifestyle/2008/02/02/2008-02-02_low_blow_for_highdef_tv_ser
vice_users-2.html
>>> claims that a special antenna is needed to get HDTV (over the air, as
>>> opposed to cable/sat box.)
>>
>> http://www.hdtvprimer.com/ANTENNAS/types.html
>>
>> "HDTV Antennas"
>> "An antenna made for analog TV will work fine for DTV.
>> There is nothing different about an antenna for DTV or
>> HDTV. Unscrupulous people have labeled their antennas
>> 'HDTV Antennas' as a marketing ploy. The honest antenna
>> makers have had to re-label their products likewise to
>> avoid losing sales."
>
> There aren't any VHF digital TV signals. If one lives any distance from a
> station transmitting in HD or SD, it is necessary to have an antenna with
> plenty of UHF gain. Eleven UHF elements, RG-6 feedline and an indoor,
> variable gain preamp give me twenty or so digital channels from my local
> area and from the Pittsburgh area. This works for my living room Hi-Def
> set or for the HD PCI card in the computer near the hamshack.
>
> Dave K8MN

2155. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 16:25:42 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fopsug$e80$1@aioe.org>
Source record: 28126

Cecil Moore wrote:

> ...
> If I understand it correctly, a cornerstone
> concept of QED is that nothing exists except
> particles.

And, if I understand string theory and Dr. Michio Kaku, everything
consists of vibrations--go figure! <grin>

Regards,
JS

2156. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 16:29:32 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fopt5nfca1@aioe.org>
Source record: 28127

Cecil Moore wrote:

> ...
> If I was a member of an advanced race, I would be using
> entangled particles for FTL communications. However, I
> would also be listening for those primitive slow obsolete
> EM waves.

You mean the "Devoted Alien CW'ers" have dropped CW and finally jumped to the present? Imagine that, if only they would have held on until SETI, we would/could have found them! :-(

Regards,
JS

2157. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 16:34:15 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <foptei$gb6$1@aioe.org>
Source record: 28128

Eric Oyen - N7ZZT wrote:
> John Smith wrote:
>
>> This article:
>>
> http://www.nydailynews.com/lifestyle/2008/02/02/2008-02-02_low_blow_for_highdef_tv_servi
ce_users-2.html
>> claims that a special antenna is needed to get HDTV (over the air, as
>> opposed to cable/sat box.) I was not aware of that fact. Are they
>> revamping all TV freqs.
> heh. more hype from the TV industry to separate fools from their money.
> the truth is, all you need is a standard UHF capable TV antenna (as this is
> where most if not all the DTV/HDTV signals will be present).
>
> A standard vhf/uhf mast mounted antella will work for nearly 99% of all
> urban environments in large urban centers.
>
>> I am just beginning to search if this article is bogus or not. Was
>> hoping someone here was in the industry and give us a
>> "quick-start-guru-tutorial."
>>
>> Regards,
>> JS
>
> not sure that such a thing exists. However, the ARRL has some nice
> publications on UHF style antennas.
>

Well, all that and taking into consideration a whole bunch of TV freqs
are/have-been auctioned off to the highest bidder, and therefore, it is
no longer necessary to have the antenna designed to receive them.

But, the major point of yours is right on ... thanks for the reaffirmation.

Warm regards,
JS

2158. get kelp

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 16:39:04 UTC
From: an old friend <kb9rqz@yahoo.com>
Message-ID: <9d1baf71-fbc4-4166-8a3e-237c0f553030@l16g2000hsh.googlegroups.com>
Source record: 28129
Cross-posted to: rec.radio.amateur.antenna, rec.radio.amateur.digital.misc, rec.radio.amateur.equipment, rec.radio.amateur.misc

On Jan 20, 4:55 pm, Carter-k8vt <k...@ameritech.net> wrote:

> Well, because he never retracted the statement. Presumably then, these
> are STILL his feelings towards hams.

please try to grow up the former goov is now unemplyeed and likely to
stay that way for some time

I at least can live with the fact various people dislike me for
various reasons

2159. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 16:48:57 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fopu9pmsm1@f04n12.cac.psu.edu>
Source record: 28130

MGFoster wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I've made some Al foil cap. hats for a 34ish foot linearly loaded dipole
> (based on NN0F's antenna in the ARRL Antenna book, 21st ed, p. 6-35 - he
> used 6ft wires as cap. hats and 450 ohm ladder wire as the radiator, w/
> coax feed). I was wondering if Al foil has enough "umpffh" to act as
> cap. hat material?
>
> Cap hat construction: 45 inch cardboard rolls wrapped in 1-1/2 layers
> of Al foil (shiny side out). 300 ohm twin-lead (the ant. radiator)
> leads soldered to copper tape, which was stuck to the Al foil (I check
> for continuity between the foil & the copper tape & between leads & Al
> foil they were OK). Final version wrapped in clear packing tape.
>
> I attached this ant. to my Elecraft K1 & got 4.7:1 SWR on 80 meters
> (where I expected it to resonate). On 15 meters got 1.2:1 SWR. Ant. is
> abt 45 ft above ground, fed by RG58 coax. Ground is concrete.
> Actually, the ant. is on my apartment bldg roof. That roof is covered
> in a silver paint or metallic weather-proofing (I don't know). The
> ground surrounding the apartment bldg is concrete and asphalt. I always
> select "Very poor - cities, industrial" as a ground description when
> using the EZNEC pgm.

What is the antenna length?

Now as for Al foil as an antenna construction material:

It works electrically, but isn't very strong. Your cardboard tubes
aren't terribly weatherproof either. You might be able to shellac them
heavily. But still it isn't a very good choice.

Making contact with the aluminum could be an issue. Tubular aluminum is
used on antennas, but the connection is usually helped by corrosion
inhibitors, and nuts/bolts with washers to help "dig in" to the AL. Your
thin foil will deform at best, and more likely rip with that sort of
treatment.

- 73 de Mike N3LI -

2160. Re: SpiderBeam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 18:18:57 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <foq3ih$gp6$1@news.jpl.nasa.gov>
Source record: 28133

tclay@qmc.ph.msstate.edu wrote:
>
>>My point was that any properly tuned unnamed generic quad should be a
>>better-performing antenna than a Spiderbeam. However the usual HF quad
>
>
>
> free space NEC calculations for both:
>
> Spiderbeam (from www.spiderbeam.net)
>
> 20: 6.7 dBi gain
> 15: 6.9 dBi gain
> 10: 7.1 dBi gain
>
> full-size 2 el quad (from www.cebik.com)
>
> 6.8-7.2 dBi (at freq where f/B is peak, also depends on boom length)
>
> I'd say in practice they are pretty much equal...the quad being three-
> dimensional will be much harder for one or two people person to put up.
>
> Tor
> N4OGW

I would further speculate that the odds of the "as deployed" performance
(in a temporary portable/field erection) of the quad being what the
model says are lower than for the Spiderbeam. The quad is bulkier and
3D, and deformations and environmental effects might be more of an issue.

Jim, W6RMK

2161. Re: Tuning antenna using signal gen and spectrum analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 18:22:41 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <foq3phkiv1@news.jpl.nasa.gov>
Source record: 28134

Bruce in alaska wrote:
> In article <AL-dnUDxSdmKZzPanZ2dneKdnZydnZ2d@bt.com>,
> "Marcus Tait" <marcus_taitNOSPAM@hotmail.com> wrote:
>
>
>>Hi,
>>I have just been tuning a 400MHz 1/4 wave antenna (approx 170mm length of
>>wire). I connect a receive antenna to a spectum analyser and the antenna to
>>be tuned to the signal generators 50ohm output. I set the signal generator
>>to 400MHz and adjusted the length of the antenna to get a maximum peak on
>>the spectrum analyser. My question is when i have tuned the antenna for
>>maximum output at 400MHz is the antenna then tuned to 400MHz or is the
>>antenna's impeadance tuned to 50ohm or both?
>
>
> The way the "Big Boys" do this is with an Impedance Bridge connected
> to the Spectrum Analyzer, Tracking Generator, Antenna, and 50 Ohm
> Termination Load.

Or with their handy dandy Vector Network Analyzer, which essentially
rolls all of the above stuff into one convenient package. There's a
fair number of mfrs selling VNAs targeted to this kind of market (i.e.
standing out in the wind on a tower, as opposed to in a nice quiet
anechoic chamber indoors). There's some nice stuff for antenna ranges
too (fiber optic connections to the remote measurement point, for instance).

2162. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 18:39:25 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rh41r3heei0k6cv08o21uu0h9a6d63jg07@4ax.com>
Source record: 28131

On Mon, 11 Feb 2008 23:07:17 +1300, cliff wright
<c.c.wright@paradise.net.nz> wrote:

>Ah Richard! I see where I didn't make myself clear.
>There are 2 points of view here (or 2 observers).
>For the mythical observer on the "wave packet" as special relativity
>tells us, at c time ceases to pass. The corollary of this is that the 40
>million years it takes a quantum of light from M104, for example, to
>reach my eye at the eyepiece of my telescope does NOT exist from the
>Quantum's point of view. Or from another aspect the space between the
>galaxy and Earth doesn't exist from the same point of view since it was
>traversed in zero time.

Hi Cliff,

Yes.

> From my point of view at relatively zero velocity there is a 40 million
>LY gap to traverse in ~40MY

Yes.

>but surely if special relativity is correct
>this is not what the quantum "experiences" at all.

Experience necessarily connotes a "before" and "after." There must be
some interval of time. Hence quantum, by your first observation,
cannot experience anything as everything is simultaneous.

>Presumably it
>"experiences" emission from an atom in M104 and absorbtion by an atom in
>my retina as extremely (perhaps 2x Planck times) close events,

The time to convert a photon to a photochemical response runs to
several femtoseconds.

>unless it
>passea through a medium in which the velocity of light is less than c on
>the way.

That would have nothing to do with anything, except for a second
observer who is the only one to gain by "experience."

>Certainly I agree with you that electromagnetic radiation cannot travel
>faster than c in this universe.

And it would be remarkable if it did seeing it is light anyway.

>But that is not to presume that other
>forms of energy tranfer may not be possible at higher velocties.

That has already been demonstrable for 70 years. However, what has
been demonstrated was perfectly within the context of pre-existing
theory, math, and experimental observation.

>A possible example is "gravitational radiation"

Coining new terms where gravitation already has a body of science
behind it does not further the dialog.

>which although it is one
>possible explanation for certain astrnomical phaenomena has NOT yet been
>detected.

An unusual comment given it is an ordinary experience available to
even the tribesman of sub-Saharan Africa.

>My research into such instruments as LIGO shows that a major
>factor in the hoped for detection is an assumption that this radiation
>travels at c.

What you are talking about is gravity waves (let's at least use the
terminology of research rather than substituting in "radiation" to no
obvious gain). There are those who would say it is instantaneous
throughout the universe, and does not propagate at all. Hence the
inability to detect them.

It kind of goes with the old real estate saying that they are not
making any more of it (land/gravity).

>This is neccessary for correlation of signals and observed
>events.

Neither of which have been detected. Do you note a contradiction
here?

> If this quadrapole radiation travels at some other velocity then
>null results are just what one would expect.

But by your earlier statements, there are some who do not expect this
at all. Given the contrary positions, neither of which that can be
proven, much of this is fevered thinking.

>The null results of SETI do not surprise me for a similar reason.

No reason has been proposed.

>If there are advanced starfaring races out there radio or other EM
>communication would be woefully inadequate and either not used at all or
>only for very specialised (and slow) directional links which are
>unlikely to send data towards Earth. If not then we are just an anomally
>and we won't be around for long enough to matter on the cosmic scale.

Well, this has scant relation to the start of the post, except both suffer from lack of demonstrables. There is an infinity of negative relations that cannot be supported, and these are only two of them. Sounds like the beginning (or ongoing) of entropy.

73's
Richard Clark, KB7QHC

2163. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 18:47:14 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ro51r3t1ihf1td43qgdvn57lo6mtfp4q1s@4ax.com>
Source record: 28132

On Mon, 11 Feb 2008 03:01:38 -0800, Roy Lewallen <w7el@eznec.com>
wrote:

>That is,
>in fact, how aluminum house wiring is (properly) handled -- a high
>pressure contact, with a generous amount of grease to prevent contact
>with air.

Hi Roy,

If I recall history and physics correctly (and simultaneously), house
wiring failed through cold flow, a property of aluminum to relax under
a one-time application of pressure (impulse rather than sustained
pressure) and thus the joint failed. The failure raised resistance,
resistance raised temperature, temperature raised flames.... no more
common use of aluminum in house wiring.

73's
Richard Clark, KB7QHC

2164. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 20:39:17 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r1cjnneh0634d@corp.supernews.com>
Source record: 28135

Richard Clark wrote:
>
> Hi Roy,
>
> If I recall history and physics correctly (and simultaneously), house
> wiring failed through cold flow, a property of aluminum to relax under
> a one-time application of pressure (impulse rather than sustained
> pressure) and thus the joint failed. The failure raised resistance,
> resistance raised temperature, temperature raised flames.... no more
> common use of aluminum in house wiring.

When I put in a new service entrance in 1979, it was after the problems with ordinary aluminum house wiring were discovered and it was no longer being used. But the service entrance cable I got was aluminum. The service box connectors are marked as approved for both aluminum and copper wiring, and have a compression fitting which doesn't give the aluminum anywhere to flow. Generous application of NoAlOx or a similar grease was also required for proper installation, so that's what I did. It's been completely trouble-free for nearly 30 years now. So it was, and is, possible to use aluminum wire. But it has to be done correctly, with due regard to its vagaries.

Roy Lewallen, W7EL

2165. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 21:12:50 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13r1eb38srl0o5f@corp.supernews.com>
Source record: 28136

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

Roy Lewallen wrote:

<SNIP>

> If pressure is maintained and no air ever strikes the aluminum again,
> The contact will remain sound.

Wouldn't the complete enclosure of the Al by the packing tape reduce, or
prevent, air contact. I'm not saying I did that good a job of wrapping
the foil, I was just concerned w/ protecting the foil from physical wear
& tear.

<SNIP>
>
> That's what I mean by the difficulty of "maintaining good contact".
Your
> system will work fine. For a while.
>

I was going to use the antenna just for portable ops, and I was hoping
it would last longer than "a while."

Oh well, back to the ... etc.

Thanks, Roy

73
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net
Oakland, CA (USA)
KI6OFN

-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR7C6SYechKqOuFEgEQIhIACg1s/RhwuFvUR+9nzAtKayoWb2rjIAn2Mo
3GdiQhJXuEr6RmICnaAfCJfC
=aF9x
-----END PGP SIGNATURE-----

2166. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 21:19:46 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13r1eo2ni7v7v11@corp.supernews.com>
Source record: 28137

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

Michael Coslo wrote:
>
> What is the antenna length?
>
>
> Now as for Al foil as an antenna construction material:
>
> It works electrically, but isn't very strong. Your cardboard tubes
> aren't terribly weatherproof either. You might be able to shellac them

> heavily. But still it isn't a very good choice.
>
> Making contact with the aluminum could be an issue. Tubular aluminum
is
> used on antennas, but the connection is usually helped by corrosion
> inhibitors, and nuts/bolts with washers to help "dig in" to the AL.
Your
> thin foil will deform at best, and more likely rip with that sort of
> treatment.

The antenna is abt 34 ft (1/4 wave for 40 meters).

The cardboard tubing was for weight - this ant. was to be a portable
ant. and would be deployed only in good wx.

"Treatment" - that's why I wrapped the tubes/foil in clear plastic
wrapping tape. Barring me accidentally smashing them or some
discombobulated squirrel "having at 'em" I'd expect them to last for abt
a year or 2.

Regards & 73s,
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net
Oakland, CA (USA)
KI6OFN

-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR7C744echKqOuFEgEQIWpgCfbHwps+8RAVBLgtYGf7uu/UywXPkAmwXI
iL1XU4yOSzyPugTPgpEZKxYU
=d9Cc
-----END PGP SIGNATURE-----

2167. Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-11 22:10:50 UTC
From: Swoozie Pellegrino <swooziep@yahoo.com>
Message-ID: <3da519c5-21cc-4ca5-ad8b-db2f3e842584@l16g2000hsh.googlegroups.com>
Source record: 28138

Hi, all.

I'm about to become a General class licensee, and I'm
trying to work out a HF antenna plan for my new apartment.
I have a small balcony on the top (4th) floor, which is good,
but unfortunately there's a roof overhanging it and is
8' over the balcony floor and juts 4' out over the balcony edge,
so a tall vertical is out of the question.

What about a 'vertical' that is angled about 45 deg. down
from vertical? Will that be good for phone DXing on any
HF band?

Also, sadly, the balcony is all metal and so is the top of
the roof.

What about some kind of loop?

Thanks!

~swooz

2168. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 00:47:14 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <m06sj.6725$5K1.1380@newssvr12.news.prodigy.net>
Source record: 28139

Roy Lewallen wrote:
> Richard Clark wrote:
>>
>> Hi Roy,
>>
>> If I recall history and physics correctly (and simultaneously), house
>> wiring failed through cold flow, a property of aluminum to relax under
>> a one-time application of pressure (impulse rather than sustained
>> pressure) and thus the joint failed. The failure raised resistance,
>> resistance raised temperature, temperature raised flames.... no more
>> common use of aluminum in house wiring.
>
> When I put in a new service entrance in 1979, it was after the problems
> with ordinary aluminum house wiring were discovered and it was no longer
> being used. But the service entrance cable I got was aluminum. The
> service box connectors are marked as approved for both aluminum and
> copper wiring, and have a compression fitting which doesn't give the
> aluminum anywhere to flow. Generous application of NoAlOx or a similar
> grease was also required for proper installation, so that's what I did.
> It's been completely trouble-free for nearly 30 years now. So it was,
> and is, possible to use aluminum wire. But it has to be done correctly,
> with due regard to its vagaries.
>
> Roy Lewallen, W7EL

Roy;

The problem with AL house wire is that the pure Al that the wire is made of will flow under pressure. When it was used with Cu wire switches and outlets the attachment points could not maintain the pressure to insure adequate contact.
At work one day the personnel department secretary requested one of the company two way radios for her desk. I installed a Motorola HT220 in a desk charger and plugged it into the outlet next to her desk. That night the mobile home trailer that we used for personnel burnt to the ground. To this day I don't know if there was a connection. ;^)... However, the radio was a mess. The trailer was manufactured during the copper shortage that necessitated the use of Al wire.

Dave Nagel WD9BDZ

2169. EZNEC output Touchstone file?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 01:25:04 UTC
From: Al Lorona <al_lorona@agilent.com>
Message-ID: <Qz6sj.4126$xq2.1322@newssvr21.news.prodigy.net>
Source record: 28140

Is there a method for getting the SWR sweep data from EZNEC into an S- or Z-parameter format for use in another application? Please forgive my relative unfamiliarity with this part of EZNEC.

Thanks very much,

Al

2170. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 01:59:49 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <47b0fd92@clear.net.nz>
Source record: 28141

Cecil Moore wrote:
> cliff wright wrote:
>
>> The null results of SETI do not surprise me for a similar reason. If
>> there are advanced starfaring races out there radio or other EM
>> communication would be woefully inadequate and either not used at all
>> or only for very specialised (and slow) directional links which are
>> unlikely to send data towards Earth.
>
>
> If I was a member of an advanced race, I would be using
> entangled particles for FTL communications. However, I
> would also be listening for those primitive slow obsolete
> EM waves.

Well Cecil, you might be listening, but I might not be sending!
It often amuses me to consider just how naive humans can be in
advertising their presence in our spiral arm for a long time now.
Why do so many assume that an advanced race might have such a benign
attitude to other intelligences. We probably don't even share DNA
so why should we seee things in the same light.
See Larry Niven's "Tales of known space" (about 1966) for an example of
a race that got more than it bargained for when it met the Kzin through
radio.
Cliff Wright.

2171. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 02:28:26 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b1044d$0$6937$4c368faf@roadrunner.com>
Source record: 28142

"David G. Nagel" <nagel.david@sbcglobal.net> wrote in message
news:_VZrj.8512$nK5.7551@nlpi069.nbdc.sbc.com...
> Richard Clark wrote:
>> On Sun, 10 Feb 2008 22:43:26 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>> Any gedanken experminent involving a mass with a velocity being greater
>>> than 299,792,458 meters/sec leads directly to the quantity under the
>>> square root sign for (1 - v**2/c**2) [where c = 299,792,458 meters/sec]
>>> to become a negative number. Impossibly absurd.
>>
>> We have progressed from your statement that:
>>>>> Instead, what you are arguing is NO-THING
>>>>> travels faster than 299,792,458 meters per second. I will leave that
>>>>> to others.
>>>> Correct. However, why don't you just leave it to Einstein who has
>>>> confirmed this, rather than leaving it to others, particularly a bunch
>>>> of ham radio operators who sometimes have their own 'theories' ;-)
>> to an absurdity where at the time of Einstein's theory (or in the
>> historical neighborhood of 1926 which I have pegged at Michaelson's
>> most accurate determination) that light at 299,796 kilometers per
>> second most certainly is a speed sufficiently in excess of the speed
>> of light (by later accurate determinations), and yet this present
>> speed proves nothing could exceed the speed of light (begging the
>> question, of course, which speed of which light) whereby we are
>> inescapably faced with the prospect of a negative number dashing one
>> proof of Einstein's or another (the same one?). For those confounded by
>> the turns in the road for a varying constant
>> (you have every reason to be confused): The speed of light in 1926
>> clearly results in a -1 solution for today's speed of light proving
>> that light traveled faster than the speed of light in 1926.
>>
>
> Einstein's equations use the speed of light in a vacuum, Michaelson
> conducted his experiments in unstandardized air. c in air does change and
> c(air) can be exceeded.

Well said.

2172. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 02:52:24 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b109e8$0$6962$4c368faf@roadrunner.com>
Source record: 28143

"cliff wright" <c.c.wright@paradise.net.nz> wrote in message
news:47b0fd92@clear.net.nz...
> Cecil Moore wrote:
>> cliff wright wrote:
>>
>>> The null results of SETI do not surprise me for a similar reason. If
>>> there are advanced starfaring races out there radio or other EM
>>> communication would be woefully inadequate and either not used at all or
>>> only for very specialised (and slow) directional links which are
>>> unlikely to send data towards Earth.
>>
>>
>> If I was a member of an advanced race, I would be using
>> entangled particles for FTL communications. However, I
>> would also be listening for those primitive slow obsolete
>> EM waves.
>
> Well Cecil, you might be listening, but I might not be sending!
> It often amuses me to consider just how naive humans can be in advertising
> their presence in our spiral arm for a long time now.

I think this is the "real" reason that the FCC tells us to use only the
minimum power necessary to maintain communications ;-)

2173. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 04:41:43 UTC
From: Rick Frazier <rickf@rickfrazier.com>
Message-ID: <47b12345$0$6980$4c368faf@roadrunner.com>
Source record: 28144

Swoozie Pellegrino wrote:
> Hi, all.
>
> I'm about to become a General class licensee, and I'm
> trying to work out a HF antenna plan for my new apartment.
> I have a small balcony on the top (4th) floor, which is good,
> but unfortunately there's a roof overhanging it and is
> 8' over the balcony floor and juts 4' out over the balcony edge,
> so a tall vertical is out of the question.
>
> What about a 'vertical' that is angled about 45 deg. down
> from vertical? Will that be good for phone DXing on any
> HF band?
>
> Also, sadly, the balcony is all metal and so is the top of
> the roof.
>
> What about some kind of loop?
>
> Thanks!
>
> ~swooz
How about a vertical suspended from a hunk of plastic pipe ? Try
letting it hang down from the balcony, as far out as you can safely
suspend it. I've gotten away with using a 24 guage wire suspended with
a collapsable/extendible fishing pole with reasonable results, compared
to trying to use a short dipole inside a hotel room....

Though far from optimum, sometimes almost anything is better than nothing.

--Rick AH7H

2174. C42 Radio Set Manual

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 10:07:22 UTC
From: Peter <colleenpeter@westnet.com.au>
Message-ID: <13r2rusabqfsd8@corp.supernews.com>
Source record: 28146

I was hoping that some may be able email me a pdf copy of the C42 Radio Set manual and ideally a copy of the schematic. I know these things are bit rare!

Regards

--
Peter VK6YSF

http://members.optushome.com.au/vk6ysf/vk6ysf/main.htm

2175. Why do Muslims think that Islam is true. Is there any factual basis?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 12:45:18 UTC
From: small giant <mutawafayez@yahoo.com>
Message-ID: <76939dda-98a3-47bf-8cc3-5ae2442725ee@l16g2000hsh.googlegroups.com>
Source record: 28147

Question:
There are many religions.

Why do Muslims think that Islam is true. Is there any factual basis?

Answer:
Praise be to Allah.

This is a reasonable enough question for one who has not entered Islam, but one who believes in and practices this religion already knows the blessings which are his because of this religion. There are many reasons for this, which include the following:

(1) The Muslim worships One God, Who has no partner, and Who has the most beautiful names and the highest attributes. Thus the Muslim's focus and aim is concentrated, focused on His Lord and Creator; he puts his trust in Him and asks Him for help, patience and support; he believes that Allaah is able to do all things, and has no need of a wife or son. Allaah created the heavens and earth; He is the One Who gives life and death; He is the Creator and Sustainer from Whom the slave seeks provision. He is the All-Hearing Who responds to the supplication of His slave, and from Whom the slave hopes for a response. He is the All-Merciful and All-Forgiving, to Whom the slave turns in repentance when he has committed a sin or fallen short in his worship of Allaah. He is the Omniscient and All-Seeing, who knows all intentions and what is hidden in people's hearts. The slave feels ashamed to commit a sin by doing wrong to himself or to others, because his Lord is watching over him and sees all that he does. He knows that Allaah is All-Wise, the Seer of the Unseen, so he trusts that what Allaah decrees for him is good; he knows that Allaah will never be unjust to him, and that everything that Allaah decrees for him is good, even if he does not understand the wisdom behind it.

(2) The effects of Islaamic worship on the soul of the Muslim include the following:
Prayer keeps the slave in contact with his Lord; if he enters it in a spirit of humiliation and concentration, he will feel tranquil and secure, because he is seeking a "powerful support," which is Allaah, may He be glorified and exalted. For this reason, the Prophet of Islaam, Muhammad (peace and blessings of Allaah be upon him) used to say: "Let us find relaxation and joy in prayer." If something distressed him, he would hasten to pray. Everyone who finds himself faced with disaster and tries prayer finds strength, patience and consolation, because he is reciting the words of his Lord, which cannot be compared to the effect of the words of a created being. If the words of some psychologists can offer a little comfort, what do

you think of the words of the One Who created the psychologist?

Now let us look at zakaat, which is one of the pillars of Islaam. Zakaat purifies the soul from stinginess and miserliness, and accustoms people to being generous and helping the poor and needy. It will bring a great reward on the Day of Resurrection, just like other forms of worship. It is not burdensome, like man-made taxes; it is only 25 in every thousand, which the sincere Muslim pays willingly and does not try to evade or wait until someone chases him for it.

Fasting involves refraining from food and sex. It is a form of worship, and a way in which one can feel the hunger of those who are deprived. It is also a reminder of the blessings of the Creator, and it brings rewards beyond measure.

Hajj is the Pilgrimage to the sacred House of Allaah, which was built by Ibraaheem (Abraham, upon whom be peace). By performing Hajj one is obeying the command of Allaah and the call to come and meet Muslims from all over the world.

(3) Islaam commands all kinds of good and forbids all kinds of evil. It encourages good manners and proper treatment of others. It enjoins good characteristics such as truthfulness, patience, deliberation, kindness, humility, modesty, keeping promises, dignity, mercy, justice, courage, patience, friendliness, contentment, chastity, good treatment, tolerance, trustworthiness, gratitude for favours, and self-control in times of anger. Islaam commands the Muslim to fulfil his duty towards his parents and to uphold family ties, to help the needy, to treat neighbours well, to protect and safeguard the wealth of the orphan, to be gentle with the young and show respect to the old, to be kind to servants and animals, to remove harmful things from the road, to speak kind words, to forgive at the time when one has the opportunity to take revenge, to be sincere towards one's fellow-Muslims, to meet the needs of the Muslims, to give the debtor time to repay his debt, to prefer others over oneself, to console others, to greet people with a smiling face, to visit the sick, to support the one who is oppressed, to give gifts to friends, to honour his guest, to treat his wife kindly and spend on her and her children, to spread the greeting of peace (salaam) and to seek permission before entering another person's house, lest one see something private that the other person does not want one to see.

Some non-Muslims may do these things out of politeness or good manners, but they are not seeking reward from Allaah or salvation of the Day of Judgement.

If we look at what Islam has prohibited, we will find that it is in the interests of both the individual and society as a whole. All these prohibitions serve to safeguard the relationship between the slave and his Lord, and the relationship of the individual with himself and with his fellow-man. The following examples demonstrate this:

Islam forbids the association of anything in worship with Allaah and the worship of anything other than Allaah, because this spells doom and misery. Islaam also forbids visiting or believing soothsayers and fortune-tellers; magic or witchcraft that may cause a rift between two people or bring them together; belief in the influence of the stars on events and people's lives; cursing time, because Allaah is directing its affairs; and superstition, because this is pessimism.

Islam forbids cancelling out good deeds by showing off, boasting or reminding others of one's favours; bowing or prostrating to anything other than Allaah; sitting with hypocrites or immoral people for the purposes of enjoying their company or keeping them company; and invoking the curse or wrath of Allaah on one another or damning one another to Hell.

Islaam forbids urinating into stagnant water; defecating on the side of the road or in places where people seek shade or where they draw water; from facing the qiblah (direction of prayer) or turning one's back towards it when passing water or stools; holding one's penis in one's right hand when passing water; giving the greeting of salaam (peace) to one who is answering the call of nature; and putting one's hand into any vessel before washing it, when one has just woken up.

Islaam forbids the offering of any nafl (supererogatory) prayers when the sun is rising, when it is at its zenith, and when it is setting, because it rises and sets between the horns of Shaytaan (Satan); praying when there is food prepared that a person desires; praying when one urgently needs to pass water, stools or wind, because that will distract a person from concentrating properly on his prayer.

Islam forbids the Muslim to raise his voice in prayer, lest it disturb other believers; to continue offering supererogatory prayers at night when one feels drowsy - such a person should sleep then get up; to stay up all night in prayer, especially one night after another; and to stop praying when there is doubt as to the validity of one's wudoo' - unless one hears a sound or smells an odour.

Islaam forbids buying, selling and making "lost and found" announcements in the mosque - because it is the place of worship and remembrance of Allaah, where worldly affairs have no place.

Islam forbids haste in walking when the iqaamah (call immediately preceding congregational prayer) is given, and prescribes walking in a calm and dignified manner. It is also forbidden to boast about the cost of building a mosque; to decorate a mosque with red or yellow paint or adornments which will distract the worshippers; to fast day after day without a break; and for a woman to observe a supererogatory fast when her husband is present without his permission.

Islaam forbids building over graves, making them high, sitting on them, walking between them wearing shoes, putting lights over them or writing on them. It is forbidden to disinter the dead or to take graves as places of worship. Islam forbids wailing, tearing one's

clothes or leaving one's hair unkempt when a person dies. Eulogizing the dead in the manner of the times of Ignorance (Jaahiliyyah) is also forbidden, although there is nothing wrong with informing others that a person has died.

Islaam forbids the consumption of riba (interest); all kinds of selling which involve ignorance (of the product), misleading and cheating; selling blood, wine, pork, idols and everything that Allaah has forbidden - their price, whether bought or sold - is haraam; najash, which is offering a price for something one has no intention of buying, as happens in many auctions; concealing a product's faults at the time of selling; selling something which one does not own or before it comes into one's possession; undercutting, outbidding or out bargaining another; selling produce before it is clear that it is in good condition and free of blemish; cheating in weights and measures; and hoarding. A partner who has shares in a plot of land or a date palm tree is forbidden to sell his share without consulting his partners. It is forbidden to consume the wealth of orphans unjustly; to bet or gamble; to take anything by force; to accept or offer bribes; to steal people's wealth or to consume it unjustly; to take something for the purpose of destroying it; to undermine the value of people's possessions; to keep lost property which one has found, or to keep quiet about it and not announce it, for it belongs to the one who recognizes it; to cheat in any way; to ask for a loan with no intention of repaying it; to take anything of the wealth of a fellow-Muslim, unless it is given freely, because what is taken because of another person's shyness is haraam; and to accept a gift because of intercession.

Celibacy and castration are forbidden, as is marrying two sisters, or a woman and her aunt (paternal or maternal), whether he marries the aunt after marrying her niece or vice versa, for fear of breaking the ties of kinship. It is forbidden to make deals in marriage, such as saying "Let me marry your daughter and I will give you my daughter or sister in marriage." Such reciprocal deals are a form of oppression and injustice, and haraam. Islaam forbids mut'ah (temporary marriage), which is a marriage contract for a period of time agreed by the two parties, at the end of which the marriage expires. Islaam forbids intercourse with a menstruating woman, until she has purified herself (by taking a bath after her period ends), and also forbids anal intercourse. A man is forbidden to propose marriage to a woman when another man has already proposed to her, unless the other man withdraws his proposal or gives him permission. It is forbidden to marry a previously-married woman without consulting her, or a virgin without seeking her permission. It is forbidden to wish (a newly married couple) "Bi'l-rafaa' wa'l-baneen (a joyful life and many sons)," because this is the greeting of the people of Jaahiliyyah, who hated daughters. The divorced woman is forbidden to conceal what Allaah has created in her womb (if she is pregnant). A husband and wife are forbidden to speak (to others) about the intimacies of married life. It is forbidden to turn a woman against her husband or

to take divorce lightly. It is forbidden for a woman to ask for another's divorce, such as asking a man to divorce a woman so that she can marry him. A wife is forbidden to spend her husband's money without his permission, or to keep away from his bed without good reason, because the angels will curse her if she does that. A man is forbidden to marry his father's wife, or to have intercourse with a woman who is pregnant from another man. It is forbidden for a man to practise 'azl (coitus interruptus) with his free wife without her permission. It is forbidden for a man to return home from a journey late at night and startle his family, unless he has previously notified them when he will arrive home. A man is forbidden to take anything of his wife's mahr (dowry) without her consent, or to keep annoying his wife so that she will give up her wealth.

Islaam forbids women to make a wanton display of themselves (tabarruj). It also forbids extreme forms of female circumcision. Women are forbidden to admit anyone into their husband's home without his permission; his general permission is acceptable so long as they stay within the limits of sharee'ah. It is forbidden to separate a mother and child (in case of divorce); to let one's womenfolk behave foolishly (in an immoral fashion) and not say anything; to let one's gaze wander everywhere; and to follow an accidental glance with an intentional glance.

Islaam forbids the eating of dead meat, regardless of whether it died by drowning, strangulation, shock or falling from a high place; eating blood, pork and anything slaughtered in a name other than that of Allaah or for idols; eating the flesh or drinking the milk of beasts that feed on filth and waste matter; eating the flesh of every carnivorous beast that has fangs and every bird that has talons; eating the meat of domesticated donkeys; killing animals by keeping them and throwing stones at them until they die, or detaining them without food until they die; slaughtering with teeth or nails; slaughtering one animal (for food) in front of another; or sharpening the knife in front of the animal to be slaughtered.

In the area of clothing and adornment, men are forbidden the extravagance of wearing gold. Muslim are forbidden to be naked or to expose their thighs; to leave their clothes long (below the ankles) and trail them on the ground for the purpose of showing off; and to wear clothes that will attract attention.

It is forbidden to bear false witness; to make false accusations against a chaste believing woman; to accuse someone who is innocent; to utter lies; to slander and backbite; to call people by offensive nicknames; to spread gossip and malicious slander; to make fun of the Muslims; to boast about one's status; to shed doubts on a person's lineage; to utter slander, insults and obscenities; to speak in an indecent or rude manner; or to utter evil in public, except by one who has been wronged.

Islaam forbids telling lies; one of the worst kinds of lie is to lie about dreams, like fabricating dreams and visions in order to prove one's virtue, or make some material gains, or to frighten an enemy.

Muslims are forbidden to praise themselves, or to talk in a secret way: two may not converse secretly to the exclusion of a third, because this is offensive. It is forbidden to curse a believer or someone who does not deserve to be cursed.

Islaam forbids speaking ill of the dead; praying for death; wishing for death because of some suffering that one is passing through; praying against one's self, one's children, one's servants or one's wealth.

Muslims are told not to eat the food that is directly in front of others or to eat from the centre of the dish or platter; rather they should eat from what is directly in front of them or thereabouts, because the barakah (blessing) comes in the middle of the food. It is forbidden to drink from a broken edge of a vessel, because this could cause harm; or to drink from the mouth of a vessel; or to breathe into it. It is forbidden to eat while lying on one's stomach; to sit at a table where wine is being drunk; to leave a fire burning in one's house when one sleeps; to sleep with Ghamr in one's hand, like an offensive smell or the remainder of food (grease); to sleep on one's stomach; or to talk about or try to interpret bad dreams, because these are tricks of the Shaytaan.

It is forbidden to kill another person except in cases where it is right to do so; to kill one's children for fear of poverty; to commit suicide; to commit fornication, adultery or sodomy (homosexuality); to drink wine, or even to prepare it, carry it from one place to another, or sell it. Muslims are forbidden to please people by angering Allaah; to offend their parents or even to say "Uff" (the slightest word of contempt) to them; to claim that a child belongs to anyone but his real father; to torture by means of fire; to burn anyone, alive or dead, with fire; to mutilate the bodies of the slain; to help anyone commit falsehood; or to cooperate in wrongdoing and sin.

It is forbidden to obey any person by disobeying Allaah; to swear falsely; to swear a disastrous oath; to eavesdrop on people without their permission; to invade people's privacy or look at their private parts; to claim something that does not belong to one or that one did not do, for the purpose of showing off; to look into someone's else's house without permission; to be extravagant; to swear an oath to do something wrong; to spy on others or be suspicious about righteous men and women; to envy, hate or shun one another; to persist in falsehood; to be arrogant or feel superior; to be filled with self-admiration; to be pleased with one's arrogance. Islam forbids taking back one's charity, even if one pays to get it back; employing someone to do a job without paying him his wages; being unfair in giving gifts to one's children; bequeathing everything in one's will and leaving one's heirs poor - in such a case the will should not be executed; writing a will that concerns more than one third of one's legacy; being a bad

neighbour; or changing a will to the detriment of one or some of one's heirs. A Muslim is forbidden to forsake or shun his brother for more than three days, except for a reason sanctioned by sharee'ah; to hold small stones between two fingers and throw them because this could cause injury to eyes or teeth; to include his heirs in a will, because Allaah has already given heirs their rights of inheritance; to disturb his neighbour; to point a weapon at his Muslim brother; to hand someone an unsheathed sword, lest it harm him; to come (walk) between two people except with their permission; to return a gift, unless there is some shar'i objection to it; to be extravagant; to give money to foolish people; to wish to be like someone to whom Allaah has given more of something; to cancel out his charity by giving offensive reminders of his giving; to wilfully conceal testimony; or to oppress orphans or scold one who asks for help or money. It is forbidden to treat with evil medicines, because Allaah would not create a cure for this ummah which includes something that He has forbidden. It is forbidden to kill women and children in warfare; to boast to one another; or to break promises.

Islaam forbids betraying a trust; asking for charity that one does not need; alarming a Muslim brother or taking away his possessions, whether jokingly or seriously; changing one's mind after giving a gift, except in the case of a gift from a father to his child; practising medicine without experience; or killing ants, bees and hoopoe birds. A man is forbidden to look at the 'awrah (private parts) of another man, and a woman is forbidden to look at the 'awrah of another woman. It is forbidden to sit between two people without their permission; or to greet only those whom one knows, because the greeting is to be given to those whom you know and those whom you do not know. A Muslim is forbidden to let an oath come between him and good deeds; he should do what is good and make expiation for the oath. It is forbidden to judge between two disputing parties when one is angry, or to judge in favour of one party without hearing what the other has to say. It is forbidden for a man to walk through the market-place carrying something - like a sharp weapon - that could harm the Muslims, unless it is properly covered. A Muslim is forbidden to make another person get up, so that he can take his place.

There are more commands and prohibitions which came for the benefit and happiness of individuals and mankind as a whole. Have you ever seen any other religion that can compare to this religion?

Read this response again, then ask yourself: is it not a great pity that I am not one of them? Allaah says in the Qur'aan (interpretation of the meaning): "And whoever seeks a religion other than Islam, it will never be accepted of him, and in the Hereafter he will be one of the losers." [Aal 'Imraan 3:85]

Finally, I hope that everyone who reads this will be guided to the correct way and to follow the truth. May Allaah protect you and us from all evil.

see this site www.sultan.org

2176. Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 13:08:19 UTC
From: amdx <amdx@knology.net>
Message-ID: <a9252$47b197fe$18d6b40c$23017@KNOLOGY.NET>
Source record: 28148
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

Can someone explain how these two relate in a waveguide.
My limited understanding is, group velocity is slow near cutoff and
increases as frequency increases to almost c.
I don't know the difference between group velocity and phase velocity.
Thanks, Mike

2177. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 13:56:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r39ci151chk3e@corp.supernews.com>
Source record: 28149
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

amdx wrote:
> Can someone explain how these two relate in a waveguide.
> My limited understanding is, group velocity is slow near cutoff and
> increases as frequency increases to almost c.
> I don't know the difference between group velocity and phase velocity.
> Thanks, Mike

Phase velocity is the velocity of a constant phase point. For example, if you look at a point where the voltage or current wave crosses zero going in the positive voltage or current direction, it moves down the waveguide at the phase velocity. In a waveguide, the phase velocity is always greater than the speed of light c. It approaches c at very high frequency, and increases without bound as cutoff is approached.

The group velocity is the speed at which information can be moved. In other words, a change in the signal (e.g., turning it on or off or changing its amplitude) propagates at the group velocity. In a waveguide, the group velocity approaches c at very high frequency and 0 at cutoff.

Mathematically, vp = c/sqrt(1 - (f/fc)^2)
vg = c * sqrt(1 - (f/fc)^2)

where vp is the phase velocity, vg is the group velocity, f is the frequency, and fc is the cutoff frequency. These equations are valid for TE and TM modes in hollow waveguides.

A medium in which the phase velocity varies with frequency is called a dispersive medium, and all hollow waveguides are in this category. Phase and group velocities are the same in non-dispersive media such as coaxial cable.

Kraus uses a caterpillar as an example: The humps on the caterpillar's back move at the phase velocity, but the caterpillar moves at the group velocity.

Roy Lewallen, W7EL

2178. Re: Why do Muslims think that Islam is true. Is there any factual basis?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 14:01:05 UTC
From: ltdoc@yahoo.com
Message-ID: <a3591e47-234c-4d09-adc8-17f835234366@1g2000hsl.googlegroups.com>
Source record: 28150

Hate to tell you this, but there is no 'factual' evidence for any
religion. It's a matter of 'faith', which requires no 'factual'
evidence. Want to be Muslim? Good for you, do so. Please keep your
'converting' where it belongs. I don't need it. Thank you.
- 'Doc

2179. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 14:05:37 UTC
From: Yuri Blanarovich <K3BU@optonline.net>
Message-ID: <47b1a7c0$0$15163$607ed4bc@cv.net>
Source record: 28201

"Swoozie Pellegrino" <swooziep@yahoo.com> wrote in message
news:3da519c5-21cc-4ca5-ad8b-db2f3e842584@l16g2000hsh.googlegroups.com...
> Hi, all.
>
> I'm about to become a General class licensee, and I'm
> trying to work out a HF antenna plan for my new apartment.
> I have a small balcony on the top (4th) floor, which is good,
> but unfortunately there's a roof overhanging it and is
> 8' over the balcony floor and juts 4' out over the balcony edge,
> so a tall vertical is out of the question.
>
> What about a 'vertical' that is angled about 45 deg. down
> from vertical? Will that be good for phone DXing on any
> HF band?
>
> Also, sadly, the balcony is all metal and so is the top of
> the roof.
>
> What about some kind of loop?
>
> Thanks!
>
> ~swooz

Try the Half Sloper if you could.
It is quarter wave wire suspended between balcony and run at about 45 deg
down to a tree or whatever. There is a good chance you will end up with 50
ohm impedance and can be fed directly with a coax, shield connected to metal
railing or door frame and center wire to the antenna. Trim to frequency.
Had one like that from the 9th floor at the hotel in Bahamas, worked very
well.

73 Yuri, K3BU.us

2180. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 14:10:06 UTC
From: Phil Hobbs <pcdhSpamMeSenseless@electrooptical.net>
Message-ID: <47B1A8BE.7010509@electrooptical.net>
Source record: 28202
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

Roy Lewallen wrote:
> amdx wrote:
>> Can someone explain how these two relate in a waveguide.
>> My limited understanding is, group velocity is slow near cutoff and
>> increases as frequency increases to almost c.
>> I don't know the difference between group velocity and phase velocity.
>> Thanks, Mike
>
> Phase velocity is the velocity of a constant phase point. For example,
> if you look at a point where the voltage or current wave crosses zero
> going in the positive voltage or current direction, it moves down the
> waveguide at the phase velocity. In a waveguide, the phase velocity is
> always greater than the speed of light c. It approaches c at very high
> frequency, and increases without bound as cutoff is approached.

That's true for metal waveguides. Dielectric guides always have at
least one mode at all frequencies, and vp <= c.
>
> The group velocity is the speed at which information can be moved. In
> other words, a change in the signal (e.g., turning it on or off or
> changing its amplitude) propagates at the group velocity. In a
> waveguide, the group velocity approaches c at very high frequency and 0
> at cutoff.

This is true for narrowband modulation, because it assumes that
d(omega)/dk is constant. It also requires the approximation that the
pulse shape propagates unchanged, which means that it works only for
short distances. A very long guide with linear dispersion will produce
the Fourier transform of the input. Various grandstanding academics
have published papers claiming group velocities higher than c, but it
always turns out to violate one or other of these conditions.

Cheers,

Phil Hobbs

2181. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 14:29:42 UTC
From: Josef Matz <josefmatz@arcor.de>
Message-ID: <47b1adc6$0$379$9b4e6d93@newsspool2.arcor-online.net>
Source record: 28203
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

Group velocity wants to describe a pulse containing more than one photon
frequenccy.

In dispersive media the group velocity is a function of frequency of the
photons that form
a physical signal. So neighboured frequencies have a little different
velocities. That is what is behind.

So group velocity as one uses the terminus in hard physical theory is
nothing else as the true physical velocity at a certain frequency of the
photonic carrier resp. field.

Group velocities of wave packets is something apart from that. If you have a
carrier that containes
a spectrum of frequencies it describes the broadening of the signal due to
different carrier frequencies in
which have different velocities.
This definition is therefore unsharp and has only qualitative picturesque
meaning !

So group velocity in a sharp sense is just the real velocity which with the
field and the photons in move
at and only at a certain frequency.

Josef Matz

"amdx" <amdx@knology.net> schrieb im Newsbeitrag
news:a9252$47b197fe$18d6b40c$23017@KNOLOGY.NET...
> Can someone explain how these two relate in a waveguide.
> My limited understanding is, group velocity is slow near cutoff and
> increases as frequency increases to almost c.
> I don't know the difference between group velocity and phase velocity.
> Thanks, Mike
>
>

2182. Re: Why do Muslims think that Islam is true. Is there any factual basis?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 14:36:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <O9isj.57406$Pv2.43481@newssvr23.news.prodigy.net>
Source record: 28204

ltdoc@yahoo.com wrote:
> Hate to tell you this, but there is no 'factual' evidence for any
> religion. It's a matter of 'faith', which requires no 'factual'
> evidence.

Maybe he could begin his "factual" evidence with
a technically valid proof that God exists?
--
73, Cecil http://www.w5dxp.com

2183. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 14:56:18 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fosc2i$sg2$1@f04n12.cac.psu.edu>
Source record: 28205

cliff wright wrote:

> Well Cecil, you might be listening, but I might not be sending!
> It often amuses me to consider just how naive humans can be in
> advertising their presence in our spiral arm for a long time now.
> Why do so many assume that an advanced race might have such a benign
> attitude to other intelligences. We probably don't even share DNA
> so why should we seee things in the same light.
> See Larry Niven's "Tales of known space" (about 1966) for an example of
> a race that got more than it bargained for when it met the Kzin through
> radio.

So we should wrap the earth in a Dyson sphere to make sure none of
those evil ET's do us harm?

Yours and others phobia do make for great movies though.

Lets think about it.

Any "evil" ET's that were advanced enough to find and destroy us
wouldn't likely need to find our radio transmissions to find us. The
earth has plenty of cues that there is life here. And any aliens who
could physically come here would be able to find those clues.

- 73 de Mike N3LI -

2184. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 15:15:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GKisj.57407$Pv2.20802@newssvr23.news.prodigy.net>
Source record: 28206

Michael Coslo wrote:
> Any "evil" ET's that were advanced enough to find and destroy us
> wouldn't likely need to find our radio transmissions to find us. The
> earth has plenty of cues that there is life here. And any aliens who
> could physically come here would be able to find those clues.

Ever wonder why Elohim (Gods) was plural in Genesis?
--
73, Cecil http://www.w5dxp.com

2185. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 15:25:17 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fosdot$t7u$1@f04n12.cac.psu.edu>
Source record: 28207

MGFoster wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> Michael Coslo wrote:
> >
> > What is the antenna length?
> >
> >
> > Now as for Al foil as an antenna construction material:
> >
> > It works electrically, but isn't very strong. Your cardboard tubes
> > aren't terribly weatherproof either. You might be able to shellac them
>
> > heavily. But still it isn't a very good choice.
> >
> > Making contact with the aluminum could be an issue. Tubular aluminum
> is
> > used on antennas, but the connection is usually helped by corrosion
> > inhibitors, and nuts/bolts with washers to help "dig in" to the AL.
> Your
> > thin foil will deform at best, and more likely rip with that sort of
> > treatment.
>
> The antenna is abt 34 ft (1/4 wave for 40 meters).

Okay. Assuming that is 34 feet per leg, you might be cut a little long for 40 meters. (Let me make sure I'm correct here - this is a linear loaded dipole, yes?)

What would be good to know is the frequency where you are at your lowest SWR.

Can you beg borrow or steal an antenna analyzer? Your antenna is probably cut for somewhere outside of where you can transmit with your rig. That would be the quick way to find out. Otherwise you should take SWR measurements across the band to see if that gives you an idea about how the antenna is cut.

Another thing is to try a measurement without the capacity hat - see where that puts you. It might just get you a lot closer to tuned.

> The cardboard tubing was for weight - this ant. was to be a portable
> ant. and would be deployed only in good wx.
>
> "Treatment" - that's why I wrapped the tubes/foil in clear plastic

> wrapping tape. Barring me accidentally smashing them or some
> discombobulated squirrel "having at 'em" I'd expect them to last for abt
> a year or 2.

Well, you can give it a try, homebrewing is a big part of the fun in
Ham radio.

- 73 de Mike N3LI -

2186. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 16:26:31 UTC
From: amdx <amdx@knology.net>
Message-ID: <b584d$47b1c67c$450139ad$31816@KNOLOGY.NET>
Source record: 28208
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

> "amdx" <amdx@knology.net> schrieb im Newsbeitrag
> news:a9252$47b197fe$18d6b40c$23017@KNOLOGY.NET...
>> Can someone explain how these two relate in a waveguide.
>> My limited understanding is, group velocity is slow near cutoff and
>> increases as frequency increases to almost c.
>> I don't know the difference between group velocity and phase velocity.
>> Thanks, Mike

"Josef Matz" <josefmatz@arcor.de> wrote in message
news:47b1adc6$0$379$9b4e6d93@newsspool2.arcor-online.net...
> Group velocity wants to describe a pulse containing more than one photon
> frequenccy.
>
> In dispersive media the group velocity is a function of frequency of the
> photons that form
> a physical signal. So neighboured frequencies have a little different
> velocities. That is what is behind.
>
> So group velocity as one uses the terminus in hard physical theory is
> nothing else as the true physical velocity at a certain frequency of the
> photonic carrier resp. field.
>
> Group velocities of wave packets is something apart from that. If you have
> a
> carrier that containes
> a spectrum of frequencies it describes the broadening of the signal due to
> different carrier frequencies in
> which have different velocities.
> This definition is therefore unsharp and has only qualitative picturesque
> meaning !
>
> So group velocity in a sharp sense is just the real velocity which with
> the
> field and the photons in move
> at and only at a certain frequency.
>
> Josef Matz

I was in a hurry this morning and didn't ask my main question.
I think at this point I understand different frequencies travel at different
speeds.
Group Velocity vs Velocity Factor what is the difference?
If vg = c * sqrt(1 - (f/fc)^2) hmm, maybe I should tell what I think I know.
(I'm way over my head on this subject).

If I generate a spark (many frequencies) all these frequencies combine to make a waveshape, as the wave travels down the waveguide the waveshape changes because different frequencies are traveling at different speeds? Correct me as needed.
So is 'group velocity' the velocity the peak of the signal as it travels down the waveguide?
Forgive my ignorance but the formula vg = c * sqrt(1 - (f/fc)^2) doesn't work for me. (1-(f/fc)^2) is negative and I can't get the sqrt of a negative. What did I miss?
Thanks, Mike

2187. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 16:46:07 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fosigfmvc1@f04n12.cac.psu.edu>
Source record: 28209

Cecil Moore wrote:
> Michael Coslo wrote:
>> Any "evil" ET's that were advanced enough to find and destroy us
>> wouldn't likely need to find our radio transmissions to find us. The
>> earth has plenty of cues that there is life here. And any aliens who
>> could physically come here would be able to find those clues.
>
> Ever wonder why Elohim (Gods) was plural in Genesis?

It is an intriguing concept. Gotta wonder about that "wheel in a wheel"
business also.

- 73 de Mike N3LI -

2188. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 16:46:37 UTC
From: Swoozie Pellegrino <swooziep@yahoo.com>
Message-ID: <a942837c-2943-47aa-919a-19e1d30360ea@u10g2000prn.googlegroups.com>
Source record: 28210

On Feb 12, 8:05 am, "Yuri Blanarovich" <K...@optonline.net> wrote:
> "Swoozie Pellegrino" <swooz...@yahoo.com> wrote in message
>
> news:3da519c5-21cc-4ca5-ad8b-db2f3e842584@l16g2000hsh.googlegroups.com...
>
>
>
>
>
> > Hi, all.
>
> > I'm about to become a General class licensee, and I'm
> > trying to work out a HF antenna plan for my new apartment.
> > I have a small balcony on the top (4th) floor, which is good,
> > but unfortunately there's a roof overhanging it and is
> > 8' over the balcony floor and juts 4' out over the balcony edge,
> > so a tall vertical is out of the question.
>
> > What about a 'vertical' that is angled about 45 deg. down
> > from vertical? Will that be good for phone DXing on any
> > HF band?
>
> > Also, sadly, the balcony is all metal and so is the top of
> > the roof.
>
> > What about some kind of loop?
>
> > Thanks!
>
> > ~swooz
>
> Try the Half Sloper if you could.
> It is quarter wave wire suspended between balcony and run at about 45 deg
> down to a tree or whatever. There is a good chance you will end up with 50
> ohm impedance and can be fed directly with a coax, shield connected to metal
> railing or door frame and center wire to the antenna. Trim to frequency.
> Had one like that from the 9th floor at the hotel in Bahamas, worked very
> well.
>
> 73 Yuri, K3BU.us- Hide quoted text -
>
> - Show quoted text -

Thanks, Yuri. Unfortunately, there's no good tree or pole to attach
to
below. There *is* a parking garage about 400 feet straight across
from
me though! LOL, would be a really long wire.

I may try the dangling wire that Rick described earlier in this
thread.
I'll just have to figure out what fraction of 20m and 40m wavelengths
that will work best with that and cut the wire(s) accordingly. I have
about 50' of height to work with.

Or maybe a MFJ-1622 clamped to the railing?
http://www.eham.net/reviews/detail/2035

Thanks,
~swooz

2189. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 17:16:02 UTC
From: Siyazini <scoles@isomedia.com>
Message-ID: <2ccc64a5-2ec5-4167-aa29-9dfd7bf4db29@s13g2000prd.googlegroups.com>
Source record: 28211

All,

Some textbooks use c with a subscript for propagation velocity. When we use c for propagation velocity we can talk about a "particle" accelerated to a velocity v such that

c_h2o < v < c_free_space

Closer to home, we can imagine a cosmic ray passing the shack with a velocity such that

c_RG58 < v < c_ladder_line

I suggest anyone wishing to clarify his or her posts apply subscripts to c to indicate how c is being used.

Thank you,

Steven, KD7YTE

2190. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 17:19:48 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <5zksj.179$tW.38@nlpi070.nbdc.sbc.com>
Source record: 28212

Cecil Moore wrote:
> Michael Coslo wrote:
>> Any "evil" ET's that were advanced enough to find and destroy us
>> wouldn't likely need to find our radio transmissions to find us. The
>> earth has plenty of cues that there is life here. And any aliens who
>> could physically come here would be able to find those clues.
>
> Ever wonder why Elohim (Gods) was plural in Genesis?

Because the original story was made up by Canaanites who had a
pantheon headed by the Creator, a guy named El, who lived in a
tent in the desert, had two wives, drank Budweiser, and rode a
Harley between the astral planes. I thought you knew that, Cecil.
73,
Tom Donaly, KA6RUH

2191. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 17:21:37 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <BAksj.8135$0o7.8055@newssvr13.news.prodigy.net>
Source record: 28213

Siyazini wrote:
> All,
>
> Some textbooks use c with a subscript for propagation velocity. When
> we use c for propagation velocity we can talk about a "particle"
> accelerated to a velocity v such that
>
> c_h2o < v < c_free_space
>
> Closer to home, we can imagine a cosmic ray passing the shack with a
> velocity such that
>
> c_RG58 < v < c_ladder_line
>
> I suggest anyone wishing to clarify his or her posts apply subscripts
> to c to indicate how c is being used.
>
> Thank you,
>
> Steven, KD7YTE

All;

Years ago I looked a book about Einstein's famous equation E=MC2. I quickly closed it.

Steven's comments above, IMHO, pretty much cover the description of the value of c in various media in a manner that has greater clarity than my comments had.

Dave WD9BDZ

2192. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 17:41:40 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <47B1DA54.1060609@jpl.nasa.gov>
Source record: 28215

David G. Nagel wrote:
> Roy Lewallen wrote:
>
>> Richard Clark wrote:
>>
>>>
>>> Hi Roy,
>>>
>>> If I recall history and physics correctly (and simultaneously), house
>>> wiring failed through cold flow, a property of aluminum to relax under
>>> a one-time application of pressure (impulse rather than sustained
>>> pressure) and thus the joint failed. The failure raised resistance,
>>> resistance raised temperature, temperature raised flames.... no more
>>> common use of aluminum in house wiring.
>>
>>
>> When I put in a new service entrance in 1979, it was after the
>> problems with ordinary aluminum house wiring were discovered and it
>> was no longer being used. But the service entrance cable I got was
>> aluminum. The service box connectors are marked as approved for both
>> aluminum and copper wiring, and have a compression fitting which
>> doesn't give the aluminum anywhere to flow. Generous application of
>> NoAlOx or a similar grease was also required for proper installation,
>> so that's what I did. It's been completely trouble-free for nearly 30
>> years now. So it was, and is, possible to use aluminum wire. But it
>> has to be done correctly, with due regard to its vagaries.
>>
>> Roy Lewallen, W7EL
>
>
>
> Roy;
>
> The problem with AL house wire is that the pure Al that the wire is made
> of will flow under pressure. When it was used with Cu wire switches and
> outlets the attachment points could not maintain the pressure to insure
> adequate contact.

there's a bit more to it than that.. and, there's a whole industry that
has sprung up to do wiring retrofits, adapters, inspect your house,
etc., as well as to litigate claims of one sort or another. Tough to
find unbiased information on the web.

It has to do with which alloy of aluminum was used, and the casual use
of the wrong alloy with connection methods not suitable for it (i.e.

screw terminals). When the copper prices rose and the economy sank in the late 60s early 70s, they used the same aluminum wire (EC1350?) as had been used (successfully) for overhead and underground feeders for decades. The wire companies will make wire out of any alloy you want, so folks said, give me that stuff I've been getting in 2/0, except in AWG14 or AWG12.

Bad choice, as it happens. An alloy that is good for big ol' fat feeders supporting their own weight on a 100 ft span, especially bare ones, going into big (aluminum) compression clamps, is probably not a good choice for electricians working in tight quarters, stripping insulation with a penknife, and then wrapping it around a screw made of steel that's installed into a threaded hole made of brass. Even worse, the quickwiring "push it in the hole" type connectors.

Another problem was the change from brass to steel screws in the terminations, also as a result of cost. The Coefficient of Thermal Expansion (CTE) mismatch between brass and aluminum isn't as big as between steel and aluminum. And, issues with Steel screws staying tight in brass threads, etc.

I don't know that cold flow is actually an issue. After all, most power lines and the feeder to your house is done with old style aluminum wires, into a compression screw termination, and failures are very rare, even with the connector untouched for 50 years. It's more the gradual loosening from temperature cycling, which is self aggravating: small gap opens, contact area reduces, localized heating causes more of a gap, etc.

Modern aluminum wiring uses another alloy (AA-8000 series or ACM), which has better mechanical properties: it's less brittle, so nicks and tight turns don't cause problems, it's also mechanically weaker, but that's not an issue, unlike with overhead power lines, which need to support their own weight. In addition, the termination device (the screws or clamps) are specifically designed to work with the aluminum (or copper) wire. Things like little ridges and grooves in the plate you tighten down against.

Some interesting photos at:
http://www.qpi-inspect.com/aluminum06-02-04.pdf

2193. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 17:54:46 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fosmh6$t7q$1@f04n12.cac.psu.edu>
Source record: 28214

Tom Donaly wrote:
> Cecil Moore wrote:
>> Michael Coslo wrote:
>>> Any "evil" ET's that were advanced enough to find and destroy us
>>> wouldn't likely need to find our radio transmissions to find us. The
>>> earth has plenty of cues that there is life here. And any aliens who
>>> could physically come here would be able to find those clues.
>>
>> Ever wonder why Elohim (Gods) was plural in Genesis?
>
> Because the original story was made up by Canaanites who had a
> pantheon headed by the Creator, a guy named El, who lived in a
> tent in the desert, had two wives, drank Budweiser, and rode a
> Harley between the astral planes. I thought you knew that, Cecil.

No Elohim would drink Budweiser!

- 73 de Mike N3LI -

2194. practical yagi question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 20:20:00 UTC
From: francesco.messineo@gmail.com
Message-ID: <a3c5825a-0228-4680-9891-741f0c55a127@n20g2000hsh.googlegroups.com>
Source record: 28216

Hi all,

it's time to build new antennas for V/UHF season. Until now I always used over the boom insulated elements mounting and in almost all cases folded dipoles with 4:1 coaxial balun/transformer. In one case I changed this driven element to a simple split dipole because the antenna didn't seem to work well (when in facts was my homebrew tx which wasn't working really well).
Now I read in some web pages that split dipoles work better for yagis (no balun loss, balun is narrowband, split dipole can be easily tuned...). This make enough sense to me (doesn't it?) so I'm willing to use this driven element on the new antennas.
Now the question for the experts:

is this driven element really "better"? How about braid currents?

In the future yagis I want to use insulated through the boom elements (they are really easier to manufacture for me this way). With folded dipole the element's plane will pass approximately on the center of the folded dipole gap, if however the driven element is a split dipole, this element will be mounted over the boom and insulated for mechanical and electrical reasons, thus the driven element will lay in a different plane than all the other elements. Is this acceptable?

Thanks in advance for all hints.

best 73 de
IZ8DWF Francesco

2195. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 22:05:49 UTC
From: Bob Miller <NOSPAM@neosoft.com>
Message-ID: <0q54r35ncvpuun5d6lr76p2a357n0dlvl0@4ax.com>
Source record: 28217

On Tue, 12 Feb 2008 08:46:37 -0800 (PST), Swoozie Pellegrino
<swooziep@yahoo.com> wrote:

>On Feb 12, 8:05ï¿½am, "Yuri Blanarovich" <K...@optonline.net> wrote:
>> "Swoozie Pellegrino" <swooz...@yahoo.com> wrote in message
>>
>> news:3da519c5-21cc-4ca5-ad8b-db2f3e842584@l16g2000hsh.googlegroups.com...
>>
>>
>>
>>
>>
>> > Hi, all.
>>
>> > I'm about to become a General class licensee, and I'm
>> > trying to work out a HF antenna plan for my new apartment.
>> > I have a small balcony on the top (4th) floor, which is good,
>> > but unfortunately there's a roof overhanging it and is
>> > 8' over the balcony floor and juts 4' out over the balcony edge,
>> > so a tall vertical is out of the question.
>>
>> > What about a 'vertical' that is angled about 45 deg. down
>> > from vertical? ï¿½Will that be good for phone DXing on any
>> > HF band?
>>
>> > Also, sadly, the balcony is all metal and so is the top of
>> > the roof.
>>
>> > What about some kind of loop?
>>
>> > Thanks!
>>
>> > ~swooz
>>
>> Try the Half Sloper if you could.
>> It is quarter wave wire suspended between balcony and run at about 45 deg
>> down to a tree or whatever. There is a good chance you will end up with 50
>> ohm impedance and can be fed directly with a coax, shield connected to metal
>> railing or door frame and center wire to the antenna. Trim to frequency.
>> Had one like that from the 9th floor at the hotel in Bahamas, worked very
>> well.
>>
>> 73 ï¿½Yuri, K3BU.us- Hide quoted text -
>>

>> - Show quoted text -
>
>Thanks, Yuri. Unfortunately, there's no good tree or pole to attach
>to
>below. There *is* a parking garage about 400 feet straight across
>from
>me though! LOL, would be a really long wire.
>
>I may try the dangling wire that Rick described earlier in this
>thread.
>I'll just have to figure out what fraction of 20m and 40m wavelengths
>that will work best with that and cut the wire(s) accordingly. I have
>about 50' of height to work with.
>
>Or maybe a MFJ-1622 clamped to the railing?
>http://www.eham.net/reviews/detail/2035
>
>Thanks,
>~swooz
>

That antenna is based on one B&W used to market. I had the B&W version in a third floor apartment window back in the 80s, and it worked reasonably well. The vertical had a long counterpoise wire that I stretched out through the apartment -- I tuned the antenna by adjusting the length of the counterpoise. Worked fine, but be careful to not set the rug on fire :-)

bob
k5qwg

2196. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-12 22:45:38 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <j074r3tuutlbbsmlcfn0rd5tp674fe4jfq@4ax.com>
Source record: 28218
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

On Tue, 12 Feb 2008 07:08:19 -0600, "amdx" <amdx@knology.net> wrote:

>Can someone explain how these two relate in a waveguide.
>My limited understanding is, group velocity is slow near cutoff and
>increases as frequency increases to almost c.
> I don't know the difference between group velocity and phase velocity.
> Thanks, Mike
>

If you threw a stone into a pond, the group velocity of the wave
generated would be how fast the ripples moved away from the point
where the stone hit the water, while the phase velocity would be how
long it took for a ripple peak to go from a peak to a trough and
then back to a peak.

Likening it to a pair of scissors closing while cutting through a
sheet of paper, the group velocity would be the speed of the ends of
the blades approaching each other, while the phase velocity would be
the speed of propagation of the cut as the blades sliced the paper
apart.

--
JF

2197. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 00:30:07 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <pob4r3lgdnd2ldtae0rlqh1m5aqchni2qv@4ax.com>
Source record: 28219
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

On Tue, 12 Feb 2008 10:26:31 -0600, "amdx" <amdx@knology.net> wrote:

>I was in a hurry this morning and didn't ask my main question.
>I think at this point I understand different frequencies travel at different
>speeds.

AIUI, it depends on the medium and how it's distorted by the
amplitude of the signal traveling through it.

--
JF

2198. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 01:09:13 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <2hf4r3p94r23snl2j8v2l01huld6gfh02g@4ax.com>
Source record: 28220
Cross-posted to: alt.radio.amateur,news.misc.radio.amateur.antenna,rec.radio.amateur.antenna

On Fri, 18 Jan 2008 12:36:01 -0800, "Juan M."
<jdmollanNOSPAMPLEASE@juno.com> wrote:

>A problem seeking a solution.

>
>I live in a wooded area of the Pacific Northwest with dozens of fir trees of
>100 ft or more in height that make wonderful supports for high dipoles and
>other wire antennas. These particular trees have very few limbs at anything
>below the 60 ft level so using a crossbow or slingshot for installation is
>not practical. I have been forced to employ a professional tree climber to
>install the eyebolts and halyards. Using this system, the antennas can be
>raised and lowered for maintenance or modification.
>
>This system works fine until our winter storms kick in. Often, during those
>storms, a tree will lose a limb or two and take the antenna down with it. I
>am then left with a halyard tied to an insulator 50 ft or more above the
>ground with no way to get the insulator back down short of hiring another
>costly climber.
>
>Does anyone have any solutions to this problem?
>
>
>
>73,
>
>John
>
>AE7P

I can't speak for your specific situation, but here is how I handled
the similar situation.

I used either a multi-band-parallel dipole (sometimes referred to as a
fan dipole) or a 135 foot dipole fed with 300 ohm twin-lead. These
antennas were raised about 100 feet or so into trees by mason's line
which can be purchased at Walmart or most hardware or building supply
stores.

My first antenna was taken down by tree movement shortly after having
put it up. After that, I created a 'fuse' mechanism that released the
line if too much tension was placed on the antenna end.

What I did was to pull the antenna up partially until the antenna was
just above the ground. I wrapped the excess line around two nails I

used as a make-shift cleat. Then I wrapped the string around a nail and mounted it into the bark of the tree. I did this several times a different intervals until the antenna was raised to a maximum height still providing for general tree movement in the wind. When an excess wind strikes, it removes one or more of the nails lowering the antenna without breaking the string, or if a limb hit the wire, the antenna was low enough for me to reach the end of the line and put it back up.

disclaimer:

I didn't really trust the mason line to work as well as it did. I typically replaced it every six months or so (as I replaced antennas this often, mostly in experimentation or for improvements.)

While I still use it today, I don't recommend it for anyone wanting to put up a permanent antenna and just leave it alone for more than a year.

Buck

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

2199. Re: RF Power Resistors from Caddock

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 01:14:51 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <d2h4r3l7lsqc75re42j3d5450fa1vrc1g5@4ax.com>
Source record: 28221

What would this cost and from where do we buy them?

Buck

On Tue, 22 Jan 2008 09:19:45 -0800, Richard Clark <kb7qhc@comcast.net>
wrote:

>Hi All,
>
>In regard to other postings originally inquiring into the utility of
>network terminations as dummy loads, the thread drifted into more
>serious power levels with the Caddock MP9100 being suggested.
>
>I have been in correspondence with their engineers who have kindly
>supplied me with these details:
>
>>We have test data for the similarly constructed, smaller scale model MP930,
>>that indicates pretty good frequency performance up to about 300 MHz or so.
>>We have verbal reports that the MP9100 looks pretty good up to similar
>>frequencies, but of course ï¿½pretty goodï¿½ depends on expectations and actual
>>requirements. I seriously doubt that it will be useful at 3 GHz, or
>>anywhere near that frequency. I have attached a drawing of an impedance
>>model derived for the TO220 sized parts. The inductance for the MP9100
>>should be about 10 nH, and freestanding capacitance should be about 1.5 pF.
>>
>>The impedance data is from testing we did using an HP 4291A Impedance
>>Analyzer. Because the resistance film pattern is the same for all MP930
>>resistance values (MP9100 uses the same pattern ï¿½ scaled larger), and
>>measurements performed on low (< 1 Ohm) and high (> 1 kOhm) resistor samples
>>confirm it, the model is valid for all resistance values. Referring to the
>>impedance model depicted in the attachment, inductance (l1) in nH and
>>capacitance (Cm) in pF is:
>>
>> Isolated One lead common
>> Freestanding On heatsink to heatsink
>>Model nH pF nH pF pF
>>================== ============ =======
>>MP930 7.60 0.75 8.00 1.75 3.65
>>
>>==
>>
>>We measured these resistances and phase shifts with 50 Ohm nominal value
>>resistors:
>>
>>==========

>> Phase
>> Shift
>>F, MHz Ohms degrees
>>====== ===== =======
>>MP930 (freestanding)
>>100 50.2 5.1
>>250 51.6 12.2
>>500 56.5 23.2
>>
>>MP930 (isolated, on heatsink)
>>100 50.1 2.9
>>250 50.3 7.4
>>500 51.6 15.0
>>
>>MP930 (one lead common to heatsink)
>>100 49.7 -1.80
>>250 48.5 -4.50
>>500 43.8 -9.70
>>
>
>73's
>Richard Clark, KB7QHC

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

2200. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 01:45:15 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b24baa$0$8661$4c368faf@roadrunner.com>
Source record: 28222

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:GKisj.57407$Pv2.20802@newssvr23.news.prodigy.net...
> Michael Coslo wrote:
>> Any "evil" ET's that were advanced enough to find and destroy us
>> wouldn't likely need to find our radio transmissions to find us. The
>> earth has plenty of cues that there is life here. And any aliens who
>> could physically come here would be able to find those clues.
>
> Ever wonder why Elohim (Gods) was plural in Genesis?

I think they were the same people as the Annunaki of the Sumerian writings,
correct?

2201. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 01:49:17 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b24c9c$0$8641$4c368faf@roadrunner.com>
Source record: 28223

"Siyazini" <scoles@isomedia.com> wrote in message
news:2ccc64a5-2ec5-4167-aa29-9dfd7bf4db29@s13g2000prd.googlegroups.com...
> All,
>
> Some textbooks use c with a subscript for propagation velocity. When
> we use c for propagation velocity we can talk about a "particle"
> accelerated to a velocity v such that
>
> c_h2o < v < c_free_space
>
> Closer to home, we can imagine a cosmic ray passing the shack with a
> velocity such that
>
> c_RG58 < v < c_ladder_line
>
> I suggest anyone wishing to clarify his or her posts apply subscripts
> to c to indicate how c is being used.
>
> Thank you,
>
> Steven, KD7YTE

That's a good convention to use.

2202. Re: RF Power Resistors from Caddock

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 01:55:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bdj4r3h9g8oihct8ust42hak30hgeuahnl@4ax.com>
Source record: 28224

On Tue, 12 Feb 2008 20:14:51 -0500, Buck <usenet01@lumpuckeroo.com>
wrote:

>
>What would this cost and from where do we buy them?

Hi Buck,

I think Digikey for about $8 - $10 apiece.

73's
Richard Clark, KB7QHC

2203. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 02:15:02 UTC
From: "Autymn D. C." <lysdexia@sbcglobal.net>
Message-ID: <f08ae9d0-a67a-4286-b248-30788304dbf5@d4g2000prg.googlegroups.com>
Source record: 28225
Cross-posted to: sci.physics.electromag, rec.radio.amateur.antenna, sci.electronics.design

On Feb 12, 2:45 pm, John Fields <jfie...@austininstruments.com> wrote:
> Likening it to a pair of scissors closing while cutting through a
> sheet of paper, the group velocity would be the speed of the ends of
> the blades approaching each other, while the phase velocity would be
> the speed of propagation of the cut as the blades sliced the paper

if...

2204. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 02:18:50 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b25389$0$8671$4c368faf@roadrunner.com>
Source record: 28226

"Yuri Blanarovich" <K3BU@optonline.net> wrote in message
news:47b1a7c0$0$15163$607ed4bc@cv.net...
>
> "Swoozie Pellegrino" <swooziep@yahoo.com> wrote in message
> news:3da519c5-21cc-4ca5-ad8b-db2f3e842584@l16g2000hsh.googlegroups.com...
>> Hi, all.
>>
>> I'm about to become a General class licensee, and I'm
>> trying to work out a HF antenna plan for my new apartment.
>> I have a small balcony on the top (4th) floor, which is good,
>> but unfortunately there's a roof overhanging it and is
>> 8' over the balcony floor and juts 4' out over the balcony edge,
>> so a tall vertical is out of the question.
>>
>> What about a 'vertical' that is angled about 45 deg. down
>> from vertical? Will that be good for phone DXing on any
>> HF band?
>>
>> Also, sadly, the balcony is all metal and so is the top of
>> the roof.
>>
>> What about some kind of loop?
>>
>> Thanks!
>>
>> ~swooz
>
> Try the Half Sloper if you could.
> It is quarter wave wire suspended between balcony and run at about 45 deg
> down to a tree or whatever. There is a good chance you will end up with 50
> ohm impedance and can be fed directly with a coax, shield connected to
> metal railing or door frame and center wire to the antenna. Trim to
> frequency.
> Had one like that from the 9th floor at the hotel in Bahamas, worked very
> well.

That would seem to be very unbalanced, even at 50 ohms. Could have lot's of
RF feedback but maybe it is not such a big problem at low power (QRP).
Better to connect the shield to the ground terminal in the supply mains
(thereshould be a functional safety ground in most hotels and it would be
better than a door frame or railing).

de AI4QJ

2205. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 02:35:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r4lru4q2o3maf@corp.supernews.com>
Source record: 28227
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

```
Correction:

Roy Lewallen wrote:
>
> Mathematically, vp = c/sqrt(1 - (f/fc)^2)
> vg = c * sqrt(1 - (f/fc)^2)

That should be:

vp = c/sqrt(1 - (fc/f)^2)
vg = c * sqrt(1 - (fc/f)^2)

I apologize for the error.

Roy Lewallen, W7EL
```

2206. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 02:55:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r4n1nj4rracc2@corp.supernews.com>
Source record: 28228
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

amdx wrote:
>
> I was in a hurry this morning and didn't ask my main question.
> I think at this point I understand different frequencies travel at different
> speeds.
> Group Velocity vs Velocity Factor what is the difference?

Velocity factor is the ratio of the velocity of waves in the medium to the velocity of the speed of light in a vacuum. That is, VF = v/c, where v is the velocity in the medium, c is the speed of light in a vacuum, and VF is the velocity factor. I'm more familiar with its use in non-dispersive media, but there's no reason it couldn't also be used for dispersive media. If it is, then group velocity and phase velocity would each have a different velocity factor (and it would be greater than one for the phase velocity in a hollow waveguide), and it would also be a function of frequency.

> If vg = c * sqrt(1 - (f/fc)^2) hmm, maybe I should tell what I think I know.
> (I'm way over my head on this subject).

I made an error and reversed f and fc in the equations. I've posted a correction.

> If I generate a spark (many frequencies) all these frequencies combine to
> make a waveshape, as the wave travels down the waveguide the waveshape
> changes because different frequencies are traveling at different speeds?
> Correct me as needed.

Yes, that's correct. A dispersive medium distorts any waveshape except a pure sine wave. People used to working in the frequency domain often forget the vital importance of phase response in preserving waveshape integrity. I learned the hard way that microstrip line is dispersive when designing a delay line loss compensator for a high-speed sampling oscilloscope used for TDR, where very good waveshape integrity is essential.

> So is 'group velocity' the velocity the peak of the signal as it travels
> down the waveguide?

Assuming that by "signal" you mean something other than a sine wave, it becomes a matter of definition depending on the application. When dealing with step functions, for example, the 50% point on the step is commonly used.

> Forgive my ignorance but the formula vg = c * sqrt(1 - (f/fc)^2) doesn't
> work for me. (1-(f/fc)^2) is negative and I can't get the sqrt of a
> negative. What did I miss?

Nothing, it was I that missed my error in reversing f and fc. My apology. I've posted a correction.

Roy Lewallen, W7EL

2207. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 03:03:01 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r4nf8coutmq75@corp.supernews.com>
Source record: 28229
Cross-posted to: alt.radio.amateur,news.misc.radio.amateur.antenna,rec.radio.amateur.antenna

Buck wrote:
>
> I can't speak for your specific situation, but here is how I handled
> the similar situation.
>
> I used either a multi-band-parallel dipole (sometimes referred to as a
> fan dipole) or a 135 foot dipole fed with 300 ohm twin-lead. These
> antennas were raised about 100 feet or so into trees by mason's line
> which can be purchased at Walmart or most hardware or building supply
> stores.
>
> . . .

> While I still use it today, I don't recommend it for anyone wanting to
> put up a permanent antenna and just leave it alone for more than a
> year.

I don't think it works equally well for all kinds of trees. For many years I've used nylon twine or mason's line for raising Field Day antennas. The trees here in the Pacific Northwest are of course mostly evergreens which have a lot of pitchy sap and in many varieties, fairly soft wood. An antenna with a fair amount of tension causes the line to dig into the wood in a very short period of time. And even after two days, the line can sometimes be hard to get down because of being seized in the pitchy slot it cuts in the wood. So while it's fine for a very short time temporary setup, I don't consider it viable for longer term installation in the kinds of trees we have here.

Roy Lewallen, W7EL

2208. Re: Aluminum foil capacitance hat

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 03:10:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r4ntqdcous332@corp.supernews.com>
Source record: 28230

MGFoster wrote:
> Roy Lewallen wrote:
>
> <SNIP>
>
> > If pressure is maintained and no air ever strikes the aluminum again,
> > The contact will remain sound.
>
> Wouldn't the complete enclosure of the Al by the packing tape reduce, or
> prevent, air contact. I'm not saying I did that good a job of wrapping
> the foil, I was just concerned w/ protecting the foil from physical wear
> & tear.

It should help, but I honestly can't say how much. The tape should help keep moisture out, anyway.

> <SNIP>
> >
> > That's what I mean by the difficulty of "maintaining good contact".
> Your
> > system will work fine. For a while.
> >
>
> I was going to use the antenna just for portable ops, and I was hoping
> it would last longer than "a while."

Surely the larger the surface area of the contact, the longer before it fails to make contact somewhere. There's no reason not to use it, but be on the lookout for intermod and harmonics or noise in the receiver when the wind blows and jiggles it, and don't be surprised when it fails.

Roy Lewallen, W7EL

2209. Re: RF Power Resistors from Caddock

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 03:20:04 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <CNqdnQUJw85J_C_anZ2dnUVZ_rignZ2d@giganews.com>
Source record: 28231

Richard Clark wrote:
> On Tue, 12 Feb 2008 20:14:51 -0500, Buck wrote:
>
> >
> >What would this cost and from where do we buy them?
>
> Hi Buck,
>
> I think Digikey for about $8 - $10 apiece.
>
> 73's
> Richard Clark, KB7QHC

Mouser (http://www.mouser.com/) and Allied (http://www.alliedelec.com/) also stock Caddock. If you need only one or two, you won't get stung $5 for a less-than $25 order. Their prices are only a tad higher.

For higher power capability, you can go with series-parallel combinations of such devices (on a heatsink). For even higher power, there are devices up to ~800W in a flange-mount. The RF Cafe (http://www.rfcafe.com/) has a list of vendors.

vy 73,
Bryan WA7PRC

2210. Re: EZNEC output Touchstone file?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 04:20:45 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r4s10or2g4hc1@corp.supernews.com>
Source record: 28232

Al Lorona wrote:
> Is there a method for getting the SWR sweep data from EZNEC into an S- or
> Z-parameter format for use in another application? Please forgive my
> relative unfamiliarity with this part of EZNEC.
>
> Thanks very much,

The easiest way to export SWR sweep data is via the LastZ.txt file,
described in the EZNEC manual. The impedance data can be converted into
S or other parametric forms with a spreadsheet or simple program.

Roy Lewallen, W7EL

2211. Re: practical yagi question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 04:21:20 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <Keusj.85211$rc2.31091@bignews1.bellsouth.net>
Source record: 28233

Nya - make it a Quagi!
DE is a loop
Refl is a loop
all directors are straight elements
more fun to make
easier to tune
<francesco.messineo@gmail.com> wrote in message
news:a3c5825a-0228-4680-9891-741f0c55a127@n20g2000hsh.googlegroups.com...
> Hi all,
>
> it's time to build new antennas for V/UHF season. Until now I always
> used over the boom insulated elements mounting and in almost all cases
> folded dipoles with 4:1 coaxial balun/transformer. In one case I
> changed this driven element to a simple split dipole because the
> antenna didn't seem to work well (when in facts was my homebrew tx
> which wasn't working really well).
> Now I read in some web pages that split dipoles work better for yagis
> (no balun loss, balun is narrowband, split dipole can be easily
> tuned...). This make enough sense to me (doesn't it?) so I'm willing
> to use this driven element on the new antennas.
> Now the question for the experts:
>
> is this driven element really "better"? How about braid currents?
>
> In the future yagis I want to use insulated through the boom elements
> (they are really easier to manufacture for me this way). With folded
> dipole the element's plane will pass approximately on the center of
> the folded dipole gap, if however the driven element is a split
> dipole, this element will be mounted over the boom and insulated for
> mechanical and electrical reasons, thus the driven element will lay in
> a different plane than all the other elements. Is this acceptable?
>
> Thanks in advance for all hints.
>
> best 73 de
> IZ8DWF Francesco

2212. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 04:27:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xkusj.7027$5K1.1789@newssvr12.news.prodigy.net>
Source record: 28234

AI4QJ wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>> Ever wonder why Elohim (Gods) was plural in Genesis?
>
> I think they were the same people as the Annunaki of the Sumerian writings,
> correct?

Apparently, and when they mated with humans, the
offspring were called the Nephilim, mentioned a couple
of times in The Bible.
--
73, Cecil http://www.w5dxp.com

2213. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 04:53:47 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b277cc$0$6495$4c368faf@roadrunner.com>
Source record: 28235

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:xkusj.7027$5K1.1789@newssvr12.news.prodigy.net...
> AI4QJ wrote:
>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>>> Ever wonder why Elohim (Gods) was plural in Genesis?
>>
>> I think they were the same people as the Annunaki of the Sumerian
>> writings, correct?
>
> Apparently, and when they mated with humans, the
> offspring were called the Nephilim, mentioned a couple
> of times in The Bible.

Yes, and at that time, before they allegedly engineered the DNA of homo erectus to homo sapiens sapiens, none of the human ancestors were sending out radio waves and yet we still were discovered by the Annunaki leader(s) Elohim. Thus, Richard's concern of advanced civilizations discovering our crude radio wave transmissions could come to fruition with or without controls on radio emissions ;-)

2214. Re: EZNEC output Touchstone file?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 05:35:08 UTC
From: Al Lorona <al_lorona@agilent.com>
Message-ID: <hkvsj.581$fX7.391@nlpi061.nbdc.sbc.com>
Source record: 28236

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13r4s10or2g4hc1@corp.supernews.com...
>
> The easiest way to export SWR sweep data is via the LastZ.txt file,
> described in the EZNEC manual. The impedance data can be converted into S
> or other parametric forms with a spreadsheet or simple program.
>
> Roy Lewallen, W7EL

Roy, thanks a million. I've already followed your advice and it worked beautifully. In fact, I didn't have to make any conversion at all because I used the impedance data in Last.txt as Z-parameters directly, which my program could make use of.

Thanks again,

Al W6LX

2215. Re: practical yagi question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 08:06:25 UTC
From: francesco.messineo@gmail.com
Message-ID: <7b5d6ea4-89f0-4082-8b25-daf5ee0d89f5@j20g2000hsi.googlegroups.com>
Source record: 28237

On 13 Feb, 05:21, "Hal Rosser" <hmros...@bellsouth.net> wrote:
> Nya - make it a Quagi!
> DE is a loop
> Refl is a loop
> all directors are straight elements
> more fun to make
> easier to tune

well, I made two quagi one year, they worked well. The problem is that
you don't easily find good design procedures for quagi (neither for
quads).

<francesco.messi...@gmail.com> wrote in message
>
> news:a3c5825a-0228-4680-9891-741f0c55a127@n20g2000hsh.googlegroups.com...
>
> > Hi all,
>
> > it's time to build new antennas for V/UHF season. Until now I always
> > used over the boom insulated elements mounting and in almost all cases
> > folded dipoles with 4:1 coaxial balun/transformer. In one case I
> > changed this driven element to a simple split dipole because the
> > antenna didn't seem to work well (when in facts was my homebrew tx
> > which wasn't working really well).
> > Now I read in some web pages that split dipoles work better for yagis
> > (no balun loss, balun is narrowband, split dipole can be easily
> > tuned...). This make enough sense to me (doesn't it?) so I'm willing
> > to use this driven element on the new antennas.
> > Now the question for the experts:
>
> > is this driven element really "better"? How about braid currents?
>
> > In the future yagis I want to use insulated through the boom elements
> > (they are really easier to manufacture for me this way). With folded
> > dipole the element's plane will pass approximately on the center of
> > the folded dipole gap, if however the driven element is a split
> > dipole, this element will be mounted over the boom and insulated for
> > mechanical and electrical reasons, thus the driven element will lay in
> > a different plane than all the other elements. Is this acceptable?
>
> > Thanks in advance for all hints.
>
> > best 73 de
> > IZ8DWF Francesco

2216. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 13:17:00 UTC
From: amdx <amdx@knology.net>
Message-ID: <803cf$47b2edc4$18d6b40c$5315@KNOLOGY.NET>
Source record: 28238
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

"amdx" <amdx@knology.net> wrote in message
news:b584d$47b1c67c$450139ad$31816@KNOLOGY.NET...
>> "amdx" <amdx@knology.net> schrieb im Newsbeitrag
>> news:a9252$47b197fe$18d6b40c$23017@KNOLOGY.NET...
>>> Can someone explain how these two relate in a waveguide.
>>> My limited understanding is, group velocity is slow near cutoff and
>>> increases as frequency increases to almost c.
>>> I don't know the difference between group velocity and phase velocity.
>>> Thanks, Mike
>
> "Josef Matz" <josefmatz@arcor.de> wrote in message
> news:47b1adc6$0$379$9b4e6d93@newsspool2.arcor-online.net...
>> Group velocity wants to describe a pulse containing more than one photon
>> frequenccy.
>>
>> In dispersive media the group velocity is a function of frequency of the
>> photons that form
>> a physical signal. So neighboured frequencies have a little different
>> velocities. That is what is behind.
>>
>> So group velocity as one uses the terminus in hard physical theory is
>> nothing else as the true physical velocity at a certain frequency of the
>> photonic carrier resp. field.
>>
>> Group velocities of wave packets is something apart from that. If you
>> have a
>> carrier that containes
>> a spectrum of frequencies it describes the broadening of the signal due
>> to
>> different carrier frequencies in
>> which have different velocities.
>> This definition is therefore unsharp and has only qualitative picturesque
>> meaning !
>>
>> So group velocity in a sharp sense is just the real velocity which with
>> the
>> field and the photons in move
>> at and only at a certain frequency.
>>
>> Josef Matz
>
> I was in a hurry this morning and didn't ask my main question.
> I think at this point I understand different frequencies travel at

> different speeds.
> Group Velocity vs Velocity Factor what is the difference?
> If vg = c * sqrt(1 - (f/fc)^2) hmm, maybe I should tell what I think I
> know.
> (I'm way over my head on this subject).
> If I generate a spark (many frequencies) all these frequencies combine to
> make a waveshape, as the wave travels down the waveguide the waveshape
> changes because different frequencies are traveling at different speeds?
> Correct me as needed.
> So is 'group velocity' the velocity the peak of the signal as it travels
> down the waveguide?
> Thanks, Mike
>
Ok, guys you helped me get a better understanding without the math, that I
wouldn't
be able to do.
The end point of this information is to initiate a spark pulse at one end
of a
waveguide and pickup the pulse two times. So I'll have two pickups separated
by distance.
The time between the two received pulses is distance times the velocity of
the waveform.
Hence all my questions about vf, vg and vp.
Any added thoughts are appreciated.
Thanks, Mike
p.s. I have someone that can do all the maths, I just want a better
understanding
of what's happening.

2217. Re: practical yagi question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 14:44:07 UTC
From: Harry7 <cpa599@gmail.com>
Message-ID: <25e5bd09-1e57-4c9f-90a9-0db998d51ec4@v4g2000hsf.googlegroups.com>
Source record: 28239

On Feb 13, 3:06 am, francesco.messi...@gmail.com wrote:
> On 13 Feb, 05:21, "Hal Rosser" <hmros...@bellsouth.net> wrote:
>
> > Nya - make it a Quagi!
> > DE is a loop
> > Refl is a loop
> > all directors are straight elements
> > more fun to make
> > easier to tune
>
> well, I made two quagi one year, they worked well. The problem is that
> you don't easily find good design procedures for quagi (neither for
> quads).
>

try: http://web.wt.net/~w5un/w5unqu97.htm

> <francesco.messi...@gmail.com> wrote in message
>
> >news:a3c5825a-0228-4680-9891-741f0c55a127@n20g2000hsh.googlegroups.com...
>
> > > Hi all,
>
> > > it's time to build new antennas for V/UHF season. Until now I always
> > > used over the boom insulated elements mounting and in almost all cases
> > > folded dipoles with 4:1 coaxial balun/transformer. In one case I
> > > changed this driven element to a simple split dipole because the
> > > antenna didn't seem to work well (when in facts was my homebrew tx
> > > which wasn't working really well).
> > > Now I read in some web pages that split dipoles work better for yagis
> > > (no balun loss, balun is narrowband, split dipole can be easily
> > > tuned...). This make enough sense to me (doesn't it?) so I'm willing
> > > to use this driven element on the new antennas.
> > > Now the question for the experts:
>
> > > is this driven element really "better"? How about braid currents?
>
> > > In the future yagis I want to use insulated through the boom elements
> > > (they are really easier to manufacture for me this way). With folded
> > > dipole the element's plane will pass approximately on the center of
> > > the folded dipole gap, if however the driven element is a split
> > > dipole, this element will be mounted over the boom and insulated for
> > > mechanical and electrical reasons, thus the driven element will lay in
> > > a different plane than all the other elements. Is this acceptable?
>

> > > Thanks in advance for all hints.
>
> > > best 73 de
> > > IZ8DWF Francesco

2218. Re: practical yagi question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 14:49:04 UTC
From: ltdoc@yahoo.com
Message-ID: <b1889e5b-e171-499d-b8a7-de982c72d7b4@j20g2000hsi.googlegroups.com>
Source record: 28240

Francesco,
The 'best' driven element is one that is the easiest and most
practical for you to make/use. I'm sure that someone has done testing
of this sort, and I also think that there isn't all that much
difference in performance (all things considered). Lots of variables
in that "best" qualification!
- 'Doc

2219. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 16:28:54 UTC
From: Swoozie Pellegrino <swooziep@yahoo.com>
Message-ID: <9d92e7b3-a226-4679-80f9-1489cc2e9355@j20g2000hsi.googlegroups.com>
Source record: 28241

On Feb 11, 10:41 pm, Rick Frazier <ri...@rickfrazier.com> wrote:
> Swoozie Pellegrino wrote:
> > Hi, all.
>
> > I'm about to become a General class licensee, and I'm
> > trying to work out a HF antenna plan for my new apartment.
> > I have a small balcony on the top (4th) floor, which is good,
> > but unfortunately there's a roof overhanging it and is
> > 8' over the balcony floor and juts 4' out over the balcony edge,
> > so a tall vertical is out of the question.
>
> > What about a 'vertical' that is angled about 45 deg. down
> > from vertical? Will that be good for phone DXing on any
> > HF band?
>
> > Also, sadly, the balcony is all metal and so is the top of
> > the roof.
>
> > What about some kind of loop?
>
> > Thanks!
>
> > ~swooz
>
> How about a vertical suspended from a hunk of plastic pipe ? Try
> letting it hang down from the balcony, as far out as you can safely
> suspend it. I've gotten away with using a 24 guage wire suspended with
> a collapsable/extendible fishing pole with reasonable results, compared
> to trying to use a short dipole inside a hotel room....
>
> Though far from optimum, sometimes almost anything is better than nothing.
>
> --Rick AH7H- Hide quoted text -
>
> - Show quoted text -

I could fashion a 24 gauge 1/2-wavelength 20m dipole, which I know
about its footprint when strung horizontally at 1/2-wavelength above
the ground, but is it of any use stood on end (as in dangled from
my balcony and tapped in the center)?

Thanks,
~swooz

2220. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 17:11:18 UTC
From: The Shadow <Cranston@CobaltClub.com>
Message-ID: <_wFsj.9815$n42.7471@newsfe08.phx>
Source record: 28242

"Swoozie Pellegrino" <swooziep@yahoo.com> wrote in message
news:9d92e7b3-a226-4679-80f9-1489cc2e9355@j20g2000hsi.googlegroups.com...
On Feb 11, 10:41 pm, Rick Frazier <ri...@rickfrazier.com> wrote:
> Swoozie Pellegrino wrote:
> > Hi, all.
>
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> > trying to work out a HF antenna plan for my new apartment.
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>
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> to trying to use a short dipole inside a hotel room....
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about its footprint when strung horizontally at 1/2-wavelength above
the ground, but is it of any use stood on end (as in dangled from
my balcony and tapped in the center)?

Thanks,
~swooz

Sure is -- tis a vertical dipole - works well at low heights where a horizontal dipole should be elevated above ground - half wavelength +

Be sure to center tap it for proper impedance match. Not end fed.

Feedline should be 90 deg from the dipole or as near as you can get it.

I use a vertical dipole on six meters - works well

Lamont

2221. Re: FS: GPIB (HPIB) IEEE 488.2 PCI-controller NATIONAL INSTRUMENTS NI. $199 COST FAR BELOW ORIGINAL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 18:16:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GtGsj.10920$J41.9060@newssvr14.news.prodigy.net>
Source record: 28243

Mark Licetti wrote:
> FS:

In case you don't know, for sale postings are against
the guidelines for this newsgroup. rec.radio.swap is
the appropriate newsgroup.
--
73, Cecil http://www.w5dxp.com

2222. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 19:23:58 UTC
From: "R.Scott" <w7psk@yahoo.com>
Message-ID: <6ad11835-5b68-4f94-90d8-66592293080d@d21g2000prf.googlegroups.com>
Source record: 28244

On Feb 13, 8:28 am, Swoozie Pellegrino <swooz...@yahoo.com> wrote:
> On Feb 11, 10:41 pm, Rick Frazier <ri...@rickfrazier.com> wrote:
>
>
>
> > Swoozie Pellegrino wrote:
> > > Hi, all.
>
> > > I'm about to become a General class licensee, and I'm
> > > trying to work out a HF antenna plan for my new apartment.
> > > I have a small balcony on the top (4th) floor, which is good,
> > > but unfortunately there's a roof overhanging it and is
> > > 8' over the balcony floor and juts 4' out over the balcony edge,
> > > so a tall vertical is out of the question.
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> > > What about a 'vertical' that is angled about 45 deg. down
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> > > HF band?
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> > > Also, sadly, the balcony is all metal and so is the top of
> > > the roof.
>
> > > What about some kind of loop?
>
> > > Thanks!
>
> > > ~swooz
>
> > How about a vertical suspended from a hunk of plastic pipe ? Try
> > letting it hang down from the balcony, as far out as you can safely
> > suspend it. I've gotten away with using a 24 guage wire suspended with
> > a collapsable/extendible fishing pole with reasonable results, compared
> > to trying to use a short dipole inside a hotel room....
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> > Though far from optimum, sometimes almost anything is better than nothing.
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> about its footprint when strung horizontally at 1/2-wavelength above
> the ground, but is it of any use stood on end (as in dangled from
> my balcony and tapped in the center)?

>
> Thanks,
> ~swooz

When I was first licenced I lived in a 2 story apartment. For 20 - 10 meters I hung Clothes line pulleys at the end of both bedrooms (abotu 25 feet) and small diameter rope tween the pulleys. I then attached the GROUND side of the dipole and pulled it across letting the Center dangle down. Inverted L ..... and I worked 100+ countries and WAS on that little piece of wire. I used small copper wire, never ran more than 100W and it was near invisible even in daytime.

Scotty W7PSK.

2223. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 20:27:00 UTC
From: Josef Matz <josefmatz@arcor.de>
Message-ID: <47b35304$0$23019$9b4e6d93@newsspool1.arcor-online.net>
Source record: 28245
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna,sci.electronics.design

"amdx" <amdx@knology.net> schrieb im Newsbeitrag
news:b584d$47b1c67c$450139ad$31816@KNOLOGY.NET...
> > "amdx" <amdx@knology.net> schrieb im Newsbeitrag
> > news:a9252$47b197fe$18d6b40c$23017@KNOLOGY.NET...
> >> Can someone explain how these two relate in a waveguide.
> >> My limited understanding is, group velocity is slow near cutoff and
> >> increases as frequency increases to almost c.
> >> I don't know the difference between group velocity and phase
velocity.
> >> Thanks, Mike
>
> "Josef Matz" <josefmatz@arcor.de> wrote in message
> news:47b1adc6$0$379$9b4e6d93@newsspool2.arcor-online.net...
> > Group velocity wants to describe a pulse containing more than one photon
> > frequenccy.
> >
> > In dispersive media the group velocity is a function of frequency of
the
> > photons that form
> > a physical signal. So neighboured frequencies have a little different
> > velocities. That is what is behind.
> >
> > So group velocity as one uses the terminus in hard physical theory is
> > nothing else as the true physical velocity at a certain frequency of the
> > photonic carrier resp. field.
> >
> > Group velocities of wave packets is something apart from that. If you
have
> > a
> > carrier that containes
> > a spectrum of frequencies it describes the broadening of the signal due
to
> > different carrier frequencies in
> > which have different velocities.
> > This definition is therefore unsharp and has only qualitative
picturesque
> > meaning !
> >
> > So group velocity in a sharp sense is just the real velocity which with
> > the
> > field and the photons in move
> > at and only at a certain frequency.
> >

> > Josef Matz
>
> I was in a hurry this morning and didn't ask my main question.
> I think at this point I understand different frequencies travel at
different
> speeds.
> Group Velocity vs Velocity Factor what is the difference?
> If vg = c * sqrt(1 - (f/fc)^2) hmm, maybe I should tell what I think I
know.
> (I'm way over my head on this subject).
> If I generate a spark (many frequencies) all these frequencies combine
to
> make a waveshape, as the wave travels down the waveguide the waveshape
> changes because different frequencies are traveling at different speeds?
> Correct me as needed.
> So is 'group velocity' the velocity the peak of the signal as it travels
> down the waveguide?
> Forgive my ignorance but the formula vg = c * sqrt(1 - (f/fc)^2) doesn't
> work for me. (1-(f/fc)^2) is negative and I can't get the sqrt of a
> negative. What did I miss?
> Thanks, Mike
>
>
>
>
>

I have seen that at Nimtz too. He modifies the dispersion relation. Since i
have not seen that before
i just can say that light having this dispersion relation does not obey the
wave equation but a more general equation which is called Klein - Gordon
equation. So it is not elliptic polarized light.
Such light can also move in homogene waves but with velocities less than c
and be frozen at f =fc.
For f >fc you get inhomogene waves and those can tunnel almost instant.
Thats proof too.

But whats fc ? I dint know.

So i am going after that, my trial to find out something is that it light
where the ellipse of elliptic polrized light
rotates or in other words the field takes a screw. But ok i am not shure
about that last now.

Josef

2224. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 22:15:37 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13r6qok1cpkjh5e@corp.supernews.com>
Source record: 28246

R.Scott wrote:
>
> When I was first licenced I lived in a 2 story apartment. For 20 -
> 10 meters I hung Clothes line pulleys at the end of both bedrooms
> (abotu 25 feet) and small diameter rope tween the pulleys. I then
> attached the GROUND side of the dipole and pulled it across letting
> the Center dangle down. Inverted L ..... and I worked 100+
> countries and WAS on that little piece of wire. I used small copper
> wire, never ran more than 100W and it was near invisible even in
> daytime.

Where did you have the feed point?

Thanks,
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net
Oakland, CA (USA)
KI6OFN

2225. High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 22:30:46 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13r6rl0cklloj17@corp.supernews.com>
Source record: 28247

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

I'm working QRP (5W max) and I'm construction my own antennas. I've read that antenna efficiency can be degraded by "high ohmic connections" (especially deleterious to QRP ops). I'm assuming that we shouldn't make potato-sized solder joints when assembling the antenna. So, I was wondering what would be the best way to connect various parts of the antenna?

Example: I've created a 4:1 balun based on Ron's (VK2DQ) description in his article "Understanding and building the OCF dipole." The toroid windings had to be connected. So, rather than twist them together (they are 18 AWG) and solder them, I laid the pieces side-by-side (abt 1/4") and solder them together. Is that a "high ohmic" connection? If so, what other way could the pieces be soldered together w/o creating a high ohmic connection?

For other parts of the antenna (e.g., the feed-point) would connectors (quick release, ring type, etc.) be better than a solder joint?

Thanks,
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net
Oakland, CA (USA)
KI6OFN

-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR7Nvi4echKqOuFEgEQIUIQCg2fSd/P9gK8ANzngBvKLQ0uj72qwAoIxS
1sXN9l/C5N9aeftVEm6iqqPp
=f3tu
-----END PGP SIGNATURE-----

2226. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 23:11:02 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <83bf4d64-3a72-4547-9b5f-5ef4a84078c4@s8g2000prg.googlegroups.com>
Source record: 28248

On Feb 13, 2:30 pm, MGFoster <m...@privacy.com> wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I'm working QRP (5W max) and I'm construction my own antennas. I've
> read that antenna efficiency can be degraded by "high ohmic connections"
> (especially deleterious to QRP ops). I'm assuming that we shouldn't
> make potato-sized solder joints when assembling the antenna. So, I was
> wondering what would be the best way to connect various parts of the
> antenna?
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> Example: I've created a 4:1 balun based on Ron's (VK2DQ) description in
> his article "Understanding and building the OCF dipole." The toroid
> windings had to be connected. So, rather than twist them together (they
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> and solder them together. Is that a "high ohmic" connection? If so,
> what other way could the pieces be soldered together w/o creating a high
> ohmic connection?
>
> For other parts of the antenna (e.g., the feed-point) would connectors
> (quick release, ring type, etc.) be better than a solder joint?
>
> Thanks,
> --
> MGFoster:::mgf00 <at> earthlink <decimal-point> net
> Oakland, CA (USA)
> KI6OFN
>
> -----BEGIN PGP SIGNATURE-----
> Version: PGP for Personal Privacy 5.0
> Charset: noconv
>
> iQA/AwUBR7Nvi4echKqOuFEgEQIUIQCg2fSd/P9gK8ANzngBvKLQ0uj72qwAoIxS
> 1sXN9l/C5N9aeftVEm6iqqPp
> =f3tu
> -----END PGP SIGNATURE-----

Well, I recently finished installation of a 160 meter lazy quad,
horizontal loop, fed with home made 600 ohm feed line. All connections
have crimp type terminals that are also soldered. The plastic was
removed from the terminal before use. Then the terminals are bolted
together. I change things quite often and needed to have an easy to
disconnect the feed line from the antenna and house. Seems to be
working just fine.

Paul, KD7HB

2227. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-13 23:15:09 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r6ug1bcet1332@corp.supernews.com>
Source record: 28249

Any soldered connection is fine, and not a "high ohmic connection". The only time you really need to worry is if you're using an electrically small antenna such as a small loop for transmitting and even then any soldered joint is ok.

I often use wire nuts (the sort used for house wiring) for temporary or even semi-permanent antenna connections.

Roy Lewallen, W7EL

MGFoster wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I'm working QRP (5W max) and I'm construction my own antennas. I've
> read that antenna efficiency can be degraded by "high ohmic connections"
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> ohmic connection?
>
> For other parts of the antenna (e.g., the feed-point) would connectors
> (quick release, ring type, etc.) be better than a solder joint?
>
> Thanks,

2228. Standing wave and power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 00:16:17 UTC
From: Yuri Blanarovich <K3BU@optonline.net>
Message-ID: <47b3885e$0$25023$607ed4bc@cv.net>
Source record: 28250

From Kraus: Antennas

" 1-1. Definitions. A radio antenna may be defined as the structure associated with the region of transition between a guided wave and a freespace wave, or vice versa.
In connection with this definition it is also useful to consider what is meant by transmission line and by resonator. A transmission line is a device for transmitting or guiding radio-frequency energy from one point to another. Usually it is desirable to transmit the energy with a minimum of attenuation, heat and radiation losses being as small as possible. This means that while the energy is being conveyed from one point to another it is confined within the transmission line or to the vicinity of the line. Thus, the wave transmitted along the line is one-dimensional in that it does not spread out into space but follows along the line. From this general point of view the term transmission line includes not only coaxial and two-wire transmission lines but also hollow pipes, or wave guides.
A generator connected to an infinite, lossless transmission line produces a uniform traveling wave along the line. If the line is short-circuited, a standing wave appears because of interference between the incident and reflected waves. A standing wave has associated with it local concentrations of energy. If the reflected wave is equal to the incident wave, we have a pure standing wave. The energy concentrations in such a wave oscillate from entirely electric to entirely magnetic energy and back twice per cycle. Such energy behavior is characteristic of a resonant circuit, or resonator. Although the term resonator, in its most general sense, may be applied to any device with standing waves, the term is usually reserved for devices with stored energy concentrations that are large compared with the inflow or outflow of energy.(2)

(2) The ratio of the energy stored to that lost per cycle is proportional to the Q, or sharpness of resonance of the resonator."

From Wikipedia:

"In physics, power (symbol: P) is the rate at which work is performed or energy is transmitted, or the amount of energy required or expended for a given unit of time.
When the rate of energy transfer or work is constant, all of this can be simplified to

P=W/t=E/t

where W and E are, respectively, the work done or energy transferred in time t (usually measured in seconds)."

Yuri and W9UCW also found that
on a quarter wave resonant vertical antenna, which is a standing wave circuit, and demonstrates that at the current maximum at the base, or at the bottom of the loading coil, the current heats the wire. At the tip, where there is a voltage maximum, the corona or neon bulb lights up. Both effects demonstrating that there is power (energy over time) being exhibited. Kraus so effectively explains it in the introduction to his book, but the "expertise" on this news group insists on otherwise - "no power in standing wave circuit".

73 Yuri, K3BU.us

2229. Re: Standing wave and power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 00:42:10 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <MoidnUE3zO8PEy7anZ2dneKdnZydnZ2d@bt.com>
Source record: 28051

"Yuri Blanarovich" <K3BU@optonline.net> wrote in message
news:47b3885e$0$25023$607ed4bc@cv.net...
>
> From Kraus: Antennas
>
> " 1-1. Definitions. A radio antenna may be defined as the structure
> associated with the region of transition between a guided wave and a
> freespace wave, or vice versa.
> In connection with this definition it is also useful to consider what is
> meant by transmission line and by resonator. A transmission line is a
> device for transmitting or guiding radio-frequency energy from one point
> to another. Usually it is desirable to transmit the energy with a minimum
> of attenuation, heat and radiation losses being as small as possible. This
> means that while the energy is being conveyed from one point to another it
> is confined within the transmission line or to the vicinity of the line.
> Thus, the wave transmitted along the line is one-dimensional in that it
> does not spread out into space but follows along the line. From this
> general point of view the term transmission line includes not only coaxial
> and two-wire transmission lines but also hollow pipes, or wave guides.
> A generator connected to an infinite, lossless transmission line produces
> a uniform traveling wave along the line. If the line is short-circuited, a
> standing wave appears because of interference between the incident and
> reflected waves. A standing wave has associated with it local
> concentrations of energy. If the reflected wave is equal to the incident
> wave, we have a pure standing wave. The energy concentrations in such a
> wave oscillate from entirely electric to entirely magnetic energy and back
> twice per cycle. Such energy behavior is characteristic of a resonant
> circuit, or resonator. Although the term resonator, in its most general
> sense, may be applied to any device with standing waves, the term is
> usually reserved for devices with stored energy concentrations that are
> large compared with the inflow or outflow of energy.(2)
>
> (2) The ratio of the energy stored to that lost per cycle is
> proportional to the Q, or sharpness of resonance of the resonator."
>
>
>
> From Wikipedia:
>
> "In physics, power (symbol: P) is the rate at which work is performed or
> energy is transmitted, or the amount of energy required or expended for a
> given unit of time.
> When the rate of energy transfer or work is constant, all of this can be
> simplified to

>
> P=W/t=E/t
>
> where W and E are, respectively, the work done or energy transferred in
> time t (usually measured in seconds)."
>
>
> Yuri and W9UCW also found that
> on a quarter wave resonant vertical antenna, which is a standing wave
> circuit, and demonstrates that at the current maximum at the base, or at
> the bottom of the loading coil, the current heats the wire. At the tip,
> where there is a voltage maximum, the corona or neon bulb lights up. Both
> effects demonstrating that there is power (energy over time) being
> exhibited.
> Kraus so effectively explains it in the introduction to his book, but the
> "expertise" on this news group insists on otherwise - "no power in
> standing wave circuit".
>
> 73 Yuri, K3BU.us
>
Since you are drawing power, by lighting a neon bulb, or by creating a corona, or by heating a wire through current flow, it cannot be a standing wave in the theoretical sense. It is possible to use perfect or ideal components in a theoretical analysis, but real life tends to throw a spanner in the works. In any real standing wave circuit there are power losses due to radiation or resistance. The nearest one could come to the idealised standing wave circuit is the current flow around a superconductor. The current flows continuously until an outside influence such as a magnetic field interrupts the flow. Depending on the circumstances, a physical (magnetic) repulsive force may be generated or a feedback loop may develop resulting in rapid temperature rise, loss of superconductive properties and a rather loud bang as the circuit comes apart. Clearly power does flow in all real life standing wave circuits.

Mike G0ULI

2230. Re: Standing wave and power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 02:31:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fKNsj.233$Mw.131@nlpi068.nbdc.sbc.com>
Source record: 28052

Yuri Blanarovich wrote:
> Kraus so effectively explains it in the introduction to his book, but the
> "expertise" on this news group insists on otherwise - "no power in standing
> wave circuit".

The energy in the traveling waves was supplied as power
by the source during the power-on transient state and is
exactly the amount of energy needed to support the forward
and reflected waves. The energy in the forward and reflected
waves is dissipated during the power-down transient state.

Assuming an integer number of cycles per second, a one second
long lossless transmission line with a forward power of 200
watts and a reflected power of 100 watts contains 300 joules
of energy.
--
73, Cecil http://www.w5dxp.com

2231. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 02:54:47 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <B3Osj.32304$1f.18481@bignews9.bellsouth.net>
Source record: 28053

Daddy always said the solder joint oughta be mechanically sound before you even put the heat to it.
Use an abrasive and clean the wires to be joined.
Join them mechanically (like a good twist or compression connector) (If the wire is copper, this would be low-resistance in itself) - then flux it and solder it. (use Rosin flux - not acid flux).
Then considering its for an outside antenna, dip it in 3M ScotchKote which is like an electrical-grade varnish.
That would make a "low-ohmic" (some call it "low-resistance") connection.

Oh and considering you're only using 5 watts, you need to shake the antenna real hard while transmitting to be sure to get every little bit of RF out of it. :-)

"MGFoster" <me@privacy.com> wrote in message
news:13r6rl0cklloj17@corp.supernews.com...
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I'm working QRP (5W max) and I'm construction my own antennas. I've
> read that antenna efficiency can be degraded by "high ohmic connections"
> (especially deleterious to QRP ops). I'm assuming that we shouldn't
> make potato-sized solder joints when assembling the antenna. So, I was
> wondering what would be the best way to connect various parts of the
> antenna?
>
> Example: I've created a 4:1 balun based on Ron's (VK2DQ) description in
> his article "Understanding and building the OCF dipole." The toroid
> windings had to be connected. So, rather than twist them together (they
> are 18 AWG) and solder them, I laid the pieces side-by-side (abt 1/4")
> and solder them together. Is that a "high ohmic" connection? If so,
> what other way could the pieces be soldered together w/o creating a high
> ohmic connection?
>
> For other parts of the antenna (e.g., the feed-point) would connectors
> (quick release, ring type, etc.) be better than a solder joint?
>
> Thanks,
> --
> MGFoster:::mgf00 <at> earthlink <decimal-point> net
> Oakland, CA (USA)
> KI6OFN
>
> -----BEGIN PGP SIGNATURE-----
> Version: PGP for Personal Privacy 5.0

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> Charset: noconv
>
> iQA/AwUBR7Nvi4echKqOuFEgEQIUIQCg2fSd/P9gK8ANzngBvKLQ0uj72qwAoIxS
> 1sXN9l/C5N9aeftVEm6iqqPp
> =f3tu
> -----END PGP SIGNATURE-----
```

2232. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 02:55:04 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <47b3ad7f@clear.net.nz>
Source record: 28054

AI4QJ wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:xkusj.7027$5K1.1789@newssvr12.news.prodigy.net...
>
>>AI4QJ wrote:
>>
>>>"Cecil Moore" <nospam@w5dxp.com> wrote in message
>>>
>>>>Ever wonder why Elohim (Gods) was plural in Genesis?
>>>
>>>I think they were the same people as the Annunaki of the Sumerian
>>>writings, correct?
>>
>>Apparently, and when they mated with humans, the
>>offspring were called the Nephilim, mentioned a couple
>>of times in The Bible.
>
>
> Yes, and at that time, before they allegedly engineered the DNA of homo
> erectus to homo sapiens sapiens, none of the human ancestors were sending
> out radio waves and yet we still were discovered by the Annunaki leader(s)
> Elohim. Thus, Richard's concern of advanced civilizations discovering our
> crude radio wave transmissions could come to fruition with or without
> controls on radio emissions ;-)
>
>
Oh dear we are getting of the thread aren't we! So here goes. Anyone
read Robert Graves book "The White goddess"? Ther he makes a fairly
strong case that the religion of Genisis actually had 3 deities
1 God and 2 Goddesses. He get a lot of this idea from of all place's
Solomons temple and its construction. So maybe they wern't Aliens after
all just good old Polytheism.
In any event why hold up a sign saying "exploitable planet with
intelligent? race here" maybe they are a bit lazy just like us.
Cliff Wright

2233. 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 03:51:33 UTC
From: art <aunwin@insightbb.com>
Message-ID: <82c08057-8efb-4d41-9549-b0b0ba898b6c@n20g2000hsh.googlegroups.com>
Source record: 28055

My present antenna, which is for 160m and above, is about the size of
two shoe
boxes and is less than 2:1 swr (50 ohm) across the band when
situatedat the
top of my tower.
I have googled a lot over the last month or so to determine if there
has been
claims for the 'smallest' transmitting antenna and what the criteria
consisted of.
If I knew what it was I would concentrate on making my antenna smaller
to reflect
something more close to point radiation which has been theorized as
being possible.
Seems like that there is no real definition of what a 'small' compact
antenna
actually comprises of together with power handling capabilities!
True, for receiving only there are many contestants all with
different criteria,
but for the ham community there is absolutely nothing for anybody to
compare
with other than such claims as 'mine is the smallest and I work
anything I can
hear' !. Can anybody point to a transmitting antenna that can be
considered
'small ' without the need for a ground plane, which thus puts it
into the
'antenna systems' class ?
For a point of interest, I am presently using a reflector made from a
garbage can lid,
but it is not acting in anyway a dish antenna works when the reflector
is grounded!
As an aside, most posters to the group are aware that a modest sum was
offered
who could disprove my claim but with no takers. So can we put that
particular subject
aside and concentrate only on the request of this posting which
should cut off
most of the insults ?
Best regards to all
Art Unwin

2234. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 04:34:36 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <wxPsj.11175$Ej5.2497@newssvr29.news.prodigy.net>
Source record: 28056

art wrote:
> My present antenna, which is for 160m and above, is about the size of
> two shoe
> boxes and is less than 2:1 swr (50 ohm) across the band when
> situatedat the
> top of my tower.
> I have googled a lot over the last month or so to determine if there
> has been
> claims for the 'smallest' transmitting antenna and what the criteria
> consisted of.
> If I knew what it was I would concentrate on making my antenna smaller
> to reflect
> something more close to point radiation which has been theorized as
> being possible.
> Seems like that there is no real definition of what a 'small' compact
> antenna
> actually comprises of together with power handling capabilities!
> True, for receiving only there are many contestants all with
> different criteria,
> but for the ham community there is absolutely nothing for anybody to
> compare
> with other than such claims as 'mine is the smallest and I work
> anything I can
> hear' !. Can anybody point to a transmitting antenna that can be
> considered
> 'small ' without the need for a ground plane, which thus puts it
> into the
> 'antenna systems' class ?
> For a point of interest, I am presently using a reflector made from a
> garbage can lid,
> but it is not acting in anyway a dish antenna works when the reflector
> is grounded!
> As an aside, most posters to the group are aware that a modest sum was
> offered
> who could disprove my claim but with no takers. So can we put that
> particular subject
> aside and concentrate only on the request of this posting which
> should cut off
> most of the insults ?
> Best regards to all
> Art Unwin

Hi Art,
Get a copy of Balanis' _Antenna Theory, Analysis and Design_,

second edition, and read section 11.5, Fundamental Limits of Electrically Small Antennas. Also, in the _Antenna Engineering Handbook_, third edition, read section 6, Small Antennas by Harold A. Wheeler. I won't vouch for any of the information, but it should give you some ideas on what the practical limits of small antennas are supposed to be by reputable people who have thought the subject through.
73,
Tom Donaly, KA6RUH

2235. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 04:40:09 UTC
From: MGFoster <me@privacy.com>
Message-ID: <13r7h9j282pa30a@corp.supernews.com>
Source record: 28057

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

MGFoster wrote:
> I'm working QRP (5W max) and I'm construction my own antennas. I've
> read that antenna efficiency can be degraded by "high ohmic
connections"
> (especially deleterious to QRP ops). I'm assuming that we shouldn't
> make potato-sized solder joints when assembling the antenna. So, I
was
> wondering what would be the best way to connect various parts of the
> antenna?

<SNIP>

Thanks to everyone who gave advice; very helpful.

The person who stated that "high ohmic connections" were deleterious to
QRP ops was describing his construction of a linear loaded dipole and
the connections to the inductance section of the antenna (see N5ESE's
article on the "Notebook antenna"
http://www.io.com/~n5fc/notebk_ant.htm). This is a small radiation
resistance antenna and could be affected by bad connections.

The balun's connections, described in my original post, will not be
subject to mechanical stress 'cuz it will be bolted down inside a
connection box and protected from the wx.

Thanks & 73
--
MGFoster:::mgf00 <at> earthlink <decimal-point> net
Oakland, CA (USA)
** Respond only to this newsgroup. I DO NOT respond to emails **

-----BEGIN PGP SIGNATURE-----
Version: PGP for Personal Privacy 5.0
Charset: noconv

iQA/AwUBR7PGDYechKqOuFEgEQL05ACfb1CWbMksIbJjTXdKprq00w9OwJoAn3LB
1ZYIIsNktVMGLKCFdQAoimUD
=9oQp
-----END PGP SIGNATURE-----

2236. Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 04:58:31 UTC
From: N0GW <wescom@wildblue.net>
Message-ID: <47b7b286-28d1-44e4-8a28-263e3358d2aa@m34g2000hsb.googlegroups.com>
Source record: 28058

OK, I apparently drifted off the beaten path plus I seem to be experiencing some serious brain fade.

What I was doing was preparing a short presentation for new hams on the subject of vertical antennas. I was using EZNEC to produce some antenna pattern graphics. It was then that I noticed that when I overlayed the pattern from a vertical half wavelength dipole with that of a horizontal half wave dipole at the same center height over real ground that the pattern from the vertical was completely enclosed by the horizontal dipole pattern, at least broadside to the horizontal dipole that is. The vertical dipole pattern definitely showed a lower angle of peak radiation but no greater gain a low angles than the horizontal dipole.

At first, seeing the vertical dipole gain the same as the horizontal dipole, even at low elevation angles, was a little confusing but I had just scanned a bit of text on vertical antenna operation including calculation for reflected waves and stuff like the pseudo Brewster angle.

But then... I remembered talking to a couple guys in Germany on 75 meters the previous evening. From my location here in Missouri, I was hearing their signals on my 75 meter inverted L much stronger at 10 to 20 over S9 than on my dipole at S4 to S5. They noted the same difference in performance between the two antennas. As both the Dipole height and the top of the inverted L were at 50 feet, I thought this was a reasonable comparison. Also, the dipole is in the clear, resonant, and has been performing as well or better than other horizontal dipoles used by other hams in this area.

Furthermore, my experience switching between horizontal and vertical antennas on 75 meters matched that of other guys with both. I was starting to wonder why the mismatch between the theory I was familiar with and my experiences.

Jumping back in to the text books and spending some time 'googling' for more info I found nothing to conflict with the material I had previously covered. That was disconcerting. About the only glimmer of a solution to the question popped up when I looked at papers on ground or surface wave propagation. There were some vague comments about diffraction that seemed to indicate one of the loss factors involved with ground wave propagation is that some of the signal does not get diffracted low enough to keep in from being 'lost' to sky wave radiation.

As I continued chasing that thought, I found that discussions of sky wave propagation ignored ground wave and discussions of ground wave propagation considered sky wave as lost RF.

Now, after all that windup, what am I missing? I acknowledge ahead of time that I may be a dummy so don't bother explaining that to me. Why do reasonable size vertical antennas with proper radial systems under them outperform horizontal dipoles for DX operation for typical ham antenna support structure heights of 50 feet or so?

The interesting question then: Is the improved performance of vertical antennas over horizontal dipoles on 75 meters at DX distances due to a combination of direct radiation plus radiation from the ground in the area of strong ground wave strength out hundreds of meters? Is the ground wave leakage providing additional low signal strength in both transmit and receive?

Gary - N0GW

2237. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 05:27:31 UTC
From: art <aunwin@insightbb.com>
Message-ID: <9f692ea7-e3a6-43ce-a2c0-e237e0774611@d68g2000hsg.googlegroups.com>
Source record: 28059

On 13 Feb, 20:34, "Tom Donaly" <dtdon...@sbcglobal.net> wrote:
> art wrote:
> > My present antenna, which is for 160m and above, is about the size of
> > two shoe
> > boxes and is less than 2:1 swr (50 ohm) across the band when
> > situatedat the
> > top of my tower.
> > I have googled a lot over the last month or so to determine if there
> > has been
> > claims for the 'smallest' transmitting antenna and what the criteria
> > consisted of.
> > If I knew what it was I would concentrate on making my antenna smaller
> > to reflect
> > something more close to point radiation which has been theorized as
> > being possible.
> > Seems like that there is no real definition of what a 'small' compact
> > antenna
> > actually comprises of together with power handling capabilities!
> > True, for receiving only there are many contestants all with
> > different criteria,
> > but for the ham community there is absolutely nothing for anybody to
> > compare
> > with other than such claims as 'mine is the smallest and I work
> > anything I can
> > hear' !. Can anybody point to a transmitting antenna that can be
> > considered
> > 'small ' without the need for a ground plane, which thus puts it
> > into the
> > 'antenna systems' class ?
> > For a point of interest, I am presently using a reflector made from a
> > garbage can lid,
> > but it is not acting in anyway a dish antenna works when the reflector
> > is grounded!
> > As an aside, most posters to the group are aware that a modest sum was
> > offered
> > who could disprove my claim but with no takers. So can we put that
> > particular subject
> > aside and concentrate only on the request of this posting which
> > should cut off
> > most of the insults ?
> > Best regards to all
> > Art Unwin
>
> Hi Art,

> Get a copy of Balanis' _Antenna Theory, Analysis and Design_,
> second edition, and read section 11.5, Fundamental Limits of
> Electrically Small Antennas. Also, in the _Antenna Engineering
> Handbook_, third edition, read section 6, Small Antennas by Harold A.
> Wheeler. I won't vouch for any of the information, but it should give
> you some ideas on what the practical limits of small antennas are
> supposed to be by reputable people who have thought the subject
> through.
> 73,
> Tom Donaly, KA6RUH- Hide quoted text -
>
> - Show quoted text -

Understood Tom. Wheeler looks at the subject from many angles but
does
not get into overall specifics. For instance, the smallest volume
antenna can be based on wire size which in turn is based on power
output.
This effectively states that the smallest radiater is the size of a
pinhead!
Practicality states that the wire diameter is exceedingly small
diameter
plus extremely low power, all of which is based on a arrangement that
is
resonant. In practical terms I would point to a Fractal antenna
however, the
criteria for 'smallness' or 'compact' must factor in efficiency with
respect
to wave length where the latter antenna would fail. Same goes for the
EH
antenna which only can be regarded as a 'system'. Or for that matter
a
resister which as a load is just a heat exchanger.
In the amateur field one should incorporate max power allowed on key
down for a certain period of time without loading of any sort and
where
radiation is rated with respect to a unit volume. With that in mind I
have found nothing to aim for to qualify as a 'small' or 'compact'
antenna.
Looking at the trade magazine 'Antenna' there is always demands for a
"smaller"
design antenna as something that is holding up electronic progress,
but at
the same time zero reference as to what defines 'small' since design
is
covered by Maxwell and not by Congress
Best regards
Art Unwin.

2238. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 05:32:01 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r7kilq9oj0l7b@corp.supernews.com>
Source record: 28060

MGFoster wrote:
>>
> Thanks to everyone who gave advice; very helpful.
>
> The person who stated that "high ohmic connections" were deleterious to
> QRP ops was describing his construction of a linear loaded dipole and
> the connections to the inductance section of the antenna (see N5ESE's
> article on the "Notebook antenna"
> http://www.io.com/~n5fc/notebk_ant.htm). This is a small radiation
> resistance antenna and could be affected by bad connections.
> . . .

Yes, it does have a low radiation resistance:

21 MHz: 31.7 ohms
14 MHz: 11.6 ohms
7 MHz: 2.6 ohms
3.5 MHz: 0.64 ohms
1.8 MHz: 0.17 ohms

And the tuner has a lot of reactance to take care of, from about 180 ohms at 21 MHz to nearly 8000 at 1.8 MHz. If a 1.8 MHz tuner had a coil with Q = 400, the tuner loss alone would be 20 dB.

My model doesn't show the claimed spectacular rise in radiation resistance from the meander lines. Replacing them with straight 14 inch wires just about halves the radiation resistance. That's nearly 3 dB at the lower frequencies, so nothing to sniff at, but nowhere near the factor of up to 14 claimed. The meander lines cut the reactance by a factor of 1-1/2 to 2, which helps the tuner efficiency.

The fact that QSOs can be made with this antenna and QRP is yet another illustration of just how little radiated power is needed in order to communicate.

Roy Lewallen, W7EL

2239. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 05:46:21 UTC
From: Rick Frazier <rickf@rickfrazier.com>
Message-ID: <47b3d56a$0$1097$4c368faf@roadrunner.com>
Source record: 28061

MGFoster wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> I'm working QRP (5W max) and I'm construction my own antennas. I've
> read that antenna efficiency can be degraded by "high ohmic connections"
> (especially deleterious to QRP ops). I'm assuming that we shouldn't
> make potato-sized solder joints when assembling the antenna. So, I was
> wondering what would be the best way to connect various parts of the
> antenna?
>
> Example: I've created a 4:1 balun based on Ron's (VK2DQ) description in
> his article "Understanding and building the OCF dipole." The toroid
> windings had to be connected. So, rather than twist them together (they
> are 18 AWG) and solder them, I laid the pieces side-by-side (abt 1/4")
> and solder them together. Is that a "high ohmic" connection? If so,
> what other way could the pieces be soldered together w/o creating a high
> ohmic connection?
>
> For other parts of the antenna (e.g., the feed-point) would connectors
> (quick release, ring type, etc.) be better than a solder joint?
>
> Thanks,
Take two bare copper wires (don't clean them), twist together and leave
in the weather for a few weeks. If you get any sort of rain and some
decent sun, before long you will have a "high ohmic" connection. The
more oxidation between the two wires at the point of contact, the higher
the resistance. This can be detrimental, especially if you're using low
power (QRP). On the other hand, if you have an amplifier and transmit
through this sort of poor connection it can actually get worse, and you
can end up with variable swr, which most amplifiers don't like....

Typically, any clean, tight joint will be fine for awhile, longer if
protected, and longer yet if soldered before you protect it.....

--Rick AH7H

2240. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 05:55:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r7luusl4iumc3@corp.supernews.com>
Source record: 28062

Rick Frazier wrote:
> Take two bare copper wires (don't clean them), twist together and leave
> in the weather for a few weeks. If you get any sort of rain and some
> decent sun, before long you will have a "high ohmic" connection. The
> more oxidation between the two wires at the point of contact, the higher
> the resistance. This can be detrimental, especially if you're using low
> power (QRP). On the other hand, if you have an amplifier and transmit
> through this sort of poor connection it can actually get worse, and you
> can end up with variable swr, which most amplifiers don't like....
>
> Typically, any clean, tight joint will be fine for awhile, longer if
> protected, and longer yet if soldered before you protect it.....
>
> --Rick AH7H

What you need to do is keep air and moisture from between the wires, once you've put them together with enough pressure to break through the surface oxide and make good metal-metal contact. That's how wire nuts and clamp and crimp type connections remain reliable for a long time. Of course, soldering accomplishes this too.

Roy Lewallen, W7EL

2241. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 06:03:25 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <v7l7r3hs46p7e10pnfp5iu2f9ej1er9qcj@4ax.com>
Source record: 28063

On Wed, 13 Feb 2008 20:58:31 -0800 (PST), N0GW <wescom@wildblue.net>
wrote:

>It was then that I noticed that when I
>overlayed the pattern from a vertical half wavelength dipole with that
>of a horizontal half wave dipole at the same center height over real
>ground that the pattern from the vertical was completely enclosed by
>the horizontal dipole pattern, at least broadside to the horizontal
>dipole that is. The vertical dipole pattern definitely showed a lower
>angle of peak radiation but no greater gain a low angles than the
>horizontal dipole.

Hi Gary,

You have so much left unsaid, that it is shooting in the dark.
However, proceeding with that risk in mind....

A vertical dipole described above is not the vertical antenna that you
describe following:
>The interesting question then: Is the improved performance of
>vertical antennas over horizontal dipoles on 75 meters at DX distances
>due to a combination of direct radiation plus radiation from the
>ground in the area of strong ground wave strength out hundreds of
>meters? Is the ground wave leakage providing additional low signal
>strength in both transmit and receive?

Better? You are relying too heavily on anecdotal reports.

For one, I seriously doubt you compared a 75M vertical dipole to a 75M
horizontal dipole in your lecture - no one in your audience would have
the financial clout to go there I suspect. That vertical dipole tip
would have to be hoisted quite a distance to see that the bottom tip
wasn't buried in the earth.

The next problem is height (again) and how it contributes to (or
subtracts from) gain as that varies. There is no "similar" comparison
between the two. You could model and present variations on horizontal
dipole elevation alone for two hours, much less both of them.

Rule 1 of presentations: Don't give them off the cuff unless you are
prepared to follow the surprises.

Rule 2: If you are willing to follow the surprises; then you aren't
really giving a presentation.

73's
Richard Clark, KB7QHC

2242. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 06:05:41 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A44ADC6B68AEnonenowhere@61.9.191.5>
Source record: 28064

MGFoster <me@privacy.com> wrote in
news:13r7h9j282pa30a@corp.supernews.com:
...
> The person who stated that "high ohmic connections" were deleterious to
> QRP ops was describing his construction of a linear loaded dipole and
> the connections to the inductance section of the antenna (see N5ESE's
> article on the "Notebook antenna"
> http://www.io.com/~n5fc/notebk_ant.htm). This is a small radiation
> resistance antenna and could be affected by bad connections.

I had a look at that article, and have concerns about many things stated, and the way in which the author distances himself from some of what is said.

The effect of linear loading is that the contribution to radiation of current in a segment of one section of the linear loading is offset to some lesser or greater extent by the currents in parallel segments. The heat loss is incurred by the current flowing in all the conductors, but the radiation effect is diminished.

This mechanism can increase the loss resistance more than it increases the radiation resistance.

This is contrary to the widely held view that linear loading is essentially lossless.

Owen

2243. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 06:13:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r7n0rolvfgobe@corp.supernews.com>
Source record: 28065

N0GW wrote:
> OK, I apparently drifted off the beaten path plus I seem to be
> experiencing some serious brain fade.
>
> What I was doing was preparing a short presentation for new hams on
> the subject of vertical antennas. I was using EZNEC to produce some
> antenna pattern graphics. It was then that I noticed that when I
> overlayed the pattern from a vertical half wavelength dipole with that
> of a horizontal half wave dipole at the same center height over real
> ground that the pattern from the vertical was completely enclosed by
> the horizontal dipole pattern, at least broadside to the horizontal
> dipole that is. The vertical dipole pattern definitely showed a lower
> angle of peak radiation but no greater gain a low angles than the
> horizontal dipole.

That's because the energy radiated at lower angles with vertical
polarization is actually absorbed and dissipated in the ground, while
very little of the horizontally polarized antenna energy is.

> At first, seeing the vertical dipole gain the same as the horizontal
> dipole, even at low elevation angles, was a little confusing but I had
> just scanned a bit of text on vertical antenna operation including
> calculation for reflected waves and stuff like the pseudo Brewster
> angle.
>
> But then... I remembered talking to a couple guys in Germany on 75
> meters the previous evening. From my location here in Missouri, I was
> hearing their signals on my 75 meter inverted L much stronger at 10 to
> 20 over S9 than on my dipole at S4 to S5. They noted the same
> difference in performance between the two antennas. As both the
> Dipole height and the top of the inverted L were at 50 feet, I thought
> this was a reasonable comparison. Also, the dipole is in the clear,
> resonant, and has been performing as well or better than other
> horizontal dipoles used by other hams in this area.
>
> Furthermore, my experience switching between horizontal and vertical
> antennas on 75 meters matched that of other guys with both. I was
> starting to wonder why the mismatch between the theory I was familiar
> with and my experiences.

Tom Rauch, W8JI, has the capability to run some pretty good comparisons
under near-textbook conditions, and he's consistently observed the same
thing on 160 and 80.

> Jumping back in to the text books and spending some time 'googling'
> for more info I found nothing to conflict with the material I had
> previously covered. That was disconcerting. About the only glimmer
> of a solution to the question popped up when I looked at papers on
> ground or surface wave propagation. There were some vague comments
> about diffraction that seemed to indicate one of the loss factors
> involved with ground wave propagation is that some of the signal does
> not get diffracted low enough to keep in from being 'lost' to sky wave
> radiation.
>
> As I continued chasing that thought, I found that discussions of sky
> wave propagation ignored ground wave and discussions of ground wave
> propagation considered sky wave as lost RF.
>
> Now, after all that windup, what am I missing? I acknowledge ahead of
> time that I may be a dummy so don't bother explaining that to me. Why
> do reasonable size vertical antennas with proper radial systems under
> them outperform horizontal dipoles for DX operation for typical ham
> antenna support structure heights of 50 feet or so?
>
> The interesting question then: Is the improved performance of
> vertical antennas over horizontal dipoles on 75 meters at DX distances
> due to a combination of direct radiation plus radiation from the
> ground in the area of strong ground wave strength out hundreds of
> meters? Is the ground wave leakage providing additional low signal
> strength in both transmit and receive?

The short answer is that I don't think anyone really knows. I'm convinced that the program accurately calculates the field from the antenna and environment specified by the model. But there are some pretty significant ways in which the model doesn't represent reality. EZNEC uses the NEC ground model which is highly simplified - its ground is perfectly flat, homogeneous to an infinite depth, and infinite in extent. Real ground is curved and stratified with many layers of sometimes highly differing conductivity and permittivity. Besides the deficiency of the ground models, there might be some interesting phenomena like ground wave energy following the ground for a while, then launching some distance from the antenna. This wouldn't be modeled properly by EZNEC or NEC. And although polarization is rotated during ionospheric propagation, maybe there's some inherent advantage to launching a vertically polarized signal. EZNEC and NEC make no attempt at modeling propagation. Anecdotal evidence seems to find more of a disparity between model results and observations at low frequencies (80 meters and below) than higher frequencies. Whether this is due to the greater ground skin depth at lower frequencies, different propagation effects, or maybe just the vagaries of anecdotal reporting, is something I don't think anyone knows.

Roy Lewallen, W7EL

2244. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 06:16:45 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <blm7r3h8r4ucav650g00j7ui5cju3ldns3@4ax.com>
Source record: 28066

On Wed, 13 Feb 2008 21:54:47 -0500, "Hal Rosser"
<hmrosser@bellsouth.net> wrote:

>Daddy always said the solder joint oughta be mechanically sound before you
>even put the heat to it.

Hi Hal,

Your daddy was teaching you that solder is a gas-tight seal, not a
mechanical connection.
>Use an abrasive and clean the wires to be joined.
>Join them mechanically (like a good twist or compression connector) (If the
>wire is copper, this would be low-resistance in itself)
To the OP: a Western Union Splice is the correct form of joining
wires, and then flooded with solder. Flooded does NOT mean like Noah
and the Ark.
>Then considering its for an outside antenna, dip it in 3M ScotchKote which
>is like an electrical-grade varnish.
That is more so the weather doesn't leach the solder.
>That would make a "low-ohmic" (some call it "low-resistance") connection.
Quite so.

73's
Richard Clark, KB7QHC

2245. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 06:22:20 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <f9n7r31lpttek05ldfpocsiou910r0fr1a@4ax.com>
Source record: 28067

On Thu, 14 Feb 2008 15:55:04 +1300, cliff wright
<c.c.wright@paradise.net.nz> wrote:

>Oh dear we are getting of the thread aren't we! So here goes. Anyone
>read Robert Graves book "The White goddess"? Ther he makes a fairly
>strong case that the religion of Genisis actually had 3 deities
>1 God and 2 Goddesses.

Get it right, there is only one, Ayesha, from the Amahagger.
"She," by H. Rider Haggard.

73's
Richard Clark, KB7QHC

2246. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 07:26:14 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <XYudnXKOXvatcC7anZ2dnUVZ_jidnZ2d@giganews.com>
Source record: 28068

Richard Clark wrote:
> Hal Rosser wrote:
>
> >Daddy always said the solder joint oughta be mechanically sound before
you
> >even put the heat to it.
>
> Hi Hal,
>
> Your daddy was teaching you that solder is a gas-tight seal, not a
> mechanical connection.
> >Use an abrasive and clean the wires to be joined.
> >Join them mechanically (like a good twist or compression connector) (If
the
> >wire is copper, this would be low-resistance in itself)
> To the OP: a Western Union Splice is the correct form of joining
> wires, and then flooded with solder. Flooded does NOT mean like Noah
> and the Ark.
> >Then considering its for an outside antenna, dip it in 3M ScotchKote
which
> >is like an electrical-grade varnish.
> That is more so the weather doesn't leach the solder.
> >That would make a "low-ohmic" (some call it "low-resistance") connection.
> Quite so.
>
> 73's
> Richard Clark, KB7QHC

If the splice will be under strain, a Western Union or Lineman splice
(http://workmanship.nasa.gov/lib/insp/2%20books/links/sections/407%20Splices
.html) is "bestest". I use such splices when there is nothing (i.e.
insulator) to take the strain. IMO, the OP's description of his splice
would not require such tensile strength. In his application, anything that
prevents oxidation of the mating surfaces would suffice.

73,
Bryan WA7PRC

2247. Re: Waves vs Particles

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 07:31:44 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fp0qpd$u5b$1@aioe.org>
Source record: 28069

Cecil Moore wrote:

> ...
> Ever wonder why Elohim (Gods) was plural in Genesis?

That is just "peaking under the covers!"

Ever wonder about those ancient "books" in India, written in Sanskrit
which read like a Buck Rogers novel?

Quite obviously, things are stranger than we can possibly imagine ...

Regards,
JS

2248. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 12:28:52 UTC
From: Denny <k8do@mailblocks.com>
Message-ID: <5552f8d0-061d-4c0f-af95-6d11061535c9@e25g2000prg.googlegroups.com>
Source record: 28070

Art,
I am convinced that you are experimenting in an area of antenna practices that has been neglected... I am always interested in advances on the art and practice of antennas... You hereby offered the opportunity to drop by my qth with your reduced size 160 antenna... If transportation is a problem I will fly my airplane to your area and bring you back to Michigan, or arrange other transportation for you at my expense...
I will personally mount your antenna at the top of a 150 foot tower and we can measure the near field intensity and far field signal strength developed by the antenna, compared to my normal size antennas which are off another tower at a distance .. I am sure I can convince a few of the regulars on here to be on the band and be ready to participate with signal strength measurements, spectrum analyzers, etc... This would form an excellent basis for an article for you to publish - complete with reports from third parties - on a major advance in the theory and practice of antennas...

If I am not convenient to you then I suspect that W8JI or others would offer a similar testing range and I still would be happy to provide transportation just to be a part of an exciting new chapter in radio experimentation...

cordially,
denny - k8do

2249. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 12:47:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xLWsj.336$tW.299@nlpi070.nbdc.sbc.com>
Source record: 28071

Roy Lewallen wrote:
> ... there might be some interesting
> phenomena like ground wave energy following the ground for a while, then
> launching some distance from the antenna. This wouldn't be modeled
> properly by EZNEC or NEC.

Could that possibly be the result of the curvature
of the earth?
--
73, Cecil http://www.w5dxp.com

2250. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 13:55:29 UTC
From: art <aunwin@insightbb.com>
Message-ID: <efae5d42-45d9-4b35-ad81-d4eb3206e640@n19g2000hsd.googlegroups.com>
Source record: 28072

On 14 Feb, 04:28, Denny <k...@mailblocks.com> wrote:
> Art,
> I am convinced that you are experimenting in an area of antenna
> practices that has been neglected... I am always interested in
> advances on the art and practice of antennas... You hereby offered the
> opportunity to drop by my qth with your reduced size 160 antenna... If
> transportation is a problem I will fly my airplane to your area and
> bring you back to Michigan, or arrange other transportation for you at
> my expense...
> I will personally mount your antenna at the top of a 150 foot tower
> and we can measure the near field intensity and far field signal
> strength developed by the antenna, compared to my normal size antennas
> which are off another tower at a distance .. I am sure I can convince
> a few of the regulars on here to be on the band and be ready to
> participate with signal strength measurements, spectrum analyzers,
> etc... This would form an excellent basis for an article for you to
> publish - complete with reports from third parties - on a major
> advance in the theory and practice of antennas...
>
> If I am not convenient to you then I suspect that W8JI or others would
> offer a similar testing range and I still would be happy to provide
> transportation just to be a part of an exciting new chapter in radio
> experimentation...
>
> cordially,
> denny - k8do

That is very kind of you but there is no need for any all out effort
regarding travel. What I will do is look around for some copper scraps
and make one for you and use the normal mail. Since I will probably
be
using scrap that I can find my guess is that it would behove you to
use
500 watts or less for your playing around.
I will send it off about 14 days or less from now and hopefully the
weather will be warmer for you.If I don't find any scraps then I will
send the one on the tower even tho it is not of the optimum design use
can use it as is on different bands. At the moment I am making one
that
can fit into a trouser pocket so that may be the one you get.
Best regards
Art Unwin

2251. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 14:10:23 UTC
From: N0GW <wescom@wildblue.net>
Message-ID: <548d4477-2053-4e02-a848-d03784e468af@s13g2000prd.googlegroups.com>
Source record: 28073

On Feb 14, 12:03 am, Richard Clark <kb7...@comcast.net> wrote:
>
> You have so much left unsaid, that it is shooting in the dark.
> However, proceeding with that risk in mind....
>
> A vertical dipole described above is not the vertical antenna that you
> describe following:
>
> Better? You are relying too heavily on anecdotal reports.
>
> The next problem is height (again) and how it contributes to (or
> subtracts from) gain as that varies. There is no "similar" comparison
> between the two. You could model and present variations on horizontal
> dipole elevation alone for two hours, much less both of them.
>
> Rule 1 of presentations: Don't give them off the cuff unless you are
> prepared to follow the surprises.
>
> Rule 2: If you are willing to follow the surprises; then you aren't
> really giving a presentation.
>
> 73's
> Richard Clark, KB7QHC

Richard, thanks for the comments. Yep, I thought of the thing about the model versus the inverted L mentioned after I had already sent the message. What I should have mentioned is that the EZNEC pattern for the inverted L showed lower gain than the vertical dipole.

As for the anecdotal evidence thing: It's my observation. My 756ProIII S meter may not be a calibrated piece of test equipment but the deflection of the needle was much higher while listening with the inverted L. While I can't give an quantitative number to the difference in strength, I can say qualitatively that the Inverted L provided a much stronger and clearer signal.

As for the presentation, that is why I'm here asking the question. No point in putting out info if it is going to be bogus. I saw a discrepancy between my experience and the text books. I'm just trying to resolve that.

Thanks again.

Gary - N0GW

2252. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 16:41:08 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <l6q8r3tviad8nflv0estju315stlteojf4@4ax.com>
Source record: 28074

On Thu, 14 Feb 2008 06:10:23 -0800 (PST), N0GW <wescom@wildblue.net>
wrote:

>As for the presentation, that is why I'm here asking the question. No
>point in putting out info if it is going to be bogus. I saw a
>discrepancy between my experience and the text books. I'm just trying
>to resolve that.

Hi Gary,

Experience is often the most confounding experience you will ever
experience.

After all, does experience explain the angle at which you
receive/transmit that portion of signal in a circuit (the jargon for
connection between you and that distant operator)? NVIS can hammer a
vertical, if that is what you want; even if you forget to lift the
horizontal into the air. So a horizontal dipole on the ground is the
best antenna compared to the best vertical? Not when you shift bands
and target a DX station.

Does experience explain the difference in (at what would be a strain
to justify) "a vertical at the same height as a horizontal dipole?" To
fill in that last parenthetical: What makes a vertical dipole at an
EQUAL height to a horizontal dipole? The equal high feed points? The
equal highest point of metal? The equal average height of both?
Choose any one of three and the other two could have better
performance over the other - and still someone in the audience could
cry nothing can be said to be EQUAL.

Does the experience at 160M with a ground mounted vertical translate
into the same experience at 10M? Experience in the 'burbs with trees,
homes, sheds, cars, playsets in the vicinity would suggest no. An
antenna 16 times taller can see over those same things which are
barely dimples to the field.

A head-to-head comparison will quickly resolve; but as this is an
amateur society with limited antenna options and a multitude of band
choices, experience will often roller-coaster between disappointment
and elation - and as so often proven in threads of amazing inventions
here, those inventors demand classical text books should be discarded
as being obviously counter to "experience."

The emerging new invention of an 160M band antenna the size of two
shoe-boxes should show how plastic and flexible experience is such
that it can stretch to fit into a suit 300 times it size.

73's
Richard Clark, KB7QHC

2253. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 16:44:40 UTC
From: Swoozie Pellegrino <swooziep@yahoo.com>
Message-ID: <1bf9c770-8b1a-49b4-be71-4bcc1a6cd638@70g2000hsv.googlegroups.com>
Source record: 28075

On Feb 13, 11:11 am, "The Shadow" <Crans...@CobaltClub.com> wrote:
> "Swoozie Pellegrino" <swooz...@yahoo.com> wrote in message
>
> news:9d92e7b3-a226-4679-80f9-1489cc2e9355@j20g2000hsi.googlegroups.com...
> On Feb 11, 10:41 pm, Rick Frazier <ri...@rickfrazier.com> wrote:
>
>
>
>
>
> > Swoozie Pellegrino wrote:
> > > Hi, all.
>
> > > I'm about to become a General class licensee, and I'm
> > > trying to work out a HF antenna plan for my new apartment.
> > > I have a small balcony on the top (4th) floor, which is good,
> > > but unfortunately there's a roof overhanging it and is
> > > 8' over the balcony floor and juts 4' out over the balcony edge,
> > > so a tall vertical is out of the question.
>
> > > What about a 'vertical' that is angled about 45 deg. down
> > > from vertical? Will that be good for phone DXing on any
> > > HF band?
>
> > > Also, sadly, the balcony is all metal and so is the top of
> > > the roof.
>
> > > What about some kind of loop?
>
> > > Thanks!
>
> > > ~swooz
>
> > How about a vertical suspended from a hunk of plastic pipe ? Try
> > letting it hang down from the balcony, as far out as you can safely
> > suspend it. I've gotten away with using a 24 guage wire suspended with
> > a collapsable/extendible fishing pole with reasonable results, compared
> > to trying to use a short dipole inside a hotel room....
>
> > Though far from optimum, sometimes almost anything is better than nothing.
>
> > --Rick AH7H- Hide quoted text -
>
> > - Show quoted text -

> I could fashion a 24 gauge 1/2-wavelength 20m dipole, which I know
> about its footprint when strung horizontally at 1/2-wavelength above
> the ground, but is it of any use stood on end (as in dangled from
> my balcony and tapped in the center)?
>
> Thanks,
> ~swooz
>
> Sure is -- tis a vertical dipole - works well at low heights where a
> horizontal dipole should be elevated above ground - half wavelength +
>
> Be sure to center tap it for proper impedance match. Not end fed.
>
> Feedline should be 90 deg from the dipole or as near as you can get it.
>
> I use a vertical dipole on six meters - works well
>
> Lamont- Hide quoted text -
>
> - Show quoted text -

Thanks for the info, Lamont. Well, it's going to be difficult to get
that
90 deg angle at the central feed point, since the 'dipole' will be
something
like a 10-meter long magnet wire hanging from my balcony with a weight
at the bottom. I could run coax down alongside for 5m and have it
connect
there in the center.

Hmmm...wonder if a Buddipole clamped on my balcony railing and
pointed out at a 45 deg angle will work better for me.

Thanks,
~swooz

2254. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 17:48:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <klv8r39luc8518hdqclpv0idjf3v9hgfrv@4ax.com>
Source record: 28076

On Thu, 14 Feb 2008 08:44:40 -0800 (PST), Swoozie Pellegrino
<swooziep@yahoo.com> wrote:

>like a 10-meter long magnet wire hanging from my balcony with a weight
>at the bottom. I could run coax down alongside for 5m and have it
>connect
>there in the center.

Make it 5 meter long wire hanging from the center conductor of a
hanging 5+ meter long coax.

73's
Richard Clark, KB7QHC

2255. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 20:08:11 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13r97tf91hkvha8@corp.supernews.com>
Source record: 28077

Denny wrote:
> Art,
> I am convinced that you are experimenting in an area of antenna
> practices that has been neglected... I am always interested in
> advances on the art and practice of antennas... You hereby offered the
> opportunity to drop by my qth with your reduced size 160 antenna... If
> transportation is a problem I will fly my airplane to your area and
> bring you back to Michigan, or arrange other transportation for you at
> my expense...
> I will personally mount your antenna at the top of a 150 foot tower
> and we can measure the near field intensity and far field signal
> strength developed by the antenna, compared to my normal size antennas
> which are off another tower at a distance .. I am sure I can convince
> a few of the regulars on here to be on the band and be ready to
> participate with signal strength measurements, spectrum analyzers,
> etc... This would form an excellent basis for an article for you to
> publish - complete with reports from third parties - on a major
> advance in the theory and practice of antennas...
>
> If I am not convenient to you then I suspect that W8JI or others would
> offer a similar testing range and I still would be happy to provide
> transportation just to be a part of an exciting new chapter in radio
> experimentation...
>
>
> cordially,
> denny - k8do

I suggest that you take pains to make sure the feedline is well decoupled - a couple of current baluns, one at the feedpoint and one a quarter wave down the line, should be adequate. An extra measure would be to measure the common mode feedline current to make sure it's minimal. That would go a long way toward silencing critics (like me) who believe that reported good results from such small antennas are often the result of feedline radiation -- that is, that the feedline is the primary radiator and the "antenna" plays only a minor role.

Roy Lewallen, W7EL

2256. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 21:22:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2i2tj.11067$J41.5148@newssvr14.news.prodigy.net>
Source record: 28078

Richard Clark wrote:
> Swoozie Pellegrino <swooziep@yahoo.com> wrote:
>
>> like a 10-meter long magnet wire hanging from my balcony with a weight
>> at the bottom. I could run coax down alongside for 5m and have it
>> connect there in the center.
>
> Make it 5 meter long wire hanging from the center conductor of a
> hanging 5+ meter long coax.

Or fold 1/4WL of the braid back down over itself leaving
1/4WL of the insulated center conductor to hang down.
It's called a sleeve dipole.
--
73, Cecil http://www.w5dxp.com

2257. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 22:29:25 UTC
From: N0GW <wescom@wildblue.net>
Message-ID: <88c04981-8841-4520-bb75-f2493f5fa30b@s37g2000prg.googlegroups.com>
Source record: 28079

On Feb 14, 12:13 am, Roy Lewallen <w...@eznec.com> wrote:
<snip>
>
> The short answer is that I don't think anyone really knows. I'm
> convinced that the program accurately calculates the field from the
> antenna and environment specified by the model. But there are some
> pretty significant ways in which the model doesn't represent reality.
> EZNEC uses the NEC ground model which is highly simplified - its ground
> is perfectly flat, homogeneous to an infinite depth, and infinite in
> extent. Real ground is curved and stratified with many layers of
> sometimes highly differing conductivity and permittivity. Besides the
> deficiency of the ground models, there might be some interesting
> phenomena like ground wave energy following the ground for a while, then
> launching some distance from the antenna. This wouldn't be modeled
> properly by EZNEC or NEC. And although polarization is rotated during
> ionospheric propagation, maybe there's some inherent advantage to
> launching a vertically polarized signal. EZNEC and NEC make no attempt
> at modeling propagation. Anecdotal evidence seems to find more of a
> disparity between model results and observations at low frequencies (80
> meters and below) than higher frequencies. Whether this is due to the
> greater ground skin depth at lower frequencies, different propagation
> effects, or maybe just the vagaries of anecdotal reporting, is something
> I don't think anyone knows.
>
> Roy Lewallen, W7EL

Thanks Roy, but darn, I was hoping that was not the answer. I was hoping this was a subject someone had worked through definitively. Oh well. What counts is how well an antenna works, not what calculations show.

At no point did I think that EZNEC and NEC2 were busted. The output I saw matched expectations arrived at from digging through text books and scientific papers. I was eventually looking for a clue as to what the NEC2 algorithms might be missing. I found the "leaky ground wave" thing for lower frequencies an intriguing idea. I expect that above about 10 MHz, where ground wave propagation becomes a fairly minor consideration, NEC2 should provide a fairly accurate prediction of vertical antenna performance.

Gary - N0GW

2258. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-14 22:58:50 UTC
From: art <aunwin@insightbb.com>
Message-ID: <07d8f69c-1b3f-4813-96b4-21b02b709feb@e23g2000prf.googlegroups.com>
Source record: 28080

On 14 Feb, 12:08, Roy Lewallen <w...@eznec.com> wrote:
> Denny wrote:
> > Art,
> > I am convinced that you are experimenting in an area of antenna
> > practices that has been neglected... I am always interested in
> > advances on the art and practice of antennas... You hereby offered the
> > opportunity to drop by my qth with your reduced size 160 antenna... If
> > transportation is a problem I will fly my airplane to your area and
> > bring you back to Michigan, or arrange other transportation for you at
> > my expense...
> > I will personally mount your antenna at the top of a 150 foot tower
> > and we can measure the near field intensity and far field signal
> > strength developed by the antenna, compared to my normal size antennas
> > which are off another tower at a distance .. I am sure I can convince
> > a few of the regulars on here to be on the band and be ready to
> > participate with signal strength measurements, spectrum analyzers,
> > etc... This would form an excellent basis for an article for you to
> > publish - complete with reports from third parties - on a major
> > advance in the theory and practice of antennas...
>
> > If I am not convenient to you then I suspect that W8JI or others would
> > offer a similar testing range and I still would be happy to provide
> > transportation just to be a part of an exciting new chapter in radio
> > experimentation...
>
> > cordially,
> > denny - k8do
>
> I suggest that you take pains to make sure the feedline is well
> decoupled - a couple of current baluns, one at the feedpoint and one a
> quarter wave down the line, should be adequate. An extra measure would
> be to measure the common mode feedline current to make sure it's
> minimal. That would go a long way toward silencing critics (like me) who
> believe that reported good results from such small antennas are often
> the result of feedline radiation -- that is, that the feedline is the
> primary radiator and the "antenna" plays only a minor role.
>
> Roy Lewallen, W7EL- Hide quoted text -
>
> - Show quoted text -

I understand all that. If Tom wishes to add one for his
own satisfaction that's fine by me.
If he wants to test it then I am confident he will do what

ever is necessary without comment from me.
I have no wish to influence him in any way. He cam make his own call
even if it means that it burns up. I have no experience with 180 M
and have only loaded it for 100W. As I have stated before, I have not
been active for years because of illnesses etc and I would not
presume
that Tom would need any assistance from a blithering idiot and
liar such as I.
W8TI Tom laughed his socks off when I mentioned resonant tank
circuits
in equilibrium and refused to give me any time for discussion.
On the other hand, Tom in Michigan has always been polite to me
and appears to have a genuine interest in new ideas, so I have
worked all day today in getting things together so I can get
one to him as quickly as possible.

2259. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 03:31:25 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b5078b$0$6981$4c368faf@roadrunner.com>
Source record: 28081

"N0GW" <wescom@wildblue.net> wrote in message
news:47b7b286-28d1-44e4-8a28-263e3358d2aa@m34g2000hsb.googlegroups.com...
> OK, I apparently drifted off the beaten path plus I seem to be
> experiencing some serious brain fade.
>
> What I was doing was preparing a short presentation for new hams on
> the subject of vertical antennas. I was using EZNEC to produce some
> antenna pattern graphics. It was then that I noticed that when I
> overlayed the pattern from a vertical half wavelength dipole with that
> of a horizontal half wave dipole at the same center height over real
> ground that the pattern from the vertical was completely enclosed by
> the horizontal dipole pattern, at least broadside to the horizontal
> dipole that is. The vertical dipole pattern definitely showed a lower
> angle of peak radiation but no greater gain a low angles than the
> horizontal dipole.
>
> At first, seeing the vertical dipole gain the same as the horizontal
> dipole, even at low elevation angles, was a little confusing but I had
> just scanned a bit of text on vertical antenna operation including
> calculation for reflected waves and stuff like the pseudo Brewster
> angle.
>
> But then... I remembered talking to a couple guys in Germany on 75
> meters the previous evening. From my location here in Missouri, I was
> hearing their signals on my 75 meter inverted L much stronger at 10 to
> 20 over S9 than on my dipole at S4 to S5. They noted the same
> difference in performance between the two antennas. As both the
> Dipole height and the top of the inverted L were at 50 feet, I thought
> this was a reasonable comparison. Also, the dipole is in the clear,
> resonant, and has been performing as well or better than other
> horizontal dipoles used by other hams in this area.
>
> Furthermore, my experience switching between horizontal and vertical
> antennas on 75 meters matched that of other guys with both. I was
> starting to wonder why the mismatch between the theory I was familiar
> with and my experiences.
>
> Jumping back in to the text books and spending some time 'googling'
> for more info I found nothing to conflict with the material I had
> previously covered. That was disconcerting. About the only glimmer
> of a solution to the question popped up when I looked at papers on
> ground or surface wave propagation. There were some vague comments
> about diffraction that seemed to indicate one of the loss factors
> involved with ground wave propagation is that some of the signal does

> not get diffracted low enough to keep in from being 'lost' to sky wave
> radiation.
>
> As I continued chasing that thought, I found that discussions of sky
> wave propagation ignored ground wave and discussions of ground wave
> propagation considered sky wave as lost RF.
>
> Now, after all that windup, what am I missing? I acknowledge ahead of
> time that I may be a dummy so don't bother explaining that to me. Why
> do reasonable size vertical antennas with proper radial systems under
> them outperform horizontal dipoles for DX operation for typical ham
> antenna support structure heights of 50 feet or so?
>
> The interesting question then: Is the improved performance of
> vertical antennas over horizontal dipoles on 75 meters at DX distances
> due to a combination of direct radiation plus radiation from the
> ground in the area of strong ground wave strength out hundreds of
> meters? Is the ground wave leakage providing additional low signal
> strength in both transmit and receive?
>
> Gary - N0GW

I suspect that the EZNEC program is not designed for taking into account such "rare" phenomena as "ground wave propagation". So much for EZNEC analysis at 75m.

de AI4QJ

2260. Re: High ohm connections

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 04:04:30 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <Wa8tj.97903$K27.19657@bignews6.bellsouth.net>
Source record: 28082

"Rick Frazier" <rickf@rickfrazier.com> wrote in message
news:47b3d56a$0$1097$4c368faf@roadrunner.com...
> MGFoster wrote:
>> -----BEGIN PGP SIGNED MESSAGE-----
>> Hash: SHA1
> the resistance. This can be detrimental, especially if you're using low
> power (QRP). On the other hand, if you have an amplifier and transmit
> through this sort of poor connection it can actually get worse, and you
> can end up with variable swr, which most amplifiers don't like....
>
> Typically, any clean, tight joint will be fine for awhile, longer if
> protected, and longer yet if soldered before you protect it.....
>
> --Rick AH7H

another "High Ohmic" connection" would be:
The connection of a one-OHM resistor on top of a HIGH mountain.
That's the high ohm connection.

Or a one-ohm resistor on a tall ham's beanie-cap

2261. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 07:00:19 UTC
From: "Myron A. Calhoun" <mcalhoun@ksu.edu>
Message-ID: <bc64edf5-ae3e-4634-80e4-17ef2aeee73b@e25g2000prg.googlegroups.com>
Source record: 28083
Cross-posted to: alt.radio.amateur,rec.radio.amateur.antenna

> From Rain City (Seattle). I did this in a Maple forest. I did mine
> with pulleys top and bottom with a continuous loop like a flag pole. I
> snip

Instead of pulleys, I use large screw-in insulators like you might see on a
power pole. They are slick enough to act as pulleys, large enough to take
two ropes (one for the continuous loop and the other for holding the
antenna), they don't cost much, and a rope NEVER jumps out of the
"pulley"!

I've also used a screen-door spring (or two in parallel) between the rope
and the end-of-the-antenna insulator (with some more rope in between
so the spring doesn't add much capacitance to the antenna proper) to
give some strain relief.

--Myron A. Calhoun, W0PBV.
Five boxes preserve our freedoms: soap, ballot, witness, jury, and
cartridge.

2262. tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 10:50:46 UTC
From: ml <m@di.net>
Message-ID: <m-093F6F.05505015022008@news.verizon.net>
Source record: 28084

hi

pretty soon when current tv broadcast stops i was thinkng my
building master ant will either be left there or just removed

i thought about petitioning the coop board to let me have the space
under the guise of replacing the antenna with another that looked for
the most part just like/simular to the old tv ant but actually
subsituting a ham antenna

my first thought as far as a look alike was to a LP , just
wondering of all of the antennas out there anyone know which specific
brand might come closest to looking like a regular tv antenna?

thanks

2263. far radials for verticle?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 11:09:05 UTC
From: ml <m@di.net>
Message-ID: <m-DB9107.06091415022008@news.verizon.net>
Source record: 28085

hi

I might be able to get permission to put up a simple multiband verticle

i'd have to mount it on the elevator room (brick wall 10ft high) of my building.

if i got approval, the coop board wouldn't let me put 'radials' off the base of the antenna they don't like the way it'd look

The roof floor is concreat w/tar then small stones

wondering if i could just burry lots of wires and attach to the bottom of the mast, so it would be 10ft away from the base of the antenna, which would be held onto the wall w/a 10ft mast not sure how that couples but i presume it's base of antenna not base of mast that counts

how bad would placing the radials be in this manner (all band verticle)

are there any other alternatives?

the roof of the elevator room is 10ft by 10ft i could put 1 or 2 wires on the base /floor of that but it would all be in 1 compas direction mostly

not sure which is 'best'??

any tips appreciated

thanks

2264. Re: Arrl antenna book cd does not install, help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 11:14:34 UTC
From: ml <m@di.net>
Message-ID: <m-7116F7.06144215022008@news.verizon.net>
Source record: 28086

In article
<7807c664-a239-48ed-a8d0-3f609aa048db@v67g2000hse.googlegroups.com>,
"Francesco L." <flancellotta@gmail.com> wrote:

> I tried to install the cd contained in the arrl antenna book latest
> edition but at the end of the process it shows an error. So I was
> wondering if there's another method to see what's inside and
> particularly the previous edition of the antenna book that, according
> to what someone said on this newsgroup, should be contained in the cd.
> Thanks a lot in advance

the disk dosn't have to really install, just the viewer program,
most people just either explore it as mentioned or use the arrl
program to navigate /view it

you can of course put the entire cd on your hd if you like

just treat it like any other file, copy the cd image or the entire
contense to a new folder on your computer

then try to get their viewer working it should install, since you
didn't mentioned why it didn't install i can t say more what error
messages did you get?

you can also perhaps call arrl they may be able to walk u thru a simple
install or a tech issue w/it not installing

most of the files are common files there you should be able to view
them even w/o the arrl program however it makes it easier

good luck

2265. Re: far radials for verticle?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 15:07:15 UTC
From: ltdoc@yahoo.com
Message-ID: <977549b0-77e1-4e32-9b59-4f89498d79b4@d21g2000prf.googlegroups.com>
Source record: 28087

Those radials are the 'other half' of the antenna, so having them
'close' to the first half is sort of reasonable, right? Then there's
the 'can't get there from here' problem. So, the 'trick' is to get
around that 'problem', and there are a number of ways of doing that.
None of them are 'best' by any means, but still do-able, sort of.
Since the objection is a 'don't care for the looks' thingy, one method
is to hide them in some way. Run the radials from the base of the
antenna, then cover them so that they sort of 'blend-in' with the
surroundings?
Lumping all the radials on one side or the other tends to make the
antenna sort of directional. Maybe not a 'good' idea, but certainly
better than no antenna at all?
Imagination!
Good luck.
- 'Doc

2266. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 15:38:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <37cbr3dh3bu5laa48i40rj8u7aftpcissp@4ax.com>
Source record: 28088

On Fri, 15 Feb 2008 10:50:46 GMT, ml <m@di.net> wrote:

>hi
>
>pretty soon when current tv broadcast stops i was thinkng my
>building master ant will either be left there or just removed
>
>i thought about petitioning the coop board to let me have the space
>under the guise of replacing the antenna with another that looked for
>the most part just like/simular to the old tv ant but actually
>subsituting a ham antenna
>
>my first thought as far as a look alike was to a LP , just
>wondering of all of the antennas out there anyone know which specific
>brand might come closest to looking like a regular tv antenna?

Hi Myles,

Any Log periodic that looks like a TV antenna is going to cover
VHF/UHF - keep that in mind if you are hoping for HF.

However, nobody sees those antennas way up on the top of your building
except the traffic spotters in helicopters. If you want to sneak an
HF LPDA up there, then you will need a tad more height for masting,
and more than a tad more support/guying.

73's
Richard Clark, KB7QHC

2267. Re: far radials for verticle?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 15:39:40 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tfcbr3dni1j3tumc1kvtjtvre6m3gl0dtj@4ax.com>
Source record: 28089

On Fri, 15 Feb 2008 11:09:05 GMT, ml <m@di.net> wrote:

>i'd have to mount it on the elevator room (brick wall 10ft high) of my
>building.

Hi Myles,

Doc's advice covers the antenna. Did you solve your problems with the
elevator control noise? Tell us that story.

73's
Richard Clark, KB7QHC

2268. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 15:59:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <PFitj.7348$5K1.4723@newssvr12.news.prodigy.net>
Source record: 28090

ml wrote:
> my first thought as far as a look alike was to a LP , just
> wondering of all of the antennas out there anyone know which specific
> brand might come closest to looking like a regular tv antenna?

Any ham VHF/UHF Yagi "looks like" a TV antenna.
--
73, Cecil http://www.w5dxp.com

2269. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 17:52:36 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fp4jh4$1eje$1@f04n12.cac.psu.edu>
Source record: 28091

AI4QJ wrote:

> I suspect that the EZNEC program is not designed for taking into account
> such "rare" phenomena as "ground wave propagation". So much for EZNEC
> analysis at 75m.

My own experiments with vertical vs dipole led me to the conclusion that they both work better than the other, and they both work worse than each other.

I based my analysis on signal strength using a db pad to match for the weakest signal vs the strongest one. You can't do this one with just the S-Meter, they aren't very accurate.

Sometimes the vertical "worked" better, and sometimes the horizontal did. And while a generalization could be made for distance, therefore "take off angle" between the two antennas, the reception could change in the middle of a QSO, favoring one other the other.

Comparing one antenna against another is quite difficult - at least to say which one "works" better.

And I'm curious - where is the propagation function in EZNEC?

- 73 de Mike N3LI -

2270. Re: Group Velocity and Velocity Factor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 19:04:04 UTC
From: richardharrison@webtv.net
Message-ID: <16749-47B5E224-437@storefull-3254.bay.webtv.net>
Source record: 28092

Mike wrote:
"Group Velocity and Velocity factor - Can someone explain how these two relate in a waveguide."

Group velocity differs from phase velocity (which is defined as the velocity at which a point of constant phase is propagated in a progressive sinusoidal wave). Group velocity implies several transmitted sinusoidal waves for which the medium has a velocity factor that is a function of frequency.

Waveguides are used over limited frequency ranges so that their dimensions exclude propagation of any but the dominant mode, and so that the operating frequency is sufficiently above the low-frequency cutoff of the guide to avoid excessive attenuation. The limited tange of frequencies transmitted through a waveguide assures a group velocity ahich equals the phase velocity and thus assures low attenuation.

Terman explains the above in his treatment of "Rectangular Waveguides" which begins on page 128 of his 1955 opus.

Best regards, Richard Harrison, KB5WZI

2271. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 19:40:50 UTC
From: Swoozie Pellegrino <swooziep@yahoo.com>
Message-ID: <a87c0f38-809a-4dd2-aff6-a15bbb2bc282@i12g2000prf.googlegroups.com>
Source record: 28093

On Feb 14, 3:22 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Richard Clark wrote:
> > Swoozie Pellegrino <swooz...@yahoo.com> wrote:
>
> >> like a 10-meter long magnet wire hanging from my balcony with a weight
> >> at the bottom. I could run coax down alongside for 5m and have it
> >> connect there in the center.
>
> > Make it 5 meter long wire hanging from the center conductor of a
> > hanging 5+ meter long coax.
>
> Or fold 1/4WL of the braid back down over itself leaving
> 1/4WL of the insulated center conductor to hang down.
> It's called a sleeve dipole.
> --
> 73, Cecil http://www.w5dxp.com

What might the impedance of this look like, say, if I
took the last 10 meters of a 100' 50-ohm coax piece
and slice it to split out into a 20-meter sleeve dipole
and hung the dipole part vertically from the balcony?
Can I just screw the other end onto the back of
my transceiver and go? Or....

Thanks,
~swooz

2272. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 20:27:57 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <c6tbr3pqten8c6an18sfmm1m4db3mj9a75@4ax.com>
Source record: 28094

On Fri, 15 Feb 2008 11:40:50 -0800 (PST), Swoozie Pellegrino
<swooziep@yahoo.com> wrote:

>What might the impedance of this look like, say, if I
>took the last 10 meters of a 100' 50-ohm coax piece
>and slice it to split out into a 20-meter sleeve dipole
>and hung the dipole part vertically from the balcony?
>Can I just screw the other end onto the back of
>my transceiver and go? Or....

Sure, if you can live with the mismatch. Better if you can tune it
for one band. Or simply stick with my suggestion and run it into a
tuner which you will probably need anyway. The difference between any
of these will be undetectable at the far end of the QSO.

To reduce the chance of a hot chassis due to common mode currents, you
should use a 1:1 W2DU style BalUn (aka choke).

73's
Richard Clark, KB7QHC

2273. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 20:37:55 UTC
From: dfinn1@nc.rr.com
Message-ID: <488f31bc-66d2-47e2-b99c-2d0ce194990b@28g2000hsw.googlegroups.com>
Source record: 28095

On Feb 15, 12:52 pm, Michael Coslo <m...@psu.edu> wrote:
> AI4QJwrote:
> > I suspect that the EZNEC program is not designed for taking into account
> > such "rare" phenomena as "ground wave propagation". So much for EZNEC
> > analysis at 75m.
>
> My own experiments with vertical vs dipole led me to the conclusion
> that they both work better than the other, and they both work worse than
> each other.
>
> I based my analysis on signal strength using a db pad to match for the
> weakest signal vs the strongest one. You can't do this one with just the
> S-Meter, they aren't very accurate.
>
> Sometimes the vertical "worked" better, and sometimes the horizontal
> did. And while a generalization could be made for distance, therefore
> "take off angle" between the two antennas, the reception could change
> in the middle of a QSO, favoring one other the other.
>
> Comparing one antenna against another is quite difficult - at least to
> say which one "works" better.
>
> And I'm curious - where is the propagation function in EZNEC?
>
> - 73 de Mike N3LI -

There is none, of course. You would have to construct the lobes on an
asimuth chart but this is only useful for take-off angle and skywave
propagation. EZNEC information tells you nothing about ground wave
propagation.

2274. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 20:52:29 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rbubr3pmqr1pbsdsooehkovs6ip0ao4gvu@4ax.com>
Source record: 28096

On Fri, 15 Feb 2008 12:37:55 -0800 (PST), dfinn1@nc.rr.com wrote:

>> AI4QJwrote:
>> > I suspect that the EZNEC program is not designed for taking into account
>> > such "rare" phenomena as "ground wave propagation". So much for EZNEC
>> > analysis at 75m.
...
>EZNEC information tells you nothing about ground wave
>propagation.

Two things wrong with this:
1. EZNEC does provide information about the radiation characteristics
along ground at any distance on an infinite, flat plane and at any
elevation above it;
2. EZNEC is not a propagation modeler as its users are well aware;
3. EZNEC models the 100M work of Brown, Lewis, & Epstein quite
closely. There is nothing in the body of RF literature to suggest
that the nature of radiation shifts suddenly in 7/8ths of a megahertz.

73's
Richard Clark, KB7QHC

2275. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 21:53:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rc2e06pn2cd93@corp.supernews.com>
Source record: 28097

Richard Clark wrote:
> On Fri, 15 Feb 2008 11:40:50 -0800 (PST), Swoozie Pellegrino
> <swooziep@yahoo.com> wrote:
>
>> What might the impedance of this look like, say, if I
>> took the last 10 meters of a 100' 50-ohm coax piece
>> and slice it to split out into a 20-meter sleeve dipole
>> and hung the dipole part vertically from the balcony?
>> Can I just screw the other end onto the back of
>> my transceiver and go? Or....
>
> Sure, if you can live with the mismatch. Better if you can tune it
> for one band. Or simply stick with my suggestion and run it into a
> tuner which you will probably need anyway. The difference between any
> of these will be undetectable at the far end of the QSO.
>
> To reduce the chance of a hot chassis due to common mode currents, you
> should use a 1:1 W2DU style BalUn (aka choke).
>
> 73's
> Richard Clark, KB7QHC

I've found that the trick of folding the braid down over the coax does a very poor job of decoupling the line in an imitation of a "sleeve" or "bazooka" dipole. It turns out that you really need a high Z0 for the decoupling sleeve, and the only practical way I know of to do that is with a larger diameter pipe, and air insulation between the pipe and the coax. I've also found that a choke balun made of multiple turns on a single core, by itself, anyway, doesn't provide adequate impedance. I'd worry that a W2DU style balun would cause a lot of loss in this application, but it should be possible to model it reasonably well with a series of loads and find out. (You'd first need to determine the actual Z of the type of core used, at the operating frequency.) You might be able to decouple the line adequately with a very high impedance and low resistance resonant current balun (common mode choke), perhaps one made by winding coax on a plastic pop bottle. You'd probably need a second current balun of some type about 1/4 wavelength down the line. My experience is that it's a trickier problem than most people think.

Roy Lewallen, W7EL

2276. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 23:29:26 UTC
From: richardharrison@webtv.net
Message-ID: <15925-47B62056-450@storefull-3253.bay.webtv.net>
Source record: 28098

Art wrote:
"My present antenna, which is for 160 m and above, is about the size of two shoe boxes and is less than 2:1 swr (50 ohm) across the band when situated at the tip of my tower."

Outstanding! An effective antenna needs to be an appreciable portion of wavelength in some dimension.

If Art`s antenna is an appreciable portion of 525 feet it can radiate well on 160 meters.

Any length of wire carrying an RF current is capable of radiation. Significant radiation from a short wire requires much current.

With a garbage can lid for a reflector, a helical antenna can be made. Were it 3 feet across in diameter (0.9 meter) the helix might work on 3 meters as the diameter needs to be about 0,3 lambda. Terman gives helical antenna information on page 909 of his 1955 opus. His best bets for small antenas are the corner reflector and the Yagi.

Best regards, Richard Harrison, KB5WZI

2277. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-15 23:41:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Bqptj.8970$0w.6896@newssvr27.news.prodigy.net>
Source record: 28099

Swoozie Pellegrino wrote:
> What might the impedance of this look like, say, if I
> took the last 10 meters of a 100' 50-ohm coax piece
> and slice it to split out into a 20-meter sleeve dipole
> and hung the dipole part vertically from the balcony?
> Can I just screw the other end onto the back of
> my transceiver and go? Or....

When I plugged it into a 2x6146 transceiver equipped
with a pi-net matching output network, it worked well. :-)
I would guess the SWR will be less than 2:1.
--
73, Cecil http://www.w5dxp.com

2278. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 00:12:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rcajijcicsb39@corp.supernews.com>
Source record: 28100

Shucks, I have an antenna that's no bigger than a baseball, and it gives better than a 1.5:1 SWR over more than the whole HF band when I connect it directly to my transmitter. If I hang it up real high, the SWR gets better yet.

Roy Lewallen, W7EL

Richard Harrison wrote:
> Art wrote:
> "My present antenna, which is for 160 m and above, is about the size of
> two shoe boxes and is less than 2:1 swr (50 ohm) across the band when
> situated at the tip of my tower."
>
> Outstanding! An effective antenna needs to be an appreciable portion of
> wavelength in some dimension.
>
> If Art`s antenna is an appreciable portion of 525 feet it can radiate
> well on 160 meters.
>
> Any length of wire carrying an RF current is capable of radiation.
> Significant radiation from a short wire requires much current.
>
> With a garbage can lid for a reflector, a helical antenna can be made.
> Were it 3 feet across in diameter (0.9 meter) the helix might work on 3
> meters as the diameter needs to be about 0,3 lambda. Terman gives
> helical antenna information on page 909 of his 1955 opus. His best bets
> for small antenas are the corner reflector and the Yagi.
>
> Best regards, Richard Harrison, KB5WZI
>

2279. Re: Standing wave and power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 00:32:58 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <e2f54b07-86c6-44c4-ad51-1334c4cbf2b3@i7g2000prf.googlegroups.com>
Source record: 28001

On Feb 13, 9:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Yuri Blanarovich wrote:
> > Kraus so effectively explains it in the introduction to his book, but the
> > "expertise" on this news group insists on otherwise - "no power in standing
> > wave circuit".
>
> The energy in the traveling waves was supplied as power
> by the source during the power-on transient state and is
> exactly the amount of energy needed to support the forward
> and reflected waves. The energy in the forward and reflected
> waves is dissipated during the power-down transient state.
>
> Assuming an integer number of cycles per second, a one second
> long lossless transmission line with a forward power of 200
> watts and a reflected power of 100 watts contains 300 joules
> of energy.
> --
> 73, Cecil http://www.w5dxp.com

This is demonstrated everytime a pulsed radar fires. Energy for the
next pulse is stored in a Pulse Forming Network that is either a
transmission line or lumped circuit representation of a transmission
line. High energy devices such as radar, lasers and xray equipment
often use the lumped circuit (LC ladder)representation of a
transmission line to store energy. I dont know if there is a practical
example of an actual transmission line being used for this purpose
outside of a design laboratory due to physical impracticality but
under those lab conditions it was discovered that an actual
transmission line provide a pulse of superior shape than the lumped
circuit PFN. It should be noted that when a radar fires more power is
taken from the PFN in say 1uS than was placed into it during any uS
while the PFN was charging. MIT/ Lincoln Labs is probably the best
source of data for anyone who wants to research this further. The use
of a transmission line to store energy is covered in just about any
introductory level radar theory book.

For quite some time now I have followed this thread(s) wondering if
all the arguement is about whether or not a transmission line can
store energy or not. If this is in fact the question then the answer
is definitely YES.

Jimmie

2280. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 00:46:33 UTC
From: art <aunwin@insightbb.com>
Message-ID: <259be41b-2c32-439a-9599-6889d169cd42@e23g2000prf.googlegroups.com>
Source record: 28002

On 15 Feb, 15:29, richardharri...@webtv.net (Richard Harrison) wrote:
> Art wrote:
>
> "My present antenna, which is for 160 m and above, is about the size of
> two shoe boxes and is less than 2:1 swr (50 ohm) across the band when
> situated at the tip of my tower."
>
> Outstanding! An effective antenna needs to be an appreciable portion of
> wavelength in some dimension.
>
> If Art`s antenna is an appreciable portion of 525 feet it can radiate
> well on 160 meters.
>
> Any length of wire carrying an RF current is capable of radiation.
****
Yes, but it is not useable if C and L for the length involved and
frequency of use is not adhered to.
Implicit in Maxwell's laws is that a radiator can be any size or shape
as long as it is in equilibrium. Without the inclusion of that last
word
all laws of the masters are invalid.

> Significant radiation from a short wire requires much current.
>
> With a garbage can lid for a reflector, a helical antenna can be made.
> Were it 3 feet across in diameter (0.9 meter) the helix might work on 3
> meters as the diameter needs to be about 0,3 lambda. Terman gives
> helical antenna information on page 909 of his 1955 opus. His best bets
> for small antenas are the corner reflector and the Yagi.
#######

It is not the physical size that is important whith respect to a dish
it is the wavelength between the two objects that counts. A simple
helix
antenna can use a reflector in place of a ground plane not as an
optical
ray deflector.Such an array is not in a state of equilibrium

>
> Best regards, Richard Harrison, KB5WZI

2281. Re: Standing wave and power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 00:59:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Ozqtj.6234$xq2.344@newssvr21.news.prodigy.net>
Source record: 28003

JIMMIE wrote:
> For quite some time now I have followed this thread(s) wondering if
> all the arguement is about whether or not a transmission line can
> store energy or not. If this is in fact the question then the answer
> is definitely YES.

Joules of energy delivered to the standing wave during the
key-down transient state can be enormous when very high
SWRs are involved. When key-up occurs, that energy has to
go somewhere. More than ten times the steady-state power can
easily be delivered to the load during the key-up transient
state.
--
73, Cecil http://www.w5dxp.com

2282. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 01:20:47 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b63a71$0$7028$4c368faf@roadrunner.com>
Source record: 28004

"art" <aunwin@insightbb.com> wrote in message
news:259be41b-2c32-439a-9599-6889d169cd42@e23g2000prf.googlegroups.com...
> On 15 Feb, 15:29, richardharri...@webtv.net (Richard Harrison) wrote:
>> Art wrote:

> It is not the physical size that is important whith respect to a
> dish it is the wavelength between the two objects that counts.

A small antenna can be constructed by multiplying the area of the garbage
can lid by the square root of the fib.

de AI4QJ

2283. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 01:33:04 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b63d4d$0$6965$4c368faf@roadrunner.com>
Source record: 28005

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:rbubr3pmqr1pbsdsooehkovs6ip0ao4gvu@4ax.com...
> On Fri, 15 Feb 2008 12:37:55 -0800 (PST), dfinn1@nc.rr.com wrote:
>
>>> AI4QJwrote:
>>> > I suspect that the EZNEC program is not designed for taking into
>>> > account
>>> > such "rare" phenomena as "ground wave propagation". So much for EZNEC
>>> > analysis at 75m.
> ...
>>EZNEC information tells you nothing about ground wave
>>propagation.
>
> Two things wrong with this:
> 1. EZNEC does provide information about the radiation characteristics
> along ground at any distance on an infinite, flat plane and at any
> elevation above it;

Really? Can it follow the curvature of the earth from say, Illinois to
Germany?

> 2. EZNEC is not a propagation modeler as its users are well aware;

If it cannot predict take-off angle then what good is it? It doesn't matter
if we warm the clouds directly above?

> 3. EZNEC models the 100M work of Brown, Lewis, & Epstein quite
> closely. There is nothing in the body of RF literature to suggest
> that the nature of radiation shifts suddenly in 7/8ths of a megahertz.

Yes, there is no abrupt shift at 75m (most obviously). Quite simply, as you
approach larger wavelengths, skywave characterstics lessen and groundwave
characteristics increase.

But I am a heretic for not having mindlessly bowed in adoration at the altar
of the EZNEC god in blind faith as you and others have done. However, those
fanatic evangelists who live by blind faith alone have wisely plonked me so
as not to let their blood pressures rise at the spectre of the EZNEC god
being angered.

73

2284. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 01:39:55 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47b63eeb$0$1119$8046368a@newsreader.iphouse.net>
Source record: 28006

Roy Lewallen wrote:
> Shucks, I have an antenna that's no bigger than a baseball, and it gives
> better than a 1.5:1 SWR over more than the whole HF band when I connect
> it directly to my transmitter. If I hang it up real high, the SWR gets
> better yet.
>
> Roy Lewallen, W7EL

Well heck, I have one the size of 2 shoe boxes that will handle a KW
from 160m through 70cm with less than 1.35:1. Bird made it. Decades
old and still works perfectly.

tom
K0TAR

2285. Re: Standing wave and power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 02:38:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rcj60mjrtvl40@corp.supernews.com>
Source record: 28007

JIMMIE wrote:
> . . .
> For quite some time now I have followed this thread(s) wondering if
> all the arguement is about whether or not a transmission line can
> store energy or not. If this is in fact the question then the answer
> is definitely YES.

The little program I wrote and referenced a little while ago, TLVis1, shows graphically how much energy is at each point along a line at every time from turn-on to steady state. And it even shows separately how much is stored in the electric and magnetic fields.

Roy Lewallen, W7EL

2286. 100 Pages of New Videos Added

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 03:11:29 UTC
From: WillWeav@gmail.com
Message-ID: <da319002-3ef0-495d-9391-769e0f5aac08@k2g2000hse.googlegroups.com>
Source record: 28008

Just added 100 pages of ham radio videos to my website. Thanks to all
that have visited in the past.
Come and see the new videos and stay awhile, there are some real gems
in there :-)
Thanks for reading.

Bill
w5grx

2287. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 03:36:36 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <KSstj.84309$_m.36175@bignews4.bellsouth.net>
Source record: 28009

>
> The interesting question then: Is the improved performance of
> vertical antennas over horizontal dipoles on 75 meters at DX distances
> due to a combination of direct radiation plus radiation from the
> ground in the area of strong ground wave strength out hundreds of
> meters? Is the ground wave leakage providing additional low signal
> strength in both transmit and receive?
>
> Gary - N0GW

That's always interesting - and usually without a good explanation.
I don't know how many times I've switched from one anntenna to another just to have the quote"inferior in theory" antenna get better results than the "better" antenna.
Antennas are magic. There may be a metal building or some near-but-out-of-sight tv antenna mast or tin roof or aluminum-foil-lined insulation giving some directivity.

2288. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 04:22:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <nbocr3p1i2a5rguo7a4abvg83ul3vnigpt@4ax.com>
Source record: 28010

On Fri, 15 Feb 2008 20:33:04 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>But I am a heretic for not having mindlessly bowed in adoration at the altar
>of the EZNEC god in blind faith as you and others have done.

Hi Dan,

Heretic? More Arthur's heathen love-child. Heretics, afterall,
reject the scripture they've studied to present alternatives.
Heathens' marginal knowledge is a limited skill for making soup from
missionaries. Run out of missionaries and heathens starve; at least a
heretic can scrounge up a meal by holding out a hat on a street
corner.

Do you claim to have a hat?

73's
Richard Clark, KB7QHC

2289. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 07:41:45 UTC
From: nm5k@wt.net
Message-ID: <ed796f5d-0f35-49df-8697-42a769cab852@u10g2000prn.googlegroups.com>
Source record: 28011

On Feb 15, 7:33 pm, "AI4QJ" <nos...@yahoo.com> wrote:

>
> But I am a heretic for not having mindlessly bowed in adoration at the altar
> of the EZNEC god in blind faith as you and others have done. However, those
> fanatic evangelists who live by blind faith alone have wisely plonked me so
> as not to let their blood pressures rise at the spectre of the EZNEC god
> being angered.
>
> 73

I'm confused... Art, is that you?
MK

2290. Re: 100 Pages of New Videos Added

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 09:51:45 UTC
From: Tehrasha Darkon <darkon@netins.net>
Message-ID: <pan.2008.02.16.09.51.46@netins.net>
Source record: 28012

On Fri, 15 Feb 2008 19:11:29 -0800, WillWeav wrote:

> Just added 100 pages of ham radio videos to my website. Thanks to all
> that have visited in the past.
> Come and see the new videos and stay awhile, there are some real gems in
> there :-)
> Thanks for reading.
>
> Bill
> w5grx

If you are gonna advertise your site, a URL would be a nice touch.

2291. HAWK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 10:43:19 UTC
From: Juka <juraj.slat@ka.htnet.hr>
Message-ID: <fp6eif$ri2$1@ss408.t-com.hr>
Source record: 28013

Need service manual for Rural Radio Telephone Link ,,,, Type H A W K -
Exicom International .
9A7KSJ

2292. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 14:44:15 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A466379BD5E0mcoslocomcastnet@216.196.97.136>
Source record: 28014

"AI4QJ" <nospam@yahoo.com> wrote in
news:47b63d4d$0$6965$4c368faf@roadrunner.com:

>
>> 2. EZNEC is not a propagation modeler as its users are well aware;
>
> If it cannot predict take-off angle then what good is it? It doesn't
> matter if we warm the clouds directly above?

You may have issues with Roy, but it is pretty unprofessional to deride his program on that account.

It does predict the angle of maximum radiated power. "Take off angle" is a great term for those who believe that the energy exits the antenna as a blob, all in one place, and no energy elsewhere.

It isn't a propagation tool, it's a design tool, and as such propagation is not at issue. Apples/Oranges.

But you're a smart fellow, so I guess you are pulling our collective legs here.. 8^)

- 73 de Mike N3LI -

2293. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 15:54:33 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A466F659EB6Cmcoslocomcastnet@216.196.97.136>
Source record: 28015

nm5k@wt.net wrote in
news:ed796f5d-0f35-49df-8697-42a769cab852@u10g2000prn.googlegroups.com:

> On Feb 15, 7:33 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>
>>
>> But I am a heretic for not having mindlessly bowed in adoration at
>> the altar of the EZNEC god in blind faith as you and others have
>> done. However, those fanatic evangelists who live by blind faith
>> alone have wisely plonked me so as not to let their blood pressures
>> rise at the spectre of the EZNEC god being angered.
>>
>> 73
>
> I'm confused... Art, is that you?

Strange, ain't it? This guy starts out kind of reasonable, and within
a month or so turns into a newsgroup nasty...

Who's standing up for Roy anyway? He didn't put in propagation
effects in his antenna design program? Horrors! Makes me think about all
those fish without banjos out there.

While we're on the subject, I always wondered why EZNEC didn't
include a decoder for PSK31!

Hopefully the sarcasm was obvious to everyone!

- 73 de Mike N3LI -

2294. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 15:55:58 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A466FA28CA42mcoslocomcastnet@216.196.97.136>
Source record: 28016

Richard Clark <kb7qhc@comcast.net> wrote in
news:nbocr3p1i2a5rguo7a4abvg83ul3vnigpt@4ax.com:

> Heretic? More Arthur's heathen love-child. Heretics, afterall,
> reject the scripture they've studied to present alternatives.
> Heathens' marginal knowledge is a limited skill for making soup from
> missionaries. Run out of missionaries and heathens starve; at least a
> heretic can scrounge up a meal by holding out a hat on a street
> corner.
>
> Do you claim to have a hat?

Not even a banjo, I'll bet.

- 73 de Mike N3LI -

2295. china wholesale cheap diesel evisu burderry sneakers Series UGG boots

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 16:01:21 UTC
From: overinstock97@yahoo.com.cn
Message-ID: <97379f4c-514c-46d9-8e82-9bc17a8f9e14@s8g2000prg.googlegroups.com>
Source record: 28017

Nike shoes | china nike shoes | air jordan sneakers | cheap gucci shoes | cheap prada sneakers | gucci sneakers | mix jordan sneakers | chanel sandals | gucci sandals | dior sandals | wholesale jordan sneakers | nike running shoes | nike stock shoes | air jordan at whlesale price | nike shoes air jordan supplier from in china | Lacoste Trainers | puma trainers | louis vuitton purse | prada purse |
gucci handbags | chanel purse | coach purse | nike bas kerball shoes |
Nike Sneakers| cheap nike sneakers | nike shoes from china | nike replica | copy nike sneakers | nike factory stores | nike stores
Nike wholesale - Nike shoes wholesale

(www. overinstock net) china Wholesale Cheap Nike jordans sneakers Michael Jordan Shoes,Nike Jordan Basketball shoes...Jordan Shoes, Air Jordan Sneakers , Air Jordan Wholesale All of the Air Jordan sneakers have Nike Air in the shoes. Authentic quality Jordans Sneakers Custom China Wholesale Jordan gucci sneakers prada gucci purse Handbag We sale new Nike Sneakers,Air Jordan Sneakers,AIR FORCE 1S,Nike Dunks SB,Bape Sta from nike outlets and factory stores,
www.overinstock.net Nike wholesale - Jordan Shoes. Nike Shoes, sport Shoes, Reebok Shoes,Running Shoes , prada chanel dior gucci sandals,Nike Shox,Nike Flightposite ,Nike jordan Basketball shoes K1X Chiefglider wholesale suppliers factory.
www.overinstock.net sale new Nike Sneakers,Air Jordan Sneakers,AIR FORCE 1S,Nike Dunks SB, Bape Sta from nike Wholesale china nike jordans gucci prada sneakers at cheap price
www.overinstock.net Wholesale Nike Dunk,Authentic Jordans Wholesale,Nike Shoes Wholesale,Discount Nike Air Force 1 for wholesale
and sale from china .china wholesale discount cheap nike jordan gucci prada sneakers lacoste puma trainers at china factory price.

2296. www.sneakersea.com wholesale NFL NHL NBA jerseys nike sneaker jordan new mix shoes gucci prada dunk puma air force one shoes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 16:17:46 UTC
From: chenjunjun8 <chenjunjun8@yahoo.com.cn>
Message-ID: <7684bb3d-5347-4f0f-a1d9-e38199e71a30@h11g2000prf.googlegroups.com>
Source record: 28018

Dear my friend
It is our pleasure to meet you here.
we are wholesaler sport shoes,clothing,electrons in Fujian of China.
our website: http://www.sneakersea.com
We are professional and honest wholesaler of all kinds of brand
sneaks and apparel.the products
our company supply are as follows:
1).Nike Jordans
Jordan 1 jordan 1.5 jordan 2 jordan 3 jordan 3.5 jordan 4 jordan 5
jordan 5.5 jordan 6 jordan 6.5 jordan 7 jordan 8 jordan 9 jordan 9.5
jordan 10 jordan 11 jordan 12 jordan 13 jordan 13.5 jordan 14 jordan
15 jordan 16 jordan 17 jordan 18 jordan 18.5 jordan 19 jordan 20
jordan 21 jordan 21.5 jordan 22 jordan King jordan Dub Zero Jordan 23
Jordan 7.5
2).Air Force One Air Force one (low) Air Force one (High) Air Force
one (Mid) Air Force one (clear) Air Force One 25 year
3).SHOX Shox R3 Shox R4 Shox R5 Shox TL1 Shox TL2 Shox TL3 Shox NZ
Shox OZ Shox Turbo Show GO Shox CL Shox Coqnescenti Shox Energia Shox
Explodine Shox Monster Shox Rhythmic Shox Warrior
4).Bape Shoes Bape Bape (transparent)
5).Air max AirMax 90 AirMax 95 AirMax 97 AirMax 2003 AirMax 2004
AirMax 2005 Air Max 2006 AirMax 180 AirMax LTD AirMax TN AirMax solas
AirMax 87 AirMax Rift
6).Puma Puma Rpt2 Puma SK6 Puma Jayfi Puma Cir Puma Speed Puma Repli
Puma Future Cat Puma Mostro Puma Lifestyle
7).Dunk SB Dunk High Dunk Low
8).Timberland Timberland High Timberland Low
9).Adidas Adidas 35 Adicolor Country city sense Adidas NBA
11).Prada & Gucci Prada Gucci
12).Footballer Shoes Footballer
13).Locaste
14).converse & Reebok converse Reebok
15).D&G shoes
16).Dsquared2 shoes
17).James shoes
18).Nike King
9).Children shoes Jordan Shox
20).Women shoes Women Jordans Women Shox R3 Women Shox R4 Women
AirMax
95&97 Women AirMax 03&06 Women Dunk Women Shox NZ Women AF1
21).sandal & baboosh Nike Puma Gucci Prada
CLOTHES 1).Bape 2).ED Hardy 3).BBC 4).CLH 5).LRG 6).Artful Dodger
Hoodies 7).GINO GREEN GLOBAL 8).10 Deep 9).A&F Coat 11).Jersey NBA

Jersey Football Jersey 12).Juicy Bikini 13).Adidas Coat 14).F1 Coat
15).D&G Coat 16).Superman Coat 17).NBA Coat
JEAN 1).E&D Jeans 2).BBC Jeans 3).BAPE Jeans 4).D&G Jeans 5).EVSIU
Jeans 6).Red monkey 7).COOGI Jeans
T-shirt 1).POLO 2007 polo(women) 2007 POLO IIII(Men) POLO (stripe)
polo (small)
2).Lacoste Lacoste (LONG) Lacoste (SHORT) 3).Name Brand shirt D&G
Shirt Giorgio Armani TN Shirt 4).BBC T-shirt 5).LRG & gina green
glalal 6).Triumvir 7).ED handy 8).Evsiu 9).R.M.B 10).CLOT
Burse & Handbag 1).LV Bag 2).Gucci Bag 3).Dior Bag 4).Chanel Bag
5).Fendi Bag 6).Coach Bag 7).Burberrys Bag 8).Prada Bag 9).Man
Leisure
Bag 11).D&G bag 12).nike bag 13).Wallet 14).Suitcase
Electronics 1).Vertu Mobile 2).New iphone Mobile 3).Nokia Mobile
4).moto Mobile 5).PSP Game & memory card 6).Sony Mobile 7).Samsung
Mobile 8).Ipod nano 9).Sony PS3 10).Laptops IBM laptops DELL laptops
Sony laptops ASUS laptops
CAP 1).ED Hardy Cap 2).New Bape & NY Cap 3).RMC Cap 4).New era NBA
5).F1 6).Chanel 7).D&G 8).gucci 9).LV 10).Prada 11).PUMA 12).wool
WATCH 1).Rolex 2).Omega 3).Cartier 4).Chanel 5).Piaget 6).Breitling
7).Bvlgari 8).Corum
Sunglasses 1).Gucci Sunglasses 2).D&G Sunglasses 3).Dior Sunglasses
4).LV Sunglasses 5).Chanel Sunglasses 6).Prada Sunglasses 7).Versace
Sunglasses 8).Giorgio Armani
Strap 1).Bape Strap 2).D&G Strap 3).Gucci Strap 4).LV Strap 5).Scarf
Other 1).Lighter

size chart
Men Size:
US: 7 8 8.5 9 9.5 10 10.5 11 12 13 14 15
UK: 6 7 7.5 8 8.5 9 9.5 10 10.5 11 12 13 14
EUR: 40 41 42 42.5 43 44 44.5 45 46 47.5 48 49
Women Size:
US: 5 5.5 6 6.5 7 7.5 8 8.5
UK: 2.5 3 3.5 4 4.5 5 5.5 6
EUR: 35.5 36 36.5 37.5 38 38.5 39 40

Kid's
US: 1 2 3 4 5 6 7 7.5 8 8.5 9 9.5 10 10.5 11 11.5 12 12.5 13 13.5
UK: 13 1 2 3 4 5 6 6.5 7 7.5 8 8.5 9 9.5 10 10.5 11 11.5 12 12.5
EUR:17 18 19 20 21 22 23 24 24.5 25 25.5 26 26.5 27 27.5 28 29 30
30.5
31

Clothing Size:
S M L XL XXL XXXL XXXXL XXXXXL

7.because the space of the website is limited,we can also supply many
other products which be not showed out in our site. if you have the
photos of the products you need , we are pleasure to supply for your
orders.

And our company can supply for our customers ,as follow:
1. top quality.all our products have top quality.
2. most rational price. we offer the most competitive price to you
to
open your market. So today most of our products have sold well in the
America, Europe, Middle East, Southeast Asia etc..
3. safe and fast shipment. As different country you are in, we will
deliver the products to you by different ways and pledge to arrive to
your address 100%.and we will send the products to you within 24h
after we get your payment.
4.many products in stock. We have many products in stock and kinds of
size you need , also include kid's.
5.our credit. If the products can be not delivered to your address as
our reason, we will refund the money you paid.
Hope sincerely to have glad and long term business relationship with
you.
If you are interested in our products and have any problem, welcome
to
contact us.
Please trust us , we will be your best choice !!!

2297. Re: far radials for verticle?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 16:31:47 UTC
From: ml <m@di.net>
Message-ID: <m-1F46AC.11314616022008@news.verizon.net>
Source record: 28019

In article
<977549b0-77e1-4e32-9b59-4f89498d79b4@d21g2000prf.googlegroups.com>,
ltdoc@yahoo.com wrote:

> Those radials are the 'other half' of the antenna, so having them
> 'close' to the first half is sort of reasonable, right? Then there's
> the 'can't get there from here' problem. So, the 'trick' is to get
> around that 'problem', and there are a number of ways of doing that.
> None of them are 'best' by any means, but still do-able, sort of.
> Since the objection is a 'don't care for the looks' thingy, one method
> is to hide them in some way. Run the radials from the base of the
> antenna, then cover them so that they sort of 'blend-in' with the
> surroundings?
> Lumping all the radials on one side or the other tends to make the
> antenna sort of directional. Maybe not a 'good' idea, but certainly
> better than no antenna at all?
> Imagination!
> Good luck.
> - 'Doc

hi

thanks for the responce

one question i ponder , o is the 'base' of the antenna (my verticle)
considered the part where it meets my support mast

or the bottom of the support mast?

normally the manufactures radials are at the base of the antenna
and the support mast is physically below that but not sure does that
rf decoupple the metal support pipe?

if i can claim the base of the support mast to be or make it "" be
the bottom then that is near the roof surface and very easy to hide
wire radials in all but 1 direction

the other thought i had is since the wall is 10ft high if the
'base'' is considered the bottom of the antenna (not the support
pipe) then i could run wire radials from there draped over and
down the elevator room then flat horizontal so it would look a
little like a pealed bannana i can then burry the radials at
roof level in all directions

just trying to figure which is the best way to work around the problem

thanks again

2298. Noise// far radials for verticle?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 16:48:25 UTC
From: ml <m@di.net>
Message-ID: <m-EF6759.11482916022008@news.verizon.net>
Source record: 28020

In article <tfcbr3dni1j3tumc1kvtjtvre6m3gl0dtj@4ax.com>,
Richard Clark <kb7qhc@comcast.net> wrote:

> On Fri, 15 Feb 2008 11:09:05 GMT, ml <m@di.net> wrote:
>
> >i'd have to mount it on the elevator room (brick wall 10ft high) of my
> >building.
>
> Hi Myles,
>
> Doc's advice covers the antenna. Did you solve your problems with the
> elevator control noise? Tell us that story.
>
> 73's
> Richard Clark, KB7QHC

hi

good to hear from ya

unfortunately not too lucky here , i went up to roof sluthing around
w/my analyzer and 817

i sure heard and saw 'noise' i know for sure the elevator room is
throwing out noise

can't yet absoluetely say it's the elevator thats causing my
specific noise sure seems likely thou

i still havn't figured out how many turns to make around my 2x2' X of
26ga wire insul, as i see i will really need a very directional
antenna to pinpoint

seems very easy now to say what seems obvious but doing the actual
finding scientifically is harder then i thought due mostly to my
poor skills

i also when taround the block trying to figure if a lamppost or
inground xformer was noisy but didn't seem soo

only thing i can say for sure is i have s9 noise from 1-15mhz and
maybe s6 from 15mhz to 30mhz and it's seemingly randomly intermittant
off a few min then on a few min or so

i am going to set up a portable 80verticle i have in the bedroom
w/the rig to see if maybe the noise is comming from an adjecent apt

i think i have enough test gear but sorta not sure what do to
track the noise down , never really did that before as far as
specific professional methods and procedures

yet i suspect it's something rather obvious throwing off the noise

i also wonder if it's possible that something in my sgc237 could have
failed such that it would make that noise? it gets prety def when
power is removed so not sure w/that attenuation i could tell and i
can't really sub another at up there i just don't have access to
the roof to easy

i sure do miss hf thou

2299. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 16:54:41 UTC
From: ml <m@di.net>
Message-ID: <m-632678.11544516022008@news.verizon.net>
Source record: 28021

In article <37cbr3dh3bu5laa48i40rj8u7aftpcissp@4ax.com>,
Richard Clark <kb7qhc@comcast.net> wrote:

> On Fri, 15 Feb 2008 10:50:46 GMT, ml <m@di.net> wrote:
>
> >hi
> >
> >pretty soon when current tv broadcast stops i was thinkng my
> >building master ant will either be left there or just removed
> >
> >i thought about petitioning the coop board to let me have the space
> >under the guise of replacing the antenna with another that looked for
> >the most part just like/simular to the old tv ant but actually
> >subsituting a ham antenna
> >
> >my first thought as far as a look alike was to a LP , just
> >wondering of all of the antennas out there anyone know which specific
> >brand might come closest to looking like a regular tv antenna?
>
> Hi Myles,
>
> Any Log periodic that looks like a TV antenna is going to cover
> VHF/UHF - keep that in mind if you are hoping for HF.
>
> However, nobody sees those antennas way up on the top of your building
> except the traffic spotters in helicopters. If you want to sneak an
> HF LPDA up there, then you will need a tad more height for masting,
> and more than a tad more support/guying.
>
> 73's
> Richard Clark, KB7QHC

hi thanks guyes for responding

i should have specified HF

don't need anymore height the tv antenna is over 10ft from roof
surface and they wouldn't let me add to that

i could get away w/a somewhat bigger antenna but not 'super large'
i was thinking if it looked like a tv at, and was even 2x the size
perhaps no one would really notice

so i've never really seen any lp face to face and wasn't sure
about of all the ones made which might be closest at fitting the bill
was hopn someone might be familiar w/a specific brand/make /model

etc??

thanks much

2300. Re: Noise// far radials for verticle?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 17:04:30 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <k75er395bitjcnol8kcbscil1pcs1oloib@4ax.com>
Source record: 28022

On Sat, 16 Feb 2008 16:48:25 GMT, ml <m@di.net> wrote:

>can't yet absoluetely say it's the elevator thats causing my
>specific noise sure seems likely thou

Hi Myles,

Trust your instinct on this one = it's the elevator motor controls.

>i still havn't figured out how many turns to make around my 2x2' X of
>26ga wire insul, as i see i will really need a very directional
>antenna to pinpoint

I'm not sure what to make of that. Just use a small SW receiver with the whip pulled back into the set. Smaller the antenna, the closer you have to get to the noise. The closer you are, the more obvious the source.

>seems very easy now to say what seems obvious but doing the actual
>finding scientifically is harder then i thought due mostly to my
>poor skills

Your skills got you to the source of the problem, the difficulty is more your coming to terms with how to solve it. You aren't going to get into the elevator control room to fix anything - even if you knew what to do. Management isn't going to spend money to fix a problem that doesn't bother them. Ask your neighbors if they have any TV noise issues that just started - get allies. Think about it, if they complained about your HF rig messing up American Idol and the building super came down on you; then they could as easily demand he fix the elevator for messing up American Idol too.

>i think i have enough test gear but sorta not sure what do to
>track the noise down , never really did that before as far as
>specific professional methods and procedures

Time to look into the gear that does noise canceling. We get a number of posts here from those who find relief from just your kind of problem. All it takes is an outboard unit with its own very small "sniffer" antenna (probably not any bigger than a short 3 foot whip for your purposes). Twist a couple of controls and the noise plunges to S3 or so. Maybe someone in the group who knows the vendors can suggest something here.

73's
Richard Clark, KB7QHC

2301. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 17:09:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <h06er3tq5id07clre1aqunkot99qq9v6mr@4ax.com>
Source record: 28023

On Sat, 16 Feb 2008 16:54:41 GMT, ml <m@di.net> wrote:

>i could get away w/a somewhat bigger antenna but not 'super large'
>i was thinking if it looked like a tv at, and was even 2x the size
>perhaps no one would really notice

Hi Myles,

Think of that TV antenna being roughly for 2M. Now think of your
antenna being for 20M. Your HF antenna is going to be 10 times
larger, and it is going to need to be further from the roof for the
same reason (nearby clutter is going to be in its field of view - so
to speak).

73's
Richard Clark, KB7QHC

2302. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 18:04:45 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b725be$0$6138$4c368faf@roadrunner.com>
Source record: 28024

"Mike Coslo" <mcoslo@youknow.comcast.net> wrote in message >
> But you're a smart fellow, so I guess you are pulling our collective legs
> here.. 8^)

Roy decided to ploink me because he was not able to follow a reasoned technical discussion. Roy is kind of funny that way, he is very impatient if you question whether he is right or wrong. Roy is always right, by definition. Anyway, I told him, "fine you can ploink me but now you won't be able to see my posts and defend yourself when I begin highlighting the things that EZNEC CAN'T do (many hams consider it the be all-end all but it has severe limitations when it comes to the actual use of your ham radio).

2303. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 18:14:16 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <ZJFtj.1176$Mw.911@nlpi068.nbdc.sbc.com>
Source record: 28025

nm5k@wt.net wrote:
> On Feb 15, 7:33 pm, "AI4QJ" <nos...@yahoo.com> wrote:
>
>> But I am a heretic for not having mindlessly bowed in adoration at the altar
>> of the EZNEC god in blind faith as you and others have done. However, those
>> fanatic evangelists who live by blind faith alone have wisely plonked me so
>> as not to let their blood pressures rise at the spectre of the EZNEC god
>> being angered.
>>
>> 73
>
> I'm confused... Art, is that you?
> MK
>

Hell hath no fury like a ham plonked.
73,
Tom Donaly, KA6RUH

2304. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 18:16:53 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <qMFtj.1177$Mw.918@nlpi068.nbdc.sbc.com>
Source record: 28026

Mike Coslo wrote:
> "AI4QJ" <nospam@yahoo.com> wrote in
> news:47b63d4d$0$6965$4c368faf@roadrunner.com:
>
>>> 2. EZNEC is not a propagation modeler as its users are well aware;
>> If it cannot predict take-off angle then what good is it? It doesn't
>> matter if we warm the clouds directly above?
>
> You may have issues with Roy, but it is pretty unprofessional to deride his
> program on that account.
>
> It does predict the angle of maximum radiated power. "Take off
> angle" is a great term for those who believe that the energy exits the
> antenna as a blob, all in one place, and no energy elsewhere.
>
> It isn't a propagation tool, it's a design tool, and as such
> propagation is not at issue. Apples/Oranges.
>
> But you're a smart fellow, so I guess you are pulling our collective legs
> here.. 8^)
>
> - 73 de Mike N3LI -

Watch it, Mike, he may plonk you, a fate worse than running out of
beer.
73,
Tom Donaly, KA6RUH

2305. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 18:25:04 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <9slj85-75m.ln1@mail.specsol.com>
Source record: 28027

AI4QJ <nospam@yahoo.com> wrote:

> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:rbubr3pmqr1pbsdsooehkovs6ip0ao4gvu@4ax.com...
> > On Fri, 15 Feb 2008 12:37:55 -0800 (PST), dfinn1@nc.rr.com wrote:
> >
> >>> AI4QJwrote:
> >>> > I suspect that the EZNEC program is not designed for taking into
> >>> > account
> >>> > such "rare" phenomena as "ground wave propagation". So much for EZNEC
> >>> > analysis at 75m.
> > ...
> >>EZNEC information tells you nothing about ground wave
> >>propagation.
> >
> > Two things wrong with this:
> > 1. EZNEC does provide information about the radiation characteristics
> > along ground at any distance on an infinite, flat plane and at any
> > elevation above it;

> Really? Can it follow the curvature of the earth from say, Illinois to
> Germany?

Is there some part of "infinite, flat plane" that you fail to understand?

> > 2. EZNEC is not a propagation modeler as its users are well aware;

> If it cannot predict take-off angle then what good is it? It doesn't matter
> if we warm the clouds directly above?

EZNEC provides horizontal, vertical and 3D radiation patterns. Is there
some other dimension you are interested in?

> > 3. EZNEC models the 100M work of Brown, Lewis, & Epstein quite
> > closely. There is nothing in the body of RF literature to suggest
> > that the nature of radiation shifts suddenly in 7/8ths of a megahertz.

> Yes, there is no abrupt shift at 75m (most obviously). Quite simply, as you
> approach larger wavelengths, skywave characterstics lessen and groundwave
> characteristics increase.

Which are functions of propagation, not antenna modeling.

> But I am a heretic for not having mindlessly bowed in adoration at the altar
> of the EZNEC god in blind faith as you and others have done. However, those
> fanatic evangelists who live by blind faith alone have wisely plonked me so
> as not to let their blood pressures rise at the spectre of the EZNEC god

> being angered.

No, you sound more like someone with a grudge mixing apples and oranges.

--
Jim Pennino

Remove .spam.sux to reply.

2306. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 18:29:59 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3r9er3dbv8vr59p0odt2qcb7n4r7q447na@4ax.com>
Source record: 28028

On Sat, 16 Feb 2008 13:04:45 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>defend yourself when I begin highlighting the
>things that EZNEC CAN'T do

Hi Dan,

"EZNEC can't whiten my teeth" sounds like so much of your naive
whining; why would ANYONE put any effort to "defending" against that
kind of boorish trolling?

Well, obviously I do. When technical content is so lacking in your
complaint, all that is left are the humorous gaffs like:
>>>EZNEC does provide information about the radiation characteristics
>>>along ground at any distance on an infinite, flat plane
>>>and at any elevation above it;
>>
>>Really? Can it follow the curvature of the earth
where the distance between "flat plane" and "curvature" are separated
by only eleven words - a netzheimer's record for cognitive fading.

After all, as you are one of my groupies, you were trolling for this
response weren't you? ;-)

73's
Richard Clark, KB7QHC

2307. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 19:53:09 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b73f24$0$6157$4c368faf@roadrunner.com>
Source record: 28029

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:3r9er3dbv8vr59p0odt2qcb7n4r7q447na@4ax.com...
> On Sat, 16 Feb 2008 13:04:45 -0500, "AI4QJ"

> Well, obviously I do. When technical content is so lacking in your
> complaint, all that is left are the humorous gaffs like:
>>>>EZNEC does provide information about the radiation characteristics
>>>>along ground at any distance on an infinite, flat plane
>>>>and at any elevation above it;

I didn't make that gaff, that was someone else ;-)) I happen to subscribe to the belief that the world is round. I understand that even most flat earthers don't consider it to be an infinite flat plane, otherwise they would reason that the sun wouldn't be able to rotate around it.

Get my gist? Does this help you understand a little bit more about ground wave propagation and why hams should not use the above EZNEC assumption in designing vertical antennas for the longer wavelength DX? Like maybe, the curvature of the earth "happens"? ;-))

2308. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 20:41:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <nnher3tmovh1mmehlq7l7m3jasjt0s36s2@4ax.com>
Source record: 28030

On Sat, 16 Feb 2008 14:53:09 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>Get my gist?

Yes, unimaginative trolling.

73's
Richard Clark, KB7QHC

2309. Re: Sort of OT but interesting ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 20:54:16 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47b74d77$0$1082$4c368faf@roadrunner.com>
Source record: 28031

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:u71pj.1816$xq2.1646@newssvr21.news.prodigy.net...
> John Smith wrote:
>> This article:
>> http://www.nydailynews.com/lifestyle/2008/02/02/2008-02-02_low_blow_for_highdef_tv_serv
ice_users-2.html
>> claims that a special antenna is needed to get HDTV (over the air, as
>> opposed to cable/sat box.)
>
> http://www.hdtvprimer.com/ANTENNAS/types.html
>
> "HDTV Antennas"
> "An antenna made for analog TV will work fine for DTV.
> There is nothing different about an antenna for DTV or
> HDTV. Unscrupulous people have labeled their antennas
> 'HDTV Antennas' as a marketing ploy. The honest antenna
> makers have had to re-label their products likewise to
> avoid losing sales."
> --
> 73, Cecil http://www.w5dxp.com

Remember COLOR TV antennas

Jimmie

2310. Re: practical yagi question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 21:07:19 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47b75086$0$1113$4c368faf@roadrunner.com>
Source record: 28032

<francesco.messineo@gmail.com> wrote in message
news:7b5d6ea4-89f0-4082-8b25-daf5ee0d89f5@j20g2000hsi.googlegroups.com...
> On 13 Feb, 05:21, "Hal Rosser" <hmros...@bellsouth.net> wrote:
>> Nya - make it a Quagi!
>> DE is a loop
>> Refl is a loop
>> all directors are straight elements
>> more fun to make
>> easier to tune
>
> well, I made two quagi one year, they worked well. The problem is that
> you don't easily find good design procedures for quagi (neither for
> quads).

Thats probably because both antennas can be made to incredibly slack
tolerances and still work quite well. I hacked together a Quagi for my cell
phone a few years ago while camping that worked beter than my factory made
yagi.

Jimmie

2311. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 22:18:09 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b76120$0$16646$4c368faf@roadrunner.com>
Source record: 28033

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:nnher3tmovh1mmehlq7l7m3jasjt0s36s2@4ax.com...
> On Sat, 16 Feb 2008 14:53:09 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>
>>Get my gist?
>
> Yes, unimaginative trolling.

Technical content noted. I am going to seriously reconsider my participation in this newsgroup. Too many people here do not wish to discuss real science, they just want to argue and flame. I have seen many times here where a person makes an assertion that I know is true, even by use of such elementary tools as a smith chart, yet yahoos who know nothing about engineering try to shoot the assertion down in flames based on personality differences or whatever. Defending such assertions that are based on first principles violates the politics of the alleged gurus. It all reduces to a non-technical word game (semantics becomes the norm) where the search for scientific truth and understanding is suborned by personality cults and word games. And oh, by no means must anyone *ever* question the EZNEC software tool! My god, software is scientific perfection itself. However, when the Apollo made the landing on the moon I wonder what would have really happened hadn't Niel Armstrong assumed manual control of the craft at the last moments? So we have the software addiction of antenna modeling and we find the author of this thread puzzled as to why he cannot explain to his class the problems associated with software modeling in conducting real world QSO's. Try to explain and wham! You get hit. You are a heretic. On the other hand, you have some crackpot trying to explain antenna theory as quasi cosmic particles spewing out of the ends of a shoebox sized antenna and you have a private pilot offering to fly over to his QTH and test the new concept. I am at all loss to how real scientists like Cecil Moore and Gene Fuller can continue to participate here. I think I will just stand by and lurk for a while and if I see no changes, I will simply write this off as a flame group and go someplace else like eham.

"73" de AI4QJ (my real call sign and I have no qualms at all in writing under my true identity)

2312. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-16 23:28:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bsqer3ph15gngc46a13njmmpvjgodic1v3@4ax.com>
Source record: 28034

On Sat, 16 Feb 2008 17:18:09 -0500, "AI4QJ" <nospam@yahoo.com> wrote:

>I am going to seriously reconsider my participation
>in this newsgroup.

Dan, you've taken a long time to get serious - but this sentimentality
you offer is still unimaginative trolling. This group has seen it
done far better. Far, far better. At least Punchinello had
intelligence, experience, and gave Hams tools they still use.

73's
Richard Clark, KB7QHC

2313. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 00:22:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <r7Ltj.12156$R84.3863@newssvr25.news.prodigy.net>
Source record: 28035

AI4QJ wrote:
> I am at all loss to how real scientists like Cecil Moore and Gene
> Fuller can continue to participate here.

Although I try to use the scientific method, I am
but a lowly EE who tends to think outside the box.
--
73, Cecil http://www.w5dxp.com

2314. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 00:59:01 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <2KqdnT6Y5uNIGyranZ2dnUVZ_vCknZ2d@comcast.com>
Source record: 28036

On Sat, 16 Feb 2008 17:18:09 -0500, AI4QJ wrote:

> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:nnher3tmovh1mmehlq7l7m3jasjt0s36s2@4ax.com...
>> On Sat, 16 Feb 2008 14:53:09 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>>Get my gist?
>>
>> Yes, unimaginative trolling.
>
> Technical content noted. I am going to seriously reconsider my
> participation in this newsgroup. Too many people here do not wish to
> discuss real science, they just want to argue and flame.

And yet you criticize Roy for plonking *you*?

> I have seen
> many times here where a person makes an assertion that I know is true,
> even by use of such elementary tools as a smith chart, yet yahoos who
> know nothing about engineering try to shoot the assertion down in flames
> based on personality differences or whatever.

Yup, and there is a fringe element of folks with apparent sexual
hangups. That's why God made killfiles! ;^)

> Defending such assertions
> that are based on first principles violates the politics of the alleged
> gurus. It all reduces to a non-technical word game (semantics becomes
> the norm) where the search for scientific truth and understanding is
> suborned by personality cults and word games.

Art says pretty much the same thing.

> And oh, by no means must
> anyone *ever* question the EZNEC software tool! My god, software is
> scientific perfection itself.

Odd, people question it all the time, and get reasonable and polite
answers. Perhaps a difference in question style?

However, when the Apollo made the landing
> on the moon I wonder what would have really happened hadn't Niel
> Armstrong assumed manual control of the craft at the last moments? So we
> have the software addiction of antenna modeling and we find the author
> of this thread puzzled as to why he cannot explain to his class the
> problems associated with software modeling in conducting real world
> QSO's.

Roy has made several mentions of what his software will and won't do. I
don't recall anyone saying it is infallible.

>Try to explain and wham! You get hit. You are a heretic. On the
> other hand, you have some crackpot trying to explain antenna theory as
> quasi cosmic particles spewing out of the ends of a shoebox sized
> antenna and you have a private pilot offering to fly over to his QTH and
> test the new concept.

You must not understand the offer, Dave. It was a "put your money where
your mouth is" offer. And Art reacted just as expected.

> I am at all loss to how real scientists like Cecil
> Moore and Gene Fuller can continue to participate here.

They enjoy a good row. They like it here, arguing with each other.
Everyone here is getting something out of the group. You may not.

I think I will
> just stand by and lurk for a while and if I see no changes, I will
> simply write this off as a flame group and go someplace else like eham.

I think that you cannot control the group. I think that you may have an
issue with that.

> "73" de AI4QJ (my real call sign and I have no qualms at all in
> writing under my true identity)

--
-73 de Mike N3LI -

2315. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 02:11:56 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <MJMtj.457$kD3.85@trnddc08>
Source record: 28037

"Mike Coslo" <mcoslo@comcast.net> wrote in message
news:2KqdnT6Y5uNIGyranZ2dnUVZ_vCknZ2d@comcast.com...
> On Sat, 16 Feb 2008 17:18:09 -0500, AI4QJ wrote:
>
>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> news:nnher3tmovh1mmehlq7l7m3jasjt0s36s2@4ax.com...
>>> On Sat, 16 Feb 2008 14:53:09 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>
>>>>Get my gist?
>>>
>>> Yes, unimaginative trolling.
>>
>> Technical content noted. I am going to seriously reconsider my
>> participation in this newsgroup. Too many people here do not wish to
>> discuss real science, they just want to argue and flame.
>
> And yet you criticize Roy for plonking *you*?
>
>
>> I have seen
>> many times here where a person makes an assertion that I know is true,
>> even by use of such elementary tools as a smith chart, yet yahoos who
>> know nothing about engineering try to shoot the assertion down in flames
>> based on personality differences or whatever.
>
> Yup, and there is a fringe element of folks with apparent sexual
> hangups. That's why God made killfiles! ;^)
>
>> Defending such assertions
>> that are based on first principles violates the politics of the alleged
>> gurus. It all reduces to a non-technical word game (semantics becomes
>> the norm) where the search for scientific truth and understanding is
>> suborned by personality cults and word games.
>
> Art says pretty much the same thing.
>
>> And oh, by no means must
>> anyone *ever* question the EZNEC software tool! My god, software is
>> scientific perfection itself.
>
> Odd, people question it all the time, and get reasonable and polite
> answers. Perhaps a difference in question style?
>
> However, when the Apollo made the landing

>> on the moon I wonder what would have really happened hadn't Niel
>> Armstrong assumed manual control of the craft at the last moments? So we
>> have the software addiction of antenna modeling and we find the author
>> of this thread puzzled as to why he cannot explain to his class the
>> problems associated with software modeling in conducting real world
>> QSO's.
>
> Roy has made several mentions of what his software will and won't do. I
> don't recall anyone saying it is infallible.
>
> >Try to explain and wham! You get hit. You are a heretic. On the
>> other hand, you have some crackpot trying to explain antenna theory as
>> quasi cosmic particles spewing out of the ends of a shoebox sized
>> antenna and you have a private pilot offering to fly over to his QTH and
>> test the new concept.
>
> You must not understand the offer, Dave. It was a "put your money where
> your mouth is" offer. And Art reacted just as expected.
>
>> I am at all loss to how real scientists like Cecil
>> Moore and Gene Fuller can continue to participate here.
>
> They enjoy a good row. They like it here, arguing with each other.
> Everyone here is getting something out of the group. You may not.
>
> I think I will
>> just stand by and lurk for a while and if I see no changes, I will
>> simply write this off as a flame group and go someplace else like eham.
>
> I think that you cannot control the group. I think that you may have an
> issue with that.
>
>
>> "73" de AI4QJ (my real call sign and I have no qualms at all in
>> writing under my true identity)
>
>
>
> --
> -73 de Mike N3LI -

Hi Mike

I have some limited accuracy test equipment for evaluating antennas.
Recently Richard Clark prodded me till I couldnt take it any more so I got
some of Roy's software. Richard even told me how to use it. It has become
clear that *my* test equipment is is very good agreement with Roy's EZNEC.
. EZNEC works so well for my situation that I thought it was woring well for
everyone. I can make real radiation patterns of my prototype antennas
(using POES signals for the illuminator) that are in agreement with EZNEC
prediction. Even the inpedance of the eklements are well predicted by

EZNEC. Do you know where any real data is in disagreement with EZNEC predictions? I'd like to know more about any data anyone has that shows where EZNEC gives wrong data.

Jerry KD6JDJ (who is extreemely happy with his EZNEC "tool")

2316. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 02:51:45 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A46DED17B409mcoslocomcastnet@216.196.97.136>
Source record: 28038

Cecil Moore <nospam@w5dxp.com> wrote in news:r7Ltj.12156$R84.3863
@newssvr25.news.prodigy.net:

> AI4QJ wrote:
>> I am at all loss to how real scientists like Cecil Moore and Gene
>> Fuller can continue to participate here.
>
> Although I try to use the scientific method, I am
> but a lowly EE who tends to think outside the box.

In this case, you would have to think outside the sphere... ;^)

- 73 de Mike N3LI -

2317. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 03:10:42 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A46E2089E33Cmcoslocomcastnet@216.196.97.136>
Source record: 28039

"Jerry" <j.jmartes@verizon.net> wrote in news:MJMtj.457$kD3.85@trnddc08:

>
> "Mike Coslo" <mcoslo@comcast.net> wrote in message
> news:2KqdnT6Y5uNIGyranZ2dnUVZ_vCknZ2d@comcast.com...
>> On Sat, 16 Feb 2008 17:18:09 -0500, AI4QJ wrote:

<redundant stuff snipped>

>> Roy has made several mentions of what his software will and won't do.
>> I don't recall anyone saying it is infallible.
>>
>> >Try to explain and wham! You get hit. You are a heretic. On the
>>> other hand, you have some crackpot trying to explain antenna theory
>>> as quasi cosmic particles spewing out of the ends of a shoebox sized
>>> antenna and you have a private pilot offering to fly over to his QTH
>>> and test the new concept.
>>
>> You must not understand the offer, Dave. It was a "put your money
>> where your mouth is" offer. And Art reacted just as expected.
>>
>>> I am at all loss to how real scientists like Cecil
>>> Moore and Gene Fuller can continue to participate here.
>>
>> They enjoy a good row. They like it here, arguing with each other.
>> Everyone here is getting something out of the group. You may not.
>>
>> I think I will
>>> just stand by and lurk for a while and if I see no changes, I will
>>> simply write this off as a flame group and go someplace else like
>>> eham.
>>
>> I think that you cannot control the group. I think that you may have
>> an issue with that.

<more redundant stuff snipped>

> Hi Mike
>
> I have some limited accuracy test equipment for evaluating antennas.
> Recently Richard Clark prodded me till I couldnt take it any more so I
> got some of Roy's software. Richard even told me how to use it. It
> has become clear that *my* test equipment is is very good agreement
> with Roy's EZNEC. . EZNEC works so well for my situation that I
> thought it was woring well for everyone. I can make real radiation
> patterns of my prototype antennas (using POES signals for the

> illuminator) that are in agreement with EZNEC prediction. Even the
> inpedance of the eklements are well predicted by EZNEC. Do you
> know where any real data is in disagreement with EZNEC predictions?
> I'd like to know more about any data anyone has that shows where EZNEC
> gives wrong data.
>
> Jerry KD6JDJ (who is extreemely happy with his EZNEC "tool")

I can't recall offhand, but I think there are a few instances in which the engine has difficulty. But any softare using the engine would, and for almost any application, it wouldn't matter.

Otherwise, it is one nice piece of software, and functions well and as advertized.

Possibly embarrassing accolade follows.......

We are lucky to have someone like Roy posting here. So many truly competent folks have been run off from the newgroups by the crazies over the years that people like him are becoming more and more rare.

- 73 de Mike N3LI -

2318. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 03:14:29 UTC
From: AI4QJ <nospam@yahoo.com>
Message-ID: <47b7a699$0$1082$4c368faf@roadrunner.com>
Source record: 28040

"Mike Coslo" <mcoslo@comcast.net> wrote in message
news:2KqdnT6Y5uNIGyranZ2dnUVZ_vCknZ2d@comcast.com...

> -73 de Mike N3LI -

No, it's 73 de LAWRENCE COUNTY AMATEUR RADIO ASSOCIATION, right "Mike"?
Check N3LI on QRZ.COM) http://www.qrz.com/detail/N3RI. And then tell me
that their direct reference to the FCC database got it wrong. Does the
trustee "Cliff" know you are using the "club" callsign?

Note: Better tell your "club" that it's call sign expired in June 2007. And
you tell *me* about fringe groups? Just what do all the guys in your "club"
do to pass the time since you can't get on the radio anymore? Shall I
inform "Cliff", as trustee, how badly you are abusing his call sign, or are
you really "Cliff". The mystery deepens....(hi hi)

2319. Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 03:18:28 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47b7a783$0$1084$4c368faf@roadrunner.com>
Source record: 28041

I was reading in the Vertical Antenna Classics book an ARRL publication and I noticed an article on a 10M J antenna that seemed a little strange to me. The overall length of the antenna is only 1/2 wl including the stub. I thought they were suppose to be 3/4 wl long.

Jimmie

2320. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 03:25:10 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47b7a916$0$93286$8046368a@newsreader.iphouse.net>
Source record: 28042

AI4QJ wrote:
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:nnher3tmovh1mmehlq7l7m3jasjt0s36s2@4ax.com...
>> On Sat, 16 Feb 2008 14:53:09 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>
>>> Get my gist?
>> Yes, unimaginative trolling.
>
> Technical content noted. I am going to seriously reconsider my participation
> in this newsgroup. Too many people here do not wish to discuss real science,

Great! Don't go away mad. just go away.

tom
K0TAR

2321. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 03:36:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rfatestjs2bb6@corp.supernews.com>
Source record: 28043

Jerry wrote:
>
> Hi Mike
>
> I have some limited accuracy test equipment for evaluating antennas.
> Recently Richard Clark prodded me till I couldnt take it any more so I got
> some of Roy's software. Richard even told me how to use it. It has become
> clear that *my* test equipment is is very good agreement with Roy's EZNEC.
> . EZNEC works so well for my situation that I thought it was woring well for
> everyone. I can make real radiation patterns of my prototype antennas
> (using POES signals for the illuminator) that are in agreement with EZNEC
> prediction. Even the inpedance of the eklements are well predicted by
> EZNEC. Do you know where any real data is in disagreement with EZNEC
> predictions? I'd like to know more about any data anyone has that shows
> where EZNEC gives wrong data.
>
> Jerry KD6JDJ (who is extreemely happy with his EZNEC
> "tool")

There are many very serious commercial users of EZNEC who have the capability to compare its results with professionally made measurements. They regularly report very good agreement -- if the agreement wasn't good, in fact, they'd certainly quit using it. You'll find antennas designed with the help of EZNEC on military and civilian vehicles, aircraft, and satellites, in use by domestic and international broadcast stations, and countless other places as well as in many, many amateurs' back yards.

I can't take credit for its accuracy, however. The basic calculations are done by NEC-2, which has been even more extensively tested and shaken down for several decades now. As a result, its limitations are quite well known and documented, and I've tried to pass these along in the EZNEC manual, correspondence with users, and in postings here. NEC-2's ability to accurately predict antenna performance is also very well known. NEC-2 uses some very fundamental equations which have been well established by over a century of theory as being those which all real antennas abide by.

But when using *any* model, including the models we all use in circuit analysis -- resistance, inductance, capacitance, transmission lines, and many more -- you always have to keep in mind that the analysis applies to the *model*, not to any real object. So the results are only as good as the match between the model and the physical circuit, antenna, or object the model represents. Anyone not able to recognize when and where a model differs in any significant way from the modeled object shouldn't

be using modeling for analysis, because his results are bound to be wrong and he won't know it. On the other hand, one who recognizes the differences can still often get useful information from the model even though it might not fully represent the actual antenna. As just one example, I've recently been designing a number of antennas which are fabricated as traces on a circuit board. They have requirements for pattern and SWR bandwidth, and have to share a fairly small board with one or more other antennas and a substantial number of other conducting objects which aren't electrically small at the operating frequency. Although EZNEC has no way to accommodate the effect of the dielectric (which is quite significant), it has nevertheless given critical information about interaction among the antennas and other conductors and its effect on pattern and bandwidth, allowing me to optimize my designs for adequate performance in the difficult environment. I've produced designs which have worked as intended with only a minimal amount of modification. Several are now in use in the client's products, and they keep asking for more.

Models can be made for many antennas and systems which represent the real antennas or systems to a very good approximation, and those will agree very well. The ground model is a weakness of NEC-2 and therefore EZNEC. Fortunately, it's still good enough for all but a relatively small number of applications. Making the ground model curved according to the Earth wouldn't make any real difference in results except for extremely high antennas or for ground wave communication at distances greater than about 100 km. Perhaps the greatest shortcoming is the homogeneous ground assumption, which can be very different from real ground. I'm not convinced that a single "equivalent" homogeneous ground can be found which behaves like real stratified ground(*). But the skin depth in average soil at 1.8 MHz is about 20 feet. So to properly model it would require the ability to include strata extending perhaps to 60 feet or so. And even if you added this capability to the program, how would you measure the ground conductivity and permittivity at all the necessary levels, to that depth, over the area necessary for calculation? And how about hills, houses, buried water and power lines, and roadway rebar?

So, like any other tool, today's modeling programs don't do everything. But in the hands of someone with a basic understanding of their applications and limitations, they can be a tremendous tool, solving in seconds problems which were beyond the capabilities of the very best engineers and scientists just a short while ago.

(*)AM broadcasters determine an equivalent ground conductivity by measuring the ground wave attenuation of an AM signal. However, this is equivalent only in that it results in the same attenuation. The effect of the ground on a radial ground system or far field pattern might be affected differently, and require different "equivalent" values. But it's possible that no "equivalent" would correctly predict, say, an elevation pattern from a vertical radiator over stratified ground.

Roy Lewallen, W7EL

2322. Re: 100 Pages of New Videos Added

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 03:43:55 UTC
From: None <None@hotmail.com>
Message-ID: <AdednXLaO87jMCranZ2dnUVZ_uevnZ2d@comcast.com>
Source record: 28044

Google is your friend.

http://www.amateurradios.info/

"Tehrasha Darkon" <darkon@netins.net> wrote in message
news:pan.2008.02.16.09.51.46@netins.net...
> On Fri, 15 Feb 2008 19:11:29 -0800, WillWeav wrote:
>
>> Just added 100 pages of ham radio videos to my website. Thanks to all
>> that have visited in the past.
>> Come and see the new videos and stay awhile, there are some real gems in
>> there :-)
>> Thanks for reading.
>>
>> Bill
>> w5grx
>
> If you are gonna advertise your site, a URL would be a nice touch.

2323. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 03:56:58 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A46E9E09385Bmcoslocomcastnet@216.196.97.136>
Source record: 28045

"AI4QJ" <nospam@yahoo.com> wrote in
news:47b7a699$0$1082$4c368faf@roadrunner.com:

>
> "Mike Coslo" <mcoslo@comcast.net> wrote in message
> news:2KqdnT6Y5uNIGyranZ2dnUVZ_vCknZ2d@comcast.com...
>
>> -73 de Mike N3LI -
>
> No, it's 73 de LAWRENCE COUNTY AMATEUR RADIO ASSOCIATION, right
> "Mike"? Check N3LI on QRZ.COM) http://www.qrz.com/detail/N3RI. And
> then tell me that their direct reference to the FCC database got it
> wrong. Does the trustee "Cliff" know you are using the "club"
> callsign?

Ahem.....

I'm N3LI. Its true, I swear! I looked it up in the database, and was
pleased to see mine very own name.

You wrote:

> http://www.qrz.com/detail/N3RI

Ayup, * that * will give you the group in Lawrence County.

Feel free to tell "CLiff" about my malfeasance! Might as well tell Riley
that someone is masquerading as someone else by using a callsign that is
only 6 letters away from his actual one too! What a trickster I is....

> Note: Better tell your "club" that it's call sign expired in June
> 2007.

I'll pass, though you might if you care. I suspect that they might
have let it expire, as the FCC is trying to cut down on the groups who
hoard callsigns. Lawrence county is probably just doing the right thing
here. Its also possible that that group doesn't exist any more. I can't
find a reference online.

> And you tell *me* about fringe groups?

Ayup.

> Just what do all the guys
> in your "club" do to pass the time since you can't get on the radio
> anymore?

My guess is that the Hams in Greencastle use NC3LC as a club call

Shall I inform "Cliff", as trustee, how badly you are
> abusing his call sign, or are you really "Cliff".

Oh would you please? I might be a little suspicious of that other group
in Lawrence County also with their club call of NC3LC. After all, if you
drop the first C from their callsign, and add 9 letters to the last C,
you'll come up with that N3LI callsign again.

> The mystery
> deepens....(hi hi)

Oy. Is there an emoticon for shaking one's head?

- 73 de Mike N3LI -

2324. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 04:17:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RzOtj.1218$Mw.88@nlpi068.nbdc.sbc.com>
Source record: 28046

Jerry wrote:
> I'd like to know more about any data anyone has that shows
> where EZNEC gives wrong data.

Here's one where all the geometry and segmentation checks
are OK but the conductors are too close together. It results
in an omnidirectional antenna with a 24 dBi gain.

http://www.w5dxp.com/SUPRGAIN.EZ
--
73, Cecil http://www.w5dxp.com

2325. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 04:20:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <JCOtj.1219$Mw.228@nlpi068.nbdc.sbc.com>
Source record: 28047

Jimmie D wrote:
> I was reading in the Vertical Antenna Classics book an ARRL publication
> and I noticed an article on a 10M J antenna that seemed a little strange to
> me. The overall length of the antenna is only 1/2 wl including the stub. I
> thought they were suppose to be 3/4 wl long.

A J-Pole and a Zepp are essentially the same antenna.
--
73, Cecil http://www.w5dxp.com

2326. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 05:44:59 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <vRPtj.4318$Sa1.660@news02.roc.ny>
Source record: 28048

Mike Coslo wrote:
> "AI4QJ" <nospam@yahoo.com> wrote in
> news:47b7a699$0$1082$4c368faf@roadrunner.com:
>
>> "Mike Coslo" <mcoslo@comcast.net> wrote in message
>> news:2KqdnT6Y5uNIGyranZ2dnUVZ_vCknZ2d@comcast.com...

> Shall I inform "Cliff", as trustee, how badly you are
>> abusing his call sign, or are you really "Cliff".
>
> Oh would you please? I might be a little suspicious of that other group
> in Lawrence County also with their club call of NC3LC. After all, if you
> drop the first C from their callsign, and add 9 letters to the last C,
> you'll come up with that N3LI callsign again.
>
>> The mystery
>> deepens....(hi hi)
>
> Oy. Is there an emoticon for shaking one's head?

Take it easy on him, Mike. He has to be feeling like a fool right about
now.

Dave K8MN

2327. OFDMA - PUSC - renumbering

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 13:17:48 UTC
From: karthikbalaguru <karthikbalaguru79@gmail.com>
Message-ID: <ff69e6d7-ebff-4fcf-a566-47b2060dcae0@i29g2000prf.googlegroups.com>
Source record: 28049
Cross-posted to: comp.dsp,alt.internet.wireless,rec.radio.amateur.antenna,alt.radio.digital

Hi,

In the case of PUSC permutation mode of OFDMA, why do they adopt the
policy of renumbering ?
I searched the internet, but i do not find any specific link/doc that
talks about this in detail.
Any ideas ?

Thx in advans,
Karthik Balaguru

2328. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 14:06:03 UTC
From: Jay in the Mojave <jay123a@qnet.com>
Message-ID: <47b83f4c$0$6996$4c368faf@roadrunner.com>
Source record: 28050

Jimmie D wrote:
> I was reading in the Vertical Antenna Classics book an ARRL publication
> and I noticed an article on a 10M J antenna that seemed a little strange to
> me. The overall length of the antenna is only 1/2 wl including the stub. I
> thought they were suppose to be 3/4 wl long.
>
> Jimmie
>
>
Hello Jimmie:

Make the antenna 5/8 wavelength long, they just work great at 5/8 wavelength long. Run some wire for the ground plane radials. Its not hard to add in a wire matching system.

I built a 20 Meter 5/8 wavelength ground plane at 41 feet tall (not for the faint of heart and normally minded people) but it worked better than expected.

Jay in the Mojave

2329. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 14:29:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kxXtj.8027$5K1.3386@newssvr12.news.prodigy.net>
Source record: 27951

Mike Coslo wrote:
> I'm N3LI. Its true, I swear!

The Japanese hold the prize for confusing R's and L's.
When General MacArthur was running for the Republican
presidential nomination in 1952, the Japanese put up a
large banner in the Ginza district of Toyko that said:

Congratulations
General MacArthur
On Your Coming Erection
--
73, Cecil http://www.w5dxp.com

2330. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 14:52:15 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <K5mdnYvug4yC1yXanZ2dnUVZ_r3inZ2d@comcast.com>
Source record: 27952

On Sun, 17 Feb 2008 14:29:36 +0000, Cecil Moore wrote:

> Mike Coslo wrote:
>> I'm N3LI. Its true, I swear!
>
> The Japanese hold the prize for confusing R's and L's. When General
> MacArthur was running for the Republican presidential nomination in
> 1952, the Japanese put up a large banner in the Ginza district of Toyko
> that said:
>
> Congratulations
> General MacArthur
> On Your Coming Erection

HAR! yeah, I thought about the R an L connection, but didn't pursue it.

Great quip tough!!

--
-73 de Mike N3LI -

2331. Re: OFDMA - PUSC - renumbering

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 16:21:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qlngr3hk6p77v77q258vptb8bgm5crpd01@4ax.com>
Source record: 27953
Cross-posted to: comp.dsp,alt.internet.wireless,rec.radio.amateur.antenna,alt.radio.digital

On Sun, 17 Feb 2008 05:17:48 -0800 (PST), karthikbalaguru
<karthikbalaguru79@gmail.com> wrote:

>PUSC permutation mode of OFDMA

Hi Karthik,

I put the phrase above into Google and it gave me 606 links.

73's
Richard Clark, KB7QHC

2332. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 17:10:57 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <MM2dnfwJrecC9yXanZ2dnUVZ_oOnnZ2d@bright.net>
Source record: 27954

Dear Myles (no call sign);

This company makes a small, HF LPDA antenna with a 12 foot boom (T6).
http://www.tennadyne.com/

From a distance, it might not look too large. 73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"ml" <m@di.net> wrote in message
news:m-632678.11544516022008@news.verizon.net...
> In article <37cbr3dh3bu5laa48i40rj8u7aftpcissp@4ax.com>,
> Richard Clark <kb7qhc@comcast.net> wrote:
>
>> On Fri, 15 Feb 2008 10:50:46 GMT, ml <m@di.net> wrote:
>>
>> >hi
>> >
>> >pretty soon when current tv broadcast stops i was thinkng my
>> >building master ant will either be left there or just removed
>> >
>> >i thought about petitioning the coop board to let me have the space
>> >under the guise of replacing the antenna with another that looked for
>> >the most part just like/simular to the old tv ant but actually
>> >subsituting a ham antenna
>> >
>> >my first thought as far as a look alike was to a LP , just
>> >wondering of all of the antennas out there anyone know which specific
>> >brand might come closest to looking like a regular tv antenna?
>>
>> Hi Myles,
>>
>> Any Log periodic that looks like a TV antenna is going to cover
>> VHF/UHF - keep that in mind if you are hoping for HF.
>>
>> However, nobody sees those antennas way up on the top of your building
>> except the traffic spotters in helicopters. If you want to sneak an
>> HF LPDA up there, then you will need a tad more height for masting,
>> and more than a tad more support/guying.
>>
>> 73's
>> Richard Clark, KB7QHC
>
> hi thanks guyes for responding

>
> i should have specified HF
>
> don't need anymore height the tv antenna is over 10ft from roof
> surface and they wouldn't let me add to that
>
> i could get away w/a somewhat bigger antenna but not 'super large'
> i was thinking if it looked like a tv at, and was even 2x the size
> perhaps no one would really notice
>
> so i've never really seen any lp face to face and wasn't sure
> about of all the ones made which might be closest at fitting the bill
> was hopn someone might be familiar w/a specific brand/make /model
>
> etc??
>
>
> thanks much

2333. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 19:40:56 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47b88dc6$0$30693$4c368faf@roadrunner.com>
Source record: 27955

"Jay in the Mojave" <jay123a@qnet.com> wrote in message
news:47b83f4c$0$6996$4c368faf@roadrunner.com...
> Jimmie D wrote:
>> I was reading in the Vertical Antenna Classics book an ARRL publication
>> and I noticed an article on a 10M J antenna that seemed a little strange
>> to me. The overall length of the antenna is only 1/2 wl including the
>> stub. I thought they were suppose to be 3/4 wl long.
>>
>> Jimmie
> Hello Jimmie:
>
> Make the antenna 5/8 wavelength long, they just work great at 5/8
> wavelength long. Run some wire for the ground plane radials. Its not hard
> to add in a wire matching system.
>
> I built a 20 Meter 5/8 wavelength ground plane at 41 feet tall (not for
> the faint of heart and normally minded people) but it worked better than
> expected.
>
> Jay in the Mojave

Jay I was concerned about the discription in the book I had never seen a J antenna that its total overall length was .5 wl, The ones I am familar with are .75wl long. Back in the early 70s a friend had put up a 100ft tower and had to wait quite a while for a crane to set his antenna. To get him on the air in the mean time we put a .25wl section of water pipe .5wl from the top of the tower and turned it into a J antenna. Yes this was for CB. The overall length of this antenna was 3/4wl including the stub. I had never seen a J antenna that had an overall length of .5wl as described in the book. I was just wondering whether someone seriously screwed up or what.

Jimmie

2334. ttenuation As A Function Of Material, Freq., etc. ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 20:26:29 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <kLWdnVlF_s_sBSXanZ2dnUVZ_g-dnZ2d@comcast.com>
Source record: 27956

Hello,

New at this.

I guess radio waves can go through wood just fine, as I can har signals from my Discone that's in my attic.

But, there is, I imagine, some attenuation as a function of type, thickness (of the wood) and the frequency involved.

Are there any good links explaining Attenuation as a function of frequency for different materials, etc. ?

thanks,
Bob

2335. Re: ttenuation As A Function Of Material, Freq., etc. ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 21:11:11 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <a88hr39qrumdc9bdpkvmg4jbu0rc5r7tpl@4ax.com>
Source record: 27957

On Sun, 17 Feb 2008 15:26:29 -0500, "Robert11" <rgsros@notme.com>
wrote:

>Hello,
>
>New at this.
>
>I guess radio waves can go through wood just fine, as I can har signals from
>my Discone that's in my attic.
>
>But, there is, I imagine, some attenuation as a function of type, thickness
>(of the wood) and the frequency involved.
>
>Are there any good links explaining Attenuation as a function of frequency
>for different materials, etc. ?

Hi Bob,

Yes. I've even calibrated products that measure the percent moisture content of wood using RF probes. However, most of what you might find is in terms of nearfield (much like my probes); or as forest. Of course, the attenuation of 2x4s falls somewhere in between, but I would hazard to guess, it doesn't amount to much.

Nearby trees, on the other hand, do represent a significant wavelength of wetter wood (dry wood is about 15-22% water, and standing wood is significantly wetter). We have, in the past, found postings here on how to drive a nail into a tree for a feedline connection, lay out radials, and use the tree as a radiator for HF. I suppose it was as efficient as a 160M antenna the size of two shoeboxes. That is to say it is not so amazing that it works, as it is to say that someone tried it.

When you consider how much bulk wood is in a house, and how much volume the house occupies, the loss would seem to be inconsequential at HF. As you mention a Discone in the attic, I must expect you are more concerned with VHF/UHF. This will alter the loss landscape, and I doubt there is a lot of accessible data about wood's loss in those bands as it is so easy to avoid (putting an antenna near timbers, that is).

73's
Richard Clark, KB7QHC

2336. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 21:44:05 UTC
From: Swoozie Pellegrino <swooziep@yahoo.com>
Message-ID: <b56ac53d-e90e-4b48-974c-6388fb5b6f95@p43g2000hsc.googlegroups.com>
Source record: 27958

On Feb 12, 8:05 am, "Yuri Blanarovich" <K...@optonline.net> wrote:
> "Swoozie Pellegrino" <swooz...@yahoo.com> wrote in message
>
> news:3da519c5-21cc-4ca5-ad8b-db2f3e842584@l16g2000hsh.googlegroups.com...
>
>
>
>
>
> > Hi, all.
>
> > I'm about to become a General class licensee, and I'm
> > trying to work out a HF antenna plan for my new apartment.
> > I have a small balcony on the top (4th) floor, which is good,
> > but unfortunately there's a roof overhanging it and is
> > 8' over the balcony floor and juts 4' out over the balcony edge,
> > so a tall vertical is out of the question.
>
> > What about a 'vertical' that is angled about 45 deg. down
> > from vertical? Will that be good for phone DXing on any
> > HF band?
>
> > Also, sadly, the balcony is all metal and so is the top of
> > the roof.
>
> > What about some kind of loop?
>
> > Thanks!
>
> > ~swooz
>
> Try the Half Sloper if you could.
> It is quarter wave wire suspended between balcony and run at about 45 deg
> down to a tree or whatever. There is a good chance you will end up with 50
> ohm impedance and can be fed directly with a coax, shield connected to metal
> railing or door frame and center wire to the antenna. Trim to frequency.
> Had one like that from the 9th floor at the hotel in Bahamas, worked very
> well.
>
> 73 Yuri, K3BU.us- Hide quoted text -
>
> - Show quoted text -

I think that I'm going to start with this idea, since I have a radio coming in the mail and would like to do the simplest and cheapest up front to get the radio tested out. I have a few questions:

1. After I wire up the antenna & coax as described above, can I do my trimming to frequency by using only the radio's SWR meter, or do I need an external tuner at the wire?

2. This radio can output 100W on HF. Can't this setup with a 10m length of 26-gauge magnet wire handle this?

3. I may need to run up to 30' of coax. What type should I buy?

Thanks for all the help!
~swooz

2337. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 21:46:35 UTC
From: Bob Miller <NOSPAM@neosoft.com>
Message-ID: <1lahr3hid4u44362v9t3sv4e8dh1icvtle@4ax.com>
Source record: 27959

On Sun, 17 Feb 2008 14:40:56 -0500, "Jimmie D"
<GFENDER@carolina.rr.com> wrote:

>
>"Jay in the Mojave" <jay123a@qnet.com> wrote in message
>news:47b83f4c$0$6996$4c368faf@roadrunner.com...
>> Jimmie D wrote:
>>> I was reading in the Vertical Antenna Classics book an ARRL publication
>>> and I noticed an article on a 10M J antenna that seemed a little strange
>>> to me. The overall length of the antenna is only 1/2 wl including the
>>> stub. I thought they were suppose to be 3/4 wl long.
>>>
>>> Jimmie
>> Hello Jimmie:
>>
>> Make the antenna 5/8 wavelength long, they just work great at 5/8
>> wavelength long. Run some wire for the ground plane radials. Its not hard
>> to add in a wire matching system.
>>
>> I built a 20 Meter 5/8 wavelength ground plane at 41 feet tall (not for
>> the faint of heart and normally minded people) but it worked better than
>> expected.
>>
>> Jay in the Mojave
>
>Jay I was concerned about the discription in the book I had never seen a J
>antenna that its total overall length was .5 wl, The ones I am familar with
>are .75wl long. Back in the early 70s a friend had put up a 100ft tower and
>had to wait quite a while for a crane to set his antenna. To get him on the
>air in the mean time we put a .25wl section of water pipe .5wl from the top
>of the tower and turned it into a J antenna. Yes this was for CB. The
>overall length of this antenna was 3/4wl including the stub. I had never
>seen a J antenna that had an overall length of .5wl as described in the
>book. I was just wondering whether someone seriously screwed up or what.
>
>Jimmie
>

Wouldn't you need 2 flagpoles to get the lower part of the "J" up in
the air? Maybe the stub is on the dirt.

bob
k5qwg

2338. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 22:04:37 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Vb2uj.9029$0o7.6869@newssvr13.news.prodigy.net>
Source record: 27960

Jimmie D wrote:
> I had never
> seen a J antenna that had an overall length of .5wl as described in the
> book.

The lower 1/4WL of a J-Pole is a matching section and
ideally doesn't radiate. It can be turned horizontal
so the antenna height is only .5wl. Is that what you
are talking about?
--
73, Cecil http://www.w5dxp.com

2339. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 22:14:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rhcejic9n3989@corp.supernews.com>
Source record: 27961

Swoozie Pellegrino wrote:
> On Feb 12, 8:05 am, "Yuri Blanarovich" <K...@optonline.net> wrote:
>> Try the Half Sloper if you could.
>> It is quarter wave wire suspended between balcony and run at about 45 deg
>> down to a tree or whatever. There is a good chance you will end up with 50
>> ohm impedance and can be fed directly with a coax, shield connected to metal
>> railing or door frame and center wire to the antenna. Trim to frequency.
>> Had one like that from the 9th floor at the hotel in Bahamas, worked very
>> well.
>>
>> 73 Yuri, K3BU.us- Hide quoted text -
>>
>> - Show quoted text -
>
> I think that I'm going to start with this idea, since I have
> a radio coming in the mail and would like to do the simplest
> and cheapest up front to get the radio tested out. I have
> a few questions:
>
> 1. After I wire up the antenna & coax as described above,
> can I do my trimming to frequency by using only the radio's
> SWR meter, or do I need an external tuner at the wire?
>
> 2. This radio can output 100W on HF. Can't this setup
> with a 10m length of 26-gauge magnet wire handle
> this?
>
> 3. I may need to run up to 30' of coax. What type should
> I buy?
>
> Thanks for all the help!
> ~swooz
>
One thing you should realize about the half sloper is that it's only
half an antenna. The outside of the coax, in your case, is the other
half of the antenna. If you put one amp into the "antenna" wire, one amp
will flow down the outside of the coax. So don't be surprised if you
find strange effects in your shack, such as electronic keyers which keep
sending, push-to-talk buttons that turn on the transmitter but don't
turn it off, RF burns from the microphone, and an SWR that changes when
you move the feedline around or change its length. You might get lucky
and not see these effects if the length of coax to the antenna and from
the rig to the ground is favorable, or you might not. You'll also need
to take care to keep the feedline as far away as possible from power or

telephone wiring because it's radiating just like the "antenna" part of the actual antenna.

For those reasons it wouldn't be my choice for an indoor antenna, but apparently Yuri has gotten lucky and had success with it, and so might you, too. I'm sure you'll get some other suggestions from people with a lot of experience.

26 gauge magnet wire is fine for most indoor antennas (about anything except an electrically small loop). RG-58 is fine for the coax, up to a few hundred watts, if the SWR is fairly low. If the SWR is fairly high (say, above 3:1) and you're running 100 watts, you might want to use RG-59 or RG-58x instead.

Have fun!

Roy Lewallen, W7EL

2340. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 22:22:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <scchr3l5rsdb6tgfqg4bp87mh3trceihsb@4ax.com>
Source record: 27962

On Sun, 17 Feb 2008 13:44:05 -0800 (PST), Swoozie Pellegrino
<swooziep@yahoo.com> wrote:

>> Try the Half Sloper if you could.
>> It is quarter wave wire suspended between balcony and run at about 45 deg
>> down to a tree or whatever. There is a good chance you will end up with 50
>> ohm impedance and can be fed directly with a coax, shield connected to metal
>> railing or door frame and center wire to the antenna. Trim to frequency.

>1. After I wire up the antenna & coax as described above,
>can I do my trimming to frequency by using only the radio's
>SWR meter, or do I need an external tuner at the wire?

Cut the wire long, and trim by small increments. If you are still
trimming well after it is obviously shorter than a quarter wave,
further trimming might find resonance, but you could be bucking up
against unknowns (this is not likely to be big problem however).

>2. This radio can output 100W on HF. Can't this setup
> with a 10m length of 26-gauge magnet wire handle
> this?

And more.

>3. I may need to run up to 30' of coax. What type should
> I buy?

Common radio shack stuff will work fine. You can spend more,
certainly, but if your antenna is tuned, no one will be able to tell
the difference at the far end between hardline and RG156 (you won't
find that at RS, probably, but there is a lot of RG8X).

However, it you can put up one wire for one band (no tuner? THAT is
odd) you can as easily put up three, four or five as a fan sloper (or
dipole, or monopole...) and not have to worry about SWR for one band
or several. It takes only slightly more construction ingenuity and
effort, but perhaps it may be too much visual exposure that draws the
unwanted eye (which, I suppose, is why you are using magnet wire in
the first place).

73's
Richard Clark, KB7QHC

2341. Re: Another Stealth Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-17 23:10:51 UTC
From: Yuri Blanarovich <K3BU@optonline.net>
Message-ID: <47b8bf08$0$25048$607ed4bc@cv.net>
Source record: 27963

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13rhcejic9n3989@corp.supernews.com...
> Swoozie Pellegrino wrote:
>> On Feb 12, 8:05 am, "Yuri Blanarovich" <K...@optonline.net> wrote:
>>> Try the Half Sloper if you could.
>>> It is quarter wave wire suspended between balcony and run at about 45
>>> deg
>>> down to a tree or whatever. There is a good chance you will end up with
>>> 50
>>> ohm impedance and can be fed directly with a coax, shield connected to
>>> metal
>>> railing or door frame and center wire to the antenna. Trim to frequency.
>>> Had one like that from the 9th floor at the hotel in Bahamas, worked
>>> very
>>> well.
>>>
>>> 73 Yuri, K3BU.us- Hide quoted text -
>>>
>>> - Show quoted text -
>>
>> I think that I'm going to start with this idea, since I have
>> a radio coming in the mail and would like to do the simplest
>> and cheapest up front to get the radio tested out. I have
>> a few questions:
>>
>> 1. After I wire up the antenna & coax as described above,
>> can I do my trimming to frequency by using only the radio's
>> SWR meter, or do I need an external tuner at the wire?
>>
>> 2. This radio can output 100W on HF. Can't this setup
>> with a 10m length of 26-gauge magnet wire handle
>> this?
>>
>> 3. I may need to run up to 30' of coax. What type should
>> I buy?
>>
>> Thanks for all the help!
>> ~swooz
>>
> One thing you should realize about the half sloper is that it's only half
> an antenna. The outside of the coax, in your case, is the other half of
> the antenna. If you put one amp into the "antenna" wire, one amp will flow
> down the outside of the coax. So don't be surprised if you find strange
> effects in your shack, such as electronic keyers which keep sending,

> push-to-talk buttons that turn on the transmitter but don't turn it off,
> RF burns from the microphone, and an SWR that changes when you move the
> feedline around or change its length.

Not as bad as foreseen.
What the HalfSloper is - vertical or ground plane antenna turned on the side/angle and the pattern then formed between the antenna and the ground reflection.
It is beneficial to connect as much "iron" as possible as a ground plane - guardrail, door frame flushing. The RF is then formed between the radiator wire and the "ground plane" with little getting behind it. Just to underline that sloping wire goes away from the building, not anywhere inside.
You can use SWR meter on ic706 to find where the wire resonates and trim it to frquency. It should be close to 50 ohms, you should not need a tuner. I was expecting my setup to have lower impedance than 50 ohms and had coil ready, to be inserted between the guardrail and the wire and then finding the tap for 50 ohms on the coil, few turns up from the ground connection. But it turned out to be perect 50 ohms and wire length was original vertical wire from my baloon vertical working against 4 elevated radials on 160m.

> You might get lucky and not see these effects if the length of coax to the
> antenna and from the rig to the ground is favorable, or you might not.
> You'll also need to take care to keep the feedline as far away as possible
> from power or telephone wiring because it's radiating just like the
> "antenna" part of the actual antenna.
>

I had no problem with RF, coax was about 8 feet between balcony and rig and computer next to it. In case of longer coax and to be safe, you could wind few turns of coax in a coil at the feed point to form the choke.

> For those reasons it wouldn't be my choice for an indoor antenna, but
> apparently Yuri has gotten lucky and had success with it, and so might
> you, too. I'm sure you'll get some other suggestions from people with a
> lot of experience.
>
It is outdoor antenna with pattern being formed between the radiator wire and metal mess of the building, RF stays outside with reasonable amount of "iron" and wiring in the building.

> 26 gauge magnet wire is fine for most indoor antennas (about anything
> except an electrically small loop). RG-58 is fine for the coax, up to a
> few hundred watts, if the SWR is fairly low. If the SWR is fairly high
> (say, above 3:1) and you're running 100 watts, you might want to use RG-59
> or RG-58x instead.
>
> Have fun!
>
> Roy Lewallen, W7EL

I would use 50 ohm coax, RG 58 variety should be OK. 26 gauge wire should fine.

73 and GL Yuri, K3BU.us

2342. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 01:00:28 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47b8d8aa$0$16660$4c368faf@roadrunner.com>
Source record: 27964

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:Vb2uj.9029$0o7.6869@newssvr13.news.prodigy.net...
> Jimmie D wrote:
>> I had never seen a J antenna that had an overall length of .5wl as
>> described in the book.
>
> The lower 1/4WL of a J-Pole is a matching section and
> ideally doesn't radiate. It can be turned horizontal
> so the antenna height is only .5wl. Is that what you
> are talking about?
> --
> 73, Cecil http://www.w5dxp.com

The book shows .25wl of antenna and .25 wl of stub, all made of copper pipe arranged in a linear fashion, total length .5wl or about 17 ft on 10M. I guess no one else here has the book I referenced. This is also suppose to be in the March 1989 QST per the book.

Jimmie

2343. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 02:31:16 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <U56uj.11530$J41.1156@newssvr14.news.prodigy.net>
Source record: 27965

Jimmie D wrote:
> The book shows .25wl of antenna and .25 wl of stub, all made of copper pipe
> arranged in a linear fashion, total length .5wl or about 17 ft on 10M. I
> guess no one else here has the book I referenced. This is also suppose to
> be in the March 1989 QST per the book.

I believe that must be an "Open-Sleeve Antenna"
described in the ARRL Antenna Book on page 7-20
in the 20th edition. The center element is a little
over 16 feet on 10m.
--
73, Cecil http://www.w5dxp.com

2344. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 02:56:07 UTC
From: common sense <nospam@hotmail.com>
Message-ID: <47b8f3c8$0$30693$4c368faf@roadrunner.com>
Source record: 27966

"Tom Ring" <news0004@taring.org> wrote in message
news:47b7a916$0$93286$8046368a@newsreader.iphouse.net...
> AI4QJ wrote:
>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> news:nnher3tmovh1mmehlq7l7m3jasjt0s36s2@4ax.com...
>>> On Sat, 16 Feb 2008 14:53:09 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>
>>>> Get my gist?
>>> Yes, unimaginative trolling.
>>
>> Technical content noted. I am going to seriously reconsider my
>> participation in this newsgroup. Too many people here do not wish to
>> discuss real science,
>
>
> Great! Don't go away mad. just go away.
>
> tom
> K0TAR

Hey Tom, good one. You're the guy who said you can sign a check with your call sign and improper use is identity theft. Are you an attorney? Is this you? http://www.maplewoodvoterscoalition.com/publicDocs/tomringfinal2.pdf

"In search of...common sense"

2345. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 03:46:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <urvhr35b4ilpoqgc5hg8spjlrbbaq0g72v@4ax.com>
Source record: 27968

On Sun, 17 Feb 2008 21:56:07 -0500, "common sense"
<nospam@hotmail.com> wrote:

>Hey Tom, good one. You're the guy who said you can sign a check with your
>call sign and improper use is identity theft. Are you an attorney? Is this
>you? http://www.maplewoodvoterscoalition.com/publicDocs/tomringfinal2.pdf
>
>"In search of...common sense"

Hi Dan,

Gone back to the shadows of anonymity? ;-)

73's
Richard Clark, KB7QHC

2346. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 03:47:38 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <ud7uj.234543$MJ6.34816@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27967

AI4QJ wrote:
I am at all loss to how real scientists like Cecil Moore and Gene
> Fuller can continue to participate here.

Dan,

I am a real scientist, but I would never dream of attempting "real science" on RRAA. I try to say only things I believe to be correct, as do most people, but this is far more like a blog than a scientific journal. The burden of proof is simply based on who runs out of gas first.

There is some very useful information here along with quite a bit of more questionable lore. There is some trolling. But it is all basically entertainment. Put on your waders and remain skeptical.

Even scientists need entertainment once in a while.

73,
Gene
W4SZ

2347. The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 04:43:57 UTC
From: common sense <nospam@hotmail.com>
Message-ID: <47b90d0d$0$16665$4c368faf@roadrunner.com>
Source record: 27969

A huge 10m neutrino telescope in the South Pole. So far, $242 million in US taxpayers dollars have been spent (or printed) through the US National Science Foundation for this monster. It will easily approach $1 billion. People risking their lives in Antarctica to run this thing. Why? What will be the payback? All this money and risk for "maybe" a "potential" clue to the evolution of the universe? More government spending gone amok. And we wonder why the US dollar is approaching 0.5 Euro. The most expensive radio telescope antenna in the world....where is the common sense?
http://pole.uchicago.edu/

2348. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 05:33:04 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fpb5b2$c87$1@aioe.org>
Source record: 27970

Cecil Moore wrote:
> Mike Coslo wrote:
>> I'm N3LI. Its true, I swear!
>
> The Japanese hold the prize for confusing R's and L's.
> When General MacArthur was running for the Republican
> presidential nomination in 1952, the Japanese put up a
> large banner in the Ginza district of Toyko that said:
>
> Congratulations
> General MacArthur
> On Your Coming Erection

Easily explainable, they were ahead of the times. And, quite obviously, were making reference to the development of viagra!

There crystal ball failed them though; they must have been counting on life extending medicine which failed to be developed--however, they got it half-right. <grin>

Regards,
JS

2349. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 07:48:11 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ktcir3l8p29r6ab2s1lfseduo69urpdb11@4ax.com>
Source record: 27971

On Sun, 17 Feb 2008 23:43:57 -0500, "common sense"
<nospam@hotmail.com> wrote:

>A huge 10m neutrino telescope in the South Pole. So far, $242 million in US
>taxpayers dollars have been spent (or printed) through the US National
>Science Foundation for this monster. It will easily approach $1 billion.
>People risking their lives in Antarctica to run this thing. Why? What will
>be the payback? All this money and risk for "maybe" a "potential" clue to
>the evolution of the universe? More government spending gone amok. And we
>wonder why the US dollar is approaching 0.5 Euro. The most expensive radio
>telescope antenna in the world....where is the common sense?
>http://pole.uchicago.edu/
>

Hi Dan,

I thought you were generally for such things. To what do you
attribute this shift in feelings for science? After all, a cost of
merely $1B and some tears shed for no one yet put to any physical
discomfort when we've spent nearly a Trillion to no obvious gain and
certain death for thousands seems rather a whipsaw out of catatonic
lethargy. Should we turn our eyes toward the South Pole to the
neglect of the national paralysis in the middle east?

On the other hand, focusing on the South Pole, an interesting parallel
diversion of no immediate consequence in these threads, could also be
a way of distancing oneself from other embarrassments of mistaken
attributions.

Have you come to means by which you can reconcile the difference?
>On Sat, 16 Feb 2008 22:14:29 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>Check N3LI on QRZ.COM) http://www.qrz.com/detail/N3RI
where the gap between the two calls, all of two or three words or
links has easily upset your previous broken record for cognitive
fading.

73's
Richard Clark, KB7QHC

2350. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 11:47:56 UTC
From: gwatts <gwatts@frontiernet.net>
Message-ID: <Mfeuj.4414$7d1.447@news01.roc.ny>
Source record: 27972

common sense wrote:
> A huge 10m neutrino telescope in the South Pole. So far, $242 million in US
> taxpayers dollars have been spent (or printed) through the US National
> Science Foundation for this monster.

Cost of *one day* of the Iraq war: $275 million.

http://www.nationalpriorities.org/costofwar_home

So the cost of the SPT works out to about 21 hours, eight minutes of
Iraq War, and it will certainly last a lot longer than 21 hours. If it
will outlast the Iraq war is another question.

> It will easily approach $1 billion.

...or about 3 days, 16 hours of Iraq War.

> People risking their lives in Antarctica to run this thing.

Voluntarily. No one faces criminal charges for refusing to go and so
far zero casualties versus 3,966 in Iraq.

> Why? What will
> be the payback? All this money and risk for "maybe" a "potential" clue to
> the evolution of the universe?

More than that, do a little research and reading before you spout off
and confirm your ignorance,
http://www.nrao.edu/news/Technology_doc_final.pdf

> More government spending gone amok. And we
> wonder why the US dollar is approaching 0.5 Euro.

The reasons for the devaluation of the dollar have all but nothing to do
with what the NSF is spending, you should refresh your knowledge of
orders of magnitude and economics.

> The most expensive radio
> telescope antenna in the world....where is the common sense?

Certainly not in your head. Get a grip on the real numbers and facts
about the Federal budget and the American economy and maybe you'll have
something to say that doesn't sound like some parroted conservative
talking points, a/k/a lies and deception.

> http://pole.uchicago.edu/

Congratulations to the SPT team on First Light!
http://pole.uchicago.edu/news/news_2007-02-15.html

- Galen, W8LNA

2351. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 14:20:40 UTC
From: Yuri Blanarovich <K3BU@optonline.net>
Message-ID: <47b99445$0$14639$607ed4bc@cv.net>
Source record: 27973

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:ktcir3l8p29r6ab2s1lfseduo69urpdb11@4ax.com...

After all, a cost of
> merely $1B and some tears shed for no one yet put to any physical
> discomfort when we've spent nearly a Trillion to no obvious gain and
> certain death for thousands seems rather a whipsaw out of catatonic
> lethargy. Should we turn our eyes toward the South Pole to the
> neglect of the national paralysis in the middle east?
> 73's
> Richard Clark, KB7QHC

Eloquent liberal commie crapola.
Clintonistas solution? Sit and wait for more WT like deaths on US soil, wait for more blow ups and dead Americans on their own soil, ships, embassies while "the perpetrators will be haunted down" rhetoric while screwing interns and turning White House into a Whorehouse.
Vote for Billary or Hussein and make way for "negotiated peace" with nice terrorists and have some order from Sharia law across the globe.

bada BUmBUm
back to no power in standing waves

2352. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 14:32:25 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A48616BD3466jxp16psuedu@128.118.141.40>
Source record: 27974

"common sense" <nospam@hotmail.com> wrote in
news:47b90d0d$0$16665$4c368faf@roadrunner.com:

> A huge 10m neutrino telescope in the South Pole. So far, $242 million
> in US taxpayers dollars have been spent (or printed) through the US
> National Science Foundation for this monster. It will easily approach
> $1 billion. People risking their lives in Antarctica to run this
> thing. Why? What will be the payback? All this money and risk for
> "maybe" a "potential" clue to the evolution of the universe? More
> government spending gone amok. And we wonder why the US dollar is
> approaching 0.5 Euro. The most expensive radio telescope antenna in
> the world....where is the common sense? http://pole.uchicago.edu/
>
>
To further our understanding of the Universe and how it works is reason
enough.
Basic research always benefits mankind in the long run.
Some things are worth doing even if it does not produce better bicycle
wheels or more money in the pockets of oil companies in the near term.
After all Michelangelo could have used a paint roller on the ceiling of
that church. It would have been cheaper and quicker if he had. A nice shade
of beige would have been OK or maybe institutional green.
Ignorance is not bliss!

John Passaneau W3JXP
Physics Electronics Shop
Penn State University

Discloser:
I helped build some of the equipment for that project.

2353. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 14:44:29 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47b999ca$0$1093$4c368faf@roadrunner.com>
Source record: 27975

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:U56uj.11530$J41.1156@newssvr14.news.prodigy.net...
> Jimmie D wrote:
>> The book shows .25wl of antenna and .25 wl of stub, all made of copper
>> pipe arranged in a linear fashion, total length .5wl or about 17 ft on
>> 10M. I guess no one else here has the book I referenced. This is also
>> suppose to be in the March 1989 QST per the book.
>
> I believe that must be an "Open-Sleeve Antenna"
> described in the ARRL Antenna Book on page 7-20
> in the 20th edition. The center element is a little
> over 16 feet on 10m.
> --
> 73, Cecil http://www.w5dxp.com

2354. Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 14:44:35 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <vKmdnQ4JMaJQBCTanZ2dnUVZ_judnZ2d@comcast.com>
Source record: 27976

Don't forget to dial the phone number below
Cell phone numbers are going public today - This is a REMINDER
All cell phone numbers are being released to telemarketing companies today and you may start to receive sales calls. You will be charged for these calls.
To prevent this, call the following number from your cell phone:
888.382.1222
It is the National DO NOT CALL list. It will only take a minute of your time. It blocks your number for five (5) years. You must call from the cell phone number you want to list.

2355. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 14:52:20 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47b99ba1$0$1086$4c368faf@roadrunner.com>
Source record: 27977

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:U56uj.11530$J41.1156@newssvr14.news.prodigy.net...
> Jimmie D wrote:
>> The book shows .25wl of antenna and .25 wl of stub, all made of copper
>> pipe arranged in a linear fashion, total length .5wl or about 17 ft on
>> 10M. I guess no one else here has the book I referenced. This is also
>> suppose to be in the March 1989 QST per the book.
>
> I believe that must be an "Open-Sleeve Antenna"
> described in the ARRL Antenna Book on page 7-20
> in the 20th edition. The center element is a little
> over 16 feet on 10m.
> --
> 73, Cecil http://www.w5dxp.com

No, thats not it either, I think someone just screwed up on this antenna.
Stub is 8'7" radiator is 8'7". Built like a typical J antenna its just 8'7"
too short. I was thinking someone really messed up when this was published.

Jimmie

2356. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 14:58:44 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9A485B606C7D4VeebleFetzer@216.250.184.7>
Source record: 27978

In news:vKmdnQ4JMaJQBCTanZ2dnUVZ_judnZ2d@comcast.com "Howard W3CQH" <hsgorden@comcast.net> wrote:

> Don't forget to dial the phone number below
> Cell phone numbers are going public today

"You may have received an email telling you that your cell phone is about to be assaulted by telemarketing calls as a result of a new cell phone number database; however, that is not the case. FCC regulations prohibit telemarketers from using automated dialers to call cell phone numbers. Automated dialers are standard in the industry, so most telemarketers don't call consumers on their cell phones without their consent."

http://www.ftc.gov/bcp/edu/pubs/consumer/alerts/alt107.shtm

--
Bert Hyman St. Paul, MN bert@iphouse.com

2357. W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 15:13:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Bghuj.925$pl4.352@newssvr22.news.prodigy.net>
Source record: 27979

While working on an energy-based presentation of W7EL's
data from the following web page, I came across an
instance where my energy analysis differed from W7EL's
results under the "Food for Thought: Forward and Reverse
Power" section. Assuming Roy was correct, I attempted to
find my error and failed to do so.

http://eznec.com/misc/Food_for_thought.pdf

**********begin quote**********

Zl fPa rPa Pa(tx) Pa(src) Pa(R0) Pa(Rl) frac R0 frac Rl
0 + j0 100 100 0 0 0 0 - -
infinite 100 100 0 0 0 0 - -

Not only that, but notice the last two cases. Here, the reverse power is
a full 100 watts. The source match is 1:1. Yet *none* of this reverse
power is dissipated in the source resistance. In fact, no power at all
is dissipated in the source resistance.

ANY MODEL PRESENTED TO ACCOUNT FOR WHAT HAPPENS TO "FORWARD" AND
"REVERSE" POWER AT TRANSMISSION LINE ENDS HAD BETTER GIVE RESULTS THAT
AGREE WITH THE ABOVE TABLE.

**********end quote**********

Unfortunately, my results do not agree.

In the line where ZL is zero, i.e. a short-circuit, the
dissipation in the source resistance is 400 watts, i.e.
all of the forward power and reflected power is dissipated
in the source resistor plus an additional 200 watts associated
with constructive interference. All 400 watts must be supplied
by the source so Pa(src) must also be 400 watts. It should read:

Zl fPa rPa Pa(tx) Pa(src) Pa(R0) Pa(Rl) frac R0 frac Rl
0 + j0 100 100 0 400 400 0 1.0 -
infinite 100 100 0 0 0 0 - -

For the ZL=0 case:
Pa(R0) = fPa + rPa + 2*SQRT(fPa*rPa) = 400 watts
This is *total constructive interference* as defined by
Hecht in "Optics".

For the ZL=infinite case:
Pa(R0) = fPa + rPa - 2*SQRT(fPa*rPa) = 0 watts
This is *total destructive interference* as defined by
Hecht in "Optics".

Since Roy doesn't read my postings or emails, could someone
please pass this information on to him.
--
73, Cecil http://www.w5dxp.com

2358. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 15:20:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hnhuj.926$pl4.79@newssvr22.news.prodigy.net>
Source record: 27980

John Passaneau wrote:
> Discloser:
> I helped build some of the equipment for that project.

What some may not realize is that most money spent by
the government, no matter how irrational the initial
expenditure, is routed back into the economy. This one
apparently paid for some of your groceries - a good thing.
--
73, Cecil http://www.w5dxp.com

2359. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 15:26:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <oshuj.6614$xq2.4507@newssvr21.news.prodigy.net>
Source record: 27981

Jimmie D wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>> I believe that must be an "Open-Sleeve Antenna"
>> described in the ARRL Antenna Book on page 7-20
>> in the 20th edition. The center element is a little
>> over 16 feet on 10m.

> No, thats not it either, I think someone just screwed up on this antenna.
> Stub is 8'7" radiator is 8'7". Built like a typical J antenna its just 8'7"
> too short. I was thinking someone really messed up when this was published.

If one omitted one of the two T-line elements in an
Open-Sleeve Antenna, it would look exactly as you
describe it above.
--
73, Cecil http://www.w5dxp.com

2360. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 16:21:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <zgiuj.12360$0w.3099@newssvr27.news.prodigy.net>
Source record: 27982

Mike Coslo wrote:
> We are lucky to have someone like Roy posting here. So many truly
> competent folks have been run off from the newgroups by the crazies over
> the years that people like him are becoming more and more rare.

What may be the real objection is the arrogance demonstrated
by some of the contributors. Please see my new thread concerning
some of Roy's "Food for Thought" statements.
--
73, Cecil http://www.w5dxp.com

2361. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 16:28:57 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jhcjr3pg131k3dihmvnju229523lgfliu6@4ax.com>
Source record: 27983

On Mon, 18 Feb 2008 09:20:40 -0500, "Yuri Blanarovich"
<K3BU@optonline.net> wrote:

>Eloquent liberal commie crapola.

Thanx for the flowers Hussein.

73's
Richard Clark, KB7QHC

2362. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 17:01:00 UTC
From: richardharrison@webtv.net
Message-ID: <17314-47B9B9CC-852@storefull-3256.bay.webtv.net>
Source record: 27985

Jimmie D wrote:
"The book shows a .25wl of antenna and a .25wl of stub,---."

The J antenna is often described as a half-wave of antenna with a quarter-wave matching stub.

Function of the stub is to shunt the antenna at a point so that the parallel combination of antenna and stub equal Zo.

If the antenna were only 1/4-wavelength, reflection from its open-circuit end at its drive point may yet be compensated by a .25wl stub.

At the 1/4-wavelength stub`s short-circuit, phase of the reflected voltage is reversed. Voltage reflected from the open-circuit tip of the antenna is not reversed in phase by its reflection. Both waves travel the same distance to the point where they meet at the antenna drive point. These tend to offset each other.

Terman describes impedance matching using stubs on page 109 of his 1955 opus:
"Thus, although a reflected wave is present in the length l1 because of reflection from ZL, there is no reflected wave on the generator side of the stub line as a result of the cancellation of the two reflected waves."

Best regards, Richard Harrison, KB5WZI

2363. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 17:09:57 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <FZiuj.8221$5K1.4697@newssvr12.news.prodigy.net>
Source record: 27984

Yuri Blanarovich wrote:
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:ktcir3l8p29r6ab2s1lfseduo69urpdb11@4ax.com...
>
> After all, a cost of
>> merely $1B and some tears shed for no one yet put to any physical
>> discomfort when we've spent nearly a Trillion to no obvious gain and
>> certain death for thousands seems rather a whipsaw out of catatonic
>> lethargy. Should we turn our eyes toward the South Pole to the
>> neglect of the national paralysis in the middle east?
>> 73's
>> Richard Clark, KB7QHC
>
> Eloquent liberal commie crapola.
> Clintonistas solution? Sit and wait for more WT like deaths on US soil, wait
> for more blow ups and dead Americans on their own soil, ships, embassies
> while "the perpetrators will be haunted down" rhetoric while screwing
> interns and turning White House into a Whorehouse.
> Vote for Billary or Hussein and make way for "negotiated peace" with nice
> terrorists and have some order from Sharia law across the globe.
>
> bada BUmBUm
> back to no power in standing waves
>
>

The Cold War is over, Yuri. We won.
73,
Tom Donaly, KA6RUH

2364. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 17:20:11 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <b49856ea-73e4-4efe-bdd2-7a508d14aaf4@e6g2000prf.googlegroups.com>
Source record: 27986

On Feb 18, 7:13 am, Cecil Moore <nos...@w5dxp.com> wrote:
> While working on an energy-based presentation of W7EL's
> data from the following web page, I came across an
> instance where my energy analysis differed from W7EL's
> results under the "Food for Thought: Forward and Reverse
> Power" section. Assuming Roy was correct, I attempted to
> find my error and failed to do so.
>
> http://eznec.com/misc/Food_for_thought.pdf
>
> **********begin quote**********
>
> Zl fPa rPa Pa(tx) Pa(src) Pa(R0) Pa(Rl) frac R0 frac Rl
> 0 + j0 100 100 0 0 0 0 - -
> infinite 100 100 0 0 0 0 - -
>
> Not only that, but notice the last two cases. Here, the reverse power is
> a full 100 watts. The source match is 1:1. Yet *none* of this reverse
> power is dissipated in the source resistance. In fact, no power at all
> is dissipated in the source resistance.
>
> ANY MODEL PRESENTED TO ACCOUNT FOR WHAT HAPPENS TO "FORWARD" AND
> "REVERSE" POWER AT TRANSMISSION LINE ENDS HAD BETTER GIVE RESULTS THAT
> AGREE WITH THE ABOVE TABLE.
>
> **********end quote**********
>
> Unfortunately, my results do not agree.
>
> In the line where ZL is zero, i.e. a short-circuit, the
> dissipation in the source resistance is 400 watts, i.e.
> all of the forward power and reflected power is dissipated
> in the source resistor plus an additional 200 watts associated
> with constructive interference. All 400 watts must be supplied
> by the source so Pa(src) must also be 400 watts. It should read:
>
> Zl fPa rPa Pa(tx) Pa(src) Pa(R0) Pa(Rl) frac R0 frac Rl
> 0 + j0 100 100 0 400 400 0 1.0 -
> infinite 100 100 0 0 0 0 - -
>
> For the ZL=0 case:
> Pa(R0) = fPa + rPa + 2*SQRT(fPa*rPa) = 400 watts
> This is *total constructive interference* as defined by
> Hecht in "Optics".

>
> For the ZL=infinite case:
> Pa(R0) = fPa + rPa - 2*SQRT(fPa*rPa) = 0 watts
> This is *total destructive interference* as defined by
> Hecht in "Optics".
>
> Since Roy doesn't read my postings or emails, could someone
> please pass this information on to him.
> --
> 73, Cecil http://www.w5dxp.com

Why did you bother with Hecht? It's simple enough to go back to the second equation above the line you disagree with, the one at the bottom of page 7 in that pdf, and see it does not agree there either. It's obviously a typo and should be corrected. I'll drop Roy a line about it, in case he doesn't see this.

Cheers,
Tom

2365. Re: ttenuation As A Function Of Material, Freq., etc. ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 17:43:48 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <69b2d556-c4bc-49cd-b645-9d1b72064672@e23g2000prf.googlegroups.com>
Source record: 27987

On Feb 17, 12:26 pm, "Robert11" <rgs...@notme.com> wrote:
> Hello,
>
> New at this.
>
> I guess radio waves can go through wood just fine, as I can har signals from
> my Discone that's in my attic.
>
> But, there is, I imagine, some attenuation as a function of type, thickness
> (of the wood) and the frequency involved.
>
> Are there any good links explaining Attenuation as a function of frequency
> for different materials, etc. ?
>
> thanks,
> Bob

The actual calculation for a practical situation isn't simple--or perhaps I should say isn't easy for a human to do. It's the sort of thing we'd most likely let a computer do these days. But you can at least get an idea about what's going on. The characteristics of a material that will interact with radio waves--electromagnetic radiation--are its permeability, permittivity, and resistivity. Permeability relates to magnetism, and for non-ferromagnetic materials, you probably don't have to worry much about it. As a start, you might have a look at Wikipedia for permittivity, or do a google it. The Wikipedia article I found about it looked pretty reasonable.

Yours is a good question. Some people make a career out of studying that sort of thing and becoming experts in it. You'd probably need to study "electricity and magnetism" up through a good understanding of Maxwell's equations and then get into the details of the physical properties of materials to thoroughly understand it. Even then, there'd be lots of puzzles to figure out, if you wanted. In other words, you can dive pretty deeply into it if you want. But you're absolutely right, the properties change with frequency, and the effects you'd see at different frequencies would be different even if the properties were to stay the same.

Cheers,
Tom

2366. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 17:50:39 UTC
From: Ask Me <bounce@127.5.254.1>
Message-ID: <6bhjr3d4iq6ruvg9i8nu9ojh37570h08k9@4ax.com>
Source record: 27988
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

On Mon, 11 Feb 2008 07:41:38 -0600, "William O'Hara"
<whoohara@yahoo.com> wrote:

>I would like to point out as a former Assistant RACES Officer for a local
>community in Massachusetts, that Mr. Romney is absolutely correct.
>
>The current EMA-ARRL structure co-exists with the STATE RACES Officer and
>going nothing.
>
>ARES has nets that do NOTHING. RACES does nothing. 85% of the
>communities south of Boston do not have any active participation in the
>RACES drills.

This seems to be true, there is an ARES net near me that does not do
any training but encourages parcipitants to do conversation after
everyone has checked in. In the course Emergency Communication I we
are discouraged from doing conversation during emergency communication
and encouraged to be brief and accurate with our communication.

John Ragland - KE6CQK

2367. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 18:02:16 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <HKjuj.1122$Mh2.1103@nlpi069.nbdc.sbc.com>
Source record: 27989

Richard Harrison wrote:
> "Thus, although a reflected wave is present in the length l1 because of
> reflection from ZL, there is no reflected wave on the generator side of
> the stub line as a result of the cancellation of the two reflected
> waves."

What? "Cancellation of the two reflected waves"???
Some of the gurus here say that cannot happen,
that there is never any interaction between waves.
--
73, Cecil http://www.w5dxp.com

2368. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 18:07:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cPjuj.1123$Mh2.610@nlpi069.nbdc.sbc.com>
Source record: 27990

K7ITM wrote:
> It's obviously a typo and should be corrected. I'll drop Roy a line
> about it, in case he doesn't see this.

So much for this statement screamed at us by Roy. :-)

"ANY MODEL PRESENTED TO ACCOUNT FOR WHAT HAPPENS TO 'FORWARD' AND
'REVERSE' POWER AT TRANSMISSION LINE ENDS HAD BETTER GIVE RESULTS THAT
AGREE WITH THE ABOVE TABLE. Otherwise, it's wrong. The values in the
above table can be measured and confirmed."
--
73, Cecil http://www.w5dxp.com

2369. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 18:17:23 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fpci3jskq1@f04n12.cac.psu.edu>
Source record: 27991

Howard W3CQH wrote:
> Don't forget to dial the phone number below
> Cell phone numbers are going public today - This is a REMINDER
> All cell phone numbers are being released to telemarketing companies today
> and you may start to receive sales calls. You will be charged for these
> calls.
> To prevent this, call the following number from your cell phone:
> 888.382.1222
> It is the National DO NOT CALL list. It will only take a minute of your
> time. It blocks your number for five (5) years. You must call from the cell
> phone number you want to list.
>
>

HOAX alert!

2370. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 18:20:13 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47b9cc5a$0$6156$4c368faf@roadrunner.com>
Source record: 27992

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:oshuj.6614$xq2.4507@newssvr21.news.prodigy.net...
> Jimmie D wrote:
>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>>> I believe that must be an "Open-Sleeve Antenna"
>>> described in the ARRL Antenna Book on page 7-20
>>> in the 20th edition. The center element is a little
>>> over 16 feet on 10m.
>
>> No, thats not it either, I think someone just screwed up on this antenna.
>> Stub is 8'7" radiator is 8'7". Built like a typical J antenna its just
>> 8'7" too short. I was thinking someone really messed up when this was
>> published.
>
> If one omitted one of the two T-line elements in an
> Open-Sleeve Antenna, it would look exactly as you
> describe it above.
> --
> 73, Cecil http://www.w5dxp.com

No, it would vaguely appear as I discribed with exceptions. They are
simular. The antenna I was talking about is shunt fed and the open sleeve is
series fed and the stub elements are much closer together than on the open
sleeve. This would never work on both both 14 and 28 as the open sleeve is
ment to do. Then again a J pole has always been a variant of a sleeve
antenna.

Jimmie

2371. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 18:24:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u9jjr31kveusjs5u7bfdvlvib1dh5k6mv8@4ax.com>
Source record: 27993

On Mon, 18 Feb 2008 13:20:13 -0500, "Jimmie D"
<GFENDER@carolina.rr.com> wrote:

>Then again a J pole has always been a variant of a sleeve
>antenna.

Hi Jimmie,

How so?

73's
Richard Clark, KB7QHC

2372. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 18:30:26 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fpcis2$1eju$1@f04n12.cac.psu.edu>
Source record: 27994

Yuri Blanarovich wrote:
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:ktcir3l8p29r6ab2s1lfseduo69urpdb11@4ax.com...
>
> After all, a cost of
>> merely $1B and some tears shed for no one yet put to any physical
>> discomfort when we've spent nearly a Trillion to no obvious gain and
>> certain death for thousands seems rather a whipsaw out of catatonic
>> lethargy. Should we turn our eyes toward the South Pole to the
>> neglect of the national paralysis in the middle east?
>> 73's
>> Richard Clark, KB7QHC
>
> Eloquent liberal commie crapola.
> Clintonistas solution? Sit and wait for more WT like deaths on US soil, wait
> for more blow ups and dead Americans on their own soil, ships, embassies
> while "the perpetrators will be haunted down" rhetoric while screwing
> interns and turning White House into a Whorehouse.
> Vote for Billary or Hussein and make way for "negotiated peace" with nice
> terrorists and have some order from Sharia law across the globe.

HOWL! Pretty cool - but

Yuri, you forgot to include:

Teachers and other liberals who fill our kids heads with claptrap.

Same sex marriage enthusiasts.

Gun control whacks.

Soccer Moms

Michael J Fox

Global Warming sissies

The French

People from Wisconsin

Now get back and rewrite that the right way, or you won't get an A on
your liberal bashing report.

For extra credit, do a good diss on moderates in the same paragraphs.

- 73 de Mike N3LI -

2373. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 18:33:44 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47b9cf85$0$6138$4c368faf@roadrunner.com>
Source record: 27995

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:17314-47B9B9CC-852@storefull-3256.bay.webtv.net...
> Jimmie D wrote:
> "The book shows a .25wl of antenna and a .25wl of stub,---."
>
> The J antenna is often described as a half-wave of antenna with a
> quarter-wave matching stub.
>
> Function of the stub is to shunt the antenna at a point so that the
> parallel combination of antenna and stub equal Zo.
>
> If the antenna were only 1/4-wavelength, reflection from its
> open-circuit end at its drive point may yet be compensated by a .25wl
> stub.
>
> At the 1/4-wavelength stub`s short-circuit, phase of the reflected
> voltage is reversed. Voltage reflected from the open-circuit tip of the
> antenna is not reversed in phase by its reflection. Both waves travel
> the same distance to the point where they meet at the antenna drive
> point. These tend to offset each other.
>
> Terman describes impedance matching using stubs on page 109 of his 1955
> opus:
> "Thus, although a reflected wave is present in the length l1 because of
> reflection from ZL, there is no reflected wave on the generator side of
> the stub line as a result of the cancellation of the two reflected
> waves."
>
> Best regards, Richard Harrison, KB5WZI
>

Yes, I know . The thing that threw me was that a ran the numbers for a 10M j
the ones that are normally 3/4 wl long overall. To my surprise the 50 ohm
point where you connected the feedline to stub was in the same place on both
antennas. Initial assumption was this was some kind of screw up. I guess
not. This AM I spent some time building the short J out of some galvanize
pipe and it works as advertise

Jimmie

2374. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 18:38:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <atjjr3pmc528k488hmfj0k8ilsp497v6pi@4ax.com>
Source record: 27996

On Mon, 18 Feb 2008 13:33:44 -0500, "Jimmie D"
<GFENDER@carolina.rr.com> wrote:

>To my surprise the 50 ohm
>point where you connected the feedline to stub was in the same place on both
>antennas.

Hi Jimmie,

That would make sense given the matching section is to match a 50 Ohms
drive to any load.

>Initial assumption was this was some kind of screw up. I guess
>not. This AM I spent some time building the short J out of some galvanize
>pipe and it works as advertise

If you are still talking about the curiosity of a quarterwave match to
a quarterwave radiator, then it should work as advertised. The
curiosity factor is like wondering why anyone would buy a car with
five wheels when the world has been traveling on four for millennia.

73's
Richard Clark, KB7QHC

2375. Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 18:54:38 UTC
From: Rick <ricknj10@hotmail.com>
Message-ID: <47b9d475$0$15190$607ed4bc@cv.net>
Source record: 27997

Some users think they are doing those of us who are interested in antennas a favor by posting what they think are useful topics - something "everyone needs to know." Sometimes it is cellphone do not call lists. Other times it is some PC virus, etc. etc. Usually it is bogus information that the original poster was misled into believing, and ends up costing all of us wasted time. There are tens of thousands of newsgroups where these topics can be discussed.
When I enter rec.radio.amateur.antennas all I want to see is stuff about antennas.
Hey Guys, I value my time so much that I measure it in milliseconds.
I constantly update my kill file with posters who aren't really interested in antennas (Art), and subjects that have gotten so far off the topic of antennas that they are also a waste of my milliseconds.

Yuri can stay. Roy Lewallen can stay. Richard Clark and Cecil can stay.
THOSE guys know antennas. The rest of you are on probation.

Rick K2XT

2376. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 19:00:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <b7kjr396r0vg67j1f6lg3p1otkdnm3nbrt@4ax.com>
Source record: 27998

On Mon, 18 Feb 2008 13:30:26 -0500, Michael Coslo <mjc5@psu.edu>
wrote:

>For extra credit, do a good diss on moderates in the same paragraphs.

Hi Mike,

It would be far more interesting to figure out why for 12 years the
whining Republicant-get-dones never took care of:
1. An amendment to protect the flag;
2. A balanced budget;
3. A great reputation overseas;
4. A secure Nation (how many years on orange alert?);
5. Fixed or eliminated the Capital Gains Tax;
6. Building more refineries;
7. Cut backs on government bureaucracy;
8. Getting out of local Schools;
9. Unfunded mandates;
10. The deficit;
11. An economy that won't tank every 2 years;
12. The infrastructure;
13. Getting out of "nation building" (a crapola idea);
14. Handing the country over to the Chinese communists;
15. Taking care of the midget in North Korea;
16. Taking care of the midget of Cuba's Castro;
17. Taking care of the midget of Venezuela's Hugo Chavez;
18. Taking care of the midget Qadaffi;
19. Taking care of the midget in NW Pakistan Ossama been Forgotten;
20. Our brave commie allie, Putin;
21. Getting back the canal;
22. Stopping the flow of illegals (the raging Republicant-get-done
issue of 1988).....

and on an on and on.

73's
Richard Clark, KB7QHC

2377. Re: keeping wire antennas up

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 19:17:14 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <_Qkuj.11614$J41.1034@newssvr14.news.prodigy.net>
Source record: 27999
Cross-posted to: alt.radio.amateur,rec.radio.amateur.antenna

Myron A. Calhoun wrote:
>> From Rain City (Seattle). I did this in a Maple forest. I did mine
>> with pulleys top and bottom with a continuous loop like a flag pole. I
>> snip
>
> Instead of pulleys, I use large screw-in insulators like you might see
> on a
> power pole. They are slick enough to act as pulleys, large enough to
> take
> two ropes (one for the continuous loop and the other for holding the
> antenna), they don't cost much, and a rope NEVER jumps out of the
> "pulley"!
>
> I've also used a screen-door spring (or two in parallel) between the
> rope
> and the end-of-the-antenna insulator (with some more rope in between
> so the spring doesn't add much capacitance to the antenna proper) to
> give some strain relief.
>
> --Myron A. Calhoun, W0PBV.
> Five boxes preserve our freedoms: soap, ballot, witness, jury, and
> cartridge.

Myron;

The only problem with your insulators is that the tree is alive and
still growing. It will eventually grow around the insulator and embed it
in the wood. This will take a long time but they are still finding
cannon balls in trees left over from the Civil War.

Dave WD9BDZ

2378. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 19:22:04 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <wVkuj.11615$J41.11109@newssvr14.news.prodigy.net>
Source record: 28000

Cecil Moore wrote:
> John Passaneau wrote:
>> Discloser:
>> I helped build some of the equipment for that project.
>
> What some may not realize is that most money spent by
> the government, no matter how irrational the initial
> expenditure, is routed back into the economy. This one
> apparently paid for some of your groceries - a good thing.

Cecil;

Good point. Also remember that for all the billions of dollars spent on the space program and going to the Moon there is not one single doller bill on the moon or in space except for some personal cash taken by an enterprising astronaut or cosmonaut looking to make a quick profit.

Dave n

2379. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 19:22:59 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <nWkuj.9711$0o7.8512@newssvr13.news.prodigy.net>
Source record: 27901

Rick wrote:
> Some users think they are doing those of us who are interested in antennas a
> favor by posting what they think are useful topics - something "everyone
> needs to know." Sometimes it is cellphone do not call lists. Other times
> it is some PC virus, etc. etc. Usually it is bogus information that the
> original poster was misled into believing, and ends up costing all of us
> wasted time. There are tens of thousands of newsgroups where these topics
> can be discussed.
> When I enter rec.radio.amateur.antennas all I want to see is stuff about
> antennas.
> Hey Guys, I value my time so much that I measure it in milliseconds.
> I constantly update my kill file with posters who aren't really interested
> in antennas (Art), and subjects that have gotten so far off the topic of
> antennas that they are also a waste of my milliseconds.
>
> Yuri can stay. Roy Lewallen can stay. Richard Clark and Cecil can stay.
> THOSE guys know antennas. The rest of you are on probation.
>
> Rick K2XT
>
>

Thank you for sharing that with us, Rick.
73,
Tom Donaly, KA6RUH

2380. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 19:23:13 UTC
From: Rick <ricknj10@hotmail.com>
Message-ID: <47b9db27$0$15203$607ed4bc@cv.net>
Source record: 27902

>
> It would be far more interesting to figure out why for 12 years the
> whining Republicant-get-dones never took care of:
> 1. An amendment to protect the flag;
> 2. A balanced budget;

Richard OB, I might take back what I said about you in my off topic post.
Clam it up, please. If it ain't antennas it doesn't belong here. Don't get
trapped into
this squabbling. You are a bigger man than that.

Rick K2XT

2381. Re: ttenuation As A Function Of Material, Freq., etc. ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 19:24:48 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <A_kuj.945$pl4.327@newssvr22.news.prodigy.net>
Source record: 27903

Robert11 wrote:
> Hello,
>
> New at this.
>
> I guess radio waves can go through wood just fine, as I can har signals from
> my Discone that's in my attic.
>
> But, there is, I imagine, some attenuation as a function of type, thickness
> (of the wood) and the frequency involved.
>
> Are there any good links explaining Attenuation as a function of frequency
> for different materials, etc. ?
>
> thanks,
> Bob
>
>

Bob;

Attenuation can be a problem but not until frequencies reach the Ghz
range. Then it is a case of radiated signal being reflected not absorbed
by the intervening material. i.e. wood will absorb, radome plastic will
transfer.

As for a source of information, all I can suggest is GOOGLE.

Dave WD9BDZ

2382. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 19:28:14 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <O1luj.949$pl4.1@newssvr22.news.prodigy.net>
Source record: 27905

ml wrote:
> hi
>
> pretty soon when current tv broadcast stops i was thinkng my
> building master ant will either be left there or just removed
>
> i thought about petitioning the coop board to let me have the space
> under the guise of replacing the antenna with another that looked for
> the most part just like/simular to the old tv ant but actually
> subsituting a ham antenna
>
> my first thought as far as a look alike was to a LP , just
> wondering of all of the antennas out there anyone know which specific
> brand might come closest to looking like a regular tv antenna?
>
>
>
>
> thanks

ML;

Your current building master antenna will still function exactly as it
is currently doing the only change is the mode of the signal from analog
to digital.

Dave N

2383. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 19:28:33 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fpcm91$15us$1@f04n12.cac.psu.edu>
Source record: 27904

Rick wrote:
> Some users think they are doing those of us who are interested in antennas a
> favor by posting what they think are useful topics - something "everyone
> needs to know." Sometimes it is cellphone do not call lists. Other times
> it is some PC virus, etc. etc. Usually it is bogus information that the
> original poster was misled into believing, and ends up costing all of us
> wasted time. There are tens of thousands of newsgroups where these topics
> can be discussed.

Some times its just plain old spam, or postings from the fringe elements
of the newsgroups.

> When I enter rec.radio.amateur.antennas all I want to see is stuff about
> antennas.

That would be cool wouldn't it? Isn't going to happen.

Maybe you could start a yahoo or google group, moderate it, and no
posts other than what you want to see will show up.

> Hey Guys, I value my time so much that I measure it in milliseconds.
> I constantly update my kill file with posters who aren't really interested
> in antennas (Art), and subjects that have gotten so far off the topic of
> antennas that they are also a waste of my milliseconds.

I feel pretty unimportant now, My time management dictates only goes to
increments of 500 milliseconds. ;^)

But seriously, that is what killfiles or filters are for. Don't want to
see someone, and at least in my software, I push "k", and its TTFN!

> Yuri can stay. Roy Lewallen can stay. Richard Clark and Cecil can stay.
> THOSE guys know antennas. The rest of you are on probation.

Why do people come into groups, and set themselves up as the cops? Who
are you to determine who stays and who is on "probation". When people
write stuff such as this, they have an implicit sense of entitlement, as
if Roy, Richard, and Cecil owe you edification. They don't. You really
need your own group, and you can invite the chosen few, and you can
disallow any posts you determine to be off topic. Don't be surprised if
they don't show up though.

For that matter, will you allow posts by Cecil when he goes off on a
cosmology tangent (often with me along) or Richard when he treats us to
one of his amusing forays?

I'd be pleased to be in your plonkfile. Note, I post from two separate
accounts, so you'll have to do two filters so that I don't pollute your

screen.

- Mike N3LI -

2384. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 19:33:33 UTC
From: richardharrison@webtv.net
Message-ID: <8553-47B9DD8D-149@storefull-3258.bay.webtv.net>
Source record: 27906

Cecil, W5DXP wrote:
"What ? "Cancellation of the two reflected waves"??? Some of the gurus here say that cannot happen, that there is never any interaction between waves."

I was quoting Terman word for word. In more than 60 years of studying him I have never found him mistaken. Terman uses words like cancellation, waves, and power. These words make me comfortable even when I don`t understand what was said upon first reading.

On the subject of the Flagpole J, Kraus has some words on matching with a short-circuited 1/4-wave stub on pages 719 and 720 of his 3rd edition. These reminded me of a conversation with Charlie Wright of A.D. Ring & Associates I had over 50 years ago. Although Kraus had already published, we didn`t have his book.

Kraus writes:
"A modification of this antenna is shown at (e) in which a short-circuited 1/4-wave section of coaxial line is connected in parallel with the antenna terminals. This widens the impedance bandwidth and also places the stub antenna at ground potential. This is desirable to protect the transmission line from lightning surges."

From experience, Kraus has proved to be correct and you can bank on what he says. Frequency agile amateurs find resonant lengths of transmission line troublesome at times, but more bandwidth over a narrow range and protection from lightning are big assets where needed.

Best regards, Richard Harrison, KB5WZI

2385. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 20:09:30 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <TBluj.74325$vt2.40535@bignews8.bellsouth.net>
Source record: 27907

You sound like a Luddite. No offense intended.

Ed, NM2K

"common sense" <nospam@hotmail.com> wrote in message
news:47b90d0d$0$16665$4c368faf@roadrunner.com...
>A huge 10m neutrino telescope in the South Pole. So far, $242 million in US
>taxpayers dollars have been spent (or printed) through the US National
>Science Foundation for this monster. It will easily approach $1 billion.
>People risking their lives in Antarctica to run this thing. Why? What will
>be the payback? All this money and risk for "maybe" a "potential" clue to
>the evolution of the universe? More government spending gone amok. And we
>wonder why the US dollar is approaching 0.5 Euro. The most expensive radio
>telescope antenna in the world....where is the common sense?
> http://pole.uchicago.edu/
>

2386. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 20:11:00 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <gDluj.74327$vt2.44983@bignews8.bellsouth.net>
Source record: 27908
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

And 'We The People' dismissed Guvna Romney. Now we'ɾe even.

Ed, NM2K

2387. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 20:12:05 UTC
From: Joseph Fenn <jfenn@lava.net>
Message-ID: <Pine.BSI.4.64.0802181008130.22874@malasada.lava.net>
Source record: 27909
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

On Mon, 18 Feb 2008, Ask Me wrote:

> On Mon, 11 Feb 2008 07:41:38 -0600, "William O'Hara"
> <whoohara@yahoo.com> wrote:
>
>> I would like to point out as a former Assistant RACES Officer for a local
>> community in Massachusetts, that Mr. Romney is absolutely correct.
>>
>> The current EMA-ARRL structure co-exists with the STATE RACES Officer and
>> going nothing.
>>
>> ARES has nets that do NOTHING. RACES does nothing. 85% of the
>> communities south of Boston do not have any active participation in the
>> RACES drills.
>
> This seems to be true, there is an ARES net near me that does not do
> any training but encourages parcipitants to do conversation after
> everyone has checked in. In the course Emergency Communication I we
> are discouraged from doing conversation during emergency communication
> and encouraged to be brief and accurate with our communication.
>
>
> John Ragland - KE6CQK
>

Your all correct. MARS is doing nothing either except checkin nets
every other Saturday where no training is done. After 70 years
of AARS/MARS continuous service I droped out of it last year.
Only few people left on local nets, and mostly no training, just
idle conversation takes place.
Joe/KH6jF (formerly ABM6JF with MARS)

2388. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 20:45:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <deojr3l9lqkh4gq2p475ubifkrht89kor8@4ax.com>
Source record: 27910

On Mon, 18 Feb 2008 14:23:13 -0500, "Rick" <ricknj10@hotmail.com>
wrote:

>
>>
>> It would be far more interesting to figure out why for 12 years the
>> whining Republicant-get-dones never took care of:
>> 1. An amendment to protect the flag;
>> 2. A balanced budget;
>
>Richard OB, I might take back what I said about you in my off topic post.
>Clam it up, please. If it ain't antennas it doesn't belong here. Don't get
>trapped into
>this squabbling. You are a bigger man than that.

Hi Rick,

Your comment is duly noted (some might dispute the last statement). As
for being trapped, I exult in it (nothing easier than shoving a sharp
elbow into the soft doughy ribs of a fat decadent Republicant).

I've no problem with off-topic posts as the days of 1200 Baud
downloads have long slipped beneath the goo of LaBrea. The modern
miracle of killfiles for threads and authors easily takes care of the
static that sometimes floods the group (in fact, I have very few of
them - mostly oriented towards the CB/SW cross-posted fanatics that
are geared up solely for trolling). I've seen fellows complain about
a flood of M.I.6 postings, but I've never seen the original posts
except once to add the filters. Complaining is a sport here in its
own right where the solution is so obvious.

Being On Topic has no correlation to quality, unfortunately. Where
the author is overly repetitive - and we have several longstanding
contributors - I simply read one in maybe a dozen posts from them to
confirm, yes, more boring repetition. That trade in technical
pornography finds no censors calling for their abolition. It easily
surpasses Off Topic discussion and is an effluent that dilutes serious
correspondence overwhelmingly. But whatchagonnado?

However, within that drek there is sometimes either a remarkable
question, or a remarkable gaff that reveals an interesting turn. Then
there are trolls disguised as "remarkable" questions - such as this
thread and Dan's submergence into the shadows of anonymity to both
continue his sniping while giving the patrician appearance of having
departed this sewer in a moral outrage of disgust.

Heck, even your posting complaining about Off Topic discussion constitutes Off Topic discussion (amazing paradox about this that must have had the philosophers scratching their heads some dozen centuries ago).

73's
Richard Clark, KB7QHC

2389. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 20:48:05 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fpcqu6$15ss$1@f04n12.cac.psu.edu>
Source record: 27911

Richard Clark wrote:
> On Mon, 18 Feb 2008 13:30:26 -0500, Michael Coslo <mjc5@psu.edu>
> wrote:
>
>> For extra credit, do a good diss on moderates in the same paragraphs.
>
> Hi Mike,
>
> It would be far more interesting to figure out why for 12 years ....

Because it is much easier to point fingers and assign blame than it is
to actually do something.

I've heard the bitching, moaning, and name calling for a long time now.
That's the only trick that pony has.

- 73 de Mike N3LI -

2390. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 20:59:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Tkmuj.8241$5K1.4331@newssvr12.news.prodigy.net>
Source record: 27912

Rick wrote:
>> It would be far more interesting to figure out why for 12 years the
>> whining Republicant-get-dones never took care of:
>> 1. An amendment to protect the flag;
>> 2. A balanced budget;
>
> Richard OB, I might take back what I said about you in my off topic post.
> Clam it up, please. If it ain't antennas it doesn't belong here. Don't get
> trapped into this squabbling. You are a bigger man than that.

Is a reply to an off-topic posting also off topic? :-)
--
73, Cecil http://www.w5dxp.com

2391. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 21:02:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2omuj.8242$5K1.2054@newssvr12.news.prodigy.net>
Source record: 27913

Michael Coslo wrote:
> For that matter, will you allow posts by Cecil when he goes off on a
> cosmology tangent ...

Hey, if it weren't for the cosmos, antennas wouldn't work.
--
73, Cecil http://www.w5dxp.com

2392. Re: Flagpole J for 10 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 21:07:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <5smuj.57988$Pv2.27613@newssvr23.news.prodigy.net>
Source record: 27914

Richard Harrison wrote:
> "A modification of this antenna is shown at (e) in which a
> short-circuited 1/4-wave section of coaxial line is connected in
> parallel with the antenna terminals. This widens the impedance bandwidth
> and also places the stub antenna at ground potential. This is desirable
> to protect the transmission line from lightning surges."

All the advantages of a Double Bazooka using
only 1/4WL of coax.
--
73, Cecil http://www.w5dxp.com

2393. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 21:33:25 UTC
From: dfinn1@nc.rr.com
Message-ID: <20ce6edf-2514-4f27-b310-9e1d4d19bd68@e23g2000prf.googlegroups.com>
Source record: 27915

On Feb 18, 4:02 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Michael Coslo wrote:
> > For that matter, will you allow posts by Cecil when he goes off on a
> > cosmology tangent ...
>
> Hey, if it weren't for the cosmos, antennas wouldn't work.
> --
> 73, Cecil http://www.w5dxp.com

It would be interesting to find a tangent point for the cosmos but
that would involve going off on a 4 dimensional cosmological tangent.

2394. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 21:38:29 UTC
From: dfinn1@nc.rr.com
Message-ID: <21d80c90-4ff8-4049-91c6-dd924f564aae@s19g2000prg.googlegroups.com>
Source record: 27916

On Feb 18, 3:09 pm, "Ed Cregger" <ecreg...@bellsouff.net> wrote:

> You sound like a Luddite. No offense intended.

Actually my ancestry is Irish. ;-) But I never top post (no offense
intended).

>
> Ed, NM2K
>
> "common sense" <nos...@hotmail.com> wrote in message
>
> news:47b90d0d$0$16665$4c368faf@roadrunner.com...
>
>
>
> >A huge 10m neutrino telescope in the South Pole. So far, $242 million in US
> >taxpayers dollars have been spent (or printed) through the US National
> >Science Foundation for this monster. It will easily approach $1 billion.
> >People risking their lives in Antarctica to run this thing. Why? What will
> >be the payback? All this money and risk for "maybe" a "potential" clue to
> >the evolution of the universe? More government spending gone amok. And we
> >wonder why the US dollar is approaching 0.5 Euro. The most expensive radio
> >telescope antenna in the world....where is the common sense?
> >http://pole.uchicago.edu/- Hide quoted text -
>
> - Show quoted text -

2395. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 21:47:22 UTC
From: pcsutton@msn.com
Message-ID: <3f72b3ee-84ca-4c9a-a962-91bb2c6eda57@e23g2000prf.googlegroups.com>
Source record: 27917

On Feb 9, 5:16 pm, Bruce W. Ellis <el...@means.net> wrote:
> I am considering a horizontal loop antenna that would be "squarish"
> (depending on tree locations) and about 400' in circumference. My
> (automatic) tuner is located in my garage (with 100' of coax going to
> the shack in the house). The lead wires for the antenna and ground
> are short and direct through the garage wall - I don't envision any
> feedline from tuner to the wire loop. I don't want to use a balun
> since there isn't really any feedline to balance and the impedances
> presented to the balun would be all over the (Smith) chart. Would it
> make sense to feed one end of the loop from the tuner and connect the
> other loop end to the ground connection near the tuner or just leave
> it open (essentially a square longwire antenna)? I would also have
> three counterpoise wires following the loop lying on the surface of
> the ground. The articles that I can find all use openwire feedlines
> and balanced tuners (or baluns) but that arrangement doesn't fit my
> situation. Thanks   W0BF

Greetings,

I had a horizontal loop antenna up for several years prior to my
moving to Texas. It was cut for 80 meters and was about 30 feet up in
a square configuration.

I fed it with coax to one corner, however I had a homebrew choke at
the connection point. I used a 10" long piece of 6 inch pvc pipe with
about 10 turns of coax around it.

The antenna worked fairly well and by virtue of the design loops are
pretty quiet.

You mention 400 feet on your loop. The formula I used was 1005/
frequency = feet in loop.

There is a yahoo group devoted to skywire loop antennas and some good
info can be found there.

At the present time I'm getting ready to erect an 80 meter loop, but
this one will be fed with 600 ohm homebrewed ladder line into a
Palstar balanced wire tuner. I'm anxious to get this on the air.

73

KI4BUN / AAV6TP TX

2396. Looking for an old project based on two half wave vertical dipoles by W7DE...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 21:56:36 UTC
From: "Francesco L." <franlanc@NOSPAMtin.it>
Message-ID: <61ud5tF1vvokuU1@mid.individual.net>
Source record: 27918

Some years ago I used to buy 73 when it was available in my hometown in Italy. I mostly liked antenna projects and ardf articles. Once I saw an HF antenna called "the palm phased array", the "California phased array" or something like that, engineered by Dave Evison W7DE. It was based on two vertical dipoles strung onto two palm trees. Is there any source where I can find this project? Thanks a lot for any help, it would be useful.
Francesco ik8vwa

--

2397. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-18 22:28:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <wEnuj.1117$pl4.641@newssvr22.news.prodigy.net>
Source record: 27919

K7ITM wrote:
> It's obviously a typo and should be corrected.

Tom, do you think this is also a typo? :-)

"Yet *none* of this reverse power is dissipated in the
source resistance. In fact, no power at all is dissipated
in the source resistance. THE REVERSE POWER IS NOT DISSIPATED
IN OR ABSORBED BY THE SOURCE RESISTANCE."
--
73, Cecil http://www.w5dxp.com

2398. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 00:30:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rk8or6i6lkh00@corp.supernews.com>
Source record: 27920

K7ITM wrote:
> On Feb 18, 7:13 am, Cecil Moore <nos...@w5dxp.com> wrote:
>> While working on an energy-based presentation of W7EL's
>> data from the following web page, I came across an
>> instance where my energy analysis differed from W7EL's
>> results under the "Food for Thought: Forward and Reverse
>> Power" section. Assuming Roy was correct, I attempted to
>> find my error and failed to do so. . .
>
> Why did you bother with Hecht? It's simple enough to go back to the
> second equation above the line you disagree with, the one at the
> bottom of page 7 in that pdf, and see it does not agree there either.
> It's obviously a typo and should be corrected. I'll drop Roy a line
> about it, in case he doesn't see this.

Thanks very much to both Cecil, for finding the error, and Tom, for passing it along.

Tom is correct, that the information in the table should follow directly from the equations at the bottom of the preceding page. The table entry was in error, but not the equations or underlying principles. For Rl = 0 + j0 the equation at the bottom of page 7

Pa(R0) = |Ilrms|^2 * R0 = (Vrms^2 * R0) / [(R0 + Rl)^2 + Xl^2]

gives the correct result of 400 watts, not 0 as shown in the table. The table has been corrected, and the comments following it have been modified to reflect the corrected value. Here's the corrected table and text:

****

Zl fPa rPa Pa(tx) Pa(src) Pa(R0) Pa(Rl) frac R0 frac Rl
50 + j0 100 0 100 200 100 100 0.50 0.50
100 + j0 100 11.1 88.9 133 44.4 88.9 0.33 0.67
25 + j0 100 11.1 88.9 267 178 88.9 0.67 0.33
37 +/-j28(*)100 11.4 88.6 209 120 88.6 0.58 0.42
0 +/-j50 100 100 0 200 200 0 1.00 0
0 +/-j100 100 100 0 80.0 80.0 0 1.00 0
0 + j0 100 100 0 400 400 0 1.00 0
infinite 100 100 0 0 0 0 - -

(*) For any Zl that causes exactly a 2:1 SWR, rPa will equal 11.1 and Pa(Rl) = 88.9. The values shown for 37 +/-j28 are slightly different because this impedance doesnï¿½t result in quite exactly a 2:1 SWR.

For the second, third, and fourth entries, the SWR is 2:1. The forward and reverse powers are the same for all three, and the source impedance (50 ohms) is the same for all the above cases. So here we have three cases where the reverse powers are the same, and the impedance match looking back toward the source is the same (1:1), yet the dissipation in the source resistor Pa(R0) is very different. The obvious conclusion is that THE POWER DISSIPATED IN THE SOURCE RESISTANCE ISNï¿½T DETERMINED DIRECTLY BY THE SOURCE MATCH, THE SWR, OR THE REVERSE POWER. Otherwise it would be the same in all three cases, since all these quantities are the same for all three.

For the last four entries, the SWR is infinite, and the reverse power is a full 100 watts. The source is perfectly matched to the line for all table entries. Yet the source resistor dissipation varies from 0 to 400 watts depending on the load impedance ï¿½ despite no difference in source match, or forward or reverse power for the four entries.

The last two entries are particularly interesting. When the line is open circuited at the far end (last table entry), there is no power at all dissipated in the source resistor. So none of the reverse power is dissipated in the source resistor. Yet when the line is short circuited at the far end (next to last table entry), the source resistor dissipates twice the sum of the forward and reverse powers.

From the last entry alone we can conclude that THE REVERSE POWER IS NOT DISSIPATED IN OR ABSORBED BY THE SOURCE RESISTANCE. And the table clearly shows that the source resistor dissipation bears no relationship to the amount of reverse power.

****

The corrected essay has been uploaded to replace the previous one at http://eznec.com/misc/Food_for_thought.pdf. Please note the uppercase "F" -- it has to be entered exactly as shown.

Again, thanks very much for the corrections. It's my sincere intention to present material that's accurate, and I appreciate the help in finding and correcting errors I've made.

Roy Lewallen, W7EL

2399. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 00:58:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xQpuj.3818$Ru4.3634@newssvr19.news.prodigy.net>
Source record: 27921

Roy Lewallen wrote:
> For the last four entries, the SWR is infinite, and the reverse power is
> a full 100 watts. The source is perfectly matched to the line for all
> table entries. Yet the source resistor dissipation varies from 0 to 400
> watts depending on the load impedance ï¿½ despite no difference in source
> match, or forward or reverse power for the four entries.
>
> The last two entries are particularly interesting. When the line is open
> circuited at the far end (last table entry), there is no power at all
> dissipated in the source resistor. So none of the reverse power is
> dissipated in the source resistor.

Such is the nature of *total destructive interference* as
described by Hecht in "Optics". All of the reflected energy
is redistributed back toward the load.

> Yet when the line is short circuited
> at the far end (next to last table entry), the source resistor
> dissipates twice the sum of the forward and reverse powers.

Such is the nature of *total constructive interference* as
described by Hecht in "Optics". All of the reflected energy
plus some more supplied by the source is dissipated in the
source resistor.

> From the last entry alone we can conclude that THE REVERSE POWER IS NOT
> DISSIPATED IN OR ABSORBED BY THE SOURCE RESISTANCE.

Of course not from only the last entry when total destructive
interference is occurring. 100% of the reflected energy is
redistributed back toward the load.

OTOH, when total constructive interference is occurring, not
only is 100% of the reflected energy dissipated in the source
resistor but the source has to supply twice as much energy as
the forward power plus the reflected power combined.

Perhaps the following energy analysis will shed some light on
the misconceptions. "Shedding some light" seems appropriate
since these concepts are from the field of optical physics.

This posting will provide an energy analysis approach to the
same previous W7EL data specifically avoiding any reference
to voltage and current.

The example that Roy provided in ï¿½Food for Thought: Forward
and Reflected Powerï¿½ is:

```
Rs
+----/\/\/-----+----------------------+
| 50 ohm |
| |
Vs 1/2 wavelength ZLoad
141.4v 50 ohm line |
| |
+--------------+----------------------+
```

http://eznec.com/misc/Food_for_thought.pdf

We will create a new chart, step by step, that doesn't use voltages or currents. Note that the first two columns are copied from W7ELï¿½s chart. The Gamma reflection coefficient is calculated at the load and |Rho|^2 is the power reflection coefficient. The reflected power is the forward power multiplied by |Rho|^2. 'GA' is the reflection coefficient Gamma Angle.

Zl fPa Rho GA,deg |Rho|^2 rPa
1. 50 + j0 100 0.0 0 0.0 0
2. 100 + j0 100 0.3333 0 0.1111 11.1
3. 25 + j0 100 0.3333 180 0.1111 11.1
4. 37 +/-j28 100 0.3378 97.1 0.1141 11.4
5. 0 +/-j50 100 1.0 -90 1.0 100
6. 0 +/-j100 100 1.0 -53.2 1.0 100
7. 0 + j0 100 1.0 -180 1.0 100
8. infinite 100 1.0 0 1.0 100

So far, everything agrees with W7ELï¿½s chart. We will now use the following power equation not only to predict the dissipation in the source resistor but also to explain the redistribution of energy associated with interference. The power equation is:

Pa(R0) = fPa + rPa + 2*(fPa*rPa)cos(180-GA)

Where 'GA' is the reflection coefficient Gamma angle and the last term, 2*SQRT(fPa*rPa)cos(180-GA), is known as the *INTERFERENCE TERM*.

fPa rPa (180-GA) Pa(R0) interference term
1. 100 0 180 100 0
2. 100 11.1 180 44.4 -66.7
3. 100 11.1 0 177.8 +66.7
4. 100 11.4 82.9 119.8 + 8.35
5. 100 100 270 200 0
6. 100 100 233.2 80.2 -119.8
7. 100 100 360 400 +200
8. 100 100 180 0 -200

Except for the error that W7EL made in the Pa(R0) for example number 7, these values of Pa(R0) agree with W7ELï¿½s posted values. Therefore, the power-interference equation works. Not only does it work, but it tells us the magnitude of interference between the forward wave and the reflected wave when they interact at the source resistor. Line by line:

1. There is zero interference because there are no reflections.

2. There is 66.7 watts of destructive interference present.

3. There is 66.7 watts of constructive interference present.

4. There is 8.35 watts of constructive interference present.

5. There is zero interference because the forward wave and
reflected waves are 90 degrees apart.

6. There is 119.8 watts of destructive interference present.

7. There is 200 watts of constructive interference present.

8. There is 200 watts of destructive interference present.
All of the reflected energy is redistributed back toward the load.

Wonder no more where the power goes. Constructive interference
requires extra energy from the source. Destructive interference
redistributes some (or all) of the reflected energy back toward
the load. Under zero interference conditions, all of the reflected
power (if it is not zero) is dissipated in the source resistor.
--
73, Cecil http://www.w5dxp.com

2400. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 01:09:19 UTC
From: amdx <amdx@knology.net>
Message-ID: <60103$47ba29cb$18d6b40c$27850@KNOLOGY.NET>
Source record: 27922

"Rick" <ricknj10@hotmail.com> wrote in message
news:47b9d475$0$15190$607ed4bc@cv.net...
> Some users think they are doing those of us who are interested in antennas
> a favor by posting what they think are useful topics - something "everyone
> needs to know." Sometimes it is cellphone do not call lists. Other times
> it is some PC virus, etc. etc. Usually it is bogus information that the
> original poster was misled into believing, and ends up costing all of us
> wasted time. There are tens of thousands of newsgroups where these topics
> can be discussed.
> When I enter rec.radio.amateur.antennas all I want to see is stuff about
> antennas.
> Hey Guys, I value my time so much that I measure it in milliseconds.
> I constantly update my kill file with posters who aren't really interested
> in antennas (Art), and subjects that have gotten so far off the topic of
> antennas that they are also a waste of my milliseconds.
>
> Yuri can stay. Roy Lewallen can stay. Richard Clark and Cecil can stay.
> THOSE guys know antennas. The rest of you are on probation.
>
> Rick K2XT
Please put me on your list, I don't care which one.
Mike

2401. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 01:20:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <c9quj.3824$Ru4.3259@newssvr19.news.prodigy.net>
Source record: 27924

Cecil Moore wrote:

Sorry about the misalignment of the numbers. Here they are
properly aligned in fixed font.

> Zl fPa Rho GA,deg |Rho|^2 rPa
> 1. 50 + j0 100 0.0 0 0.0 0
> 2. 100 + j0 100 0.3333 0 0.1111 11.1
> 3. 25 + j0 100 0.3333 180 0.1111 11.1
> 4. 37 +/-j28 100 0.3378 97.1 0.1141 11.4
> 5. 0 +/-j50 100 1.0 -90 1.0 100
> 6. 0 +/-j100 100 1.0 -53.2 1.0 100
> 7. 0 + j0 100 1.0 -180 1.0 100
> 8. infinite 100 1.0 0 1.0 100
>
> fPa rPa (180-GA) Pa(R0) interference term
> 1. 100 0 180 100 0
> 2. 100 11.1 180 44.4 -66.7
> 3. 100 11.1 0 177.8 +66.7
> 4. 100 11.4 82.9 119.8 + 8.35
> 5. 100 100 270 200 0
> 6. 100 100 233.2 80.2 -119.8
> 7. 100 100 360 400 +200
> 8. 100 100 180 0 -200
--
73, Cecil http://www.w5dxp.com

2402. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 01:20:28 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <39quj.86187$N67.38740@bignews5.bellsouth.net>
Source record: 27923

"Rick" <ricknj10@hotmail.com> wrote in message
news:47b9d475$0$15190$607ed4bc@cv.net...
> Some users think they are doing those of us who are interested in antennas
> a favor by posting what they think are useful topics - something "everyone
> needs to know." Sometimes it is cellphone do not call lists. Other times
> it is some PC virus, etc. etc. Usually it is bogus information that the
> original poster was misled into believing, and ends up costing all of us
> wasted time. There are tens of thousands of newsgroups where these topics
> can be discussed.
> When I enter rec.radio.amateur.antennas all I want to see is stuff about
> antennas.
> Hey Guys, I value my time so much that I measure it in milliseconds.
> I constantly update my kill file with posters who aren't really interested
> in antennas (Art), and subjects that have gotten so far off the topic of
> antennas that they are also a waste of my milliseconds.
>
> Yuri can stay. Roy Lewallen can stay. Richard Clark and Cecil can stay.
> THOSE guys know antennas. The rest of you are on probation.

so?

2403. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 02:31:53 UTC
From: greenhornet@kato.net
Message-ID: <fpfkr3h0bem9mds9pm2kotgsec0nb0pf1m@4ax.com>
Source record: 27925

On Mon, 18 Feb 2008 11:47:56 GMT, gwatts <gwatts@frontiernet.net>
wrote:

>common sense wrote:
>> A huge 10m neutrino telescope in the South Pole. So far, $242 million in US
>> taxpayers dollars have been spent (or printed) through the US National
>> Science Foundation for this monster.
>
>Cost of *one day* of the Iraq war: $275 million.
>
>http://www.nationalpriorities.org/costofwar_home
>
>So the cost of the SPT works out to about 21 hours, eight minutes of
>Iraq War, and it will certainly last a lot longer than 21 hours. If it
>will outlast the Iraq war is another question.
>
>> It will easily approach $1 billion.
>
>...or about 3 days, 16 hours of Iraq War.
>
>> People risking their lives in Antarctica to run this thing.
>
>Voluntarily. No one faces criminal charges for refusing to go and so
>far zero casualties versus 3,966 in Iraq.
>
>> Why? What will
>> be the payback? All this money and risk for "maybe" a "potential" clue to
>> the evolution of the universe?
>
>More than that, do a little research and reading before you spout off
>and confirm your ignorance,
>http://www.nrao.edu/news/Technology_doc_final.pdf
>
>> More government spending gone amok. And we
>> wonder why the US dollar is approaching 0.5 Euro.
>
>The reasons for the devaluation of the dollar have all but nothing to do
>with what the NSF is spending, you should refresh your knowledge of
>orders of magnitude and economics.
>
>> The most expensive radio
>> telescope antenna in the world....where is the common sense?
>
>Certainly not in your head. Get a grip on the real numbers and facts

>about the Federal budget and the American economy and maybe you'll have
>something to say that doesn't sound like some parroted conservative
>talking points, a/k/a lies and deception.
>
>> http://pole.uchicago.edu/
>
>Congratulations to the SPT team on First Light!
>http://pole.uchicago.edu/news/news_2007-02-15.html
>
>- Galen, W8LNA

We must, as a nation, keep the sciences alive or we are doomed to
defeat in the world economy. Also, we must, as a nation, keep the
arts alive or face a culture that cannot understand what to do with
the science we develop and bring on our own demise.

2404. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 03:17:51 UTC
From: Sum Ting Wong <sumtingwong@privacy.net>
Message-ID: <3fikr3hteeg71tg03mbiipp8qrf4jp8437@4ax.com>
Source record: 27926

On Mon, 18 Feb 2008 13:47:22 -0800 (PST), pcsutton@msn.com wrote:

>There is a yahoo group devoted to skywire loop antennas and some good
>info can be found there.

There is also an article on pg. 56 of the March 2008 QST on this
topic. The author used ferrite on the coax/power cable to the auto
tuner to isolate it an make it act as a balanced tuner. The loop in
the article was fed directly and not with a feedline from the tuner to
the loop.

S.T.W.

2405. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 03:31:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rkjbnql3f05a5@corp.supernews.com>
Source record: 27927

Sum Ting Wong wrote:
> On Mon, 18 Feb 2008 13:47:22 -0800 (PST), pcsutton@msn.com wrote:
>
>> There is a yahoo group devoted to skywire loop antennas and some good
>> info can be found there.
>
> There is also an article on pg. 56 of the March 2008 QST on this
> topic. The author used ferrite on the coax/power cable to the auto
> tuner to isolate it an make it act as a balanced tuner. The loop in
> the article was fed directly and not with a feedline from the tuner to
> the loop.
>
> S.T.W.

I once thought that would work, and even helped a little with an Antenna Compendium article promoting it a long time ago. But I came to realize that it doesn't matter at all whether the balun is at the input or output of the tuner -- the balun is just as effective one place as the other. The reason is that what counts is the common mode impedance, which is the impedance to ground seen looking along the outside of the coax toward the antenna, and this is the same on both sides of the tuner (except, of course, for the difference due to the short distance between the two points). Putting the balun the input has the disadvantage of making the tuner chassis hot.

I'm sorry to see that QST's article review process still isn't working.

Roy Lewallen, W7EL

2406. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 03:38:42 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <6bsuj.40016$yE1.12800@attbi_s21>
Source record: 27928

> I'm sorry to see that QST's article review process still isn't working.
>
> Roy Lewallen, W7EL

Heck Roy, if it worked, Nov-Dec QEX would have been 14 pages shorter. (And a better rag for it as well!)

W4ZCB

2407. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 06:15:20 UTC
From: common sense <nospam@hotmail.com>
Message-ID: <47ba73f9$0$8655$4c368faf@roadrunner.com>
Source record: 27929

"Richard Clark" <kb7qhc@comcast.net> wrote in message >

>there are trolls disguised as "remarkable" questions - such as this
> thread and Dan's submergence into the shadows of anonymity to both
> continue his sniping while giving the patrician appearance of having
> departed this sewer in a moral outrage of disgust.

Hey Richard, getting back on topic. I haven't yet heard of a good justification of the SPT other than some general sentiments about how we need to spend money on science which has been, usually, a sound investment. The HAARP antenna project for example has a defined purpose. The moon exploration had a defined purpose. But what is the exact purpose of THIS white elephant? That is really what my comments were related to. If you try to find the purpose you will see a confusing conglomeration of attempts to understand microwave cosmic rays and even exotic physics which are unlikely to be confirmed empirically. Really, take a look at the white papers on google. In reality, NSF has a budget. NSF MUST expend the budget or guess what, they risk getting less money next year. That is how government agencies work. NSF must be running out of ideas. They cannot think of anything that has more direct benefit in understanding the universe than constructing a telescope in the South Pole. I would think the hubble is suffiently far from city lights and could do a much better job. Finally Rich, you might try expending less effort on analyzing the motivations as to why certain people write the things they do and more effort on the technical content of what is being said. Just a suggestion.

CS

2408. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 06:24:00 UTC
From: richardharrison@webtv.net
Message-ID: <8552-47BA7600-1083@storefull-3258.bay.webtv.net>
Source record: 27930

Bruce W. Ellis wrote:
"I am considering a horizontal loop antenna that would be "squarish"
(depending on the tree locations) and about 400` in circumference."

If you had more trees (octagonalish) would enclose more area with the
same wire. Radiation is a function of loop area.

Tesonant loops are often one wavelength in perimeter. 400` is about 122
meters. 160 meters = 525 feet. 80 meters = 262 meters. What band do you
prefer? If a loop`s perimewter is a little too short for resonance, it`s
inductive and can be tuned with a low-loss variable capacitor.

The 20th edition of the ARRL Antenna Book has a horizontal loop
"skywire" (squarish) on page 5-20. A 7 MHz loop at 40 ft. elevation has
about the same radiation as a 7 MHz dipole at 30 ft. elevation for
various azimuths. It might be worthwhile reading the Antenna Book
article before construction.

Best regards, Richard Harrison, KB5WZI

2409. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 07:10:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rl07inr82t439@corp.supernews.com>
Source record: 27931

Richard Harrison wrote:

> If you had more trees (octagonalish) would enclose more area with the
> same wire. Radiation is a function of loop area.

Can you please explain that a little more? If you put 100 watts into a 400 foot circumference loop and it radiates 95 watts, will an 800 foot loop radiate four times that, or 380 watts? Then can you feed back 100 to put back into the loop, and have 280 left over to run your refrigerator to keep your beer cold?

Or if the 800 foot loop radiates 95 of your 100 watts, does the 400 foot loop radiate only 23.75 watts? If that's what happens, where does the rest of the power go?

Is the radiation pattern the same for a long skinny loop as for a round one, as long as the enclosed area is the same?

>. . .

Puzzled,

Roy Lewallen, W7EL

2410. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 07:13:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5jvkr3lda5vdee5i9u8db24tl90bhguoj1@4ax.com>
Source record: 27932

On Tue, 19 Feb 2008 01:15:20 -0500, "common sense"
<nospam@hotmail.com> wrote:

>Finally
>Rich, you might try expending less effort on analyzing the motivations as to
>why certain people write the things they do and more effort on the technical
>content of what is being said. Just a suggestion.

Hi Dan,

I might if I weren't so provided with the amusing irony of your own
analyzing motivation. Technical content? The topic is coy troll that
has long died on its feet from intellectual anemia. The best you have
to offer is sputtering along with cartoon dialog in an attempt to
breath life into its corpse. Such effort is as entertaining as
uninspired clog dancing.

73's
Richard Clark, KB7QHC

2411. Re: practical yagi question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 08:01:08 UTC
From: francesco.messineo@gmail.com
Message-ID: <74db0cd2-b22d-4207-858a-97bd7ff7a79e@34g2000hsz.googlegroups.com>
Source record: 27933

On 16 Feb, 22:07, "Jimmie D" <GFEN...@carolina.rr.com> wrote:
> <francesco.messi...@gmail.com> wrote in message
>

>
> > well, I made two quagi one year, they worked well. The problem is that
> > you don't easily find good design procedures for quagi (neither for
> > quads).
>
> Thats probably because both antennas can be made to incredibly slack
> tolerances and still work quite well. I hacked together a Quagi for my cell
> phone a few years ago while camping that worked beter than my factory made
> yagi.
>

hmmm that's not entirely true in my experience. One year I made a 4
elements quad for the 50 MHz band, simulated with nec using bare wires
and no boom, then built with metallic boom (and insulated wire spokes
of course) and with insulated wires, same diameter as in the
simulation. The result was so badly detuned that it actually had more
gain in the back direction than the forward one, SWR was like 3:1.
Probably the effect was due to insulated wire, but never investigated
further, I just dismantled it and built an 8 element yagi instead.
So far though nobody answered my original question as wether unaligned
driven element on yagis will have or not effects on tuning/
performance.

Thanks
Francesco IZ8DWF

2412. Re: Looking for an old project based on two half wave vertical dipo...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 09:06:22 UTC
From: richardharrison@webtv.net
Message-ID: <12578-47BA9C0E-762@storefull-3257.bay.webtv.net>
Source record: 27934

Francesco L., IK8VWA wrote:
"Once I saw an HF antenna called "the palm phased array",---. It was
based on two vertical dipoles strung onto two palm trees."

Sounds like a Franklin antenna, also known as a colinear array. Vertical radiation pattern from a radiator that grows beyond 180-degrees starts producing an undesired high-angle lobe in addition to the signal radiated at low angles to the earth`s surface. The undesired radiation is produced when current in the radiator reverses direction at the 180-degree mark. If we introduce a phase inverting device at the 180-degree mark on the radiator we increase radiation perpendicular to the longer radiator without growing a high-angle lobe.

Many VHF colinear antennas use 1/4-wave stubs as phase inverters between 1/2-wave radiating sections. A resonant L-C circuit can be used in place of a 1/4-wave short-circuit stub. A transformer can also be used to reverse the phase as can various line feeds.

In the "International" edition or 3rd edition of Kraus` "Antennas" on page 824 in Fig. 23-21(b) is shown a dipole made of (4) 1/2-wave sections. It uses (2) self-resonant coils. Each coil separates a pair of 1/2-wave radiators so that all four radiators have current flowing in the same direction through them at the same time.

Everyone needs access to the newest 3rd edition of "Antennas".

Best regards, Richard Harrison, KB5WZI

2413. Re: Looking for an old project based on two half wave vertical dipoles by W7DE...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 12:50:27 UTC
From: Eskay <siebklaasNO@SPAMhotmail.com>
Message-ID: <w2ysnzns4yi2.dl9e11wjos7e.dlg@40tude.net>
Source record: 27935

On Mon, 18 Feb 2008 22:56:36 +0100, Francesco L. wrote:

> Some years ago I used to buy 73 when it was available in my hometown in
> Italy. I mostly liked antenna projects and ardf articles. Once I saw an HF
> antenna called "the palm phased array", the "California phased array" or
> something like that, engineered by Dave Evison W7DE. It was based on two
> vertical dipoles strung onto two palm trees. Is there any source where I can
> find this project? Thanks a lot for any help, it would be useful.
> Francesco ik8vwa

I have found the article and can copy and email it to you.
Is the email address above good with the nospam removed?
73 de VE3JUA

2414. Re: Looking for an old project based on two half wave vertical dipo...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 15:35:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uHCuj.58069$Pv2.28879@newssvr23.news.prodigy.net>
Source record: 27936

Richard Harrison wrote:
> In the "International" edition or 3rd edition of Kraus` "Antennas" on
> page 824 in Fig. 23-21(b) is shown a dipole made of (4) 1/2-wave
> sections. It uses (2) self-resonant coils. Each coil separates a pair of
> 1/2-wave radiators so that all four radiators have current flowing in
> the same direction through them at the same time.

Richard, that graphic is redrawn on my web page at:

http://www.w5dxp.com/current.htm

The first two sections of that page are quotes from "Antennas"
by Kraus. The second section illustrates the above antenna.
And I don't think Kraus was using the lumped circuit model for
those coils. :-)
--
73, Cecil http://www.w5dxp.com

2415. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 16:37:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <LADuj.5213$Ru4.4628@newssvr19.news.prodigy.net>
Source record: 27937

Cecil Moore wrote:

I apparently used some tabs in the previous posting that
caused the columns not to be aligned. Hopefully, this
posting remedies the problem.

> Zl fPa Rho GA,deg |Rho|^2 rPa
> 1. 50 + j0 100 0.0 0 0.0 0
> 2. 100 + j0 100 0.3333 0 0.1111 11.1
> 3. 25 + j0 100 0.3333 180 0.1111 11.1
> 4. 37 +/-j28 100 0.3378 97.1 0.1141 11.4
> 5. 0 +/-j50 100 1.0 -90 1.0 100
> 6. 0 +/-j100 100 1.0 -53.2 1.0 100
> 7. 0 + j0 100 1.0 -180 1.0 100
> 8. infinite 100 1.0 0 1.0 100
>
> fPa rPa (180-GA) Pa(R0) interference term
> 1. 100 0 180 100 0
> 2. 100 11.1 180 44.4 -66.7
> 3. 100 11.1 0 177.8 +66.7
> 4. 100 11.4 82.9 119.8 + 8.35
> 5. 100 100 270 200 0
> 6. 100 100 233.2 80.2 -119.8
> 7. 100 100 360 400 +200
> 8. 100 100 180 0 -200
--
73, Cecil http://www.w5dxp.com

2416. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 16:49:10 UTC
From: richardharrison@webtv.net
Message-ID: <15925-47BB0886-939@storefull-3253.bay.webtv.net>
Source record: 27938

Roy Lewallen, W7EL wrote:
"Can you please explain that a little more? (Radiation is a function of loop area.)"

Not being a typist, I`ll refer you to "TV And Other Receiving Antennas" by Arnold Bailey. On pages 407 and 408 Bailey gives two formulas for computing the antenna resistance for a loop antenna.

On page 408, Bailey has Fig. 8-14 which plots radiation resistance (the stuff we build antennas for) versus the loop perimeter in wavelengths. For a square closed loop of one wavelength perimeter, the graph indicates about 50 ohms.

Bill Orr, W6SAI in "All About Cubical Quad Antennas" gives the full-wave vertical loop antenna an impedance of 125 ohms on page 15.

On page 14, Orr writes:
"For purposes of illustration, the two wire folded dipole may be "pulled open" to a diamond-shaped loop fed at the bottom point. If this distortion of the loop is continued the antenna will become a shorted transmission line."

A perfect circle is the geometric shape enclosing the most area for a given perimeter. The more corners a closed figure has, the more closely it usually approximates a circle. That is why I commented on an octagon versus a square.

Best regards, Richard Harrison, KB5WZI

2417. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 18:05:13 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <4d23d64a-3fe7-49da-b572-55f8add49a33@m23g2000hsc.googlegroups.com>
Source record: 27939

On Feb 18, 11:13 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Tue, 19 Feb 2008 01:15:20 -0500, "common sense"
>
> <nos...@hotmail.com> wrote:
> >Finally
> >Rich, you might try expending less effort on analyzing the motivations as to
> >why certain people write the things they do and more effort on the technical
> >content of what is being said. Just a suggestion.
>
> Hi Dan,
>
> I might if I weren't so provided with the amusing irony of your own
> analyzing motivation. Technical content? The topic is coy troll that
> has long died on its feet from intellectual anemia. The best you have
> to offer is sputtering along with cartoon dialog in an attempt to
> breath life into its corpse. Such effort is as entertaining as
> uninspired clog dancing.
>
> 73's
> Richard Clark, KB7QHC

Back on topic! Sort of! Did anyone catch the story today about the new Chinese Astronomical Observatory near the South Pole? The story is from the New York Times and the writer states the observatory is 700 miles East of the South Pole! That statement is repeated again in a picture.

Now, isn't that a good test for graduates of the American Education system? Fortunately, the writer is working for a newspaper and not somewhere important.

Paul

2418. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 18:24:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <d47mr3ha87sgpo2gl1t2qdeiopcb5bj87j@4ax.com>
Source record: 27940

On Tue, 19 Feb 2008 10:05:13 -0800 (PST), "pdrahn@coinet.com"
<co_farmer@yahoo.com> wrote:

>the observatory is 700 miles East of the South Pole!

Hi Paul,

Finally! The gristle of technical content that raises this topic to
equilibrium with inspired clog dancing. (Yes, I do note the
additional irony - the only redemption to be found.)

>Now, isn't that a good test for graduates of the American Education
>system?

Would seem to be on par with the cerebralsclerosis that has inflicted
this thread since its inception.

73's
Richard Clark, KB7QHC

2419. Re: Looking for an old project based on two half wave vertical dipoles by W7DE...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 18:58:59 UTC
From: "Francesco L." <franlanc@NOSPAMtin.it>
Message-ID: <620n4sF21gnpsU1@mid.individual.net>
Source record: 27941

> I have found the article and can copy and email it to you.
> Is the email address above good with the nospam removed?
> 73 de VE3JUA

I received the article perfectly and as you can imagine the address worked perfectly. Thanks a lot, that was a very very kind gesture. I also wish to say thanks to the other two hams who tried to explain what I was looking for, anyway VE3JUA found exactly the article I referred to.
Thanks again for your kindness.
ik8vwa/2
Francesco

2420. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 19:07:50 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <bf2491c3-f000-47c2-be5b-d7585b240ac4@n75g2000hsh.googlegroups.com>
Source record: 27942

On Feb 18, 7:58 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roy Lewallen wrote:
> > For the last four entries, the SWR is infinite, and the reverse power is
> > a full 100 watts. The source is perfectly matched to the line for all
> > table entries. Yet the source resistor dissipation varies from 0 to 400
> > watts depending on the load impedance - despite no difference in source
> > match, or forward or reverse power for the four entries.
>
> > The last two entries are particularly interesting. When the line is open
> > circuited at the far end (last table entry), there is no power at all
> > dissipated in the source resistor. So none of the reverse power is
> > dissipated in the source resistor.
>
> Such is the nature of *total destructive interference* as
> described by Hecht in "Optics". All of the reflected energy
> is redistributed back toward the load.
>
> > Yet when the line is short circuited
> > at the far end (next to last table entry), the source resistor
> > dissipates twice the sum of the forward and reverse powers.
>
> Such is the nature of *total constructive interference* as
> described by Hecht in "Optics". All of the reflected energy
> plus some more supplied by the source is dissipated in the
> source resistor.
>
> > From the last entry alone we can conclude that THE REVERSE POWER IS NOT
> > DISSIPATED IN OR ABSORBED BY THE SOURCE RESISTANCE.
>
> Of course not from only the last entry when total destructive
> interference is occurring. 100% of the reflected energy is
> redistributed back toward the load.
>
> OTOH, when total constructive interference is occurring, not
> only is 100% of the reflected energy dissipated in the source
> resistor but the source has to supply twice as much energy as
> the forward power plus the reflected power combined.
>
> Perhaps the following energy analysis will shed some light on
> the misconceptions. "Shedding some light" seems appropriate
> since these concepts are from the field of optical physics.
>
> This posting will provide an energy analysis approach to the
> same previous W7EL data specifically avoiding any reference

> to voltage and current.
>
> The example that Roy provided in "Food for Thought: Forward
> and Reflected Power" is:
>
> Rs
> +----/\/\/-----+----------------------+
> | 50 ohm |
> | |
> Vs 1/2 wavelength ZLoad
> 141.4v 50 ohm line |
> | |
> +--------------+----------------------+
>
> http://eznec.com/misc/Food_for_thought.pdf
>
> We will create a new chart, step by step, that doesn't use
> voltages or currents. Note that the first two columns are
> copied from W7EL's chart. The Gamma reflection coefficient
> is calculated at the load and |Rho|^2 is the power reflection
> coefficient. The reflected power is the forward power multiplied
> by |Rho|^2. 'GA' is the reflection coefficient Gamma Angle.
>
> Zl fPa Rho GA,deg |Rho|^2 rPa
> 1. 50 + j0 100 0.0 0 0.0 0
> 2. 100 + j0 100 0.3333 0 0.1111 11.1
> 3. 25 + j0 100 0.3333 180 0.1111 11.1
> 4. 37 +/-j28 100 0.3378 97.1 0.1141 11.4
> 5. 0 +/-j50 100 1.0 -90 1.0 100
> 6. 0 +/-j100 100 1.0 -53.2 1.0 100
> 7. 0 + j0 100 1.0 -180 1.0 100
> 8. infinite 100 1.0 0 1.0 100
>
> So far, everything agrees with W7EL's chart. We will now use
> the following power equation not only to predict the dissipation
> in the source resistor but also to explain the redistribution of
> energy associated with interference. The power equation is:
>
> Pa(R0) = fPa + rPa + 2*(fPa*rPa)cos(180-GA)

Could you expand on why the expression on the right is equal to
the average power dissipated in R0(Rs)? How was the expression
derived?

As well, what would be the equivalent expression for the following
example?

+-------+-------------+----------------------+
| | |
^ | Rs |
Is +-/\/\/-+ 1/2 wavelength ZLoad

```
2.828A 50 ohm | 50 ohm line |
| | |
+---------------+-----+----------------------+
```

The forward power is the same, the source impedance is the same,
but the conditions which cause maximum dissipation in the source
resistor are completely different.

Why is it not the same expression as previous since the conditions
on the line are the same?

What is the expression that describes the power dissipated in the
source resistor?

How is the expression derived?

> Where 'GA' is the reflection coefficient Gamma angle and the last
> term, 2*SQRT(fPa*rPa)cos(180-GA), is known as the *INTERFERENCE TERM*.
>
> fPa rPa (180-GA) Pa(R0) interference term
> 1. 100 0 180 100 0
> 2. 100 11.1 180 44.4 -66.7
> 3. 100 11.1 0 177.8 +66.7
> 4. 100 11.4 82.9 119.8 + 8.35
> 5. 100 100 270 200 0
> 6. 100 100 233.2 80.2 -119.8
> 7. 100 100 360 400 +200
> 8. 100 100 180 0 -200
>
> Except for the error that W7EL made in the Pa(R0) for example
> number 7, these values of Pa(R0) agree with W7EL's posted values.
> Therefore, the power-interference equation works. Not only does
> it work, but it tells us the magnitude of interference between
> the forward wave and the reflected wave when they interact at
> the source resistor. Line by line:
>
> 1. There is zero interference because there are no reflections.
>
> 2. There is 66.7 watts of destructive interference present.
>
> 3. There is 66.7 watts of constructive interference present.
>
> 4. There is 8.35 watts of constructive interference present.
>
> 5. There is zero interference because the forward wave and
> reflected waves are 90 degrees apart.
>
> 6. There is 119.8 watts of destructive interference present.
>
> 7. There is 200 watts of constructive interference present.
>
> 8. There is 200 watts of destructive interference present.

> All of the reflected energy is redistributed back toward the load.
>
> Wonder no more where the power goes. Constructive interference
> requires extra energy from the source. Destructive interference
> redistributes some (or all) of the reflected energy back toward
> the load. Under zero interference conditions, all of the reflected
> power (if it is not zero) is dissipated in the source resistor.
> --
> 73, Cecil http://www.w5dxp.com

2421. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 19:49:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xpGuj.1263$Mh2.413@nlpi069.nbdc.sbc.com>
Source record: 27943

pdrahn@coinet.com wrote:
> Back on topic! Sort of! Did anyone catch the story today about the new
> Chinese Astronomical Observatory near the South Pole? The story is
> from the New York Times and the writer states the observatory is 700
> miles East of the South Pole! That statement is repeated again in a
> picture.

I strongly suspect it is 700 miles North of the South Pole. :-)
--
73, Cecil http://www.w5dxp.com

2422. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 20:26:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rmesb3i861o60@corp.supernews.com>
Source record: 27944

I'm missing something here. I don't see anywhere in the response which explains how "radiation is a function of loop area" and why increasing the loop circumference would be advantageous.

Richard Harrison wrote:
> Roy Lewallen, W7EL wrote:
> "Can you please explain that a little more? (Radiation is a function of
> loop area.)"
>
> Not being a typist, I`ll refer you to "TV And Other Receiving Antennas"
> by Arnold Bailey. On pages 407 and 408 Bailey gives two formulas for
> computing the antenna resistance for a loop antenna.
>
> On page 408, Bailey has Fig. 8-14 which plots radiation resistance (the
> stuff we build antennas for) versus the loop perimeter in wavelengths.
> For a square closed loop of one wavelength perimeter, the graph
> indicates about 50 ohms.

Perhaps you build antennas for radiation resistance, but I think most people build them to maximize radiation in some direction. In any case, please exclude me from the "we" in your statement about what "we" build antennas for. You said "radiation is a function of loop area" and recommended a larger circumference. Equations are useless unless you understand how to apply them. So can you use those equations to show us how much more a loop of 800 foot circumference will radiate than one with a 400 foot circumference? You can assume 100 watts applied to each, and either zero wire resistance or any reasonable value.

> Bill Orr, W6SAI in "All About Cubical Quad Antennas" gives the full-wave
> vertical loop antenna an impedance of 125 ohms on page 15.
>
> On page 14, Orr writes:
> "For purposes of illustration, the two wire folded dipole may be "pulled
> open" to a diamond-shaped loop fed at the bottom point. If this
> distortion of the loop is continued the antenna will become a shorted
> transmission line."
>
> A perfect circle is the geometric shape enclosing the most area for a
> given perimeter. The more corners a closed figure has, the more closely
> it usually approximates a circle. That is why I commented on an octagon
> versus a square.

Which brings me back to the question I asked,

>Is the radiation pattern the same for a long skinny loop as for a round
>one, as long as the enclosed area is the same?

Roy Lewallen, W7EL

2423. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 20:30:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <J%Guj.6703$xq2.3116@newssvr21.news.prodigy.net>
Source record: 27945

Keith Dysart wrote:

> w5dxp wrote:
>> Pa(R0) = fPa + rPa + 2*(fPa*rPa)cos(180-GA)

Opps, sorry - a typo. That equation should be:

Pa(R0) = fPa + rPa + 2*SQRT(fPa*rPa)cos(180-GA)

> Could you expand on why the expression on the right is equal to
> the average power dissipated in R0(Rs)? How was the expression
> derived?

This is essentially the same as the irradiance-interference
equation from optical physics. It's derivation is covered
in detail in "Optics" by Hecht, 4th edition, pages 383-388.
It is also the same as the power equation explained in detail
by Dr. Steven Best in his QEX article, "Wave Mechanics of
Transmission Lines, Part 3", QEX, Nov/Dec 2001, Eq 12. It
can also be derived independently by squaring the s-parameter
equation: b1^2 = (s11*a1 + s12*a2)^2

> As well, what would be the equivalent expression for the following
> example?

Pa(R0) = fPa + rPa + 2*SQRT(fPa*rPa)cos(GA)

Note the 180 degree phase difference between the two
examples. Why that is so is explained below.

> +-------+-------------+----------------------+
> | | |
> ^ | Rs |
> Is +-/\/\/-+ 1/2 wavelength ZLoad
> 2.828A 50 ohm | 50 ohm line |
> | | |
> +---------------+-----+----------------------+
>
> The forward power is the same, the source impedance is the same,
> but the conditions which cause maximum dissipation in the source
> resistor are completely different.

If by "completely different", you mean 180 degrees different,
you are absolutely correct. The 1/2WL short-circuit and open-
circuit results are reversed when going from a voltage source
to a current source.

> Why is it not the same expression as previous since the conditions
> on the line are the same?

We are dealing with interference patterns between the forward wave and the reflected wave. In the voltage source example, the forward wave and reflected wave are flowing in opposite directions through the resistor. In the current source example, the forward wave and reflected wave are flowing in the same direction through the resistor. That results in a 180 degree difference in the cosine term above. I believe all your other excellent questions are answered above.
--
73, Cecil http://www.w5dxp.com

2424. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 20:39:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <a8Huj.2187$Mw.919@nlpi068.nbdc.sbc.com>
Source record: 27946

Roy Lewallen wrote:
> I'm missing something here. I don't see anywhere in the response which
> explains how "radiation is a function of loop area" and why increasing
> the loop circumference would be advantageous.

What you seem to be missing is that Richard H. said
absolutely nothing about radiated *power*. The radiation
pattern is certainly a function of loop area.
--
73, Cecil http://www.w5dxp.com

2425. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 20:59:56 UTC
From: dfinn1@nc.rr.com
Message-ID: <5b61fc43-5447-4299-bf9e-98cbcb576832@b29g2000hsa.googlegroups.com>
Source record: 27947

On Feb 19, 1:05 pm, "pdr...@coinet.com" <co_far...@yahoo.com> wrote:
> On Feb 18, 11:13 pm, Richard Clark <kb7...@comcast.net> wrote:
>
>
>
>
>
> > On Tue, 19 Feb 2008 01:15:20 -0500, "common sense"
>
> > <nos...@hotmail.com> wrote:
> > >Finally
> > >Rich, you might try expending less effort on analyzing the motivations as to
> > >why certain people write the things they do and more effort on the technical
> > >content of what is being said. Just a suggestion.
>
> > Hi Dan,
>
> > I might if I weren't so provided with the amusing irony of your own
> > analyzing motivation. Technical content? The topic is coy troll that
> > has long died on its feet from intellectual anemia. The best you have
> > to offer is sputtering along with cartoon dialog in an attempt to
> > breath life into its corpse. Such effort is as entertaining as
> > uninspired clog dancing.
>
> > 73's
> > Richard Clark, KB7QHC
>
> Back on topic! Sort of! Did anyone catch the story today about the new
> Chinese Astronomical Observatory near the South Pole? The story is
> from the New York Times and the writer states the observatory is 700
> miles East of the South Pole! That statement is repeated again in a
> picture.
>
> Now, isn't that a good test for graduates of the American Education
> system? Fortunately, the writer is working for a newspaper and not
> somewhere important.
>
> Paul- Hide quoted text -
>
> - Show quoted text -

Does anyone know the size of the dish antenna they will be using? 10m?

From: http://www.thepoles.com/news.php?id=16912

12:08 pm EST Jan 15, 2008
(ThePles.com) A 17-member Chinese expedition team Saturday reached Dome A, Xinhua reports. The scientists reached the dome with an elevation of 4,093 meters at 11:45 a.m. local time (0645 GMT) after a 21 day journey.

Dome A or Dome Argus is an Antarctican plateau located 1200 kilometres inland. Wikipedia reports that it is thought to be one of the coldest naturally occurring places on Earth, with temperatures believed to reach -90 °C.

While Mount Vinson (4,897m) on the southern part of the Sentinel Range is the highest altitude mark in Antarctica; Dome A is the highest ice feature, comprising a dome or eminence of 4,093 m elevation, located near the center of East Antarctica and approximately midway between the head of Lambert Glacier and the South Pole.

The perfect spot for an astronomical observatory

The team raised a flag and a memorial sculpture on the point. Expedition leader Sun Bo told Changcheng Station in Antarctica over satellite phone that all 17 members are well and will now select a location for an astronomical observatory and China's third Antarctic research station. The team will also spend 70 days on a scientific project dubbed "The Panda plan."

This is the second time that Chinese scientists have arrived at the dome after a similar climb on Jan. 18, 2005, the first ever by mankind, Xinhua reports.

The first attempt to reach the spot was in 1997; it failed after 300 kms and 13-days, however marking China's first Antarctic icecap expedition. Several more attempts followed, until on Jan. 18, 2005, 13 expedition members made the first ascent of Dome A.

The name "Dome Argus" was given by the Scott Polar Research Institute from Greek mythology; Argus built the ship in which Jason and the Argonauts traveled.

The coldest air temperature recorded at Dome A during 2005 was -82.5°C. The lowest air temperature (-89.2°C) at the surface of the earth was recorded in July 1983 at Vostok, which is almost 600 m lower in elevation than Dome A.

China currently has two stations in Antarctica. Changcheng Station, founded in February 1985, is located south of King George Island, and Zhongshan Station, built in February 1989, is located south of Prydz Bay on the Mirror Peninsula, east of the Larsemann Hills. The 17 researchers are part of China's 24th scientific expedition team to Antarctica.

China launched its first expedition to Antarctica in 1984, since when such expeditions have been conducted on an annual basis.

2426. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 22:31:56 UTC
From: jawod <jawod@fuse.net>
Message-ID: <47BB58DC.5060707@fuse.net>
Source record: 27948

If the SPT is successful, the terrorists win.

Michael Coslo wrote:

> HOWL! Pretty cool - but
>
> Yuri, you forgot to include:
>
> Teachers and other liberals who fill our kids heads with claptrap.
>
> Same sex marriage enthusiasts.
>
> Gun control whacks.
>
> Soccer Moms
>
> Michael J Fox
>
> Global Warming sissies
>
> The French
>
> People from Wisconsin
>
> Now get back and rewrite that the right way, or you won't get an A on
> your liberal bashing report.
>
> For extra credit, do a good diss on moderates in the same paragraphs.
>
> - 73 de Mike N3LI -

2427. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 22:44:08 UTC
From: Sum Ting Wong <sumtingwong@privacy.net>
Message-ID: <aammr3dh5ul3spefqg70o8769qjc2dqraq@4ax.com>
Source record: 27949

On Mon, 18 Feb 2008 19:31:00 -0800, Roy Lewallen <w7el@eznec.com>
wrote:

> Putting the balun the input has the disadvantage of
>making the tuner chassis hot.

Roy,

Thanks for ANOTHER lesson. I have a SGC-230 tuner in the RV that I use to tune a wire when we go camping. I think the metal mounting brackets are isolated from the floating tuner chassis and that you have to use a grounding lug on the bottom. Never verified that since I have always used the ground lug anyway. I was thinking of adding ferrites to the input side of the tuner and then using it to tune a dipole fed with 450 ohm window line. Maybe I'll just stick with the longwire.

I noticed the guy who wrote that article mounted his tuner on an el cheapo cutting board, probably just for that reason.

S.T.W.

2428. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 23:08:47 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <cef5dde3-6533-4f5c-a819-b121e1684357@q78g2000hsh.googlegroups.com>
Source record: 27950

On Feb 19, 11:07 am, Keith Dysart <Keith.Dys...@gmail.com> wrote:
...
> As well, what would be the equivalent expression for the following
> example?
>
> +-------+-------------+----------------------+
> | | |
> ^ | Rs |
> Is +-/\/\/-+ 1/2 wavelength ZLoad
> 2.828A 50 ohm | 50 ohm line |
> | | |
> +---------------+-----+----------------------+
>
> The forward power is the same, the source impedance is the same,
> but the conditions which cause maximum dissipation in the source
> resistor are completely different.

Which, of course, illustrates the point that I believe Roy made in the article, that the load conditions (whether they are the result of something going on involving a transmission line, or just a lumped load) tell us nothing about what's going on inside a source, ideal or otherwise. For that, you MUST know the characteristics of the source itself, and for that you do NOT need to know anything about the load beyond the impedance it presents to the generator output terminals (possibly as a function of time, frequency, amplitude and other factors). For example, in the case of the signal generator on my bench when 100dB of attenuation is cranked in, the change in dissipation inside the generator versus load impedance is inconsequential: at least 99.999 percent of the generator's available RF output is dissipated in the attenuator when the load is matched (50 ohms). The additional maximum possible 0.001 percent increase depending on load would be difficult to detect: about 0.00004dB change. On the other hand, the change in dissipation inside my 450MHz transmitter versus load impedance is substantial, BUT bears no resemblance to either the current-source-with-shunt-resistor or the voltage-source-with-series-resistor model, for multiple reasons.

Cheers,
Tom

2429. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 23:18:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <WsJuj.6725$xq2.6029@newssvr21.news.prodigy.net>
Source record: 27851

Sum Ting Wong wrote:
> I have a SGC-230 tuner in the RV ... I was thinking of adding
> ferrites to the input side of the tuner and then using it to tune a
> dipole fed with 450 ohm window line.

My SG-230 tuner manual says that is a no-no.
It says: "The coupler must be located *at the antenna*.
Never use a feed line or coaxial cable at the output
of the antenna coupler."
--
73, Cecil http://www.w5dxp.com

2430. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-19 23:23:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <txJuj.6726$xq2.159@newssvr21.news.prodigy.net>
Source record: 27852

K7ITM wrote:
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
>> The forward power is the same, the source impedance is the same,
>> but the conditions which cause maximum dissipation in the source
>> resistor are completely different.
>
> Which, of course, illustrates the point that I believe Roy made in the
> article, that the load conditions (whether they are the result of
> something going on involving a transmission line, or just a lumped
> load) tell us nothing about what's going on inside a source, ideal or
> otherwise.

That's true, but Roy specified exactly what was inside his source
so we are free to analyze it based on his specifications.
--
73, Cecil http://www.w5dxp.com

2431. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 01:38:02 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47bb847a$0$93279$8046368a@newsreader.iphouse.net>
Source record: 27853

```
common sense wrote:
>
> Hey Tom, good one. You're the guy who said you can sign a check with your
> call sign and improper use is identity theft. Are you an attorney? Is this
> you? http://www.maplewoodvoterscoalition.com/publicDocs/tomringfinal2.pdf
>
> "In search of...common sense"
>

Sorry, that's not me.

tom
K0TAR
```

2432. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 01:43:56 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47bb85dc$0$16689$4c368faf@roadrunner.com>
Source record: 27854

"Richard Clark" <kb7qhc@comcast.net> wrote in message
>
> Would seem to be on par with the cerebralsclerosis that has inflicted
> this thread since its inception.

Since his posts equal 6 in number out of a current total of 24 or 25% of all
posts with not one technical contribution, does not that speak to the
likelihood of one KB7QHC as a certain contibutor of the alleged
"cerebralsclerosis" condition that you say plagues this thread?

73 de AI4QJ

2433. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 01:45:15 UTC
From: Sum Ting Wong <sumtingwong@privacy.net>
Message-ID: <381nr31s0v9d7kjue1l0bbjr2up6mk00qh@4ax.com>
Source record: 27855

On Tue, 19 Feb 2008 23:18:14 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>Sum Ting Wong wrote:
>> I have a SGC-230 tuner in the RV ... I was thinking of adding
>> ferrites to the input side of the tuner and then using it to tune a
>> dipole fed with 450 ohm window line.
>
>My SG-230 tuner manual says that is a no-no.
>It says: "The coupler must be located *at the antenna*.
>Never use a feed line or coaxial cable at the output
>of the antenna coupler."

Cecil,

Saw that and wondered about isolating the coax and DC power with the
ferrite and maybe changing the rules about doing that. Since you're a
whole lot sharper than I am on this stuff, what do you figure the
reason is for not tuning a balanced feeder with it? That would make
things soooooooooo much easier if it worked.

Thanks.

S.T.W.

2434. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 02:11:29 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47bb8c52$0$1113$8046368a@newsreader.iphouse.net>
Source record: 27856

Richard Clark wrote:

> Have you come to means by which you can reconcile the difference?
>> On Sat, 16 Feb 2008 22:14:29 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>> Check N3LI on QRZ.COM) http://www.qrz.com/detail/N3RI
> where the gap between the two calls, all of two or three words or
> links has easily upset your previous broken record for cognitive
> fading.
>
> 73's
> Richard Clark, KB7QHC

Richard,

Interesting that Mr. common sense and Mr AI4QJ have identical digital trails. But I'd bet you already noticed that. You'd think he'd know at least a little about obfuscation. I mean, sheesh, at least he could use a different release of the news reader even if he didn't use a different feed point.

tom
K0TAR

2435. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 02:21:54 UTC
From: dplatt@radagast.org
Message-ID: <2ffs85-368.ln1@radagast.org>
Source record: 27857

>> I have a SGC-230 tuner in the RV ... I was thinking of adding
>> ferrites to the input side of the tuner and then using it to tune a
>> dipole fed with 450 ohm window line.

>My SG-230 tuner manual says that is a no-no.
>It says: "The coupler must be located *at the antenna*.
>Never use a feed line or coaxial cable at the output
>of the antenna coupler."

On the other hand, page 16 of the SGC-230 manual PDF specifically shows a balanced dipole, being fed through "balanced line feeders, 300-600 ohms, up to 40 feet".

The ladder line is shown as being connected to the antenna "hot" terminal, and to the case of the coupler.

The manual is quite clear about not using a coax feedline above the antenna, or having a feedline out to a longwire antenna which has more than a very small amount of capacitance to ground. The information shown on page 16 suggests that you may be able to bend this restriction if you're using a balanced feedline, although I suspect that you'll still want to make sure that you've got low capacitance between ground and the hot side of the line (keep the feedline well away from metal, and use high-quality feedthrough insulators).

I don't know about using a balun at the base of the feedline... this will (almost of necessity) require the use of a length of low-impedance feedline of some sort, and this could be exactly the sort of thing that prevents the SGC from matching the line properly. Using a choke on the coax-and-control side might work better, although this too seems to be something that SGC discourages.

I haven't been terribly happy with the SGC tuner I picked up (admittedly for cheap, at a ham swap-meet). It's an early-model SGC 230, and its tuning algorithm seems very finicky. In particular, it won't tune into any but the easiest loads when fed by my Kenwood TS-2000. I suspect that the reason is that the TS-2000's high-SWR foldback circuit is rather aggressive, and chops the power down to well under 10 watts anytime the rig sees an SWR of more than 2:1 or so. The fluctuating transmitter power seems to confuse the coupler's matching algorithm... no big surprise there. Seems to work better when fed from a simple TenTec Scout, which has a different high-SWR-protection mechanism that doesn't cause the power to flop around as much.

Anyhow... my impression is that the SGC tuners are best suited for
their original application - feeding a whip or longwire, whilst being
securely bolted and multiply-grounded to a Big Metal Vehicle Chassis.
They also seem to do OK feeding verticals over a big bed of radials.
I just don't think they're all that well suited to feeding balanced
antennas.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2436. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 02:35:10 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <61cd576c-fb94-443f-aa59-6758c63964e4@41g2000hsc.googlegroups.com>
Source record: 27858

On Feb 19, 3:30 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > w5dxp wrote:
> >> Pa(R0) = fPa + rPa + 2*(fPa*rPa)cos(180-GA)
>
> Opps, sorry - a typo. That equation should be:
>
> Pa(R0) = fPa + rPa + 2*SQRT(fPa*rPa)cos(180-GA)
>
> > Could you expand on why the expression on the right is equal to
> > the average power dissipated in R0(Rs)? How was the expression
> > derived?
>
> This is essentially the same as the irradiance-interference
> equation from optical physics. It's derivation is covered
> in detail in "Optics" by Hecht, 4th edition, pages 383-388.
> It is also the same as the power equation explained in detail
> by Dr. Steven Best in his QEX article, "Wave Mechanics of
> Transmission Lines, Part 3", QEX, Nov/Dec 2001, Eq 12. It
> can also be derived independently by squaring the s-parameter
> equation: b1^2 = (s11*a1 + s12*a2)^2

Steven Best's article does have an equation of similar form:

PFTOTAL = P1 + P2 + 2 * sqrt(P1) * sqrt(P2) * cosθ

Starting with superposition of two voltages, he derived an
equation based on powers for computing the total power.

So that made sense. But why would adding in the forward
power in the line be useful for computing the power in the
source resistor? And the answer: Pure happenstance. The
value of the source resistor is the same as the value
of the line impedance, so identical currents produce
identical powers.

Perhaps you could carry out the calculations for a slightly
different experiment. Use a 25 ohm source impedance and a
voltage oF 70.7 RMS.

Forward and reverse power for the short circuited load will
still be 100 W, but only 200 W will be dissipated in the
source resistor. It is not obvious to me how to compute the
interference term for this case.

> > As well, what would be the equivalent expression for the following
> > example?
>
> Pa(R0) = fPa + rPa + 2*SQRT(fPa*rPa)cos(GA)
>
> Note the 180 degree phase difference between the two
> examples. Why that is so is explained below.
>
> >   +------+-------------+----------------------+
> > | | |
> >   ^ | Rs |
> >   Is   +-/\/\/-+   1/2 wavelength   ZLoad
> >   2.828A   50 ohm | 50 ohm line |
> > | | |
> >   +---------------+-----+----------------------+
>
> > The forward power is the same, the source impedance is the same,
> > but the conditions which cause maximum dissipation in the source
> > resistor are completely different.
>
> If by "completely different", you mean 180 degrees different,
> you are absolutely correct. The 1/2WL short-circuit and open-
> circuit results are reversed when going from a voltage source
> to a current source.
>
> > Why is it not the same expression as previous since the conditions
> > on the line are the same?
>
> We are dealing with interference patterns between the forward
> wave and the reflected wave. In the voltage source example,
> the forward wave and reflected wave are flowing in opposite
> directions through the resistor. In the current source example,
> the forward wave and reflected wave are flowing in the same
> direction through the resistor.

I see that now. It works because you were effectively using
superposition to compute the voltage across the source resistor
and then converting this to power using the expression derived
by Steven Best.

But it was happenstance that the voltage across the resistor
was the same as the forward voltage on the line. A very misleading
coincidence.

> That results in a 180 degree
> difference in the cosine term above. I believe all your other
> excellent questions are answered above.
> --
> 73, Cecil http://www.w5dxp.com

2437. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 02:50:31 UTC
From: Sum Ting Wong <sumtingwong@privacy.net>
Message-ID: <o25nr3tt90hjj22st58cpvf81ku5p8dp3r@4ax.com>
Source record: 27859

On Tue, 19 Feb 2008 18:21:54 -0800, dplatt@radagast.org (Dave Platt) wrote:

>Anyhow... my impression is that the SGC tuners are best suited for
>their original application - feeding a whip or longwire, whilst being
>securely bolted and multiply-grounded to a Big Metal Vehicle Chassis.
>They also seem to do OK feeding verticals over a big bed of radials.
>I just don't think they're all that well suited to feeding balanced
>antennas.

Used the SGC feeding a longwire this past Field Day and it kicked butt over a dipole at 80' fed with a conventional balanced tuner under most conditions. Surprised the heck out of us.

BTW - Used a pneumatic (tennis ball) antenna launcher to put up those antennas and it sure made it a lot easier than previous years using other methods. WELL worth the time to build one of those! Always wanted to try a loop though.

S.T.W.

2438. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 03:14:53 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <t7rmr39n0tefes3r06ui2l0tblucmsdqtp@4ax.com>
Source record: 27860

On Sun, 17 Feb 2008 02:11:56 GMT, "Jerry" <j.jmartes@verizon.net>
wrote:

> I have some limited accuracy test equipment for evaluating antennas.
>Recently Richard Clark prodded me till I couldnt take it any more so I got
>some of Roy's software. Richard even told me how to use it. It has become
>clear that *my* test equipment is is very good agreement with Roy's EZNEC.
>. EZNEC works so well for my situation that I thought it was woring well for
>everyone. I can make real radiation patterns of my prototype antennas
>(using POES signals for the illuminator) that are in agreement with EZNEC
>prediction. Even the inpedance of the eklements are well predicted by
>EZNEC. Do you know where any real data is in disagreement with EZNEC
>predictions? I'd like to know more about any data anyone has that shows
>where EZNEC gives wrong data.
>
> Jerry KD6JDJ (who is extreemely happy with his EZNEC
>"tool")
>

I believe there are still a lot of unknowns about antenna theory and
propagation and that something may someday come along that EZNEC
cannot properly calculate and model. There are several hams who may
or may not be lurking about this group that have invented 'new'
antenna designs that cannot be properly modeled by EZNEC.
Unfortunately, for the ones I know about, the information is held so
secretly close to the inventors that their designs cannot be properly
compared to other antennas of known design to validate the inventors'
claims.

I have been a ham for 29.5 years now and for HF base, I have almost
exclusively operated from my own home-brew antennas. I learned a few
things over the years, rules of thumb so to speak. For Yagi antennas,
the longer the boom, the greater the gain, the shorter the boom, the
wider the beam width. For wire antennas, (within certain constraints)
the more wire, the more gain, the longer the antenna, the better the
gain, the shorter the antenna (shortened antenna) the narrower the
bandwidth. It is very hard to get a 1/16th wave antenna to work as
well as a decent 1/2 wave antenna for the same frequency. Most
importantly, any antenna (that won't destroy the radio) will
communicate given adequate propagation between the two points.

I don't use EZNEC. I haven't had the time set aside for studying that
and antenna theory long enough to make good use of the program. I have
tried, but it isn't capable of modeling the antenna design that I want
to experiment with,

I don't say this to discredit Roy, as, in all honesty, from the bottom of my heart, I acknowledge that by far he has greater intelligence in the antenna field than I hope to have. But, his software has certain limitations and he states at least some of the limitations in his user manual.

There are a number of professional antenna specialists here, some real, some wanna-be. Some of those professionals don't care for us amateurs being here asking questions anyone with a Masters degree in antenna science shouldn't have learned by their fifth or sixth year of study. Others are glad to help as long as we have shown to have made some effort to understand the basics of how an antenna works.

I have respect for both Roy and Cecil, even tho they are quite often at odds with each other, and I have respect for others here as well. In time you will know who you want to trust and who you don't want to hear from.

Good luck,
Buck
N4PGW

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

2439. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 03:29:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rn7k0t5frcf17@corp.supernews.com>
Source record: 27862

K7ITM wrote:
>
> Which, of course, illustrates the point that I believe Roy made in the
> article, that the load conditions (whether they are the result of
> something going on involving a transmission line, or just a lumped
> load) tell us nothing about what's going on inside a source, ideal or
> otherwise. For that, you MUST know the characteristics of the source
> itself, and for that you do NOT need to know anything about the load
> beyond the impedance it presents to the generator output terminals
> (possibly as a function of time, frequency, amplitude and other
> factors). For example, in the case of the signal generator on my
> bench when 100dB of attenuation is cranked in, the change in
> dissipation inside the generator versus load impedance is
> inconsequential: at least 99.999 percent of the generator's available
> RF output is dissipated in the attenuator when the load is matched (50
> ohms). The additional maximum possible 0.001 percent increase
> depending on load would be difficult to detect: about 0.00004dB
> change. On the other hand, the change in dissipation inside my 450MHz
> transmitter versus load impedance is substantial, BUT bears no
> resemblance to either the current-source-with-shunt-resistor or the
> voltage-source-with-series-resistor model, for multiple reasons.

Yes. In all the cases, you can replace the transmission line and load with any other combination of transmission line and load which present the same impedance to the source, and the source resistor dissipation will be exactly the same.

For example, look at the first entry, 50 + j0:

```
Zl fPa rPa Pa(tx) Pa(src) Pa(R0) Pa(Rl) frac R0 frac Rl
50 + j0 100 0 100 200 100 100 0.50 0.50
```

If we used a 100 ohm transmission line instead of a 50 ohm transmission line, we'd have

```
Zl fPa rPa Pa(tx) Pa(src) Pa(R0) Pa(Rl) frac R0 frac Rl
50 + j0 112.5 12.5 100 200 100 100 0.50 0.50
```

There's no change in source or load dissipation even though the forward and reverse powers in the transmission line are different. If we do away with the transmission line altogether and connect the load directly to the source resistor, completely eliminating traveling waves, the result is exactly the same.

A literally infinite number of other examples, using various line impedances, load resistances, and line lengths, can be created. You'll

find that the *only* factor (other than source voltage and source resistance value) which determines source resistor dissipation is the impedance which it sees - regardless of how that impedance is created. It has nothing to do with constructive or destructive interference, traveling waves of voltage, current, or power, or anything else happening on the line, or even if there is a line at all. And the exact amount of source resistor dissipation can be immediately calculated by analyzing a simple circuit of three components: the voltage source, the source resistance, and the impedance seen by the source resistance. No other information is required.

Roy Lewallen, W7EL

2440. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 03:29:30 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <0h7nr3pi9ptt6giv2rfm2u32k8og705bpr@4ax.com>
Source record: 27861

On Sat, 16 Feb 2008 16:54:41 GMT, ml <m@di.net> wrote:

>In article <37cbr3dh3bu5laa48i40rj8u7aftpcissp@4ax.com>,
> Richard Clark <kb7qhc@comcast.net> wrote:
>
>> On Fri, 15 Feb 2008 10:50:46 GMT, ml <m@di.net> wrote:
>>
>> >hi
>> >
>> >pretty soon when current tv broadcast stops i was thinkng my
>> >building master ant will either be left there or just removed
>> >
>> >i thought about petitioning the coop board to let me have the space
>> >under the guise of replacing the antenna with another that looked for
>> >the most part just like/simular to the old tv ant but actually
>> >subsituting a ham antenna
>> >
>> >my first thought as far as a look alike was to a LP , just
>> >wondering of all of the antennas out there anyone know which specific
>> >brand might come closest to looking like a regular tv antenna?
>>
>> Hi Myles,
>>
>> Any Log periodic that looks like a TV antenna is going to cover
>> VHF/UHF - keep that in mind if you are hoping for HF.
>>
>> However, nobody sees those antennas way up on the top of your building
>> except the traffic spotters in helicopters. If you want to sneak an
>> HF LPDA up there, then you will need a tad more height for masting,
>> and more than a tad more support/guying.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>hi thanks guyes for responding
>
>i should have specified HF
>
>don't need anymore height the tv antenna is over 10ft from roof
>surface and they wouldn't let me add to that
>
>i could get away w/a somewhat bigger antenna but not 'super large'
>i was thinking if it looked like a tv at, and was even 2x the size
>perhaps no one would really notice

>
>so i've never really seen any lp face to face and wasn't sure
>about of all the ones made which might be closest at fitting the bill
>was hopn someone might be familiar w/a specific brand/make /model
>
>etc??
>
>
>thanks much

It might not cover but three bands, but have you considered a short
yagi? I had a TA-33 Jr years ago that worked very well for me and
wasn't terribly large.

Buck
N4PGW

--
73 for now
Buck, N4PGW

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"Small - broadband - efficient: pick any two."

2441. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 03:31:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13rn7o58sgecd3a@corp.supernews.com>
Source record: 27863

Sum Ting Wong wrote:
> On Mon, 18 Feb 2008 19:31:00 -0800, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>> Putting the balun the input has the disadvantage of
>> making the tuner chassis hot.
>
> Roy,
>
> Thanks for ANOTHER lesson. I have a SGC-230 tuner in the RV that I
> use to tune a wire when we go camping. I think the metal mounting
> brackets are isolated from the floating tuner chassis and that you
> have to use a grounding lug on the bottom. Never verified that since
> I have always used the ground lug anyway. I was thinking of adding
> ferrites to the input side of the tuner and then using it to tune a
> dipole fed with 450 ohm window line. Maybe I'll just stick with the
> longwire.
>
> I noticed the guy who wrote that article mounted his tuner on an el
> cheapo cutting board, probably just for that reason.
>
> S.T.W.

And you can also thank Tom Rauch, W8JI who questioned my incorrect belief, causing me to re-think it.

Roy Lewallen, W7EL

2442. Re: Vertical Antenna Performance Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 03:52:28 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <0uNuj.5004$0%3.1457@trnddc06>
Source record: 27864

"Buck" <usenet01@lumpuckeroo.com> wrote in message
news:t7rmr39n0tefes3r06ui2l0tblucmsdqtp@4ax.com...
> On Sun, 17 Feb 2008 02:11:56 GMT, "Jerry" <j.jmartes@verizon.net>
> wrote:
>
>
>> I have some limited accuracy test equipment for evaluating antennas.
>>Recently Richard Clark prodded me till I couldnt take it any more so I got
>>some of Roy's software. Richard even told me how to use it. It has
>>become
>>clear that *my* test equipment is is very good agreement with Roy's EZNEC.
>>. EZNEC works so well for my situation that I thought it was woring well
>>for
>>everyone. I can make real radiation patterns of my prototype antennas
>>(using POES signals for the illuminator) that are in agreement with EZNEC
>>prediction. Even the inpedance of the eklements are well predicted by
>>EZNEC. Do you know where any real data is in disagreement with EZNEC
>>predictions? I'd like to know more about any data anyone has that shows
>>where EZNEC gives wrong data.
>>
>> Jerry KD6JDJ (who is extreemely happy with his EZNEC
>>"tool")
>>
>
>
> I believe there are still a lot of unknowns about antenna theory and
> propagation and that something may someday come along that EZNEC
> cannot properly calculate and model. There are several hams who may
> or may not be lurking about this group that have invented 'new'
> antenna designs that cannot be properly modeled by EZNEC.
> Unfortunately, for the ones I know about, the information is held so
> secretly close to the inventors that their designs cannot be properly
> compared to other antennas of known design to validate the inventors'
> claims.
>
> I have been a ham for 29.5 years now and for HF base, I have almost
> exclusively operated from my own home-brew antennas. I learned a few
> things over the years, rules of thumb so to speak. For Yagi antennas,
> the longer the boom, the greater the gain, the shorter the boom, the
> wider the beam width. For wire antennas, (within certain constraints)
> the more wire, the more gain, the longer the antenna, the better the
> gain, the shorter the antenna (shortened antenna) the narrower the
> bandwidth. It is very hard to get a 1/16th wave antenna to work as
> well as a decent 1/2 wave antenna for the same frequency. Most

> importantly, any antenna (that won't destroy the radio) will
> communicate given adequate propagation between the two points.
>
> I don't use EZNEC. I haven't had the time set aside for studying that
> and antenna theory long enough to make good use of the program. I have
> tried, but it isn't capable of modeling the antenna design that I want
> to experiment with,
>
> I don't say this to discredit Roy, as, in all honesty, from the bottom
> of my heart, I acknowledge that by far he has greater intelligence in
> the antenna field than I hope to have. But, his software has certain
> limitations and he states at least some of the limitations in his user
> manual.
>
> There are a number of professional antenna specialists here, some
> real, some wanna-be. Some of those professionals don't care for us
> amateurs being here asking questions anyone with a Masters degree in
> antenna science shouldn't have learned by their fifth or sixth year of
> study. Others are glad to help as long as we have shown to have made
> some effort to understand the basics of how an antenna works.
>
> I have respect for both Roy and Cecil, even tho they are quite often
> at odds with each other, and I have respect for others here as well.
> In time you will know who you want to trust and who you don't want to
> hear from.
>
> Good luck,
> Buck
> N4PGW
>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

Hi Buck

My comments related to computer modeling are directed to the validity of the EZNEC results. I want to support the fact that it works. There is no question that there may be some concepts that EZNEC cant deal with. My thoughts about EZNEC relate to its ability to give good answers to questions with which it is intended to be used. I consider the EZNEC program to be quite accurate for the VHF antenna concepts I work with. I worked fairly consistently for a couple years on an antenna design concept that was written up in the Feb 2008 QST and consider EZNEC to be responsible for my being able to better understand the concept. I would certainly never be without the program, now that I have used it.

Jerry KD6JDJ

2443. Horizontal loop antenna - Dual Wire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 03:55:20 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <i09nr3p2n2d3d0kqrbgv35kfan37qmdlqg@4ax.com>
Source record: 27865

I seem to remember an article about someone taking a full-wave horizontal loop antenna and making two loops (or was it a half-wave loop?). The second loop caused the antenna to match 50 ohms so it could be fed with coax and (I think) it operated multiple bands. Anyone remember this article and know where it might be?

Thanks
Buck
N4PGW
--
73 for now
Buck, N4PGW

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2444. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 04:18:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NSNuj.12592$0w.5315@newssvr27.news.prodigy.net>
Source record: 27866

Sum Ting Wong wrote:
> Saw that and wondered about isolating the coax and DC power with the
> ferrite and maybe changing the rules about doing that. Since you're a
> whole lot sharper than I am on this stuff, what do you figure the
> reason is for not tuning a balanced feeder with it?

I was so sharp, I called SGC. :-) They said if the
transmission line accidentally opened up, the SG-230
could develop 30,000 volts at its output. If it was
mounted in an attic, for instance, it could burn the
house down. I think they are worried about being sued.
Moral: If you decide to use transmission line on the
output, put it in a location that will not matter if
it catches on fire.
--
73, Cecil http://www.w5dxp.com

2445. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 04:22:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KVNuj.12593$0w.11726@newssvr27.news.prodigy.net>
Source record: 27867

Dave Platt wrote:
> On the other hand, page 16 of the SGC-230 manual PDF specifically
> shows a balanced dipole, being fed through "balanced line feeders,
> 300-600 ohms, up to 40 feet".

My 1990 manual shows nothing like that. Maybe they changed
their minds about balanced line feeders.
--
73, Cecil http://www.w5dxp.com

2446. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 04:40:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <SaOuj.12595$0w.5346@newssvr27.news.prodigy.net>
Source record: 27868

Roy Lewallen wrote:
> No other information is required.

No other information is required if, as you assert, you don't care where the power goes. You said: "I personally don't have a compulsion to understand where this power 'goes'." That's perfectly acceptable, but don't turn around and present yourself as an expert on "where the power goes". Please choose either not to care or to engage in a technical discussion of where the power goes. It is not fair play for you to try to have it both ways.

If it is applied properly, the power-interference equation tells us exactly where the power goes so your following statement is false: "While the nature of the voltage and current waves when encountering an impedance discontinuity is well understood, we're lacking a model of what happens to this 'reverse power' we've calculated."

We are NOT lacking a model of what happens to the "reverse power". You have just chosen not to understand the model and are trying to use your guru status to belittle and discredit anyone attempting to use that model. Are you afraid it might turn out to be valid?
--
73, Cecil http://www.w5dxp.com

2447. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 05:22:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FOOuj.1316$Mh2.272@nlpi069.nbdc.sbc.com>
Source record: 27869

Keith Dysart wrote:
> Steven Best's article does have an equation of similar form:
>
> PFTOTAL = P1 + P2 + 2 * sqrt(P1) * sqrt(P2) * cosoΩ½
>
> Starting with superposition of two voltages, he derived an
> equation based on powers for computing the total power.

The derivation proves the equation to be valid.
The redundancy inside a transmission line of Z0 characteristic
impedance means we don't have to deal with voltages at all if
we know the length of the transmission line and the reflection
coefficient of the load. Pfor = Vfor^2/Z0 Pref = Vref^2/Z0

> Perhaps you could carry out the calculations for a slightly
> different experiment. Use a 25 ohm source impedance and a
> voltage oF 70.7 RMS.

Note you are cutting the source voltage and source resistance
in half while keeping the rest of the network the same. The
forward power cannot remain at 100w.

> Forward and reverse power for the short circuited load will
> still be 100 W, but only 200 W will be dissipated in the
> source resistor. It is not obvious to me how to compute the
> interference term for this case.

Nope, forward and reverse power will not still be 100w.
Forward and reverse power will be 50w. It will be
44.44w + 4.94w + 0.549w + 0.06w + ... = 50 watts
The source is now exhibiting a power reflection coefficient
of 0.3333^2 = 0.1111 so there is a multiple reflection
transient state before reaching steady-state.

50w + 50w + 2*SQRT(50w*50w) = 200 watts
--
73, Cecil http://www.w5dxp.com

2448. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 05:43:07 UTC
From: dplatt@radagast.org
Message-ID: <b8rs85-ogv.ln1@radagast.org>
Source record: 27870

>> On the other hand, page 16 of the SGC-230 manual PDF specifically
>> shows a balanced dipole, being fed through "balanced line feeders,
>> 300-600 ohms, up to 40 feet".
>
>My 1990 manual shows nothing like that. Maybe they changed
>their minds about balanced line feeders.

Could be... I was using a PDF copy of the manual I downloaded from the SGC website. Possibly the newer versions of their couplers have more flexibility in their tuning algorithm?

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2449. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 06:19:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <slgnr3t1fh0cpplke7ja41frlbdfi1neq1@4ax.com>
Source record: 27871

On Tue, 19 Feb 2008 20:43:56 -0500, "AI4QJ" <nospam@hotmail.com>
wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>>
>> Would seem to be on par with the cerebralsclerosis that has inflicted
>> this thread since its inception.
>
>Since his posts equal 6 in number out of a current total of 24 or 25% of all
>posts with not one technical contribution,

I didn't even lean on the copy button of the Xerox either which must
have absorbed your cognitive skills for two of 5 posts.

>does not that speak to the
>likelihood of one KB7QHC as a certain contibutor of the alleged
>"cerebralsclerosis" condition that you say plagues this thread?

No, not at all, but thanx for asking.

I still like the irony of your posting under three signatures - a
mutating plaque? Surely two other signatures (suitably inspiring that
is) would raise this clog hopper to Radio City Music Hall quality.

Common Cents, at least this troll has gotten you distance from your
fumbling Mike's call sign (another Xerox mastery issue).

73's
Richard Clark, KB7QHC

2450. Re: Horizontal loop antenna - Dual Wire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 06:44:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <fsinr395rjv18b2br3qu834or4m8kq086k@4ax.com>
Source record: 27872

On Tue, 19 Feb 2008 22:55:20 -0500, Buck <usenet01@lumpuckeroo.com>
wrote:

>I seem to remember an article about someone taking a full-wave
>horizontal loop antenna and making two loops (or was it a half-wave
>loop?). The second loop caused the antenna to match 50 ohms so it
>could be fed with coax and (I think) it operated multiple bands.
>Anyone remember this article and know where it might be?

Hi Buck,

It is a small tuned loop (less than a tenth wave) with a smaller loop
(about a third to a fifth in size of the first loop) inside it.

Not much else to say except that polarity is vertical/horizontal when
the loops are in the horizontal/vertical plane. Make every effort to
build low Ohmic connections and elements. The capacitor will have to
stand off a high voltage (and many caps suffer from ESR).

73's
Richard Clark, KB7QHC

2451. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 07:32:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9sknr3t1nj5gd09k7fea4hagg5ds2n5df4@4ax.com>
Source record: 27873

On Tue, 19 Feb 2008 20:11:29 -0600, Tom Ring <news0004@taring.org>
wrote:
>> Have you come to means by which you can reconcile the difference?
>>> On Sat, 16 Feb 2008 22:14:29 -0500, "AI4QJ" <nospam@yahoo.com> wrote:
>>>> Check N3LI on QRZ.COM) http://www.qrz.com/detail/N3RI
>> where the gap between the two calls, all of two or three words or
>> links has easily upset your previous broken record for cognitive
>> fading.
>Interesting that Mr. common sense and Mr AI4QJ have identical digital
>trails. But I'd bet you already noticed that.

Anonymity is a concept reserved for the techno-bourgeois when they
mistake if for what it actually is: the desperation of deniability.

Perhaps deniable inspiration will revive this corpse with how Common
Cents was a nomme-de-Web (the "Lie Circumstantial" used only to
forestall explaining that cognitive fade) artfully crafted for us all
to have immediately identified Dan behind those Foster Grants.

What a dilemma.

73's
Richard Clark, KB7QHC

2452. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 08:00:59 UTC
From: Tehrasha Darkon <darkon@netins.net>
Message-ID: <pan.2008.02.20.08.01.01@netins.net>
Source record: 27874

On Sun, 17 Feb 2008 23:43:57 -0500, AI4QJ posing as 'common sense' wrote:

> A huge 10m neutrino telescope in the South Pole.

Getting your scopes mixed up a little there....

This is the 10m -- http://pole.uchicago.edu/news/news_2006-12-01.html

This is the neutrino -- http://www.lbl.gov/Science-Articles/Archive/NSD-IceCube.html

> People risking their lives in Antarctica to run this thing. Why?

Becasue its their job and they signed up for it?
Just going there is risking your life. I dont think anyone is being forced to work in Antarctica.

> What will be the payback? All this money and risk for "maybe" a
> "potential" clue to the evolution of the universe?

http://www.cfa.harvard.edu/~aas/SPT/goals.htm

> More government spending gone amok.

$242M (your numbers) in 4 years (since groudbreaking)... Hell, I can think of a few govt handout programs that waste that much money every year.

> The most expensive radio telescope antenna in the world....

Because we can.

2453. Re: 100 Pages of New Videos Added

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 08:02:18 UTC
From: Tehrasha Darkon <darkon@netins.net>
Message-ID: <pan.2008.02.20.08.02.20@netins.net>
Source record: 27875

On Sat, 16 Feb 2008 19:43:55 -0800, None wrote:

> Google is your friend.
>
> http://www.amateurradios.info/

In this case, not just your friend, but a requirement.

2454. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 08:40:18 UTC
From: richardharrison@webtv.net
Message-ID: <19364-47BBE772-1@storefull-3253.bay.webtv.net>
Source record: 27876

Roy Lewallen wrote:
"I don`t see anywhere in the response which explains how "radiation is a function of loop area" and why increasing the loop circumference would be advantageous."

Didn`t want to bore with details. Terman knows all and tells all. His loop antenna story begins on page 907 of his 1955 opus:
"The radiation resistance of a loop antenna is less the smaller the loop area. For the radiation resistance to be large enough to give good antenna efficiency, it is necessary that the loop perimeter be of the order of a wavelength. This introduces a difficulty, since when the perimeter approaches or exceeds a half wavelength, then the loop current in Fig. 23-40 will not be constant, nor will its phase nnecessarily be the same in different parts of the loop. The prectical solution is to build up the loop in such a way that the perimeter consists of resonant antennas so arranged that the current everywhere in the loop perimeter flows in the same direction around the loop. A variety of practical physical arrangements for achieving this result have been devised, three examples of which are illustrated in Fig. 23-41."

Yet another elegant phase inverter from Kraus as applied to a colinear dipole appears on Cecil`s webpages.

Best regards, Richard Harrison, KB5WZI

2455. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 09:40:00 UTC
From: richardharrison@webtv.net
Message-ID: <12978-47BBF570-2@storefull-3258.bay.webtv.net>
Source record: 27877

Roy Lewallen wrote:
"Perhaps you build antennas for radiation resistance, but I think most people build them to maximize radiation in some particular direction.."

You must have some radiation resistance or you have no signal, but not all antennas are highly directional.

Page 8-10 of the 20th edition of the ARRL Antenna Book has (Eq 5):
Efficiency = radiation resistance / radiation resistance + loss resistance

Zero radiation resistance = zero efficiency.

Best regards, Richard Hsarrison, KB5WZI

2456. Re: Horizontal loop antenna - Dual Wire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 12:00:09 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <695or3lmca5da199qk4c28j5v6q90s77vt@4ax.com>
Source record: 27878

On Tue, 19 Feb 2008 22:44:48 -0800, Richard Clark <kb7qhc@comcast.net>
wrote:

>On Tue, 19 Feb 2008 22:55:20 -0500, Buck <usenet01@lumpuckeroo.com>
>wrote:
>
>>I seem to remember an article about someone taking a full-wave
>>horizontal loop antenna and making two loops (or was it a half-wave
>>loop?). The second loop caused the antenna to match 50 ohms so it
>>could be fed with coax and (I think) it operated multiple bands.
>>Anyone remember this article and know where it might be?
>
>Hi Buck,
>
>It is a small tuned loop (less than a tenth wave) with a smaller loop
>(about a third to a fifth in size of the first loop) inside it.
>
>Not much else to say except that polarity is vertical/horizontal when
>the loops are in the horizontal/vertical plane. Make every effort to
>build low Ohmic connections and elements. The capacitor will have to
>stand off a high voltage (and many caps suffer from ESR).
>
>73's
>Richard Clark, KB7QHC

The antenna article I was referring to is either full size or 1/2 size
horizontal loop and he used window line (twin-lead) wire for the loop
crossing the connection of the coax so that the wire made a continuous
loop twice going from the center conductor to the shield (he may have
used a balun, but you get the idea). This was a large loop running
around his yard.

Thanks, tho.

Buck
N4PGW
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

2457. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 12:04:02 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <cd6c2a3d-79c1-4685-a27d-40c530756554@t66g2000hsf.googlegroups.com>
Source record: 27879

On Feb 20, 12:22 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Steven Best's article does have an equation of similar form:
>
> > PFTOTAL = P1 + P2 + 2 * sqrt(P1) * sqrt(P2) * cos(theta)
>
> > Starting with superposition of two voltages, he derived an
> > equation based on powers for computing the total power.
>
> The derivation proves the equation to be valid.
> The redundancy inside a transmission line of Z0 characteristic
> impedance means we don't have to deal with voltages at all

Not quite, since the angle 'theta' is the angle between the voltages,
is it not?

> if
> we know the length of the transmission line and the reflection
> coefficient of the load. Pfor = Vfor^2/Z0 Pref = Vref^2/Z0
>
> > Perhaps you could carry out the calculations for a slightly
> > different experiment. Use a 25 ohm source impedance and a
> > voltage oF 70.7 RMS.
>
> Note you are cutting the source voltage and source resistance
> in half while keeping the rest of the network the same. The
> forward power cannot remain at 100w.

I am pretty sure that it is 100 W. See more below.

> > Forward and reverse power for the short circuited load will
> > still be 100 W, but only 200 W will be dissipated in the
> > source resistor. It is not obvious to me how to compute the
> > interference term for this case.
>
> Nope, forward and reverse power will not still be 100w.
> Forward and reverse power will be 50w. It will be
> 44.44w + 4.94w + 0.549w + 0.06w + ... = 50 watts
> The source is now exhibiting a power reflection coefficient
> of 0.3333^2 = 0.1111 so there is a multiple reflection
> transient state before reaching steady-state.

I suggest that you forgot to use Steven Best's equation when
you added the powers. Consider just the first re-reflection
where 4.94 is added to 44.4.

Pftotal = 44.444444 + 4.938272 + 2 * sqrt(44.444444) * sqrt(4.938272)
* cos(0)
= 49.382716 + 9.599615
= 79.01 W

To verify, let us consider the voltages:

Original Vf is 66.666666 V (peak)
First re-reflection is -66.666666 V * -0.3333333 -> 22.222222 V (peak)
giving a new Vf of 88.888888 V (peak)
which is 79.01 W into 50 ohms.

It does, indeed, converge to 100 W forward but you have to use the
proper equations when summing the powers of superposed voltages.
You can not just add them.

So forward and reverse powers each converge to 100 W and 200 W is
dissipated in the source resistor, which suggests that your
equation for computing dissipation in the source resistor is
incorrect.

To take the tedium out of these calculation you might like the
Excel spreadsheet at
http://keith.dysart.googlepages.com/generator,line,load,reflection

...Keith

2458. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 13:02:16 UTC
From: LA4RT Jon Kåre Hellan <dev@null.com>
Message-ID: <1mwsoz93xj.fsf@persaunet.uninett.no>
Source record: 27880

richardharrison@webtv.net (Richard Harrison) writes:

> Roy Lewallen wrote:
> "Perhaps you build antennas for radiation resistance, but I think most
> people build them to maximize radiation in some particular direction.."
>
> You must have some radiation resistance or you have no signal, but not
> all antennas are highly directional.
>
> Page 8-10 of the 20th edition of the ARRL Antenna Book has (Eq 5):
> Efficiency = radiation resistance / radiation resistance + loss
> resistance
>
> Zero radiation resistance = zero efficiency.
>
> Best regards, Richard Hsarrison, KB5WZI

You're right that low radiation resistance makes it hard to attain high efficiency. You want radiation resistance to be significantly higher than loss resistance.

But ohmic losses usually aren't that bad in large dipoles and loops. EZNEC or other modeling progarms can tell you how much you gain by going up in wire size. For common geometries and wire sizes, the difference will be a small fraction of a decibel.

For small ("magnetic") loops on the other hand, efficiency is very much an issue, and you want to push the radiation resistance as high as you can, and ohmic losses as low as you can. (Increasing the size of the loop is the easiest way to increase radiation resistance, but presumably there's a reason that you'er using a small loop in the first place.

73
LA4RT Jon, Trondheim, Norway

2459. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 13:33:33 UTC
From: nm5k@wt.net
Message-ID: <69508fdc-fa5b-4875-b4fd-bfef2e64de64@q33g2000hsh.googlegroups.com>
Source record: 27881

On Feb 15, 6:46 pm, art <aun...@insightbb.com> wrote:
> On 15 Feb, 15:29, richardharri...@webtv.net (Richard Harrison) wrote:> Art wrote:
>
> > "My present antenna, which is for 160 m and above, is about the size of
> > two shoe boxes and is less than 2:1 swr (50 ohm) across the band when
> > situated at the tip of my tower."
>
> > Outstanding! An effective antenna needs to be an appreciable portion of
> > wavelength in some dimension.
>
> > If Art`s antenna is an appreciable portion of 525 feet it can radiate
> > well on 160 meters.
>
> > Any length of wire carrying an RF current is capable of radiation.
>
> *******
> Yes, but it is not useable if C and L for the length involved and
> frequency of use is not adhered to.
> Implicit in Maxwell's laws is that a radiator can be any size or shape
> as long as it is in equilibrium. Without the inclusion of that last
> word
> all laws of the masters are invalid.

Define equilibrium. As far as I can tell, you seem to infer
that being in "equilibrium", means that it is resonant.
I hate to break it to you, but being resonant is no sure
road to efficiency as a radiator of RF.
How many hundreds of feet of wound 22 gauge wire does this
device contain?
Seems to me, if I ponder all the laws of the "masters",
you have reinvented an air cooled dummy load that probably
won't handle too much power before it becomes so hot as
to melt whatever is close to it.
Maybe I suggest a Heathkit "Cantenna" as a better oil
cooled substitute that can be ground mounted for ease of
use. You can blast it with your 8877 for short periods
of time, and I doubt it will melt any plastic that is lying
next to it. Requires no tower, and no need for garbage can
lids.
According to the law of Art, it is in equilibrium, and
should satisfy all the requirements of the masters,
whoever they may be, and wherever they may lie.
MK

2460. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 15:21:25 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qugor3tfbht0ufjs4k9qtkgvdtepdctgiv@4ax.com>
Source record: 27882

On Wed, 20 Feb 2008 05:33:33 -0800 (PST), nm5k@wt.net wrote:

>How many hundreds of feet of wound 22 gauge wire does this
>device contain?

Hi Mark,

Perhaps for Arthur's twist on an old concept, but for his argument's sake, he need only lift off the shield for his finals with their Plate Tank circuit to achieve "equilibrium." And how effective does this full wave radiator perform? Hertz walked away from it 120 years ago when everyone thought 160M was useless SHF.

I would point out this observation of the Plate Tank is not original to me. It was pointed out to Arthur, in eham (a forum of his choice for comity and gentlemen's conversation) where he flipped the fellow off and never looked back.

73's
Richard Clark, KB7QHC

2461. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 15:46:19 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6230b7F21elj9U1@mid.individual.net>
Source record: 27883

Rick wrote:
> Some users think they are doing those of us who are interested in
> antennas a favor by posting what they think are useful topics -

You apparently think you're doing "those of us" a favor
by not only speaking for "us" but deciding, unilaterally,
what YOU feel is "worthy" of posting to "your" group.

Thanks for your post, which had zero to do with antennas.
Which, by definition, makes your post "unworthy".

Craig - n0eq

2462. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 15:46:30 UTC
From: richardharrison@webtv.net
Message-ID: <17827-47BC4B56-24@storefull-3257.bay.webtv.net>
Source record: 27884

Jon, LA4RT wrote:
"---but presumably there`s a reason that you`re using a small loop in the first place."

True. In Norway I specified large dishes for scatter communications with North Sea platforms but the government sponsored the geosynchronous satellite program and ignored scatter. In the many tunnels I specified 300-ohm twinlead which works about as well as Andrew`s leaky coax and costs much less. I think Norway is too rich to care about cost.

Best regards, Richard Harrison, KB5WZI

2463. Re: The South Pole Telescope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 17:28:11 UTC
From: richardharrison@webtv.net
Message-ID: <17828-47BC632B-4@storefull-3257.bay.webtv.net>
Source record: 27885

C.S. wrote:
"NSF has a budget. NSF MUST expend the budget or guess what, they risk getting less money next year."

Yes. That is how government and much of industry which work on fiscal year budgets work. Timing is predictable for expenditures on less prudent projects too. Carefully hoarded approved budgets are suddenly excesses at year end. They must be spent or returned to the treasury. Return means a reduction of influence and power.

Best regards, Richard Harrison, KB5WZI

2464. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 17:41:10 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <fd791cfb-18ea-492f-88a9-019331248e88@s13g2000prd.googlegroups.com>
Source record: 27886

On Feb 18, 2:28 pm, Michael Coslo <m...@psu.edu> wrote:

> Why do people come into groups, and set themselves up as the cops?
> are you to determine who stays and who is on "probation". . . You really
> need your own group . . and you can disallow any posts you determine
> to be off topic. Don't be surprised if they don't show up though.

I'm biting my tongue. REALLY REALLY hard.

> > - Mike N3LI -

w3rv

2465. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 17:55:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <HQZuj.11768$J41.8727@newssvr14.news.prodigy.net>
Source record: 27887

Keith Dysart wrote:
> On Feb 20, 12:22 am, Cecil Moore <nos...@w5dxp.com> wrote:
>> The derivation proves the equation to be valid.
>> The redundancy inside a transmission line of Z0 characteristic
>> impedance means we don't have to deal with voltages at all
>
> Not quite, since the angle 'theta' is the angle between the voltages,
> is it not?

That's part of the redundancy I was talking about. If one
calculates the voltage reflection coefficient at the load
and knows the length of the transmission line, one knows
the angle between those voltages without actually calculating
any voltages. For a Z0-matched system, one only needs to
know the forward and reflected powers in order to do
a complete analysis. No other information is required.

> I am pretty sure that it is 100 W. See more below.

Good grief, you are right. I wrote that posting and made
a sophomoric mistake after a night out on the town. I
should have waited until after my first cup of coffee
this morning. Mea culpa.

> It does, indeed, converge to 100 W forward but you have to use the
> proper equations when summing the powers of superposed voltages.
> You can not just add them.

You're right - 20 lashes for me. Some day I will learn not
to post anything while my left brain is in a pickled state.

> So forward and reverse powers each converge to 100 W and 200 W is
> dissipated in the source resistor, which suggests that your
> equation for computing dissipation in the source resistor is
> incorrect.

It happened to be correct in the earlier example because
the ratio Rs/Z0 = 1.0, so the equation was correct
for those conditions. Rs/Z0 needs to be included when
the source resistor and the Z0 of the feedline are different.
Now that I've had my first cup of coffee this morning, let's
develop the general case equation. Note that we will converge
on the equation that I posted earlier.

>> 50w + 50w + 2*SQRT(50w*50w) = 200 watts

The interference is not between the forward wave and reflected wave on the transmission line. The interference is actually between the forward wave and the reflected wave inside the source resistor where the magnitudes can be different from the magnitudes on the transmission line.

Note that the forward RMS current is the same magnitude at every point in the network and the reflected RMS current is the same magnitude at every point in the network.

Considering the forward wave and reflected wave separately, where Rs is the source resistance:

If only the forward wave existed, the dissipation in the source resistor would be Rs/Z0 = 1/2 of the forward power, i.e. (Ifor^2*Z0)(Rs/Z0) = Ifor^2*Rs = 50 watts.

If only the reflected wave existed, the dissipation in the source resistor would be 1/2 of the reflected power, i.e. (Iref^2*Z0)(Rs/Z0) = Iref^2*Rs = 50 watts.

We can ascertain from the length of the feedline and from the Gamma angle at the load that the cos(A) is 1.0
This is rather obvious since we know the source "sees" a load of zero ohms.

Now simply superpose the forward wave and reflected wave and we arrive at the equation I posted last night which I knew had to be correct (even in my pickled state).

P(Rs) = 50w + 50w + 2*SQRT(50w*50w) = 200 watts

For the general equation: P1=Pfor(Rs/Z0), P2=Pref(Rs/Z0)

P(Rs) = P1 + P2 + 2[SQRT(P1*P2)]cos(A)

And of course, the same thing can be done using voltages which will yield identical results. What some posters here don't seem to realize are the following concepts from my energy analysis article at:

http://www.w5dxp.com/energy.htm

Given any two superposed coherent voltages, V1 and V2, with a phase angle, A, between them:

If (0 <= A < 90) then there exists constructive interference between V1 and V2, i.e. cos(A) is a positive value.

If A = 90 deg, then cos(A) = 0, and there is no destructive/constructive interference between V1 and V2, i.e. cos(A) = 0

If (90 < A <= 180) then there exists destructive interference between V1 and V2, i.e. cos(A) is a

negative value.

Dr. Best's article didn't even mention interference and
indeed, on this newsgroup, he denied interference even
exists as pertained to his QEX article.

The failure to recognize interference between two coherent
voltages is the crux of the problem.
--
73, Cecil http://www.w5dxp.com

2466. Re: Horizontal loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 18:34:25 UTC
From: Jon K Hellan <hellan@acm.org>
Message-ID: <87zltv5vf2.fsf@gavia.ha19>
Source record: 27888

richardharrison@webtv.net (Richard Harrison) writes:

> Jon, LA4RT wrote:
> "---but presumably there`s a reason that you`re using a small loop in
> the first place."
>
> True. In Norway I specified large dishes for scatter communications with
> North Sea platforms but the government sponsored the geosynchronous
> satellite program and ignored scatter. In the many tunnels I specified
> 300-ohm twinlead which works about as well as Andrew`s leaky coax and
> costs much less. I think Norway is too rich to care about cost.

That's probably true :-)

73
Jon

2467. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 18:35:00 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fphrsl$119s$1@f04n12.cac.psu.edu>
Source record: 27889

Brian Kelly wrote:
> On Feb 18, 2:28 pm, Michael Coslo <m...@psu.edu> wrote:
>
>> Why do people come into groups, and set themselves up as the cops?
>> are you to determine who stays and who is on "probation". . . You really
>> need your own group . . and you can disallow any posts you determine
>> to be off topic. Don't be surprised if they don't show up though.
>
> I'm biting my tongue. REALLY REALLY hard.

Thought you would find the humor in that, Brian!

- 73 de Mike N3LI -

2468. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 18:58:56 UTC
From: et472@FreeNet.Carleton.CA
Message-ID: <fpht9gois1@theodyn.ncf.ca>
Source record: 27890

"Rick" (ricknj10@hotmail.com) writes:
> Some users think they are doing those of us who are interested in antennas a
> favor by posting what they think are useful topics - something "everyone
> needs to know." Sometimes it is cellphone do not call lists. Other times
> it is some PC virus, etc. etc. Usually it is bogus information that the
> original poster was misled into believing, and ends up costing all of us
> wasted time. There are tens of thousands of newsgroups where these topics
> can be discussed.
> When I enter rec.radio.amateur.antennas all I want to see is stuff about
> antennas.

It's the decay of newsgroups. People decide a given newsgroup is their
hangout, rather than a place to dicuss the topic the newsgroup was created
for. So instead of going to a newsgroup to discuss the off topic things
where they are on topic, they decide they should share the off topic stuff
with their "buddies" in the favorite newsgroup.

I've seen people come into a newsgroup, and jump into that hangout mentality
without ever really participating in the newsgroup for its intended purpose.
They fit in because they just have to emulate the people who are using
it as a hangout.

Puttiung "OT" in the subject header is just a way of legitimizing it all,
they figure it hey are polite and label the off topic posts, then it's okay.
It completely sidesteps the issue of why the off topic junk is there in
the first place.

I still read newsgroups I've read for over a decade that barely have
any traffic in them.

But I keep leaving newsgroups that I've been reading and posting to
for as long, as they turn into hangouts for such people. I don't want
to wade through the junk.

The people who see the newsgroup as their hangout don't see an issue
because they are perfectly happy to talk about off-topic things.

IN reality, they are extremely selfish, since they are only thinking
of their own happiness, and not the state of the newsgroup. They
think because they are the most frequent posters that that gives
them say. Meanwhile, the newsgroup loses the people who stick around
and post when they actually have something valid to say, because they
aren't interested in the off topic junk (at least not when it's off topic,
they are likely the ones who go to multiple newsgroups to fulfill their
need to discuss multiple topics). Go far enough, and the only posters
are the ones who use it as a hangout, and pretty much none of what they

say is on-topic. Maybe more important, if their only interest is in talking to a handful of other "regulars" then they might as well move to a private space, where they can discuss anything they want without any interlopers.

And the joke is that people will say "but we don't care, we want to do this". All of the newsgroups I've left because of this inane behaviour, I was there before these people came along and decided to turn the newsgroup into their own hangout.

These same smug people are all so quick to go after spam, and other "interlopers" but they don't realize that they are the ones killing the newsgroups.

Michael VE2BVW

2469. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 19:07:44 UTC
From: ricknj10@hotmail.com
Message-ID: <47bc79af.511250@news.optonline.net>
Source record: 27891

On 20 Feb 2008 18:58:56 GMT, et472@FreeNet.Carleton.CA (Michael Black) wrote:

Finally, someone who understands.
Magnificently said, Michael. Congratulations for putting it in the proper perspective. You said it all so beautifully.

73,
Rick

2470. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 19:34:47 UTC
From: richardharrison@webtv.net
Message-ID: <12978-47BC80D7-45@storefull-3258.bay.webtv.net>
Source record: 27892

Art wrote:
"It is not physical size that is important with respect to a dish it is the wavelength between two objects that counts. A simple helix antenna can use a reflector in place of a ground plane not used as an optical ray reflector."

Yes, but, size matters even when you are told it doesn`t. A dish usually makes the path length equal between its frontal plane and focal point for all rays by the parabolic curvature of its reflector. Everything stays in phase by virtue of traveling the same distance through the same medium. The bigger the dish, the higher the gain.

On the helix antenna invented by Kraus, Terman writes on page 909 of his 1955 opus:
"The directive gain is appreciable, a six-turn helix having a diameter of 0.30 lambda sith a spacing of 0.30 lambda between turns developing a gain of 45 when provided with a reflecting screen at the input and that is normal to the helix axis. A helical antenna is relatively broadband in its characteristics."

Best regards, Richard Harrison, KB5WZI

2471. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 20:39:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%d0vj.11844$Ej5.674@newssvr29.news.prodigy.net>
Source record: 27893

Michael Black wrote:
> And the joke is that people will say "but we don't care, we want to do
> this". All of the newsgroups I've left because of this inane behaviour,
> I was there before these people came along and decided to turn the
> newsgroup into their own hangout.

But the sword cuts both ways. If this were a moderated
newsgroup, the moderating gurus would not allow any
energy analysis of transmission lines to be posted.
--
73, Cecil http://www.w5dxp.com

2472. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 20:52:34 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <6795c5b1-1266-4c2b-ad62-b7b4ab579d02@e25g2000prg.googlegroups.com>
Source record: 27894

On Feb 20, 2:07 pm, rickn...@hotmail.com (Rick) wrote:
> On 20 Feb 2008 18:58:56 GMT, et...@FreeNet.Carleton.CA (Michael Black)
> wrote:
>
> Finally, someone who understands.
> Magnificently said, Michael. Congratulations for putting it in the
> proper perspective. You said it all so beautifully.

Speaking of off-topic posts what does this exchange have to do with
ham antennas??

http://www.merriam-webster.com/dictionary/hypocrisy

>
> 73,
> Rick

w3rv

2473. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 21:14:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <eL0vj.12535$R84.9144@newssvr25.news.prodigy.net>
Source record: 27895

Cecil Moore wrote:
> Given any two superposed coherent voltages, V1 and
> V2, with a phase angle, A, between them:
>
> If (0 <= A < 90) then there exists constructive
> interference between V1 and V2, i.e. cos(A) is a
> positive value.

i.e. (V1^2 + V2^2) < (V1 + V2)^2

> If A = 90 deg, then cos(A) = 0, and there is no
> destructive/constructive interference between
> V1 and V2.

i.e. (V1^2 + V2^2) = (V1 + V2)^2

> If (90 < A <= 180) then there exists destructive
> interference between V1 and V2, i.e. cos(A) is a
> negative value.

i.e. (V1^2 + V2^2) > (V1 + V2)^2
--
73, Cecil http://www.w5dxp.com

2474. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-20 21:17:01 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8g4pr3t3j35i1cpffmbsm9ekqa9a17c0j5@4ax.com>
Source record: 27896

On 20 Feb 2008 18:58:56 GMT, et472@FreeNet.Carleton.CA (Michael Black) wrote:

>I still read newsgroups I've read for over a decade that barely have >any traffic in them.

Hi Michael,

It wasn't until your post, that I found any reason to participate in this Off Topic thread. It consists largely of griping and issues unrelated to antennas, but I've no problem with that if you want to hang out here and offer comments.

I do, however, enjoy analysis to topics whatever their stripe and this opportunity presented itself. When speaking about newsgroups that barely have any traffic in them, I would count rec.radio.amateur.moderated. I find it amusing that like the weather a lot of talk is offered, but no one really does anything about it.

I only occasionally venture to gather the latest 200 headings from rec.radio.amateur.moderated and I find nothing there that is particularly interesting. One of the frequent posters is(are) the moderator(s). Mobile Power connector talk overwhelms that of antennas 19:1. This would seem to be an intellectual entropy institutionalized by moderation and has offered the world a rec.radio.amateur.moderated.off-topic sink (but that hasn't worked very well either). Thus by the balance of moderation vs. non-moderation offered, both venue's decline in participation is unbiased, but moderation appears to be a non-starter, lacking any ignition. As for instance in the last 200 headers, they reach back before Thanksgiving, and are notably sparse for this month (perhaps the server lost interest too). In comparison, my reader currently holds 5500 headers (not counting junk posts) for roughly the same period. Clearly posters voting with their "Send Message Now" button have announced what works best.

From the evidence of those who complain about the lack of comity, discipline to topic, and the rest, I find none of them having migrated to rec.radio.amateur.moderated. Even more so, from those who complain about some posters here, I find those who've been complained OF at rec.radio.amateur.moderated.

Interesting contradiction in expectations, inversion of behaviors, and disconnected mandates.

73's
Richard Clark, KB7QHC

2475. 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 02:49:21 UTC
From: PJ <rredbeak@optusnet.com.au>
Message-ID: <47bce6a9$0$30234$afc38c87@news.optusnet.com.au>
Source record: 27897

Hi,i need building/winding instructions for a 80-10M helical for my car
please with tappings for eacvh band. all help gratefully received.. PJ

2476. 100 pages of videos

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 03:13:21 UTC
From: WillWeav@gmail.com
Message-ID: <c48a3cfa-2312-4592-95e4-b4527dd07c80@i7g2000prf.googlegroups.com>
Source record: 27898

I posted a message earlier that I had added 100 pages of ham related
videos to my website but failed to include the link to the website,
anyway here is the link, come on by and visit:
http://www.amateurradios.info

Thanks to those that have already visited, come back for more.

73's everyone

Bill W5GRX

2477. Re: OFDMA - PUSC - renumbering

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 09:09:57 UTC
From: karthikbalaguru <karthikbalaguru79@gmail.com>
Message-ID: <1be32eec-b341-43f0-b822-4e935550cfbc@n77g2000hse.googlegroups.com>
Source record: 27899
Cross-posted to: comp.dsp,alt.internet.wireless,rec.radio.amateur.antenna,alt.radio.digital

On Feb 17, 9:21 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Sun, 17 Feb 2008 05:17:48 -0800 (PST), karthikbalaguru
>
> <karthikbalagur...@gmail.com> wrote:
> >PUSC permutation mode of OFDMA
>
> Hi Karthik,
>
> I put the phrase above into Google and it gave me 606 links.
>

I got the info w.r.t PUSC permutation from http://ieee802.org/16 :-

I find that the PUSC permutation has
1) Outer Permutation and
2) Inner Permutation
Further, These permutations reduce interference .
Cross-interference between neighboring cells is reduced between
neighbouring cells,
w.r.t subchannels.

But, why have they opted for this renumbering scheme to introduce
permutation ?

Thx in advans,
Karthik Balaguru

2478. Re: OFDMA - PUSC - renumbering

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 09:13:53 UTC
From: karthikbalaguru <karthikbalaguru79@gmail.com>
Message-ID: <4c41ca4f-7014-4a98-bff5-d0b50ddf7184@k2g2000hse.googlegroups.com>
Source record: 27900
Cross-posted to: comp.dsp,alt.internet.wireless,rec.radio.amateur.antenna,alt.radio.digital

On Feb 21, 2:09 pm, karthikbalaguru <karthikbalagur...@gmail.com>
wrote:
> On Feb 17, 9:21 pm, Richard Clark <kb7...@comcast.net> wrote:
>
> > On Sun, 17 Feb 2008 05:17:48 -0800 (PST), karthikbalaguru
>
> > <karthikbalagur...@gmail.com> wrote:
> > >PUSC permutation mode of OFDMA
>
> > Hi Karthik,
>
> > I put the phrase above into Google and it gave me 606 links.
>
> I got the info w.r.t PUSC permutation fromhttp://ieee802.org/16:-
>
> I find that the PUSC permutation has
> 1) Outer Permutation and
> 2) Inner Permutation
> Further, These permutations reduce interference .
> Cross-interference between neighboring cells is reduced between
> neighbouring cells,
> w.r.t subchannels.
>
> But, why have they opted for this renumbering scheme to introduce
> permutation ?
>

Thx. I got the answers.
I find my queries answered in http://ieee802.org/16 .

Karthik Balaguru

2479. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 12:29:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <t8evj.3179$Mh2.2610@nlpi069.nbdc.sbc.com>
Source record: 27801

Keith Dysart wrote:
> So forward and reverse powers each converge to 100 W and 200 W is
> dissipated in the source resistor, which suggests that your
> equation for computing dissipation in the source resistor is
> incorrect.

I remembered what I did when I used that equation. It is
the same technique that Dr. Best used in his article. If
we add 1WL of 25 ohm line to the example, we haven't
changed any steady-state conditions but we have made the
example a lot easier to understand.

```
Rs 50w--> 100w-->
+--/\/\/--+------------------------+------------+
| 25 ohm <--50w <--100w |
| |
Vs 1WL 1/2WL |Short
70.7v 25 ohm 50 ohm |
| |
+---------+------------------------+------------+
```

Now the forward power at the source terminals is 50w and
the reflected power at the source terminals is 50w. So the
ratio of Rs/Z0 at the source terminals is 1.0. Therefore:

P(Rs) = 50w + 50w + 2*SQRT(50w*50w) = 200w

> To take the tedium out of these calculation you might like the
> Excel spreadsheet at
> http://keith.dysart.googlepages.com/generator,line,load,reflection

My firewall/virus protection will not allow me to download
EXCEL files with macros. Apparently, it is super easy to
embed a virus or worm in EXCEL macros.
--
73, Cecil http://www.w5dxp.com

2480. Re: W7EL's Food for Thought: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 14:14:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <DHfvj.8515$5K1.130@newssvr12.news.prodigy.net>
Source record: 27802

Keith Dysart wrote:

Keith, I am preparing a web page on this subject.
Here are a couple of the associated graphics for
the earlier simple example.

http://www.w5dxp.com/easis1.GIF
http://www.w5dxp.com/easis2.GIF
--
73, Cecil http://www.w5dxp.com

2481. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 14:45:02 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <rdudnVFU9dqvEyDanZ2dneKdnZydnZ2d@pipex.net>
Source record: 27803

```
>> Don't forget to dial the phone number below
>> Cell phone numbers are going public today
----------------------------
> "You may have received an email telling you that your cell phone is about
> to be assaulted by telemarketing calls as a result of a new cell phone
> number database; however, that is not the case. FCC regulations prohibit
> telemarketers from using automated dialers to call cell phone numbers.
> Automated dialers are standard in the industry, so most telemarketers donï¿½t
> call consumers on their cell phones without their consent."
>
> http://www.ftc.gov/bcp/edu/pubs/consumer/alerts/alt107.shtm
==========================
That's NOT my experience.
While visiting California recently ,I used an AT&T Pay As You Go account
and got numerous 'unsolicited' calls/text messages, which each reduced
my credit by $0.25
A true pain in the bum.
On my next visit I'll check whether 888.382.1222 will block these
annoying ,useless calls/messages.

Frank GM0CSZ / KN6WH
```

2482. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 14:59:26 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9A4B5B758B415VeebleFetzer@127.0.0.1>
Source record: 27804

abcgm0csz.kn6whxyz@dsl.pipex.com (Highland Ham) wrote in
news:rdudnVFU9dqvEyDanZ2dneKdnZydnZ2d@pipex.net:

> While visiting California recently ,I used an AT&T Pay As You Go
> account and got numerous 'unsolicited' calls/text messages, which
> each reduced my credit by $0.25
> A true pain in the bum.

I think that almost all cellphone spam is based on simply dialing
numbers in sequence on an exchange known to belong to cellphones,
rather than being directed to you specifically.

Since it's already illegal to use machine dialers to call cellphones,
adding your number to a don't call list certainly won't mean much to
the caller.

On the other hand, I've had a Verizon account with two lines for about
10 years, and have been carrying a T-Mobile pre-paid phone for about a
year and have never, ever received any unwanted phone calls or text
messages.

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

2483. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 16:04:48 UTC
From: Wayne <mygarbagecan@verizon.net>
Message-ID: <Aihvj.12090$N95.11812@trnddc03>
Source record: 27805

"Bert Hyman" <bert@iphouse.com> wrote in message
news:Xns9A4B5B758B415VeebleFetzer@127.0.0.1...
> abcgm0csz.kn6whxyz@dsl.pipex.com (Highland Ham) wrote in
> news:rdudnVFU9dqvEyDanZ2dneKdnZydnZ2d@pipex.net:
>
>> While visiting California recently ,I used an AT&T Pay As You Go
>> account and got numerous 'unsolicited' calls/text messages, which
>> each reduced my credit by $0.25
>> A true pain in the bum.
>
> I think that almost all cellphone spam is based on simply dialing
> numbers in sequence on an exchange known to belong to cellphones,
> rather than being directed to you specifically.
>
> Since it's already illegal to use machine dialers to call cellphones,
> adding your number to a don't call list certainly won't mean much to
> the caller.
>
> On the other hand, I've had a Verizon account with two lines for about
> 10 years, and have been carrying a T-Mobile pre-paid phone for about a
> year and have never, ever received any unwanted phone calls or text
> messages.
>
I agree with the above except my wording would be "never, ever received any
unwanted phone calls or text messages, except from Verizon itself." I get
plenty of those.

2484. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 17:18:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qnivj.12016$Ch6.6759@newssvr11.news.prodigy.net>
Source record: 27806

Wayne wrote:
> I agree with the above except my wording would be "never, ever received any
> unwanted phone calls or text messages, except from Verizon itself." I get
> plenty of those.

I get unwanted phone calls quite often - from my XXYL. :-)
--
73, Cecil http://www.w5dxp.com

2485. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 22:26:14 UTC
From: Eric <englere_geo@yahoo.com>
Message-ID: <c5f14e63-20f8-46d1-bfb4-a8e70170e041@j28g2000hsj.googlegroups.com>
Source record: 27807

On Feb 20, 9:49 pm, "PJ" <rredb...@optusnet.com.au> wrote:
> Hi,i need building/winding instructions for a 80-10M helical for my car
> please with tappings for eacvh band. all help gratefully received.. PJ

Now that's a tall order! The taps are the hard part since that depends
on your construction.

But then, winding a helical for 80M is not going to be fun, either. If
memory serves, I think you need a half wavelength of wire wrapped
around a pole.

Eric

2486. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-21 23:08:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Svnvj.3117$tW.776@nlpi070.nbdc.sbc.com>
Source record: 27808

Eric wrote:
> But then, winding a helical for 80M is not going to be fun, either. If
> memory serves, I think you need a half wavelength of wire wrapped
> around a pole.

Seems to me the wind loading is going to be
a severe problem. Let's say it is 8 feet long.
At 2 turns per inch, it would need to be about
3 inches in diameter. That's about 200+ square
inches of wind loading. It will probably require
a guyed fiberglass pipe as a coil form. I calculate
about 150 feet of wire is needed for the above design.
--
73, Cecil http://www.w5dxp.com

2487. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 00:26:33 UTC
From: nm5k@wt.net
Message-ID: <4356f998-73cb-4acd-851c-5e095fbe1415@h25g2000hsf.googlegroups.com>
Source record: 27809

On Feb 21, 5:08 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Eric wrote:
> > But then, winding a helical for 80M is not going to be fun, either. If
> > memory serves, I think you need a half wavelength of wire wrapped
> > around a pole.
>
> Seems to me the wind loading is going to be
> a severe problem. Let's say it is 8 feet long.
> At 2 turns per inch, it would need to be about
> 3 inches in diameter. That's about 200+ square
> inches of wind loading. It will probably require
> a guyed fiberglass pipe as a coil form. I calculate
> about 150 feet of wire is needed for the above design.
> --
> 73, Cecil http://www.w5dxp.com

What he wants to build is what outbacker sells.
Has taps with banana plugs to change bands.
I don't know of any plans to build one.
It wouldn't be that big a deal though. A bit
tedious finding the tap points, but it can be done.
You could calculate the various points to get in
the ballpark, and then clip to, or probe the wires
to fine tune the tap.
I'd probably start on the lowest band and go up to
the highest freq it will tune with whatever length
stinger whip it is using.
My plastic bug catchers are about the same thing,
but using a single lumped coil, vs the thinner helical
winding. It's best to concentrate the windings at the
top of the glass whip to improve current distribution.
Using an even space winding along the whole stick
is not quite as good in most cases.
MK

2488. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 02:48:47 UTC
From: "D. Stussy" <spam@bde-arc.ampr.org>
Message-ID: <fpld6b$e3a$1@snarked.org>
Source record: 27810

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:rdudnVFU9dqvEyDanZ2dneKdnZydnZ2d@pipex.net...
> >> Don't forget to dial the phone number below
> >> Cell phone numbers are going public today
> ----------
> > "You may have received an email telling you that your cell phone is
about
> > to be assaulted by telemarketing calls as a result of a new cell phone
> > number database; however, that is not the case. FCC regulations prohibit
> > telemarketers from using automated dialers to call cell phone numbers.
> > Automated dialers are standard in the industry, so most telemarketers
don't
> > call consumers on their cell phones without their consent."
> >
> > http://www.ftc.gov/bcp/edu/pubs/consumer/alerts/alt107.shtm
> ==========
> That's NOT my experience.
> While visiting California recently ,I used an AT&T Pay As You Go account
> and got numerous 'unsolicited' calls/text messages, which each reduced
> my credit by $0.25
> A true pain in the bum.
> On my next visit I'll check whether 888.382.1222 will block these
> annoying ,useless calls/messages.

I too have been called by telemarketers on my cell phone - and the number has been listed at the federal do-not-call site since the 3rd day I had the number years 2+ years ago. The FCC and the FTC are completely ineffective. The only way to stop these jerks is to report the violations to your state's (and their state's - if they're somewhere else) attorney general's office. I've had to do that twice so far (for 2 places that each called 10+ times).

2489. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 02:50:02 UTC
From: "D. Stussy" <spam@bde-arc.ampr.org>
Message-ID: <fpld8k$e3e$1@snarked.org>
Source record: 27811

"Wayne" <mygarbagecan@verizon.net> wrote in message
news:Aihvj.12090$N95.11812@trnddc03...
> I agree with the above except my wording would be "never, ever received
any
> unwanted phone calls or text messages, except from Verizon itself." I get
> plenty of those.

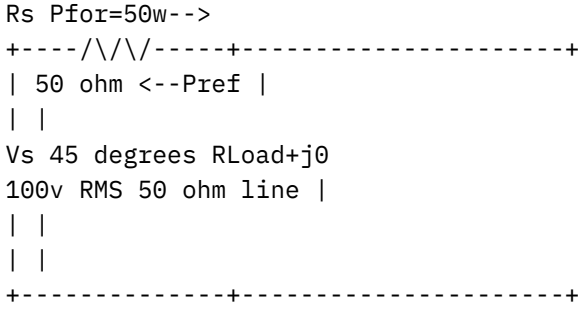
Unwanted perhaps, but as their customer, it's not a violation.

2490. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 02:53:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lOqvj.3137$tW.608@nlpi070.nbdc.sbc.com>
Source record: 27812

Keith Dysart wrote:

Hey Keith, how about this one?



The dissipation in the source resistor is:

P(Rs) = 50w + Pref

How can anyone possibly argue that reflected power
is *never* dissipated in the source resistor? :-)
--
73, Cecil http://www.w5dxp.com

2491. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 03:43:13 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fplgcguge1@aioe.org>
Source record: 27813

Howard W3CQH wrote:
> Don't forget to dial the phone number below
> Cell phone numbers are going public today - This is a REMINDER
> All cell phone numbers are being released to telemarketing companies today
> and you may start to receive sales calls. You will be charged for these
> calls.
> To prevent this, call the following number from your cell phone:
> 888.382.1222
> It is the National DO NOT CALL list. It will only take a minute of your
> time. It blocks your number for five (5) years. You must call from the cell
> phone number you want to list.

I am surprised to have read positive responses in this thread--the ones describing a lack of such calls. Perhaps I just live life wrong, but I was getting tons of these--on a personal ATT line, even on a business line--and, both on MetroPCS and Verizon cellphones I have--even a clearwire wireless internet connection employing Vonage as the local/long-distance carrier.

Listing my numbers in the national no-call database has finally brought these to a halt; Well, almost, now and then a "spam-phoner" breaks through--even my just inquiring who is calling on the other end brings a prompt hangup from the other end, go figure--for a bit I even went paranoid and wondered if it was the CIA or FBI were exhibiting such strange behavior and tapping my phones! <GRIN>

Anyway, I think the national no-call list works, but takes about a week to go into effect (if my experience can serve as an example.)

But, late at night--when I can't sleep--I still worry about those calls which sneak through ... ??? :-|

Regards,
JS

2492. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 03:44:13 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fplgebuge2@aioe.org>
Source record: 27814

Rick wrote:
> Some users think they are doing those of us who are interested in antennas a
> favor by posting what they think are useful topics - something "everyone
> needs to know." Sometimes it is cellphone do not call lists. Other times
> it is some PC virus, etc. etc. Usually it is bogus information that the
> original poster was misled into believing, and ends up costing all of us
> wasted time. There are tens of thousands of newsgroups where these topics
> can be discussed.
> When I enter rec.radio.amateur.antennas all I want to see is stuff about
> antennas.
> Hey Guys, I value my time so much that I measure it in milliseconds.
> I constantly update my kill file with posters who aren't really interested
> in antennas (Art), and subjects that have gotten so far off the topic of
> antennas that they are also a waste of my milliseconds.
>
> Yuri can stay. Roy Lewallen can stay. Richard Clark and Cecil can stay.
> THOSE guys know antennas. The rest of you are on probation.
>
> Rick K2XT
>
>

Speak for yourself, some of the offerings are quite worthwhile ...

JS

2493. Re: Off Topic means it doesn't belong here

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 03:51:50 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fplgslvtt1@aioe.org>
Source record: 27815

John Smith wrote:
> Rick wrote:
>> ...
> Speak for yourself, some of the offerings are quite worthwhile ...
>
> JS

P.S.

You wouldn't consider a construction post on a "how to" post on building a back scratcher out of an old element broken off, by the wind, from a VHF yagi, would you? I mean, I can certainly understand your opposition to "frivolous" posts of little worth, but certainly you have boundaries on your objections--I mean, don't you? <ROFLOL!>

JS

2494. Scrape the bottom, Vote for Rodham.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 04:06:12 UTC
From: Clintoon Operative <vote@for.hillery>
Message-ID: <13rsihkfq8mrj85@corp.supernews.com>
Source record: 27816
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.policy,rec.radio.shortwave

Don't vote for the nigger.

Clintoon Operative\\

2495. (OT) : 2008 Election Politics - Racial Based Political Trash Talk

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 04:19:26 UTC
From: RHF <rhf-newsgroups@pacbell.net>
Message-ID: <db59e7f1-d360-44de-9e8d-929f8abdff85@e23g2000prf.googlegroups.com>
Source record: 27817
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.policy,rec.radio.shortwave

```
On Feb 21, 8:06 pm, Clintoon Operative <v...@for.hillery> wrote:
-
- Don't vote for the [ The-N-Word ] .
-
- Clintoon Operative\\
-

(OT) : 2008 Election Politics - Racial Based Political Trash Talk
.
```

2496. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 13:37:31 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4784ca18-c1a9-4b5c-84fd-c7daaa6534a2@s8g2000prg.googlegroups.com>
Source record: 27818

On Feb 21, 9:53 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
>
> Hey Keith, how about this one?
>
>
>   Rs   Pfor=50w-->
>   +----/\/\/-----+----------------------+
> | 50 ohm   <--Pref |
> | |
>   Vs   45 degrees   RLoad+j0
>   100v RMS   50 ohm line |
> | |
> | |
>   +--------------+----------------------+
>
> The dissipation in the source resistor is:
>
> P(Rs) = 50w + Pref
>
> How can anyone possibly argue that reflected power
> is *never* dissipated in the source resistor? :-)
> --
> 73, Cecil http://www.w5dxp.com

Two Saturdays ago I was on a road trip and used
9 litres/100km. How can anyone argue that the fuel
consumption is never equal to the day of the month?
Numerical coincidences can be much fun.

But you will like the generator below even better.
The power dissipated in the generator resistors is
always equal to 50 + Pref, regardless of the load
and line length, thereby always accounting for Pref.

Pfor=50w-->
+--/\/\/---+----------------+------------------+
| 100 ohm | <--Pref |
| | 100 ohm |
| +--/\/\/--+ any length |
| ^ | 50 ohm line any load
Vs Is | |
100v RMS 1A RMS | |
| | | |
+----------+---------+------+------------------+
The generator output impedance is 50 ohms.

Dissipation in the generator resistors is always
50 Watts plus Pref.
With a shorted or open load, the power dissipation
in the generator is 100 W.

Numerical coincidence as proof that Pref is always
dissipated in the generator. :-)

On a more serious note, how would you analyze this
generator using reflected power and constructive
and destructive interference?

...Keith

2497. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 15:26:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nQBvj.3357$Mh2.631@nlpi069.nbdc.sbc.com>
Source record: 27819

Keith Dysart wrote:
> Numerical coincidence as proof that Pref is always
> dissipated in the generator. :-)

It's no coincidence. The special case example was carefully selected to make the angle 'A' between the forward and reflected waves equal to 90 degrees. Since cos(A) exists in the interference term and cos(90) = 0, it makes the interference term equal to zero.

When there is no interference at the source resistor, 100% of the reflected power is *always* dissipated in the source resistor. This is a chosen special case condition, NOT a coincidence. In the absence of interference, there is simply no other place for the reflected energy to go, i.e. it cannot be redistributed back toward the load.

There are any number of special cases that will cause the forward wave and reflected wave to be 90 degrees out of phase at the source resistor. One of Roy's cases was just such a case - 1/2WL of 50 ohm feedline with a 0 +/- j50 ohm load.

For any length feedline, there exists a load that will cause the reflected wave to be 90 degrees out of phase with the forward wave at the source resistor. For any of those infinite number of cases, the reflected energy will be dissipated in the source resistor.

> On a more serious note, how would you analyze this
> generator using reflected power and constructive
> and destructive interference?

Without analyzing it, based on our previous discussion of voltage sources and current sources, I would say that any constructive interference in the voltage source is offset by an equal magnitude of destructive interference in the current source and vice versa, i.e. the net interference inside the source is always zero.
--
73, Cecil http://www.w5dxp.com

2498. china wholesale cheap kobe hogan sneakers nike wook UGG boots

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 15:36:22 UTC
From: bizsneakers1@yahoo.com.cn
Message-ID: <06cc670a-2bc4-4deb-86a4-2675812ec43d@z70g2000hsb.googlegroups.com>
Source record: 27820

Cheap Nike shoes | china customs Air force 1s x Jordans 4 5 12 Fusion shoes | air jordan 1-23 sneakers | cheap gucci shoes | discount dsquared sneakers | cheap prada sneakers | gucci sneakers | mix jordan sneakers | chanel sandals | gucci sandals | dior sandals | sheepskin UGG boots | wholesale jordan sneakers | nike running shoes | nike max 90 95 ltd shoes | nike stock shoes | air jordan at whlesale price | nike shoes air jordan supplier from in china | Lacoste Trainers | puma trainers | louis vuitton purse | prada purse | gucci handbags | chanel purse | coach purse | nike bas kerball shoes | Nike Sneakers| cheap nike sneakers | nike shoes from china | nike replica | copy nike sneakers | china nike factory stores | nike stores Nike wholesale - Nike shoes china wholesaler (WWW.NikeChinaWholesale.Com)

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2499. www.sneakersea.com wholesale nike jordan shoes sneaker puma gucci dunk air force one ugg boots shoes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 16:05:12 UTC
From: "sneakersea@yahoo.com.cn" <sneakersea@yahoo.com.cn>
Message-ID: <9b442c66-d177-40ed-bf03-a044173c09ba@s37g2000prg.googlegroups.com>
Source record: 27821

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shoes and D&G Lacoste polo shirts;Bape 10deep lrg Hoodies;NBA/NFL/
Jersey;Evisu / Red monkey/BAPE/Antik jeans and LV,Chanel,gucci,fendi
Handbags;Sunglasses(gucci chanel lv) ;watches(omega rolex) etc.for
more detail information.please kindly visit our website:
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all the shoes is packed with original box,
and the tags and style code number is 100% correct;all the items
listed in our website we have got them in stocks,small mini order and
even drop ship is available here .All the products is in good quality
with low price!!!
Deliver safety !Fast deliver!

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China Basketball,Football,Boots,Men's,Womens
Shop,Store,Timberland,Adidas,Nike Shoes,Nike Shoes Online,Nike Shoes
website,China Nike Shoes Sell. Nike Shoes From China.Nike Shoes in
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supplier.China Nike Shoes Gucci Prada Jordan TN SHOX Puma
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cheap prada shoes|lacoste shoes|puma trainers| |louis vuitton purse|
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Monster shoes,Nike air max 95 360 97 2003 TN Plus shoes,Nike air
jordan shoes,Nike air dunk shoes. We sale wholesale Nike shoes(Nike
trainers, Nike sneakers, Nike basketball shoes, Nike running shoes,
Nike Men's shoes, Nike women's shoes, Nike mens shoes, Nike womens
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shox
tl - shox tl 3 III, Nike shox nz,Nike shox r4,Nike shox r5,Nike shox
turbo,nike shox monster,nike shox VC OZ Ride shoes). Nike air max
shoes wholesale(Nike air max tn plus,Nike air max 360,Nike air max

95,
Nike air max 97, Nike air max 2003,Nike air max 2004,Nike air max
90). www.sneakersea.com Nike shoes wholesale
other sport shoes(retro nike air jordan 21 XXI 11 XI 13 20,nike air
dunk low min high, Nike air rift,Nike air force 1 one). China Nike
factory sale and wholesale nike shoes to your nike shop & nike store,
china Nike wholesale nike shoes to United States America and England
and United Kingdom and Europe and canada...We wholesale brand name
jackets, hoodies, coats, pullovers, sweatshirts from evisu red monkey
true religion ,sports jerseys like NFL jerseys, NBA Jersey.Gucci
Prada
Chanel bape puma wholesale,wholesale gucci prada bape puma adidas
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Series,Air Max Series,Air Force one,Dunk,Rift and so on.We have
stabled.New Transparent nike shoes. New Clear nike shoes. A wide
selection of Nike and Jordan shoes from nike Retro XI to Flightposite
KG Olympic to Air Max 95 ...We sale new Nike Sneakers,Air Jordan
Sneakers,AIR FORCE 1S,Nike Dunks SB, Bape Sta from nike outlets and
factory stores, also Nike wholesale - Jordan Shoes We Wholesale Cheap
Jordan Shoes, Michael Jordan Shoes, Nike Jordan Basketball shoes,
Nike
Air Jordan Shoes,New Jordan Shoes cheap with discount.Authentic
quality Jordan Sneakers Custom Jordan Sneakers Wholesale Jordan
Sneakers gucci sneakers prada sneakers We sale new Nike Sneakers,Air
Jordan Sneakers,lacoste puma adidas trainers china wholesale.nike
shoes supplier in China, We www.sneakersea.com
Wholesale Air Jordan 21 Shoes, Jordan 7 Shoes, Air ... once worked in
nike authorized factory, where the shoes factories are located nike
shoes city.Nike wholesale,Wholesale Nike shoes Nike air dunk jordan
max shox tn.nike shoes wholesale wholesale nike shoes.jordan shoes
wholesale,wholesale jordan shoes from china ...gucci purse louis
vuitton fendi chanel prada miumiu bcbg handbags bags purse purses
offers from China purse handbags bags purses wholesale,purse China
wholesale cheap price ... manufacturers,purses factory handbags bags
at cheap. China Manufacturer of wholesale lv bags , wholesale Gucci
bags , wholesale ... Purses , Chanel Bags,purse & Wallets , Hermes
Birkin Bag,Handbag,Purses,China price,discount price www.sneakersea.com

2500. Edinburgh astronomers deliver 'origins' camera

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 17:37:38 UTC
From: monzi.john@gmail.com
Message-ID: <2f305df3-c667-41c1-9c41-3798ce54407c@z17g2000hsg.googlegroups.com>
Source record: 27822

The giant camera known as SCUBA-2 will be transported to the James Clerk Maxwell Telescope (JCMT) on top of a 14,000 foot mountain in Hawaii where it is expected to make major discoveries related to the origins of galaxies, stars and planets.

http://mozhi.org/mozhi%20news/ns405.htm

2501. Cheap Muscle Wire to turn antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 20:46:17 UTC
From: Larry Snyder <lsnyder@pacific.net>
Message-ID: <13rud4sn17t7me3@corp.supernews.com>
Source record: 27823

http://cgi.ebay.com:80/ws/eBayISAPI.dll?ViewItem&item=330214235548&ssPageName=ADME:L:LCA:US:1123

2502. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 22:11:21 UTC
From: "D. Stussy" <spam@bde-arc.ampr.org>
Message-ID: <fpnhag$r3s$1@snarked.org>
Source record: 27824

"Jim Higgins" <invalid@invalid.invalid> wrote in message
news:4outr3lluvppju23mtctuhdr2i6tbkcl8d@4ax.com...
> On Thu, 21 Feb 2008 18:50:02 -0800, "D. Stussy"
> <spam@bde-arc.ampr.org> wrote:
>
> >"Wayne" <mygarbagecan@verizon.net> wrote in message
> >news:Aihvj.12090$N95.11812@trnddc03...
> >> I agree with the above except my wording would be "never, ever received
> >any
> >> unwanted phone calls or text messages, except from Verizon itself." I
get
> >> plenty of those.
> >
> >Unwanted perhaps, but as their customer, it's not a violation.
>
> It's illegal if you ask them to stop.

...But they still get to call you once!

2503. Re: Attn Cel Phone Users

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-22 23:23:04 UTC
From: Wayne <mygarbagecan@verizon.net>
Message-ID: <sPIvj.440$Sw6.286@trnddc06>
Source record: 27825

"D. Stussy" <spam@bde-arc.ampr.org> wrote in message
news:fpnhag$r3s$1@snarked.org...
> "Jim Higgins" <invalid@invalid.invalid> wrote in message
> news:4outr3lluvppju23mtctuhdr2i6tbkcl8d@4ax.com...
>> On Thu, 21 Feb 2008 18:50:02 -0800, "D. Stussy"
>> <spam@bde-arc.ampr.org> wrote:
>>
>> >"Wayne" <mygarbagecan@verizon.net> wrote in message
>> >news:Aihvj.12090$N95.11812@trnddc03...
>> >> I agree with the above except my wording would be "never, ever
>> >> received
>> >any
>> >> unwanted phone calls or text messages, except from Verizon itself." I
> get
>> >> plenty of those.
>> >
>> >Unwanted perhaps, but as their customer, it's not a violation.
>>
>> It's illegal if you ask them to stop.
>
> ...But they still get to call you once!
>
And asking them to stop works.....UNTIL.....they put a different marketing
VP in the job. Then he starts from scratch, not wanting to abide by the
environment created by his predecessor.

NOW, if I could only get Arhnold to quit leaving recorded messages on my
answering machine.....

2504. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 01:33:43 UTC
From: ml <m@di.net>
Message-ID: <m-09C655.20333922022008@news.verizon.net>
Source record: 27826

In article <0h7nr3pi9ptt6giv2rfm2u32k8og705bpr@4ax.com>,
Buck <usenet01@lumpuckeroo.com> wrote:

> On Sat, 16 Feb 2008 16:54:41 GMT, ml <m@di.net> wrote:
>
> >In article <37cbr3dh3bu5laa48i40rj8u7aftpcissp@4ax.com>,
> > Richard Clark <kb7qhc@comcast.net> wrote:
> >
> >> On Fri, 15 Feb 2008 10:50:46 GMT, ml <m@di.net> wrote:
> >>
> >> >hi
> >> >
> >> >pretty soon when current tv broadcast stops i was thinkng my
> >> >building master ant will either be left there or just removed
> >> >
> >> >i thought about petitioning the coop board to let me have the space
> >> >under the guise of replacing the antenna with another that looked for
> >> >the most part just like/simular to the old tv ant but actually
> >> >subsituting a ham antenna
> >> >
> >> >my first thought as far as a look alike was to a LP , just
> >> >wondering of all of the antennas out there anyone know which specific
> >> >brand might come closest to looking like a regular tv antenna?
> >>
> >> Hi Myles,
> >>
> >> Any Log periodic that looks like a TV antenna is going to cover
> >> VHF/UHF - keep that in mind if you are hoping for HF.
> >>
> >> However, nobody sees those antennas way up on the top of your building
> >> except the traffic spotters in helicopters. If you want to sneak an
> >> HF LPDA up there, then you will need a tad more height for masting,
> >> and more than a tad more support/guying.
> >>
> >> 73's
> >> Richard Clark, KB7QHC
> >
> >hi thanks guyes for responding
> >
> >i should have specified HF
> >
> >don't need anymore height the tv antenna is over 10ft from roof
> >surface and they wouldn't let me add to that
> >

> >i could get away w/a somewhat bigger antenna but not 'super large'
> >i was thinking if it looked like a tv at, and was even 2x the size
> >perhaps no one would really notice
> >
> >so i've never really seen any lp face to face and wasn't sure
> >about of all the ones made which might be closest at fitting the bill
> >was hopn someone might be familiar w/a specific brand/make /model
> >
> >etc??
> >
> >
> >thanks much
>
>
> It might not cover but three bands, but have you considered a short
> yagi? I had a TA-33 Jr years ago that worked very well for me and
> wasn't terribly large.
>
> Buck
> N4PGW

thanks buck and j appreciate the tips

2505. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 01:34:53 UTC
From: ml <m@di.net>
Message-ID: <m-8D6DE6.20345522022008@news.verizon.net>
Source record: 27827

In article <O1luj.949$pl4.1@newssvr22.news.prodigy.net>,
"David G. Nagel" <nagel.david@sbcglobal.net> wrote:

> ml wrote:
> > hi
> >
> > pretty soon when current tv broadcast stops i was thinkng my
> > building master ant will either be left there or just removed
> >
> > i thought about petitioning the coop board to let me have the space
> > under the guise of replacing the antenna with another that looked for
> > the most part just like/simular to the old tv ant but actually
> > subsituting a ham antenna
> >
> > my first thought as far as a look alike was to a LP , just
> > wondering of all of the antennas out there anyone know which specific
> > brand might come closest to looking like a regular tv antenna?
> >
> >
> >
> >
> > thanks
>
> ML;
>
> Your current building master antenna will still function exactly as it
> is currently doing the only change is the mode of the signal from analog
> to digital.
>
> Dave N

isn't the digital channles a different freq here in nyc we mostly
use channels 2-13 i understood the new digital channels to be of
a diff freq and band i dunno

2506. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 02:14:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <TjLvj.12916$0w.2852@newssvr27.news.prodigy.net>
Source record: 27828

ml wrote:
> isn't the digital channles a different freq here in nyc we mostly
> use channels 2-13 i understood the new digital channels to be of
> a diff freq and band i dunno

Any TV channel can be used for analog or digital.
As of early 2009, all channels will be digital.
--
73, Cecil http://www.w5dxp.com

2507. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 02:16:41 UTC
From: dplatt@radagast.org
Message-ID: <99c495-8tv.ln1@radagast.org>
Source record: 27831

In article <m-8D6DE6.20345522022008@news.verizon.net>, ml <m@di.net> wrote:

>isn't the digital channles a different freq here in nyc we mostly
>use channels 2-13 i understood the new digital channels to be of
>a diff freq and band i dunno

All of the TV frequencies fall into one of three ranges: VHF low-band (traditionally channels 2 - 6), VHF high band (channels 7 - 13), and UHF (channels 14 on up).

During the big digital-TV transition, the upper end of the UHF frequency range (700-800 MHz) is going away entirely. It's being auctioned off or allocated to commercial and public-safety interests.

During the transition period, the full-power TV stations have each been allocated a second channel in the remaining portion of the UHF frequency band, which they've been using for their ATSC (digital-TV) signals... these are on UHF channels which had not previously been used in the station's service area. The stations have continued to transmit NTSC analog on their original frequencies.

It's important to understand that with digital TV, the "station number" displayed on the TV, and to which you tune, doesn't necessarily correspond to the actual RF frequency.

During the final switchover, each station will either:

- Drop its old NTSC frequency entirely, and move its full-power transmission to its current (transition) ATSC frequency, or

- Stop using its ATSC transition frequency, and switch its current NTSC transmitter over to ATSC digital, or

- Drop its old NTSC frequency, and start transmitting ATSC digital on a newly-allocated frequency.

My impression is that most of the stations now on channels 14 on up (UHF) will be doing the second of these. Most of the stations now on VHF will do the first of these - they'll give up their VHF frequency and move to UHF.

There *are* a few stations which will keep using their VHF frequencies (channels 2 - 13) and just switch them over to full-power digital operation. Most of these are in the VHF highband (7-13), but there are a small handful in the lowband (2-6) which will stay there.

In many areas of the country, a good UHF-only antenna is all you will need for digital TV, after The Big Day. This is fortunate for the

many people who have bought "digital TV" antennas - most of these are UHF-only.

In urban areas of the country, quite a few people will need antennas which handle both UHF, and the highband part of the VHF spectrum.

In a very few urban areas, people will need antennas with full-frequency TV-band coverage (VHF low, VHF high, and UHF) in order to get all of the channels.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

2508. Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 02:34:10 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47bf8620$0$4936$4c368faf@roadrunner.com>
Source record: 27829

This antenna is multiband but most of the literature I have seen talks to experimentation in the UHF bands. It seems to have very high gain and actually acts much like a log periodic. Has anyone experimented with this concept in the HF bands. It is sometimes considered a "fractal" antenna (more by coincidence then by intent I suppose) but it's properties on paper seem to be ideal for operation in the ham bands. I have a nice sized attic and its compact design may make it an ideal attic antenna at least up to 40m. Can one really expect 10dB gain, 25% bandwidths and VSWRs at multiples of lambda at 2X, as studies in the UHF regions show?

http://www.co.it.pt/conftele2007/assets/papers/antennas/paper_2.pdf

2509. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 03:02:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <v1Mvj.12769$R84.6063@newssvr25.news.prodigy.net>
Source record: 27830

AI4QJ wrote:
> This antenna is multiband but most of the literature I have seen talks to
> experimentation in the UHF bands. It seems to have very high gain and
> actually acts much like a log periodic. Has anyone experimented with this
> concept in the HF bands.

I vaguely remember some "Communications Quarterly"
articles on fractal antennas around 1990+. A CD-ROM
of back issues is available from the ARRL.
--
73, Cecil http://www.w5dxp.com

2510. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 03:34:30 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <avMvj.2543$pl4.1748@newssvr22.news.prodigy.net>
Source record: 27832

Cecil Moore wrote:
> AI4QJ wrote:
>> This antenna is multiband but most of the literature I have seen talks
>> to experimentation in the UHF bands. It seems to have very high gain
>> and actually acts much like a log periodic. Has anyone experimented
>> with this concept in the HF bands.
>
> I vaguely remember some "Communications Quarterly"
> articles on fractal antennas around 1990+. A CD-ROM
> of back issues is available from the ARRL.

Didn't Chip write those articles, Cecil?
73,
Tom Donaly, KA6RUH

2511. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 03:40:02 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47bf9591$0$4951$4c368faf@roadrunner.com>
Source record: 27833

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:v1Mvj.12769$R84.6063@newssvr25.news.prodigy.net...
> AI4QJ wrote:
>> This antenna is multiband but most of the literature I have seen talks to
>> experimentation in the UHF bands. It seems to have very high gain and
>> actually acts much like a log periodic. Has anyone experimented with this
>> concept in the HF bands.
>
> I vaguely remember some "Communications Quarterly"
> articles on fractal antennas around 1990+. A CD-ROM
> of back issues is available from the ARRL.

I was looking at this more as a bowtie antenna with internal embedded bowtie antennas (making it multiband). I wasn't looking at this specifically as a "fractal antenna" since there is no need to go into mandelbrot math. It is called sierpinski simply due to the inventor of the triangle within a triangle pattern ad infinatum which was published in 1905 (or something like that), way before fractal math was invented. Some people do consider it also to be a "fractal", I know. It does appear that telecom companies have been taking notice of the sierpinski carpet design for cell phones....perhaps using the same design on HF is relatively unexplored. It looks promising for a compact HF design.

2512. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 03:46:09 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <571b5598-9981-4601-b81b-6096641c5013@s37g2000prg.googlegroups.com>
Source record: 27834

```
On Feb 22, 5:37 am, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> On Feb 21, 9:53 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>
>
>
> > Keith Dysart wrote:
>
> > Hey Keith, how about this one?
>
> > Rs Pfor=50w-->
> > +----/\/\/-----+----------------------+
> > | 50 ohm <--Pref |
> > | |
> > Vs 45 degrees RLoad+j0
> > 100v RMS 50 ohm line |
> > | |
> > | |
> > +--------------+----------------------+
>
> > The dissipation in the source resistor is:
>
> > P(Rs) = 50w + Pref
>
> > How can anyone possibly argue that reflected power
> > is *never* dissipated in the source resistor? :-)
> > --
> > 73, Cecil http://www.w5dxp.com
>
> Two Saturdays ago I was on a road trip and used
> 9 litres/100km. How can anyone argue that the fuel
> consumption is never equal to the day of the month?
> Numerical coincidences can be much fun.
>
> But you will like the generator below even better.
> The power dissipated in the generator resistors is
> always equal to 50 + Pref, regardless of the load
> and line length, thereby always accounting for Pref.
>
> Pfor=50w-->
> +--/\/\/---+----------------+------------------+
> | 100 ohm | <--Pref |
> | | 100 ohm |
> | +--/\/\/--+ any length |
> | ^ | 50 ohm line any load
```

> Vs Is | |
> 100v RMS 1A RMS | |
> | | | |
> +----------+---------+------+------------------+
> The generator output impedance is 50 ohms.
> Dissipation in the generator resistors is always
> 50 Watts plus Pref.
> With a shorted or open load, the power dissipation
> in the generator is 100 W.
>
> Numerical coincidence as proof that Pref is always
> dissipated in the generator. :-)
>
> On a more serious note, how would you analyze this
> generator using reflected power and constructive
> and destructive interference?
>
> ...Keith

It's easy to lose sight of what's important when you get bogged down in numerical coincidences and the like. To me, some things are clearly important with respect to analyzing such systems:

1. If a generator is linear and matched to a line (Zgen = Zline, not Zgen* = Zline), then no matter where a "reverse" signal comes from, that signal does not reflect at the source:line junction. The "reverse" signal can come from a reflection at a load, from another generator at the other end of the line, from something feed in through a coupler, from an electric eel biting the line--it doesn't matter. There is no need for an analysis involving "constructive" or "destructive" interference.

1a. Just because a "reverse" signal on the line does not reflect at the generator:line junction, that does NOT mean that additional power is dissipated inside the source.

2. You MUST have an accurate model of the inside of the source to know how it will respond to some particular load and to signals that impinge on its output port. With respect to figuring out what goes on inside the source and what power may or may not be dissipate there, there is NO advantage to knowing how the load or signals got there.

3. To correctly analyze conditions on a line that's fed only from one end, with a load on the other end, there is NO NEED OR ADVANTAGE to know what goes on inside the generator (beyond knowing the power it delivers to that effective load, perhaps).

3a. There may be some advantage in knowing the source impedance of a generator (or transmitter) in calculating the power delivered to a load at the source's output port, but there is no advantage to knowing it if you want to determine the standing wave ratio or reflection coefficient on the line, or what net impedance that line+load presents

to the source; that is all determined solely by the line and the load.

The stuff about constructive/destructive interference with respect to figuring out what happens inside a source is, to me, just so much dancing on the head of pins. Welcome to dance if you so wish, but I'd just as soon sit that one out.

Cheers,
Tom

2513. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 04:07:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <JZMvj.12779$R84.3453@newssvr25.news.prodigy.net>
Source record: 27835

Tom Donaly wrote:
> Didn't Chip write those articles, Cecil?

Could be. My memory is hazy.
--
73, Cecil http://www.w5dxp.com

2514. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 04:30:26 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47bfa161$0$4971$4c368faf@roadrunner.com>
Source record: 27836

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:JZMvj.12779$R84.3453@newssvr25.news.prodigy.net...
> Tom Donaly wrote:
>> Didn't Chip write those articles, Cecil?
>
> Could be. My memory is hazy.
> --
> 73, Cecil http://www.w5dxp.com

Apparently it can be run as a monopole or dipole. I wonder how they achieve
the stated 50 ohm impedance match? Or perhaps that is the impedance it
happens to be a low VSWR frequencies.

2515. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 04:49:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kBNvj.2539$fX7.1375@nlpi061.nbdc.sbc.com>
Source record: 27837

K7ITM wrote:
> It's easy to lose sight of what's important when you get bogged down
> in numerical coincidences and the like. To me, some things are
> clearly important with respect to analyzing such systems:

Is it a coincidence when one amp flows through a one ohm
resistor with one volt across it and dissipates one watt?
No, it is the laws of physics in action. The fact that
everything is a unity magnitude is because of the particular
values chosen for the example.

My example was NOT coincidence. I deliberately chose values
that would cause the forward wave and reflected wave to be
90 degrees out of phase at the source resistor. Under those
conditions, there is no interference present and all of the
reflected energy is dissipated in the source resistor. There
are an infinity of such examples and it is true for both
voltage sources and current sources.

The fact that there is even one example discredits the assertion
that reflected energy is *never* dissipated in the source.

> 1. If a generator is linear and matched to a line (Zgen = Zline, not
> Zgen* = Zline), then no matter where a "reverse" signal comes from,
> that signal does not reflect at the source:line junction. The
> "reverse" signal can come from a reflection at a load, from another
> generator at the other end of the line, from something feed in through
> a coupler, from an electric eel biting the line--it doesn't matter.
> There is no need for an analysis involving "constructive" or
> "destructive" interference.

An interference analysis reveals exactly where all the energy is
going and that's what this discussion is all about. It may not
matter to you but it obviously matters to Keith and me.

> 1a. Just because a "reverse" signal on the line does not reflect at
> the generator:line junction, that does NOT mean that additional power
> is dissipated inside the source.

That's true. If total destructive interference exists at the
source resistor, then all of the reflected energy is redistributed
back toward the load. For the simple sources we have been using,
predicting how much reflected energy is dissipated in the source
resistor is a piece of cake.

I took Roy's chart and without calculating a single voltage or
current, not only matched Roy's correct results but I uncovered

an error he had made. That's a pretty good track record considering
that Roy's data went unchallenged for many years.

> 2. You MUST have an accurate model of the inside of the source to
> know how it will respond to some particular load and to signals that
> impinge on its output port. With respect to figuring out what goes on
> inside the source and what power may or may not be dissipate there,
> there is NO advantage to knowing how the load or signals got there.

We are discussing single-source, single transmission line, single
mismatched load systems. Where the energy components come from is
obvious.

> 3. To correctly analyze conditions on a line that's fed only from one
> end, with a load on the other end, there is NO NEED OR ADVANTAGE to
> know what goes on inside the generator (beyond knowing the power it
> delivers to that effective load, perhaps).

This discussion is all about what is going on inside the source.
If you don't care to engage in that discussion, please feel free
not to.

> 3a. There may be some advantage in knowing the source impedance of a
> generator (or transmitter) in calculating the power delivered to a
> load at the source's output port, but there is no advantage to knowing
> it if you want to determine the standing wave ratio or reflection
> coefficient on the line, or what net impedance that line+load presents
> to the source; that is all determined solely by the line and the load.

The argument about what happens inside a source is about 20 years
old now and is still raging. I'm simply trying to contribute
something to that argument.

> The stuff about constructive/destructive interference with respect to
> figuring out what happens inside a source is, to me, just so much
> dancing on the head of pins. Welcome to dance if you so wish, but I'd
> just as soon sit that one out.

That's your opinion and that's OK. If you choose not to attempt
to understand interference, you will forever remain ignorant of
its usefulness as an analysis tool. For the simple examples presented
so far, how much reflected power is dissipated in the source
resistor has been accurately predicted for all examples.

The interference phenomenon is well understood in the field of
optical physics and is a very useful tool in that field. The
principles are the same for RF waves. Why not use the tool?
Incidentally, optical physicists are NOT dancing on the head
of a pin when they calculate the irradiance of the bright rings
and dark rings.
--
73, Cecil http://www.w5dxp.com

2516. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 07:16:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tqhvr39orc9o68h8urmpgjhq8o7ls96p08@4ax.com>
Source record: 27838

On Fri, 22 Feb 2008 22:40:02 -0500, "AI4QJ" <nospam@hotmail.com>
wrote:

> It looks promising for a compact HF design.

Hi Dan,

All depends on what you mean by "promising."

Fractal antennas, historically, have "promised" a lot, and in and of themselves have proven to be no more _____ (fill in the blank with any presumed benefit) than a random wire pattern.

Fractal antennas, historically, have never broken out of the pack. 10-15 years is long enough for the votes to have been cast, counted, and taken to the Supreme Court for the judicial thumb on the scales. There's a good reason why you don't see them advertised (and only "mentioned") = underwhelming.

73's
Richard Clark, KB7QHC

2517. Three new Ham Radio sites in March!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 10:14:33 UTC
From: coley@a1isp.co.uk
Message-ID: <93cc5632-bc07-4a34-9c06-60f10e41587e@q33g2000hsh.googlegroups.com>
Source record: 27839

Three brand new sites hit the Internet for hams next month:

HamBid.com is an Auction, 'Fore Sale' and wanted posts site which is completely free to use.

QRZsearch.com is a ham focused search engines which provides only targeted results, no mush!

DStarForum.com is a iscussion board focused on D-Star users and functionality.

Give them a go.

www.HamBid.com
www.QRZsearch.com
www.Dstarforum.com

2518. feedpoint impedance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 10:19:57 UTC
From: PJ <rredbeak@optusnet.com.au>
Message-ID: <47bff349$0$10472$afc38c87@news.optusnet.com.au>
Source record: 27840

Whats the feedpoint impedance Without a Balun for a slinky dipole in the ham bands please??? PJ

2519. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 11:03:23 UTC
From: Manjimike <Manjimike.205b3e4@radiobanter.com>
Message-ID: <Manjimike.205b3e4@radiobanter.com>
Source record: 27841

'PJ[_3_ Wrote:
> ;618945']Hi,i need building/winding instructions for a 80-10M helical
> for my car
> please with tappings for eacvh band. all help gratefully received.. PJ

This Might be what you need

http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=10335

Cheers Mike
VK6ZYX

--
Manjimike

2520. Re: Cheap Muscle Wire to turn antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 11:34:03 UTC
From: ltdoc@yahoo.com
Message-ID: <e6f9c379-02a4-45e5-a8f4-6e6c4d2b9dc5@h11g2000prf.googlegroups.com>
Source record: 27842

...Or. Wonder if using this stuff on the end(s) of an antenna would make it change resonant frequency by the signal fed to it? Might be cheaper than a screwdriver, and you'd have a real "MuscleWire" antenna! Hmm.
- 'Doc

(forget it. It's early, not enough coffee.)

2521. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 11:48:49 UTC
From: ml <m@di.net>
Message-ID: <m-2E5E73.06484823022008@news.verizon.net>
Source record: 27843

In article <99c495-8tv.ln1@radagast.org>,
dplatt@radagast.org (Dave Platt) wrote:

> In article <m-8D6DE6.20345522022008@news.verizon.net>, ml <m@di.net> wrote:
>
> >isn't the digital channles a different freq here in nyc we mostly
> >use channels 2-13 i understood the new digital channels to be of
> >a diff freq and band i dunno
>
> All of the TV frequencies fall into one of three ranges: VHF low-band
> (traditionally channels 2 - 6), VHF high band (channels 7 - 13), and
> UHF (channels 14 on up).
>
> During the big digital-TV transition, the upper end of the UHF
> frequency range (700-800 MHz) is going away entirely. It's being
> auctioned off or allocated to commercial and public-safety interests.
>
> During the transition period, the full-power TV stations have each
> been allocated a second channel in the remaining portion of the UHF
> frequency band, which they've been using for their ATSC (digital-TV)
> signals... these are on UHF channels which had not previously been
> used in the station's service area. The stations have continued to
> transmit NTSC analog on their original frequencies.
>
> It's important to understand that with digital TV, the "station
> number" displayed on the TV, and to which you tune, doesn't
> necessarily correspond to the actual RF frequency.
>
> During the final switchover, each station will either:
>
> - Drop its old NTSC frequency entirely, and move its full-power
> transmission to its current (transition) ATSC frequency, or
>
> - Stop using its ATSC transition frequency, and switch its current
> NTSC transmitter over to ATSC digital, or
>
> - Drop its old NTSC frequency, and start transmitting ATSC digital on
> a newly-allocated frequency.
>
> My impression is that most of the stations now on channels 14 on up
> (UHF) will be doing the second of these. Most of the stations now on
> VHF will do the first of these - they'll give up their VHF frequency
> and move to UHF.
>

> There *are* a few stations which will keep using their VHF frequencies
> (channels 2 - 13) and just switch them over to full-power digital
> operation. Most of these are in the VHF highband (7-13), but there
> are a small handful in the lowband (2-6) which will stay there.
>
> In many areas of the country, a good UHF-only antenna is all you will
> need for digital TV, after The Big Day. This is fortunate for the
> many people who have bought "digital TV" antennas - most of these are
> UHF-only.
>
> In urban areas of the country, quite a few people will need antennas
> which handle both UHF, and the highband part of the VHF spectrum.
>
> In a very few urban areas, people will need antennas with
> full-frequency TV-band coverage (VHF low, VHF high, and UHF) in order
> to get all of the channels.

thanks very much, i was a little confused guess the only thing that
remain to be seen, is if once all digitial if i'll create more/less
or same 'TVI" i presume less I don't really give any now on most
occasions except close to 100w or 50w 2m/440 as my antennas are
close to the tv ant

2522. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 13:35:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3jVvj.12813$R84.1694@newssvr25.news.prodigy.net>
Source record: 27844

nm5k@wt.net wrote:
> What he wants to build is what outbacker sells.

Why would he want to build an antenna that,
on 75m, is only 12% as efficient as a good
bugcatcher?
--
73, Cecil http://www.w5dxp.com

2523. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 13:40:08 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <Uf-dnWv3m6Glv13anZ2dnUVZ_quhnZ2d@bright.net>
Source record: 27845

Dear AI4QJ: Work through the numbers found in the paper. Each full-size
triangle has a height and width of about 0.26 WL at the lower resonant
frequency. Assume a balanced pair of full-size triangles and one has the
length of a 0.5 WL dipole. The latter is much more easy to tune!

The only positive thing about this antenna is the possibility of having a
second resonance at about two times the lower resonance.

A somewhat fat dipole that is not necessarily resonant at any amateur radio
frequency (but fits your space) fed by a tuner seems to be the ticket.
When we built our house, I ran a wire just under the ridge line as a back-up
antenna.

73, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net

"AI4QJ" <nospam@hotmail.com> wrote in message
news:47bf8620$0$4936$4c368faf@roadrunner.com...
> This antenna is multiband but most of the literature I have seen talks to
> experimentation in the UHF bands. It seems to have very high gain and
> actually acts much like a log periodic. Has anyone experimented with this
> concept in the HF bands. It is sometimes considered a "fractal" antenna
> (more by coincidence then by intent I suppose) but it's properties on
> paper seem to be ideal for operation in the ham bands. I have a nice sized
> attic and its compact design may make it an ideal attic antenna at least
> up to 40m. Can one really expect 10dB gain, 25% bandwidths and VSWRs at
> multiples of lambda at 2X, as studies in the UHF regions show?
>
> http://www.co.it.pt/conftele2007/assets/papers/antennas/paper_2.pdf
>

2524. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 14:10:43 UTC
From: nm5k@wt.net
Message-ID: <80f65ab3-fc42-4946-9dfa-3611620e4a86@q78g2000hsh.googlegroups.com>
Source record: 27846

On Feb 23, 7:35 am, Cecil Moore <nos...@w5dxp.com> wrote:
> n...@wt.net wrote:
> > What he wants to build is what outbacker sells.
>
> Why would he want to build an antenna that,
> on 75m, is only 12% as efficient as a good
> bugcatcher?
> --
> 73, Cecil http://www.w5dxp.com

I dunno. Probably weight, and being able to avoid the
usual industrial strength mount required for the heavy
antennas.
But using a helical stick is no sure route to disaster.
I've used a few that were so close to bugcatchers in
performance you could hardly tell the difference on the
air.
But... they were modified sticks, and not the usual you
buy at a store.
IE: if I want a 40m stick, I don't use a regular 40m version.
I use a 20m version and a longer stinger. I also try
to use one that has the bulk of the windings near the
top to improve current distribution. The helical whips
act the same as a lumped coil antenna in this regard.
You will have a more linear current distribution if you
wind most of the coil near the top, and then use a pretty
long stinger above it.
Being that in most cases ground losses are higher than
coil losses, often the ground loss swamps the coil
loss, and you end up not seeing as large a difference
as you would expect.
I often see the same comparing larger lumped coils.
IE: a 3 inch vs a 6 inch diameter coil..
In theory the 6 inch should be quite a bit better, being
less turns are needed, but often in the real world the
difference is hardly noticeable being the ground loss
is pretty high.
The worst helical whips are the ones that use no or a
very short stinger whip. If you want to use a thin helical
whip, you *must* use a pretty long stinger above the
glass whip if you want any kind of decent performance.
The 20m stick I used on 40m was very stout. But it
was 6 ft of 20m glass whip with the windings at the top,
and 5 ft of stinger. 11 ft total.

Made the car look like one of those RC cars... :/
But that antenna eventually became my present
lumped coil "plastic bugcatcher.
MK

2525. Re: Cheap Muscle Wire to turn antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 18:23:54 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <NwZvj.81053$Mu4.639@bignews7.bellsouth.net>
Source record: 27847

<ltdoc@yahoo.com> wrote in message
news:e6f9c379-02a4-45e5-a8f4-6e6c4d2b9dc5@h11g2000prf.googlegroups.com...
> ...Or. Wonder if using this stuff on the end(s) of an
> antenna would
> make it change resonant frequency by the signal fed to it?
> Might be
> cheaper than a screwdriver, and you'd have a real
> "MuscleWire"
> antenna! Hmm.
> - 'Doc
>
> (forget it. It's early, not enough coffee.)

I wonder if this is the same stuff that was talked about
being used to control airplane (small) flight surfaces some
twenty years ago?

I know what you mean about the coffee. <G>

Ed, NM2K

2526. Re: feedpoint impedance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 18:32:31 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <d4c30513-b9fa-4518-b73b-5fb67afb2651@p25g2000hsf.googlegroups.com>
Source record: 27848

On Feb 23, 2:19 am, "PJ" <rredb...@optusnet.com.au> wrote:
> Whats the feedpoint impedance Without a Balun for a slinky dipole in the ham
> bands please??? PJ

It can be represented as a point within the unity reflection
coefficient circle on a Smith chart...

Seriously, it depends on SO many factors you haven't specified that
it's not realistic to expect a single answer. How high above what
kind of ground? How many turns, spaced how? What diameter is the
helix? Is it stretched in a straight line, or bent? ...

Cheers,
Tom

2527. Re: feedpoint impedance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 18:41:17 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47c068cd$0$4966$4c368faf@roadrunner.com>
Source record: 27849

"PJ" <rredbeak@optusnet.com.au> wrote in message
news:47bff349$0$10472$afc38c87@news.optusnet.com.au...
> Whats the feedpoint impedance Without a Balun for a slinky dipole in the
> ham bands please??? PJ

It is about 70-75 ohms.

2528. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 19:38:52 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A4D7677810CDHuckleberrybigvalley@198.186.192.196>
Source record: 27850

>> Hi,i need building/winding instructions for a 80-10M helical
>> for my car
>> please with tappings for eacvh band. all help gratefully received..
PJ
>

If you really want a great performing mobile, and you want to build
it yourself, you might consider this:

http://faq.1and1.com/web_space__access/protected_directories/3.html

Scroll down to the bottom and click on "80-10M mobile vertical".
The PDF that comes up will contain all the info you need to build
yourself an efficient, and tunable, 80-10M bug-catcher type mobile
antenna.

I built myself a custom version of this for my motorhome and it is
outstanding.

Ed K7AAT

2529. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 20:16:57 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47c07f39$0$4928$4c368faf@roadrunner.com>
Source record: 27751

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:tqhvr39orc9o68h8urmpgjhq8o7ls96p08@4ax.com...
> On Fri, 22 Feb 2008 22:40:02 -0500, "AI4QJ" <nospam@hotmail.com>
> wrote:
>
>> It looks promising for a compact HF design.
>
> Hi Dan,
>
> All depends on what you mean by "promising."
>
> Fractal antennas, historically, have "promised" a lot, and in and of
> themselves have proven to be no more ________ (fill in the blank with
> any presumed benefit) than a random wire pattern.
>
> Fractal antennas, historically, have never broken out of the pack.
> 10-15 years is long enough for the votes to have been cast, counted,
> and taken to the Supreme Court for the judicial thumb on the scales.
> There's a good reason why you don't see them advertised (and only
> "mentioned") = underwhelming.
>
> 73's
> Richard Clark, KB7QHC

Thanks Rich,

As I was saying before, I do not really think it is necessary to go along
the "fractal" path when analyzing the sierpnski. One could also consider a
dipole as an extremely simple fractal
but we do not need mandelbrot math to deal with it. Fractal afficianodos
seem to latch onto sierpinski as the 'first' fractal, because it is probably
the only 'fractal' antenna that works reasonably well.

Witness the common bowtie design of many UHF TV antennas. Currently, I have
reviewed a Yatpak simulation of a sierpinski carpet and it looks very good.
This one is going to be fun.

73 de AI4QJ

2530. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 21:07:21 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <l121s3973ovje07v8reqs388sr4feec9m8@4ax.com>
Source record: 27752

On Sat, 23 Feb 2008 15:16:57 -0500, "AI4QJ" <nospam@hotmail.com>
wrote:

>Fractal afficianodos
>seem to latch onto sierpinski as the 'first' fractal, because it is probably
>the only 'fractal' antenna that works reasonably well.

Hi Dan,

The way to judge fractals is by application, not by antenna
comparison. Yes, this may seem to be a contradiction in terms (all
applications have antennas which thus are compared).

If you pick a sierpinski for one application, it may well perform
better there than others, it may well not - if 2dB difference is of
any consequence.

There are MANY characteristics of comparison. Sometimes the
conventional design wins, sometimes the fractal. It also depends on
how you price your time in a COST/BENEFIT ratio. Implementation is a
bitch and if you are going to put in the effort for the fractal, you
might easily find an antenna design that is 70 years old doing better
for less effort. Thus, it means you may be comparing the wrong
antenna designs (and why application should drive choice).

If you simply want to experiment, then there are some really
convoluted designs few consider.

The choice of sierpinski pretty much demonstrates that the "field of
research" into this category pretty much withered away a dozen years
ago, or more.

73's
Richard Clark, KB7QHC

2531. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 21:13:56 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47c08c96$0$4956$4c368faf@roadrunner.com>
Source record: 27753

"J. Mc Laughlin" <jcm@power-net.net> wrote in message
news:Uf-dnWv3m6Glv13anZ2dnUVZ_quhnZ2d@bright.net...
> Dear AI4QJ: Work through the numbers found in the paper. Each full-size
> triangle has a height and width of about 0.26 WL at the lower resonant
> frequency. Assume a balanced pair of full-size triangles and one has the
> length of a 0.5 WL dipole. The latter is much more easy to tune!
>
> The only positive thing about this antenna is the possibility of having a
> second resonance at about two times the lower resonance.
>
> A somewhat fat dipole that is not necessarily resonant at any amateur
> radio frequency (but fits your space) fed by a tuner seems to be the
> ticket. When we built our house, I ran a wire just under the ridge line as
> a back-up antenna.
>

Thanks for your comments Mr. McLaughlin,

In the following paper
http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf you
see a sierpinski construction containing 1 triangle gasket with 4 additional
sierpinski subgaskets.
The perfromance is mildly impressive. For example, the 5 gaskets seem to act
as 5 tuned
"bowtie antennas" with the resonance points divided by 2 (with the slight
exception of first
gasket to 1st subgasket), a distict advantage for hams.What this means of
course
is a multiband, multi-resonant antenna, with a possible infinite number of
subgaskets, although the
paper deals with only 5. No tuner should be required (except for 1st gasket
to 1st subgasket).
Or. for a dipole, none of those LC circuits need be added to the dipole
(ugh) to have
'resonance' at several bands. For each band, you just construct more
triangles.
The input return loss is rather good as well. I would really approeciate
your comments
if you could take a look at the paper I referenced above.

TKS ES 73
de AI4QJ

2532. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 21:23:56 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47c08eec$0$4973$4c368faf@roadrunner.com>
Source record: 27754

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:l121s3973ovje07v8reqs388sr4feec9m8@4ax.com...
> On Sat, 23 Feb 2008 15:16:57 -0500, "AI4QJ" <nospam@hotmail.com>
> wrote:
>
>>Fractal afficianodos
>>seem to latch onto sierpinski as the 'first' fractal, because it is
>>probably
>>the only 'fractal' antenna that works reasonably well.
>
> Hi Dan,
>
> The way to judge fractals is by application, not by antenna
> comparison. Yes, this may seem to be a contradiction in terms (all
> applications have antennas which thus are compared).
>
> If you pick a sierpinski for one application, it may well perform
> better there than others, it may well not - if 2dB difference is of
> any consequence.
>
> There are MANY characteristics of comparison. Sometimes the
> conventional design wins, sometimes the fractal. It also depends on
> how you price your time in a COST/BENEFIT ratio. Implementation is a
> bitch and if you are going to put in the effort for the fractal, you
> might easily find an antenna design that is 70 years old doing better
> for less effort. Thus, it means you may be comparing the wrong
> antenna designs (and why application should drive choice).
>
> If you simply want to experiment, then there are some really
> convoluted designs few consider.
>
> The choice of sierpinski pretty much demonstrates that the "field of
> research" into this category pretty much withered away a dozen years
> ago, or more.
>
> 73's
> Richard Clark, KB7QHC

Richard:

1. A realtively compact multiband antenna.

2. Number of bands is defined by the user by simply adding as many
subgaskets as is needed.

3. Not difficult at all to construct a wire antenna this way. Stranded Cu wire, soldering iron, solder, wire cutters, nylon rope to suspend to inside of roof.

4. Resonant points of each gasket divided by 2. Thus no tuner.

When I get the time I hope to construct one. I need only to calculate the dimensions of the outer triangles operating as a dipole. Dimensions of the inner triangles (subgaskets) are based on the outer bowtie so no need for calculating (other than simple arithmetic).

73 de AI4QJ

2533. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 21:26:39 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <jc0wj.250770$MJ6.188094@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27755

Cecil Moore wrote:

>
> The interference phenomenon is well understood in the field of
> optical physics and is a very useful tool in that field. The
> principles are the same for RF waves. Why not use the tool?
> Incidentally, optical physicists are NOT dancing on the head
> of a pin when they calculate the irradiance of the bright rings
> and dark rings.

Cecil,

I don't recall just how you became such an expert on optics, but your proposed use of constructive and destructive interference is not the way to calculate bright and dark rings. Great for handwaving explanations, or textbook explanations, but close to useless for detailed calculations.

In the real world most most problems of interest are not simple one dimensional set-ups with ideal lossless components. All of your nice power equations with cosine cross-terms get completely unwieldy in the real world.

Do you even wonder why you seem to be the pioneer in trying to apply constructive and destructive interference to HF problems? Do you suppose that no other smart folks ever thought along the same path? Do you suppose there is a reason why essentially all of the textbooks and scholarly writings on transmission lines virtually ignore constructive and destructive interference for detailed calculations?

You have recently demonstrated that you can get exactly the same answers as Keith, Roy, and others. However, beyond satisfying your own needs, you have demonstrated exactly nothing in addition to the results available from conventional analysis. That is dancing on the head of a pin.

There is really no particular need to discover "where the power goes". The equations for ordinary classical physics are self-consistent. If one gets the fields analyzed correctly, or equivalently the voltages and currents, then energy and power will take care of themselves. You simply will not find a case where all of the forces or fields are worked out correctly but the energy is not conserved.

73,
Gene
W4SZ

2534. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 21:45:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ah41s39soi2nidqo8ffhao0kpjj6rarmhm@4ax.com>
Source record: 27756

On Sat, 23 Feb 2008 16:23:56 -0500, "AI4QJ" <nospam@hotmail.com>
wrote:

>1. A realtively compact multiband antenna.

Hi Dan,

This is not unique to fractals and easily achieved by many other
means.

>2. Number of bands is defined by the user by simply adding as many
>subgaskets as is needed.

You will find that easier written than demonstrated.

>3. Not difficult at all to construct a wire antenna this way. Stranded Cu
>wire, soldering iron, solder, wire cutters, nylon rope to suspend to inside
>of roof.

You did say HF didn't you? If by that you mean 10M, yes, the
intricacies are within the scope of manageability. However, this then
dismisses the "multiband" nature, unless you are now talking VHF/UHF.

>4. Resonant points of each gasket divided by 2. Thus no tuner.

A Gamma match does much the same thing (no tuner). As for the
"resonant points" - again, easier to write than to demonstrate (let's
just simplifiy this and say impossible).

>When I get the time I hope to construct one. I need only to calculate the
>dimensions of the outer triangles operating as a dipole. Dimensions of the
>inner triangles (subgaskets) are based on the outer bowtie so no need for
>calculating (other than simple arithmetic).

Which returns me to the rhetorical question of what's your time worth?
Which fractal are you choosing? What application is it for? What
characteristic are you trying to optimize?

I ask this because:
1. It will take longer than with a conventional design;
2. It will not necessarily be the best fractal selected;
3. It may be inappropriate to the application;
4. You may stand to lose gain, BW, launch angle, or suffer match.

73's
Richard Clark, KB7QHC

2535. Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 21:54:37 UTC
From: "Francesco L." <franlanc@NOSPAMtin.it>
Message-ID: <62biu3F227ldtU1@mid.individual.net>
Source record: 27757

I was wondering if it's possible to shorten the radials from the standard 1/4 wavelength to another value, a smaller one. For example, in a 20 meters antenna, which is the best value of length for shortened radials or, in alternative, until which value is possible to go to without superlosses?
Thanks in advance

E il marconista sulla sua torre,
le lunghe dita celesti nell'aria,
riceveva messaggi d'auguri
per questa crociera straordinaria.
E trasmetteva saluti e speranze
in quasi tutte le lingue del mondo,
comunicava tra Vienna e Chicago
in poco meno di un secondo.
E la ragazza di prima classe, innamorata del proprio cappello,
quando la sera lo vide ballare lo trov&#65533; subito molto bello.
Forse per via di quegli occhi di ghiaccio cos&#65533; difficili da evitare,
pens&#65533; "Magari con un po' di coraggio, prima dell'arrivo mi far&#65533;
baciare".

Francesco DeGregori

2536. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 22:03:24 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47c0982c$0$4965$4c368faf@roadrunner.com>
Source record: 27758

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:tqhvr39orc9o68h8urmpgjhq8o7ls96p08@4ax.com...
> On Fri, 22 Feb 2008 22:40:02 -0500, "AI4QJ" <nospam@hotmail.com>
> wrote:
>
>> It looks promising for a compact HF design.
>
> Hi Dan,
>
> All depends on what you mean by "promising."
>
> Fractal antennas, historically, have "promised" a lot, and in and of
> themselves have proven to be no more ________ (fill in the blank with
> any presumed benefit) than a random wire pattern.

First of all, in googling these antennas I happened to come across your website and I found your discussions on fractals interesting. You do overal seem to have an intellectual bias of the designs as being mediocre, something that I don't necessarily disagree with for many applications but in my opinion your brush of mediocity is quite broad. For example, I don't think you have considered sierpinski carpets as a solution for a specific problem not shared by all hams, or possibly yourself, that is, the construction of a better than mediocre stealth (attic) antenna that is multiband by frquencies dividied by 2, balanced (resonant without ground) and easy to construct with wire. Repeating your premise above:

1. A Sierpinski carpet antenna can also be defined as a fractal antenna.

2. All fractal antennas have no more presumed benefit than a random wire pattern.

3. Therefore sierpinski patterns used as an antenna have no more promise than a random wire pattern.

I disagree with the above, or let me say, the logic is not convincing.

A random wire pattern would require a tuner. It would not have resonant points divisible by 2. It might not be compact. I must respectfully disagree with your premise. It is known that the bowtie construction works and has gain. Sierpinski acts similar to a repeating pattern of bowtie antennas of Fr/2, (we can do the same thing with dipoles but with less gain). That is why I say don't get hung up on the word "fractal". Doing so can paralyze the thought process with a mental roadblock. Because of negative or mediocre prior experience when analyzing antennas that are purposely constructed as 'fractal', it becomes impossible to consider this construction as a possiblly advantageous solution (for stealth situations in my case), just

because it also happens to be 'fractal'.

Thank you for your comments and thanks for the information on your site. I would caution however that there are many papers on the net that seem to give more possibility of success to sierpinski than you give to fractal designs in general.

73 de AI4QJ

2537. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 22:32:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6a1wj.12292$J41.3807@newssvr14.news.prodigy.net>
Source record: 27759

Gene Fuller wrote:
> You have recently demonstrated that you can get exactly the same answers
> as Keith, Roy, and others.

Which means, that contrary to all the earlier assertions,
an energy+interference analysis works. The analysis that
Roy called "gobbledegook" caught an error in his own data
that he had overlooked for many years and about which he
had made some false technical assumptions which he promoted
on his web page.

If an energy analysis provided nothing more than uncovering
the errors in Roy's math and concepts, it was more than worth
the effort.

> There is really no particular need to discover "where the power goes".

Maxwell and Bruene have been arguing about such for 20
years now. The need to discover "where the power goes"
apparently exists for them and others.

If you, like Roy and Tom, don't care where the power
goes, that OK, but please don't try to present yourselves
as experts on a subject you don't care enough about
enough to have ever studied it in detail.
--
73, Cecil http://www.w5dxp.com

2538. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 22:47:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ho1wj.4617$Mh2.1034@nlpi069.nbdc.sbc.com>
Source record: 27760

Francesco L. wrote:
> I was wondering if it's possible to shorten the radials from the standard
> 1/4 wavelength to another value, a smaller one. For example, in a 20 meters
> antenna, which is the best value of length for shortened radials or, in
> alternative, until which value is possible to go to without superlosses?

If radials are buried, their velocity factors may be
something in the ballpark of 0.5. That's certainly a
shortening effect.

With elevated radials, the radials can be shortened
and the vertical element lengthened to maintain
resonance. Radials can also be shortened by loading
each radial with a coil.
--
73, Cecil http://www.w5dxp.com

2539. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 23:07:22 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <qoWdneffa4R7O13anZ2dnUVZ8tqinZ2d@pipex.net>
Source record: 27761

Francesco L. wrote:
> I was wondering if it's possible to shorten the radials from the standard
> 1/4 wavelength to another value, a smaller one. For example, in a 20 meters
> antenna, which is the best value of length for shortened radials or, in
> alternative, until which value is possible to go to without superlosses?
> Thanks in advance
==========
It is my understanding that when radials are on the ground or buried
,their length can be any hence also shorter than 1/4 wavelength ,but
when very they are very short ,more of the same will give an improvement
especially when on dry ground.
When radials are above ground like when part of a vertical antenna
system fitted on a roof the quarter wave radial(s) ,at least 1 for each
band , are required ,since then they are 'the other half' of a dipole.

2540. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 23:19:37 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47c0aa09$0$4949$4c368faf@roadrunner.com>
Source record: 27762

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:ah41s39soi2nidqo8ffhao0kpjj6rarmhm@4ax.com...
> On Sat, 23 Feb 2008 16:23:56 -0500, "AI4QJ" <nospam@hotmail.com>
> wrote:
>
>>1. A realtively compact multiband antenna.
>
> Hi Dan,
>
> This is not unique to fractals and easily achieved by many other
> means.

I guess sierpinski also happens to be 'fractal' for some people because it
happens to have a repeating pattern, similar to fractals. So does a fan
dipole.

>
>>2. Number of bands is defined by the user by simply adding as many
>>subgaskets as is needed.
>
> You will find that easier written than demonstrated.
>
>>3. Not difficult at all to construct a wire antenna this way. Stranded Cu
>>wire, soldering iron, solder, wire cutters, nylon rope to suspend to
>>inside
>>of roof.
>
> You did say HF didn't you? If by that you mean 10M, yes, the
> intricacies are within the scope of manageability. However, this then
> dismisses the "multiband" nature, unless you are now talking VHF/UHF.

Yes, I need to spend more time calculating the lengths os the gaskets and I
haven't done that yet. However, it is an antenna construction so coil or
capacitive 'shorteners' may have to be tolerated, reducing the gain.

>>4. Resonant points of each gasket divided by 2. Thus no tuner.
>
> A Gamma match does much the same thing (no tuner). As for the
> "resonant points" - again, easier to write than to demonstrate (let's
> just simplifiy this and say impossible).

EASY to demonstrate, see Table 1, Column 5 (F(n+1)/F(n)).

http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf

>
> Which returns me to the rhetorical question of what's your time worth?

Rhetorical response: Enjoyment is suitable compensation when one is having fun.

2541. Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 23:44:41 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A4DA024E175FHuckleberrybigvalley@198.186.192.196>
Source record: 27763

Sometime in May I expect to be moving into a new house, built on Pacific Northwest coastal Sand. It is at 100' elevation about 1/3 mile from where the Siuslaw river dumps into the Pacific Ocean.

In the past, I usually drive at least one decent 8' ground rod outside my shack for a station ground, but am wondering what you guys might advise in this regard with having sand instead of dirt.

Ed K7AAT

2542. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 23:57:26 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <pm91s39ck219rja63p8isr460a8slntae9@4ax.com>
Source record: 27764

On Sat, 23 Feb 2008 17:03:24 -0500, "AI4QJ" <nospam@hotmail.com>
wrote:

>For example, I don't
>think you have considered sierpinski carpets as a solution for a specific
>problem not shared by all hams, or possibly yourself, that is, the
>construction of a better than mediocre stealth (attic) antenna that is
>multiband by frquencies dividied by 2, balanced (resonant without ground)
>and easy to construct with wire.

Hi Dan,

55 word sentences with 8 or 9 constraints follows from the topic of
fractal antennas. Antennas that perform better are often stated
simpler.

>Repeating your premise above:
>
>1. A Sierpinski carpet antenna can also be defined as a fractal antenna.

A fractal carpet can also be defined as a fractal? Was that one of my
premises?

>2. All fractal antennas have no more presumed benefit than a random wire
>pattern.

Presumption is in the mind of the presumer. If you find that as one
of my premises, it was attended by far more qualification. Fractal
antennas exhibit considerably different characteristics compared to
random wire antennas. Does this qualify as a benefit? It depends on
the application.

>3. Therefore sierpinski patterns used as an antenna have no more promise
>than a random wire pattern.

I don't think I made simultaneous premises/promises. However, this
argues what promise has been made; and it necessarily follows that
some application has been suggested. I know full well I've offered no
applications as a premise.

>I disagree with the above, or let me say, the logic is not convincing.

To say the least.

>A random wire pattern would require a tuner.

So do many fractals. Fractal does not mean resonant. Where it is
resonant, it does not mean it matches.

>It would not have resonant points divisible by 2.

What antenna does?

>It might not be compact.

Given the necessity of application, neither might a fractal.

>I must respectfully disagree with your premise.

I offered none to disagree with.

>It is known that the bowtie construction works and has gain.

All antennas have gain (directivity, properly) - even negative gain.
This a property of every antenna. That an antenna "works" necessarily
brings in the concept of application - there is sure to be one that
"works" better than the last.

>Sierpinski acts similar to a repeating pattern of bowtie antennas of
>Fr/2, (we can do the same thing with dipoles but with less gain).

"Similar" stretches to cover a lot of poor fits. A repeating pattern
is not a virtue as there are MANY inferior antennas that so qualify.

>That is why I say don't get hung up on the word "fractal". Doing so can paralyze the
>thought process with a mental roadblock. Because of negative or mediocre
>prior experience when analyzing antennas that are purposely constructed as
>'fractal', it becomes impossible to consider this construction as a
>possiblly advantageous solution (for stealth situations in my case), just
>because it also happens to be 'fractal'.

Well, in fact I can suggest many better antennas that are either
fractal or not - so there is nothing about the word fractal to bother
me.

>Thank you for your comments and thanks for the information on your site. I
>would caution however that there are many papers on the net that seem to
>give more possibility of success to sierpinski than you give to fractal
>designs in general.

I suppose I could give more possibility of success to one fractal than
I could give to fractals in general too and I have on probably several
hundreds of pages. The statement is not remarkable although the bulk
of data is.

Those papers you've come across came years after my work so I don't
know what they contribute as new insights; they've yet to break new
ground and they are novel only to the writers.

OK, I've returned to your original post to find you want:
1. A 40M antenna in an attic of unspecified dimension;
2. 10dB gain;
3. 25% bandwidths;
4. VSWRs at multiples of lambda at 2X.

By the numbers:

1. That can be done, yes, certainly, most assuredly, without equivocation - maybe if your attic is large enough.

2. This is not demonstrated in your reference paper (and I would suggest no where in the known world). However, for the benefit of the doubt, what do you mean by 10dB gain? With respect to what (dB can compare numbers, any numbers, but this is about antennas and there are simple conventions that resolve this nebulosity).

3. You want that to go with gain too? No.

4. Again, your reference paper nowhere exhibits this property, and again it would seem unlikely to find without hi-grading a lot of designs. It is not inherent in the class called fractals.

Your suite of "wants" contains conflicts in fractal design. To put it in a nutshell, you would have to read a considerable volume of work on the topic (much less antennas in general if the word fractal is too laden with issue) to allow any other conclusion to emerge from the general consensus. That outlier would be an exceedingly rare breed, and in all likelihood a fluke of misunderstanding; because, no, arriving with 1,2,3, and 4 intact is not achievable.

Still and all, I would applaud your attempt. Everyone needs to build at least one fractal in their life.

73's
Richard Clark, KB7QHC

2543. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-23 23:58:31 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <koc1s3p04mpd3avvn5m95i1bujle2g1i6p@4ax.com>
Source record: 27765

On Sat, 23 Feb 2008 22:54:37 +0100, "Francesco L."
<franlanc@NOSPAMtin.it> wrote:

>I was wondering if it's possible to shorten the radials from the standard
>1/4 wavelength to another value, a smaller one. For example, in a 20 meters
>antenna, which is the best value of length for shortened radials or, in
>alternative, until which value is possible to go to without superlosses?
>Thanks in advance

Hi Francesco,

On the ground, or elevated?

73's
Richard Clark, KB7QHC

2544. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 00:40:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mqc1s31ngfqsltfd0fmqbu2qkdanpq3jpu@4ax.com>
Source record: 27766

On Sat, 23 Feb 2008 18:19:37 -0500, "AI4QJ" <nospam@hotmail.com>
wrote:

>I guess sierpinski also happens to be 'fractal' for some people because it
>happens to have a repeating pattern, similar to fractals. So does a fan
>dipole.

Hi Dan,

A fan dipole does not. It is not self similar at all scales, a
fractal is. The sierpinski easily qualifies on many levels.

>Yes, I need to spend more time calculating the lengths os the gaskets and I
>haven't done that yet. However, it is an antenna construction so coil or
>capacitive 'shorteners' may have to be tolerated, reducing the gain.

That would be unfortunate. The fractal can manage those issues for
itself. Calculation is plug-ordinary. You only need one successful
design and simply scale it to 40M.

>>>4. Resonant points of each gasket divided by 2. Thus no tuner.
>>
>> A Gamma match does much the same thing (no tuner). As for the
>> "resonant points" - again, easier to write than to demonstrate (let's
>> just simplifiy this and say impossible).
>
>EASY to demonstrate, see Table 1, Column 5 (F(n+1)/F(n)).
>
>http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf

Within the error of not being 2:1 (and notable not between the
fundamental and the first harmonic typical of most antennas);
trivialities aside, yes, it does support your statement.

So, it should seem that a 40M implementation is conveniently within
scaling from this paper.

However, as we close in on the 10th anniversary of publication, not
much about fractals has advanced beyond what was already known then.

73's
Richard Clark, KB7QHC

2545. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 00:46:14 UTC
From: Manjimike <Manjimike.206b103@radiobanter.com>
Message-ID: <Manjimike.206b103@radiobanter.com>
Source record: 27770

Ed_G;619267 Wrote:
>
>
> If you really want a great performing mobile, and you want to build
>
> it yourself, you might consider this:
>
> http://faq.1and1.com/web_space__access/protected_directories/3.html
>
>
> Ed K7AAT

I couldn't find anything about antennas there :)

73 Mike
VK6ZYX

--
Manjimike

2546. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 04:00:49 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <df310c62-1eab-49dd-8d9e-37b0c305bff8@e10g2000prf.googlegroups.com>
Source record: 27767

On Feb 23, 2:32 pm, Cecil Moore <nos...@w5dxp.com> wrote:
...
> If you, like Roy and Tom, don't care where the power
> goes,

I really do wish you'd learn to read. I did NOT say I don't care
where the power goes.

2547. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 04:11:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <K76wj.4633$Mh2.4606@nlpi069.nbdc.sbc.com>
Source record: 27768

K7ITM wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> If you, like Roy and Tom, don't care where the power
>> goes,
>
> I really do wish you'd learn to read. I did NOT say I don't care
> where the power goes.

I apologize, Tom. To me, the following quote sounded like
you don't care.

> The stuff about constructive/destructive interference with respect to
> figuring out what happens inside a source is, to me, just so much
> dancing on the head of pins.

If you had to chose the correct implication which would it be?

A. I care about what happens inside a source.

B. I don't care what happens inside a source.
--
73, Cecil http://www.w5dxp.com

2548. Re: Arrl antenna book cd does not install, help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 04:37:04 UTC
From: Roger <GetValidAddress@my.com>
Message-ID: <rns1s35h6utdsduu6vnteefaj7rj0q6g9i@4ax.com>
Source record: 27769

On Fri, 15 Feb 2008 11:14:34 GMT, ml <m@di.net> wrote:

>In article
><7807c664-a239-48ed-a8d0-3f609aa048db@v67g2000hse.googlegroups.com>,
> "Francesco L." <flancellotta@gmail.com> wrote:
>
>> I tried to install the cd contained in the arrl antenna book latest
>> edition but at the end of the process it shows an error. So I was
>> wondering if there's another method to see what's inside and
>> particularly the previous edition of the antenna book that, according
>> to what someone said on this newsgroup, should be contained in the cd.
>> Thanks a lot in advance
>
>the disk dosn't have to really install, just the viewer program,
>most people just either explore it as mentioned or use the arrl
>program to navigate /view it
>
>you can of course put the entire cd on your hd if you like.

Copy the CD to its own directory on the HD, then create an icon to the
pdf that is the index. You should be able to find the icon for the
book. Use that for the icon image.
As the book is a series of linked pdfs you only need the starting one
which IIRC is 000.pdf or some such name. From there on it's just like
using the installed version.

At this point you can install the other individual programs.

>
>just treat it like any other file, copy the cd image or the entire
>contense to a new folder on your computer
>
>then try to get their viewer working it should install, since you

Just use the latest version of Adobe's free reader.
Which BTW some of the older books would install their own "older"
version of Adobe reader over top of a newer resident version, which
was a very good reason for the copy instead of install.

Roger (K8RI)
>didn't mentioned why it didn't install i can t say more what error
>messages did you get?
>
>you can also perhaps call arrl they may be able to walk u thru a simple
>install or a tech issue w/it not installing
>

>most of the files are common files there you should be able to view
>them even w/o the arrl program however it makes it easier
>
>
>
>good luck
Roger Halstead (K8RI & ARRL life member)
(N833R, S# CD-2 Worlds oldest Debonair)
www.rogerhalstead.com

2549. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 05:09:58 UTC
From: PJ <rredbeak@optusnet.com.au>
Message-ID: <47c0fc22$0$7238$afc38c87@news.optusnet.com.au>
Source record: 27771

TY Mike,ive seen this site before and if i cant get what im after ill build one of these...Cheers...PJ

"Manjimike" <Manjimike.205b3e4@radiobanter.com> wrote in message news:Manjimike.205b3e4@radiobanter.com...
>
> 'PJ[_3_ Wrote:
>> ;618945']Hi,i need building/winding instructions for a 80-10M helical
>> for my car
>> please with tappings for eacvh band. all help gratefully received.. PJ
>
> This Might be what you need
>
> http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=10335
>
> Cheers Mike
> VK6ZYX
>
>
>
>
> --
> Manjimike

2550. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 05:10:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13s1v26su2vd7ef@corp.supernews.com>
Source record: 27772

K7ITM wrote:
> On Feb 23, 2:32 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> ...
>> If you, like Roy and Tom, don't care where the power
>> goes,
>
>
> I really do wish you'd learn to read. I did NOT say I don't care
> where the power goes.

I care where the power goes, too. And I know where it goes: from my transmitter through the transmission line to the antenna.

Roy Lewallen, W7EL

2551. Re: 80-10 Helical tapped mobile whip

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 05:35:50 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A4DDBAEEDFF8Huckleberrybigvalley@198.186.192.196>
Source record: 27773

>> If you really want a great performing mobile, and you want to build
>>
>> it yourself, you might consider this:
>>
>> http://faq.1and1.com/web_space__access/protected_directories/3.html
>>
>>
>> Ed K7AAT

> I couldn't find anything about antennas there :)
>
> 73 Mike
> VK6ZYX

Oh, for crying out loud, Mike. I'm sorry! I copied and pasted the
wrong URL! It should have been:

http://www.qsl.net/n1lo/antenna.htm

Scroll down as previously mentioned.

Ed

2552. LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 06:40:43 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <49115b34-632e-4cc8-bac6-1e820995e6d3@u10g2000prn.googlegroups.com>
Source record: 27774

Anyone have any practical LPY (log-periodic Yagi) antenna designs they care to share? Something with about 4% or 5% bandwidth in the VHF/low UHF range should do well--the element diameters should be appropriate for scaling the design to my frequencies of interest. 10dBi or so gain is probably fine.

Cheers,
Tom

2553. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 11:24:14 UTC
From: Silfax <root@localhost.localdomain>
Message-ID: <pan.2008.02.24.11.24.14.939048@localhost.localdomain>
Source record: 27775

On Fri, 15 Feb 2008 10:50:46 +0000, ml regurgitated the following

>
> my first thought as far as a look alike was to a LP , just
> wondering of all of the antennas out there anyone know which specific
> brand might come closest to looking like a regular tv antenna?
>

Any log periodic would probably fool most folks. You might even get
away with putting up a 80m-10m LP, and just say it's for big screen tvs

Alex/AB2RC

2554. Re: LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 12:37:43 UTC
From: Dave <noone@nowhere.com>
Message-ID: <rydwj.1850$RQ3.1388@trndny05>
Source record: 27776

"K7ITM" <k7itm@msn.com> wrote in message
news:49115b34-632e-4cc8-bac6-1e820995e6d3@u10g2000prn.googlegroups.com...
> Anyone have any practical LPY (log-periodic Yagi) antenna designs they
> care to share? Something with about 4% or 5% bandwidth in the VHF/low
> UHF range should do well--the element diameters should be appropriate
> for scaling the design to my frequencies of interest. 10dBi or so
> gain is probably fine.
>
> Cheers,
> Tom

define "log period yagi"??? ramsey has a line of products that they call
'log periodic and yagi' pcb antennas that has apparently been smushed into
"LPY" as the prefix to their part numbers... but 'Yagi' antennas are one
thing, and 'Log Periodic Dipole Array' antennas are something else. The
only place they cross practically that i have seen is the use of a log
periodic section feed section in between yagi style tuned parasitic elements
to give a wider bandwidth feed point... in this case it is usually just 2 or
3 elements worth of lpda feeding the yagi which i have always considered
just a way to add buzzwords to your antenna design description.

2555. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 12:39:15 UTC
From: Dave <noone@nowhere.com>
Message-ID: <Tzdwj.2271$A93.613@trndny08>
Source record: 27777

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in message
news:Xns9A4DA024E175FHuckleberrybigvalley@198.186.192.196...
>
>
> Sometime in May I expect to be moving into a new house, built on
> Pacific Northwest coastal Sand. It is at 100' elevation about 1/3 mile
> from where the Siuslaw river dumps into the Pacific Ocean.
>
> In the past, I usually drive at least one decent 8' ground rod outside
> my shack for a station ground, but am wondering what you guys might
> advise
> in this regard with having sand instead of dirt.
>
>
> Ed K7AAT

longer fatter rods, more of them, add horizontal buried radials, the same thing you would do in any other poor grounding situation... except in sand its much easier to bury radials and drive more rods than if you are sitting on rock, so do more of it.

2556. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 12:46:45 UTC
From: Dave <noone@nowhere.com>
Message-ID: <VGdwj.2272$A93.1266@trndny08>
Source record: 27778

"AI4QJ" <nospam@hotmail.com> wrote in message
news:47c08c96$0$4956$4c368faf@roadrunner.com...
>
> "J. Mc Laughlin" <jcm@power-net.net> wrote in message
> news:Uf-dnWv3m6Glv13anZ2dnUVZ_quhnZ2d@bright.net...
>> Dear AI4QJ: Work through the numbers found in the paper. Each
>> full-size triangle has a height and width of about 0.26 WL at the lower
>> resonant frequency. Assume a balanced pair of full-size triangles and
>> one has the length of a 0.5 WL dipole. The latter is much more easy to
>> tune!
>>
>> The only positive thing about this antenna is the possibility of having a
>> second resonance at about two times the lower resonance.
>>
>> A somewhat fat dipole that is not necessarily resonant at any amateur
>> radio frequency (but fits your space) fed by a tuner seems to be the
>> ticket. When we built our house, I ran a wire just under the ridge line
>> as a back-up antenna.
>>
>
> Thanks for your comments Mr. McLaughlin,
>
> In the following paper
> http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf you
> see a sierpinski construction containing 1 triangle gasket with 4
> additional sierpinski subgaskets.
> The perfromance is mildly impressive. For example, the 5 gaskets seem to
> act as 5 tuned
> "bowtie antennas" with the resonance points divided by 2 (with the slight
> exception of first
> gasket to 1st subgasket), a distict advantage for hams.What this means of
> course
> is a multiband, multi-resonant antenna, with a possible infinite number
> of subgaskets, although the
> paper deals with only 5. No tuner should be required (except for 1st
> gasket to 1st subgasket).
> Or. for a dipole, none of those LC circuits need be added to the dipole
> (ugh) to have
> 'resonance' at several bands. For each band, you just construct more
> triangles.
> The input return loss is rather good as well. I would really approeciate
> your comments
> if you could take a look at the paper I referenced above.
>

> TKS ES 73
> de AI4QJ
>
well, lets see... 88.9 mm high at 520MHz.... at 30m that would be 100x taller or about 29' tall, and of course 29' wide... and since it was built ion 1.588mm thick substrate you need 6" thick fiberglass backing for it(don't say you don't need the substrate, that is an integral part of how that patch works). can anyone say sailboat? you are going to need a big foundation to hold that sucker for sure!

2557. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 14:15:34 UTC
From: "Francesco L." <franlanc@NOSPAMtin.it>
Message-ID: <62dcdeF22mj4kU1@mid.individual.net>
Source record: 27779

> Hi Francesco,
>
> On the ground, or elevated?
>
Both cases please. I did a reasearch on arrl antenna book, low band dxing
and newsgroups and got a bit confused, so I need more tips. There are too
many options, I mean: at a certain height above the ground, atop the roof,
on the ground and so on, so I'm trying to collect as much info as possible
in order to get the overall picture.
Thanks

2558. china wholesale cheap louis vuitton gucci nike jordan 1 11 21 23 prada shoes UGG boots

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 14:24:59 UTC
From: myniceshoes1@yahoo.com.cn
Message-ID: <e7ae5029-e04a-47c4-bed2-ab151ef48675@s12g2000prg.googlegroups.com>
Source record: 27780

China Shoes wholesale include: Nike Shoes Max 90 Max 95 nike 87 nike 2003 nike 2006 nike 2007 Nike TN Nike shox tl oz nz r3 r4 r5 shoes,Sneakers NBA Basketball Sneakers, Jordans Sneakers Adidas, Puma, Prada, Timberland, Gucci ... Adidas, Puma, Lacoste Trainers D&G Hogan dsquared Shoes,Prada, Timberland Boots, Gucci, Cheap Nike shoes wholesale from China nike factory. Authentic Quality at Wholesale Price.Shoes wholesale include: Nike, Jordans Sneakers Adidas, Puma, Prada, Timberland, Gucci ... Adidas, Puma, Prada, Timberland, Gucci, Cheap Nike shoes wholesale from China nike factory.
cheap nike air jordans
Max 90 Sneakers www.nikechinawholesale.com
Nike Air Max 91 Supplier www.nikechinawholesale.com
Nike Air Max 95 Shoes Supplier
Nike Air Max 97 Trainers
Nike Air Max 2003 Wholesale
Nike Air Max 2004 Shoes Wholesale
Nike Air Max 2005 Shop
Nike Air Max 2006 Shoes Shop
Nike Air Max 360 Catalogs
Nike Air Max Ltd Shoes Catalogs
Nike Air Max Tn Men's Shoes www.nikechinawholesale.com
Nike Air Max Tn 2 Women's Shoes
Nike Air Max Tn 3 Customize
Nike Air Max Tn 4 Shoes Customize
Nike Air Max Tn 6 Supply
Nike Shox NZ Shoes Supply
Nike Shox OZ Sale www.nikechinawholesale.com
Nike Shox TL Store
Nike Shox TL 2 Shoes Store
Nike Shox TL 3 Distributor
Nike Shox Bmw Shoes Distributor
Nike Shox Elite Shoes Manufacturer
Nike Shox Monster Manufacturer
Nike Shox R4 Running Shoes
Nike Shox R5 Mens Shoes
Nike Shox Ride Womens Shoes
Nike Shox Rival Shoes Wholesaler
Nike Shox Energia Wholesaler
Nike Shox LV Sneaker
Nike Shox Turbo Suppliers
Nike Shox Classic Shoes Suppliers
Nike Shox Dendara Trainer www.nikechinawholesale.com
Nike Air Jordan 1 Seller

Nike Air Jordan 2 Shoes Seller
Nike Air Jordan 3 Collection
Nike Air Jordan 4 Shoes Collection
Nike Air Jordan 5 Chaussure Shoes
Nike Air Jordan 6 Catalog
Nike Air Jordan 7 Shoes Catalog
Nike Air Jordan 8 Customized
Nike Air Jordan 9 Shoes Customized
Nike Air Jordan 10 Wholesalers
Nike Jordan 11 Shoes Wholesalers
Nike Air Jordan 12 Factory www.nikechinawholesale.com
Nike Air Jordan 13 Shoes Factory
Nike Air Jordan 14 Shoes Sell
Nike Air Jordan 16 Exporter
Nike Air Jordan 17 Shoes Exporter
Nike Air Jordan 18 Offer
Nike Air Jordan 19 Shoes Offer
Nike Air Jordan 20 Manufacture www.nikechinawholesale.com
Nike Jordan 21 22 23 Shoes Manufacture www.nikechinawholesale.com
Nike Athletic shoes, Nike Basketball shoes, Nike Running shoes

2559. n8wwm rules with an iron fist

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 14:40:20 UTC
From: Channel Master <channelm@yahoo.com>
Message-ID: <47c181de$1$26905$6e1ede2f@read.cnntp.org>
Source record: 27781
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.shortwave

This is how a real radio N8WWM operator controls the airwaves. He dominates the bands so DO NOT cross him! YOU HAVE BEEN WARNED!

http://media.putfile.com/dougay-whines-again

2560. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 14:50:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2vfwj.16146$0w.7663@newssvr27.news.prodigy.net>
Source record: 27782

Roy Lewallen wrote:
> I care where the power goes, too. And I know where it goes: from my
> transmitter through the transmission line to the antenna.

Roy, here's a quote from your web page:
"I personally don't have a compulsion to understand
where this power 'goes'."

How can you care where the power goes when you don't care
to understand where the power goes?

You also scream out:
"THE REVERSE POWER IS NOT DISSIPATED IN OR ABSORBED BY THE
SOURCE RESISTANCE."

I just presented a special case example where all of the
reverse energy is dissipated (converted to heat) in the
source resistance. All it takes is one example to prove
your above statement to be false.

Your web page even contains one of those special case
examples. When your load is 0 +/- j50 at the end of
a 1/2WL piece of 50 ohm line, the forward wave and
reflected wave are 90 degrees out of phase at the
50 ohm source resistor. Under that special condition,
all of the reflected energy is dissipated in the
source resistor. Your own example proves your statement
to be false.
--
73, Cecil http://www.w5dxp.com

2561. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 16:23:49 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <pSgwj.252930$MJ6.188878@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27783

Cecil Moore wrote:

>
> Maxwell and Bruene have been arguing about such for 20
> years now. The need to discover "where the power goes"
> apparently exists for them and others.
>
> If you, like Roy and Tom, don't care where the power
> goes, that OK, but please don't try to present yourselves
> as experts on a subject you don't care enough about
> enough to have ever studied it in detail.

Cecil,

I must have missed the messages in which you resolved this 20 year
battle through your pioneering analysis technique.

Who won?

8-)

73,
Gene
W4SZ

2562. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 16:24:03 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <59459e80-f5a4-40d9-8995-afcb5531bf8e@i29g2000prf.googlegroups.com>
Source record: 27784

On 24 feb, 15:15, "Francesco L." <franl...@NOSPAMtin.it> wrote:
> > Hi Francesco,
>
> > On the ground, or elevated?
>
> Both cases please. I did a reasearch on arrl antenna book, low band dxing
> and newsgroups and got a bit confused, so I need more tips. There are too
> many options, I mean: at a certain height above the ground, atop the roof,
> on the ground and so on, so I'm trying to collect as much info as possible
> in order to get the overall picture.
> Thanks

Hello Francesco,

It depends heavily on the antenna. When your antenna is an
electrically half wave radiator, the input impedance is in the kOhm
range and "ground" becomes less important. Many CB 27 MHz antennas are
half wave antennas (without any radials). For other lengths, "ground"
is important.

The smaller your antenna the lower the radiation resistance (=higher
feed current), and the more important the "ground" system.

For fertile wet ground and buried radials, the 0.25lambda is no longer
a magic number as the attenuation is very high. For dry Rock/sand,
dielectric properties dictate and some standing waves appear in the
ground conductor. As long as the real part of the ground impedance
is less then the real part of the input impedance of the radiator, it
is OK.

If possible, I prefer elevated radials. In many cases, they can be
shorter than 0.25 lambda (add more of them). The disadvantage is that
your floating ground becomes capacitive and you get a common mode
voltage on the cable screen, so you should add a common mode choke.
When you make them very short, the electrical situation is upside
down: your radiator functions as ground and your floating radial
network is the antenna.

An advantage of floating radials and the high end of HF is that your
radiation center is higher and ground properties become less
important, so you can have less loss (also in nearby structures) and
less noise from electrical equipment.

To give a more precise answer, one need to know your local conditions,
structural limitations, frequency and antenna type to be used, etc.
For low frequency, "Ground systems as a factor in antenna

systems" (Brown, Lewis Epstein, 1937) maybe interesting for you in case of buried radials.

I know this doesn't answer your question, but I hope it will help you a bit.

Best regards,

Wim
PA3DJS
www.tetech.nl (Dutch).

2563. Oddball Antenna Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 16:27:41 UTC
From: Jim-NN7K
Message-ID: <LWgwj.5835$Mw.1567@nlpi068.nbdc.sbc.com>
Source record: 27786

Don't know if can explain this the best way, but in the
late '50's, early 60's there was a 6 meter antenna,
that was a YAGI design, but with a TWIST (Literally).
The Reflector was Horizontal, the 1st Director was
VERTICAL, and the other elements were "Skewed" so as
to imitate a helix , over the length of the boom
(some 25-35 FEET).

A normal helix, if memory serves, is wound 1/4 wavelength
to obtain circular polarization-- and the same for
satellite antennas, cross polarized , and offset by 1/4
wave, (and fed either 90 , or 270 degrees out of phase
from each other . For Right hand, or Left hand circular.

My question is 2 fold: 1) Did the Long Design really
generate Circular polarization (-3dB down in ALL polarizations)
or was this tilting at windmills.
and 2), for Circular polarization, does the constraint of
1/4 wavelength need to be applied to a (given) antenna?

Reason for this is an antenna that will pretty much
avoid polarity shifts, during band openings, or am I
Halucinating again?? Your thoughts Please
Jim NN7K

2564. Re: n8wwm rules with an iron fist

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 16:28:11 UTC
From: m II <c@in.the.hat>
Message-ID: <vWgwj.42519$w57.39487@edtnps90>
Source record: 27785
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.shortwave

Channel Master wrote:

> This is how a real radio N8WWM operator controls the airwaves. He dominates
> the bands so DO NOT cross him! YOU HAVE BEEN WARNED!
>
> http://media.putfile.com/dougay-whines-again
>
>
>

It appears CB radio has made a resurgence. What a bunch of morons.

mike

2565. LORAN - C

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 16:32:17 UTC
From: George <nospam@nospam.com>
Message-ID: <o_gwj.2741$pl4.286@newssvr22.news.prodigy.net>
Source record: 27787

Anybody have a source of information on LORAN - C antenna design? Googling hasn't turned up much at all.

George, K6GW

2566. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 16:35:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <s273s3prrig511vbddqdtl9abp979hd5k0@4ax.com>
Source record: 27788

On Sun, 24 Feb 2008 16:23:49 GMT, Gene Fuller <W4SZzzzzzz@att.net>
wrote:

>Who won?

Gad Gene,

Now we will get postings signed Cecil Balboa! (Older, pudgier, but
still swinging after all these years.)

73's
Richard Clark, KB7QHC

2567. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 16:52:52 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <q973s3lrg700jf6rb6id8u11fjq5npeuf8@4ax.com>
Source record: 27789

On Sun, 24 Feb 2008 15:15:34 +0100, "Francesco L."
<franlanc@NOSPAMtin.it> wrote:

>> Hi Francesco,
>>
>> On the ground, or elevated?
>>
>Both cases please. I did a reasearch on arrl antenna book, low band dxing
>and newsgroups and got a bit confused, so I need more tips. There are too
>many options, I mean: at a certain height above the ground, atop the roof,
>on the ground and so on, so I'm trying to collect as much info as possible
>in order to get the overall picture.
>Thanks

Hi Francesco,

In the air:
You are going to need a tuner for a standard height antenna with shorter radials. Instead, you can try adding loading coils to each radial (about midpoint). This will take experimentation to achieve resonance. So plan on putting it up and taking it down many times. You will also need a good choke at the feed point (aka 1:1 W2DU BalUn); and another one a quarter wave down the line. Some who report here say you will need more radials the lower the antenna is, and the closer to ground.

On the ground:
As many small radials as you can make, as long as the radiator. If that is too long (will not fit in garden), then simply fill the area you can. "Fill?" For argument's sake (a starting point) a dozen or more 0.1 wavelength radials. If this is too long, increase the count and make them the maximum length you can.

Read Wim's advice for halfwave radiators. They have the reputation of being ground free, but it will ease tuning if you build some radials - whatever length, whatever count (not critical). If you don't build these; then matching becomes a function of line placement. If the line changes, so does the match.

73's
Richard Clark, KB7QHC

2568. Re: LORAN - C

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 16:56:19 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mc83s3p6749ogpqr8s1rrl4nb8hmrcsfdk@4ax.com>
Source record: 27790

On Sun, 24 Feb 2008 08:32:17 -0800, "George" <nospam@nospam.com>
wrote:

>Anybody have a source of information on LORAN - C antenna design? Googling
>hasn't turned up much at all.

Hi George,

Use a CB whip with matching.

73's
Richard Clark, KB7QHC

2569. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 17:55:51 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-86EF8B.08554324022008@netnews.worldnet.att.net>
Source record: 27791

In article <Xns9A4DA024E175FHuckleberrybigvalley@198.186.192.196>,
"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote:

> Sometime in May I expect to be moving into a new house, built on
> Pacific Northwest coastal Sand. It is at 100' elevation about 1/3 mile
> from where the Siuslaw river dumps into the Pacific Ocean.
>
> In the past, I usually drive at least one decent 8' ground rod outside
> my shack for a station ground, but am wondering what you guys might advise
> in this regard with having sand instead of dirt.
>
>
> Ed K7AAT

To bad you can't get at the ReBar in the concrete pad your new house may
be built on. That grid, if tied together properly, would make a JimDandy
Low Impedance RF Ground.

--
Bruce in alaska
add <path> after <fast> to reply

2570. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 18:00:25 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <Zgiwj.10375$0o7.2406@newssvr13.news.prodigy.net>
Source record: 27792

Bruce in alaska wrote:
> In article <Xns9A4DA024E175FHuckleberrybigvalley@198.186.192.196>,
> "Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote:
>
>> Sometime in May I expect to be moving into a new house, built on
>> Pacific Northwest coastal Sand. It is at 100' elevation about 1/3 mile
>> from where the Siuslaw river dumps into the Pacific Ocean.
>>
>> In the past, I usually drive at least one decent 8' ground rod outside
>> my shack for a station ground, but am wondering what you guys might advise
>> in this regard with having sand instead of dirt.
>>
>>
>> Ed K7AAT
>
> To bad you can't get at the ReBar in the concrete pad your new house may
> be built on. That grid, if tied together properly, would make a JimDandy
> Low Impedance RF Ground.
>

Locate a piece of rebar in the concrete and carefully chip the concrete
away until you reach the metal. Then attach a heavy gage wire to the
rebar and close the hole with concrete patch. You will now have access
to the grounding grid.

Dave WD9BDZ

2571. Re: LORAN - C

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 18:03:36 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-B6BFAC.09033524022008@netnews.worldnet.att.net>
Source record: 27793

In article <mc83s3p6749ogpqr8s1rrl4nb8hmrcsfdk@4ax.com>,
Richard Clark <kb7qhc@comcast.net> wrote:

> On Sun, 24 Feb 2008 08:32:17 -0800, "George" <nospam@nospam.com>
> wrote:
>
> >Anybody have a source of information on LORAN - C antenna design? Googling
> >hasn't turned up much at all.
>
> Hi George,
>
> Use a CB whip with matching.
>
> 73's
> Richard Clark, KB7QHC

As Richard noted, MOST Loran C Antenna Systems, are comprised of a
108" CB Whip and an Active Antenna Preamp specifically designed
for the 100 Khz Frequency and 100 Hz Bandwidth of Loran C Signals.
Usually it doesn't take much except a good narrow Bandpass filter
in front of a couple of Cascode JFets, to get a reasonable signal
level for the Units receiver, and normally, Notch Filtering, is
done at the Main Receiver and Controlled by the microcontroller
that runs the receiver, for interfering Pulse Signals.

--
Bruce in alaska
add <path> after <fast> to reply

2572. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 18:45:46 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A4E6D770AA78Huckleberrybigvalley@198.186.192.196>
Source record: 27794

>
> longer fatter rods, more of them, add horizontal buried radials, the
> same thing you would do in any other poor grounding situation...
> except in sand its much easier to bury radials and drive more rods
> than if you are sitting on rock, so do more of it.
>
>

Thanks, Dave. That is probably what I may do, I don't want to be putting in overkill for my situation (that would be rods every 8 feet all around the house and connected by #0 copper!). I'm more interested in grounding for electrical safety than lightning protection. I'll probably just put in two or three standard 8' rods and connect them with large copper cable. My question was aimed more at wondering how effective for this purpose a ground rod or three would be in sand......

And thanks to those who mentioned the rebar grid... but this house is on pillars, with rebar only in the perimeter foundation.... and well embedded in the center of the concrete, at that, so as to preclude any access.

Ed K7AAT

2573. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 19:11:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13s3gb8jqkmq6ae@corp.supernews.com>
Source record: 27795

Ed_G wrote:
>
> Thanks, Dave. That is probably what I may do, I don't want to be
> putting in overkill for my situation (that would be rods every 8 feet
> all around the house and connected by #0 copper!). I'm more interested
> in grounding for electrical safety than lightning protection. I'll
> probably just put in two or three standard 8' rods and connect them with
> large copper cable. My question was aimed more at wondering how
> effective for this purpose a ground rod or three would be in sand......
>
> And thanks to those who mentioned the rebar grid... but this house is
> on pillars, with rebar only in the perimeter foundation.... and well
> embedded in the center of the concrete, at that, so as to preclude any
> access.

For an electrical safety ground, you should follow the requirements of
the National Electrical Code (NEC).

Roy Lewallen, W7EL

2574. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 19:18:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13s3gor1jumt22c@corp.supernews.com>
Source record: 27796

I believe other folks have mentioned that when the radials are buried, no specific length is required for the antenna to be resonant. The more radials you use and the longer they are, the lower the loss. There's a point of diminishing returns for both length and number, and it turns out that if you have only a few radials, making them very long doesn't help much.

Elevated radials normally have to be close to a quarter wavelength long for resonance unless they're very close to the ground in which case they need to be somewhat shorter. You can use the same techniques to shorten elevated radials, though, as you do a vertical radiating element. You can add a loading inductance at the feedpoint or farther along each radial, you can use a capacitive "hat" at the end, or some combination of the two. And just as happens with loaded verticals, the result will be narrower bandwidth, lower feedpoint resistance at resonance, and potentially higher loss.

Roy Lewallen, W7EL

2575. Re: Oddball Antenna Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 19:30:29 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13s3henhgglcoe4@corp.supernews.com>
Source record: 27797

If you do a bit of analysis with a modeling program, I think you'll find that if you generate a circularly polarized signal, it'll become nearly linearly polarized once it reflects from the ground. And it's nearly impossible, and often undesirable, to prevent ground reflection at HF. There might be a way to generate a signal that's circularly polarized after reflection, but I don't know how to do it.

Roy Lewallen, W7EL

Jim-NN7K wrote:
> Don't know if can explain this the best way, but in the
> late '50's, early 60's there was a 6 meter antenna,
> that was a YAGI design, but with a TWIST (Literally).
> The Reflector was Horizontal, the 1st Director was
> VERTICAL, and the other elements were "Skewed" so as
> to imitate a helix , over the length of the boom
> (some 25-35 FEET).
>
> A normal helix, if memory serves, is wound 1/4 wavelength
> to obtain circular polarization-- and the same for
> satellite antennas, cross polarized , and offset by 1/4
> wave, (and fed either 90 , or 270 degrees out of phase
> from each other . For Right hand, or Left hand circular.
>
> My question is 2 fold: 1) Did the Long Design really
> generate Circular polarization (-3dB down in ALL polarizations)
> or was this tilting at windmills.
> and 2), for Circular polarization, does the constraint of
> 1/4 wavelength need to be applied to a (given) antenna?
>
> Reason for this is an antenna that will pretty much
> avoid polarity shifts, during band openings, or am I
> Halucinating again?? Your thoughts Please
> Jim NN7K

2576. Re: LORAN - C

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 19:33:56 UTC
From: Roger D Johnson <n1rj~@roadrunner.com>
Message-ID: <47c1c696$0$6486$4c368faf@roadrunner.com>
Source record: 27798

George wrote:
> Anybody have a source of information on LORAN - C antenna design? Googling
> hasn't turned up much at all.
>
> George, K6GW
>
>
>
Hi George...

I spent 9 years on LORAN C stations (Kure Is, Sylt, Ger and Caribou,
Me). What do you want to know?

73, Roger (CWO4, USCG ret)

--
Remove tilde (~) to reply

Remember the USS Liberty (AGTR-5)
http://ussliberty.org/

2577. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 19:36:08 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13s3hp7e8m8kh4d@corp.supernews.com>
Source record: 27799

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13s3gb8jqkmq6ae@corp.supernews.com...
> Ed_G wrote:
>>
>> Thanks, Dave. That is probably what I may do, I don't want to be
>> putting in overkill for my situation (that would be rods every 8 feet
>> all around the house and connected by #0 copper!). I'm more interested
>> in grounding for electrical safety than lightning protection. I'll
>> probably just put in two or three standard 8' rods and connect them with
>> large copper cable. My question was aimed more at wondering how
>> effective for this purpose a ground rod or three would be in sand......
>>
>> And thanks to those who mentioned the rebar grid... but this house is
>> on pillars, with rebar only in the perimeter foundation.... and well
>> embedded in the center of the concrete, at that, so as to preclude any
>> access.
>
> For an electrical safety ground, you should follow the requirements of the
> National Electrical Code (NEC).
>
> Roy Lewallen, W7EL

That was my thinking for electrical safety and not for RF. Local conditions vary and change over the years.

Ask the building inspector what is required for your area. In my area it is two 8 foot ground rods spaced so far apart. I don't deal with the codes so can not tell the distance, but it is probably around 6 feet apart and connected by a continious conductor back to the breaker box. I think it is atleast # 6 copper wire for the ground.

Whatever you do , connect all the grounds around the house together, including the antenna and cable/phone lines if you have them.

2578. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 19:37:56 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13s3hsjto9o00c6@corp.supernews.com>
Source record: 27800

"David G. Nagel" <nagel.david@sbcglobal.net> wrote in message
news:Zgiwj.10375$0o7.2406@newssvr13.news.prodigy.net...
> Locate a piece of rebar in the concrete and carefully chip the concrete
> away until you reach the metal. Then attach a heavy gage wire to the rebar
> and close the hole with concrete patch. You will now have access to the
> grounding grid.
>
> Dave WD9BDZ

One should never have any rebar exposed to the air. It will rust and expand
breaking the concrete. If put in correctly, it will be about 3 inches
inside the concrete.

2579. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 19:57:16 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A4E7996174FHuckleberrybigvalley@198.186.192.196>
Source record: 27702

> For an electrical safety ground, you should follow the requirements of
> the National Electrical Code (NEC).
>
> Roy Lewallen, W7EL
>

True, but rather impractical for most hams, I suspect. I would
have to run a #6 or larger cable over 100' to bond the ground rod just
outside my ham shack to the building power entry ground.

So.... would I be better off just relying on the wall outlet ground
to my equipment? I'm just looking for electrical power safety, plus a
little help in possible static dissipation.

Ed K7AAT

2580. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 19:58:40 UTC
From: "Francesco L." <franlanc@NOSPAMtin.it>
Message-ID: <62e0gmF23ijd0U1@mid.individual.net>
Source record: 27701

Thanks to all!
ik8vwa

2581. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 21:01:33 UTC
From: AI4QJ <dfinn1@nc.rr.com>
Message-ID: <47c1db2e$0$1085$4c368faf@roadrunner.com>
Source record: 27703

"Dave" <noone@nowhere.com> wrote in message
news:VGdwj.2272$A93.1266@trndny08...
>
> "AI4QJ" <nospam@hotmail.com> wrote in message
> news:47c08c96$0$4956$4c368faf@roadrunner.com...
>>
>> "J. Mc Laughlin" <jcm@power-net.net> wrote in message
>> news:Uf-dnWv3m6Glv13anZ2dnUVZ_quhnZ2d@bright.net...
>>> Dear AI4QJ: Work through the numbers found in the paper. Each
>>> full-size triangle has a height and width of about 0.26 WL at the lower
>>> resonant frequency. Assume a balanced pair of full-size triangles and
>>> one has the length of a 0.5 WL dipole. The latter is much more easy to
>>> tune!
>>>
>>> The only positive thing about this antenna is the possibility of having
>>> a second resonance at about two times the lower resonance.
>>>
>>> A somewhat fat dipole that is not necessarily resonant at any amateur
>>> radio frequency (but fits your space) fed by a tuner seems to be the
>>> ticket. When we built our house, I ran a wire just under the ridge line
>>> as a back-up antenna.
>>>
>>
>> Thanks for your comments Mr. McLaughlin,
>>
>> In the following paper
>> http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf you
>> see a sierpinski construction containing 1 triangle gasket with 4
>> additional sierpinski subgaskets.
>> The perfromance is mildly impressive. For example, the 5 gaskets seem to
>> act as 5 tuned
>> "bowtie antennas" with the resonance points divided by 2 (with the slight
>> exception of first
>> gasket to 1st subgasket), a distict advantage for hams.What this means of
>> course
>> is a multiband, multi-resonant antenna, with a possible infinite number
>> of subgaskets, although the
>> paper deals with only 5. No tuner should be required (except for 1st
>> gasket to 1st subgasket).
>> Or. for a dipole, none of those LC circuits need be added to the dipole
>> (ugh) to have
>> 'resonance' at several bands. For each band, you just construct more
>> triangles.
>> The input return loss is rather good as well. I would really approeciate

>> your comments
>> if you could take a look at the paper I referenced above.
>>
>> TKS ES 73
>> de AI4QJ
>>
> well, lets see... 88.9 mm high at 520MHz.... at 30m that would be 100x
> taller or about 29' tall, and of course 29' wide... and since it was built
> ion 1.588mm thick substrate you need 6" thick fiberglass backing for
> it(don't say you don't need the substrate, that is an integral part of how
> that patch works). can anyone say sailboat? you are going to need a big
> foundation to hold that sucker for sure!
>
True, the substrate is needed when using as a monopole. However, is a
sunstrate required for a bowtie antenna?

2582. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 21:07:34 UTC
From: richardharrison@webtv.net
Message-ID: <19565-47C1DC96-619@storefull-3251.bay.webtv.net>
Source record: 27705

Francesco L. wrote:
"I was wondering if it`s possible to shorten the radials from the standard 1/4 wavelength to another value, a smaller one."

Elevated radials are resonant, but the 20th edition of the ARRL Antenna Book has Fig 47 on page 6-26 showing radials shortened by capacitive or inductive loading.

Buried radials have their resonance swamped by earth conductance. Such radials are surely effective when the greatest current drops nearly to zero at the ends, farthest from the vertical radiator, No interconnections far from the origins of the radials are desirable as they only encourage circulating current which only adds to loss.

E.A. Laport has Figs. 217 and 218 on page 119 of "Radio Antenna Engineering" taken from Brown, Lewis, and Epstein which show field strength variies versus 2, 15, 30, 60, or 113 ground radials of 0.412 or 0.137 lambda, at antenna heights up to 100 degrees, so that you can see what the shorter radials cost you.

Best regards, Richard Harrison, KB5WZI

2583. Re: LORAN - C

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 21:13:41 UTC
From: George <nospam@nospam.com>
Message-ID: <b6lwj.2767$pl4.1044@newssvr22.news.prodigy.net>
Source record: 27704

Thanks, Roger. Sent you an email.

73,
George

"Roger D Johnson" <n1rj~@roadrunner.com> wrote in message
news:47c1c696$0$6486$4c368faf@roadrunner.com...
> George wrote:
>> Anybody have a source of information on LORAN - C antenna design?
>> Googling hasn't turned up much at all.
>>
>> George, K6GW
>>
>>
>>
> Hi George...
>
> I spent 9 years on LORAN C stations (Kure Is, Sylt, Ger and Caribou, Me).
> What do you want to know?
>
> 73, Roger (CWO4, USCG ret)
>
> --
> Remove tilde (~) to reply
>
> Remember the USS Liberty (AGTR-5)
> http://ussliberty.org/

2584. Re: Oddball Antenna Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 21:27:16 UTC
From: Jim-NN7K
Message-ID: <gjlwj.5873$Mw.1701@nlpi068.nbdc.sbc.com>
Source record: 27706

That kinda the same conclusion I came to, Roy.
Asked on the VHF reflector, too-- the antenna was
apparently made by Telerex, and called the "Spiralray".
But tho it was touted as one that would work with
BOTH polarizations, I always wondered IF it worked-
and IF so, WHY no one ever duplicated it!
Like SOME old memories about radio, guess this one is
(Like TVI in the AM days, on Ch#2) best FORGOTTEN!!

No Free Lunch--(sigh)!

Tnx es 73, JIM

Roy Lewallen wrote:
> If you do a bit of analysis with a modeling program, I think you'll find
> that if you generate a circularly polarized signal, it'll become nearly
> linearly polarized once it reflects from the ground. And it's nearly
> impossible, and often undesirable, to prevent ground reflection at HF.
> There might be a way to generate a signal that's circularly polarized
> after reflection, but I don't know how to do it.
>
> Roy Lewallen, W7EL
>
> Jim-NN7K wrote:
>> Don't know if can explain this the best way, but in the
>> late '50's, early 60's there was a 6 meter antenna,
>> that was a YAGI design, but with a TWIST (Literally).
>> The Reflector was Horizontal, the 1st Director was
>> VERTICAL, and the other elements were "Skewed" so as
>> to imitate a helix , over the length of the boom
>> (some 25-35 FEET).
>>
>> A normal helix, if memory serves, is wound 1/4 wavelength
>> to obtain circular polarization-- and the same for
>> satellite antennas, cross polarized , and offset by 1/4
>> wave, (and fed either 90 , or 270 degrees out of phase
>> from each other . For Right hand, or Left hand circular.
>>
>> My question is 2 fold: 1) Did the Long Design really
>> generate Circular polarization (-3dB down in ALL polarizations)
>> or was this tilting at windmills.
>> and 2), for Circular polarization, does the constraint of
>> 1/4 wavelength need to be applied to a (given) antenna?
>>
>> Reason for this is an antenna that will pretty much

>> avoid polarity shifts, during band openings, or am I
>> Halucinating again?? Your thoughts Please
>> Jim NN7K

2585. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 22:02:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <14j3s3h3120h7ej7st4fuathf35n59nsj0@4ax.com>
Source record: 27707

On 24 Feb 2008 19:57:16 GMT, "Ed_G"
<Huckleberry_REMOVE_@bigvalley.net> wrote:

> True, but rather impractical for most hams, I suspect.

Hi Ed,

The risk of life is a major issue of practicality.

>I would
>have to run a #6 or larger cable over 100' to bond the ground rod just
>outside my ham shack to the building power entry ground.

I will take your word for it and presume that it also conforms to
code.

> So.... would I be better off just relying on the wall outlet ground
>to my equipment? I'm just looking for electrical power safety, plus a
>little help in possible static dissipation.

OK, let's say for the sake of argument that you did NOT do the 100'
tying together of grounds. Let's further consider why there are
ground rods driven and linked in the first place = all grounds are not
all at the same potential. Hint: ground is inhabited by both
resistances and currents. Those currents through those resistances
create a potential difference. I am not speaking of "static" but
honest to goodness 60Hz power.

I can full well anticipate that you are bridging this potential with a
coaxial cable out to a remote feed point - not uncommon at all.

Let's take that to be a fact and proceed to another common action that
is frequently taken. Let's say you are having problems with noise in
your rigs, or strange modulations riding on your signal, or tuning
issues. You might reach for the antenna connector behind your tuner.
The tuner is strapped to ground, and the cable's coaxial shield
supplies this ground to that remote drive point.

As you lean over the tuner, you hold it with one hand, you grab the
coax connector shell, unscrew it and as it separates from the jack
connection the ground currents seek the path formerly through the coax
shield and instead travel through you, hand to hand - across the
heart, and you are killed.

Where do we send the flowers?

p.s. By the way, all those problems I described that caused you to
remove that connector? They come from poor grounding exactly as

described.

73's
Richard Clark, KB7QHC

2586. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 22:04:36 UTC
From: Dave <noone@nowhere.com>
Message-ID: <URlwj.1377$CD4.936@trndny02>
Source record: 27708

```
"AI4QJ" <dfinn1@nc.rr.com> wrote in message
news:47c1db2e$0$1085$4c368faf@roadrunner.com...
>
> "Dave" <noone@nowhere.com> wrote in message
> news:VGdwj.2272$A93.1266@trndny08...
>>
>> "AI4QJ" <nospam@hotmail.com> wrote in message
>> news:47c08c96$0$4956$4c368faf@roadrunner.com...
>>>
>>> "J. Mc Laughlin" <jcm@power-net.net> wrote in message
>>> news:Uf-dnWv3m6Glv13anZ2dnUVZ_quhnZ2d@bright.net...
>>>> Dear AI4QJ: Work through the numbers found in the paper. Each
>>>> full-size triangle has a height and width of about 0.26 WL at the lower
>>>> resonant frequency. Assume a balanced pair of full-size triangles and
>>>> one has the length of a 0.5 WL dipole. The latter is much more easy to
>>>> tune!
>>>>
>>>> The only positive thing about this antenna is the possibility of having
>>>> a second resonance at about two times the lower resonance.
>>>>
>>>> A somewhat fat dipole that is not necessarily resonant at any amateur
>>>> radio frequency (but fits your space) fed by a tuner seems to be the
>>>> ticket. When we built our house, I ran a wire just under the ridge line
>>>> as a back-up antenna.
>>>>
>>>
>>> Thanks for your comments Mr. McLaughlin,
>>>
>>> In the following paper
>>> http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf you
>>> see a sierpinski construction containing 1 triangle gasket with 4
>>> additional sierpinski subgaskets.
>>> The perfromance is mildly impressive. For example, the 5 gaskets seem to
>>> act as 5 tuned
>>> "bowtie antennas" with the resonance points divided by 2 (with the
>>> slight exception of first
>>> gasket to 1st subgasket), a distict advantage for hams.What this means
>>> of course
>>> is a multiband, multi-resonant antenna, with a possible infinite number
>>> of subgaskets, although the
>>> paper deals with only 5. No tuner should be required (except for 1st
>>> gasket to 1st subgasket).
>>> Or. for a dipole, none of those LC circuits need be added to the dipole
>>> (ugh) to have
```

>>> 'resonance' at several bands. For each band, you just construct more
>>> triangles.
>>> The input return loss is rather good as well. I would really approeciate
>>> your comments
>>> if you could take a look at the paper I referenced above.
>>>
>>> TKS ES 73
>>> de AI4QJ
>>>
>> well, lets see... 88.9 mm high at 520MHz.... at 30m that would be 100x
>> taller or about 29' tall, and of course 29' wide... and since it was
>> built ion 1.588mm thick substrate you need 6" thick fiberglass backing
>> for it(don't say you don't need the substrate, that is an integral part
>> of how that patch works). can anyone say sailboat? you are going to
>> need a big foundation to hold that sucker for sure!
>>
> True, the substrate is needed when using as a monopole. However, is a
> sunstrate required for a bowtie antenna?
no, but without the substrate the size will be larger and performance
different. the dielectric loading of the back halves of the conductors will
affect the overall impedance as well as the velocity factor. Oh, and don't
forget to copper plate your yard to scale up the sheet of copper they used
as a ground plane.

2587. Re: LORAN - C

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 22:25:56 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <fOudncicgKBxc1zanZ2dnUVZ_gudnZ2d@comcast.com>
Source record: 27709

"Roger D Johnson" <n1rj~@roadrunner.com> wrote in message
news:47c1c696$0$6486$4c368faf@roadrunner.com...
> George wrote:
>> Anybody have a source of information on LORAN - C antenna design?
>> Googling hasn't turned up much at all.
>>
>> George, K6GW
>>
>>
>>
> Hi George...
>
> I spent 9 years on LORAN C stations (Kure Is, Sylt, Ger and Caribou, Me).
> What do you want to know?
>
> 73, Roger (CWO4, USCG ret)
>
> --
> Remove tilde (~) to reply
>
> Remember the USS Liberty (AGTR-5)
> http://ussliberty.org/

I used to work for Decca Navigator @ their US Mfg plant here in MD back in
the 70's, (we were working on a Loran-D rcvr) and I think that I might still
have some of the 100kc xtals used in the Loran-C receivers in the junk box.
If I can still find them - any interest?
73's Howie W3CQH

2588. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 22:26:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <h3r3s35m153vn4n17i9rmm28e9bhgslub3@4ax.com>
Source record: 27710

On Sun, 24 Feb 2008 16:01:33 -0500, "AI4QJ" <dfinn1@nc.rr.com> wrote:

>True, the substrate is needed when using as a monopole. However, is a
>sunstrate required for a bowtie antenna?

Hi Dan,

As I pointed out earlier, if you find a working model, you need only scale. What I left unsaid (and I presumed was the natural understanding) is that it will exhibit the same characteristics.

Take away the substrate, and you take away (alter) some of those characteristics. Which one(s)? Good question. Examine the original model in the absence of the substrate and you will find your answer. However, this is cold comfort as no one has access to work that is 10 years old (and was probably never performed).

Well, in fact I doubt it will have much disturbance with the fundamental properties, but the details will certainly drift. That is, the fractal nature of the design still remains. It will not resonate at the same frequency, but its comb of harmonic action will probably match the published work (maybe, there are others here better versed in patch designs than myself). Certainly it won't perturb the far field action to any great degree. Most of the radiation lobes will probably look the same.

73's
Richard Clark, KB7QHC

2589. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 22:28:41 UTC
From: AI4QJ <dfinn1@nc.rr.com>
Message-ID: <47c1ef9b$0$24122$4c368faf@roadrunner.com>
Source record: 27711

```
"Dave" <noone@nowhere.com> wrote in message
news:URlwj.1377$CD4.936@trndny02...
>
> "AI4QJ" <dfinn1@nc.rr.com> wrote in message
> news:47c1db2e$0$1085$4c368faf@roadrunner.com...
>>
>> "Dave" <noone@nowhere.com> wrote in message
>> news:VGdwj.2272$A93.1266@trndny08...
>>>
>>> "AI4QJ" <nospam@hotmail.com> wrote in message
>>> news:47c08c96$0$4956$4c368faf@roadrunner.com...
>>>>
>>>> "J. Mc Laughlin" <jcm@power-net.net> wrote in message
>>>> news:Uf-dnWv3m6Glv13anZ2dnUVZ_quhnZ2d@bright.net...
>>>>> Dear AI4QJ: Work through the numbers found in the paper. Each
>>>>> full-size triangle has a height and width of about 0.26 WL at the
>>>>> lower resonant frequency. Assume a balanced pair of full-size
>>>>> triangles and one has the length of a 0.5 WL dipole. The latter is
>>>>> much more easy to tune!
>>>>>
>>>>> The only positive thing about this antenna is the possibility of
>>>>> having a second resonance at about two times the lower resonance.
>>>>>
>>>>> A somewhat fat dipole that is not necessarily resonant at any amateur
>>>>> radio frequency (but fits your space) fed by a tuner seems to be the
>>>>> ticket. When we built our house, I ran a wire just under the ridge
>>>>> line as a back-up antenna.
>>>>>
>>>>
>>>> Thanks for your comments Mr. McLaughlin,
>>>>
>>>> In the following paper
>>>> http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf you
>>>> see a sierpinski construction containing 1 triangle gasket with 4
>>>> additional sierpinski subgaskets.
>>>> The perfromance is mildly impressive. For example, the 5 gaskets seem
>>>> to act as 5 tuned
>>>> "bowtie antennas" with the resonance points divided by 2 (with the
>>>> slight exception of first
>>>> gasket to 1st subgasket), a distict advantage for hams.What this means
>>>> of course
>>>> is a multiband, multi-resonant antenna, with a possible infinite
>>>> number of subgaskets, although the
>>>> paper deals with only 5. No tuner should be required (except for 1st
```

>>>> gasket to 1st subgasket).
>>>> Or. for a dipole, none of those LC circuits need be added to the dipole
>>>> (ugh) to have
>>>> 'resonance' at several bands. For each band, you just construct more
>>>> triangles.
>>>> The input return loss is rather good as well. I would really
>>>> approeciate your comments
>>>> if you could take a look at the paper I referenced above.
>>>>
>>>> TKS ES 73
>>>> de AI4QJ
>>>>
>>> well, lets see... 88.9 mm high at 520MHz.... at 30m that would be 100x
>>> taller or about 29' tall, and of course 29' wide... and since it was
>>> built ion 1.588mm thick substrate you need 6" thick fiberglass backing
>>> for it(don't say you don't need the substrate, that is an integral part
>>> of how that patch works). can anyone say sailboat? you are going to
>>> need a big foundation to hold that sucker for sure!
>>>
>> True, the substrate is needed when using as a monopole. However, is a
>> sunstrate required for a bowtie antenna?
> no, but without the substrate the size will be larger and performance
> different. the dielectric loading of the back halves of the conductors
> will affect the overall impedance as well as the velocity factor. Oh, and
> don't forget to copper plate your yard to scale up the sheet of copper
> they used as a ground plane.

Dave, you keeping talking about the monople version. No ground plane is
required for a dipole version.

2590. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 22:33:50 UTC
From: AI4QJ <dfinn1@nc.rr.com>
Message-ID: <47c1f0cf$0$24082$4c368faf@roadrunner.com>
Source record: 27712

```
"Dave" <noone@nowhere.com> wrote in message
news:URlwj.1377$CD4.936@trndny02...
>
> "AI4QJ" <dfinn1@nc.rr.com> wrote in message
> news:47c1db2e$0$1085$4c368faf@roadrunner.com...
>>
>> "Dave" <noone@nowhere.com> wrote in message
>> news:VGdwj.2272$A93.1266@trndny08...
>>>
>>> "AI4QJ" <nospam@hotmail.com> wrote in message
>>> news:47c08c96$0$4956$4c368faf@roadrunner.com...
>>>>
>>>> "J. Mc Laughlin" <jcm@power-net.net> wrote in message
>>>> news:Uf-dnWv3m6Glv13anZ2dnUVZ_quhnZ2d@bright.net...
>>>>> Dear AI4QJ: Work through the numbers found in the paper. Each
>>>>> full-size triangle has a height and width of about 0.26 WL at the
>>>>> lower resonant frequency. Assume a balanced pair of full-size
>>>>> triangles and one has the length of a 0.5 WL dipole. The latter is
>>>>> much more easy to tune!
>>>>>
>>>>> The only positive thing about this antenna is the possibility of
>>>>> having a second resonance at about two times the lower resonance.
>>>>>
>>>>> A somewhat fat dipole that is not necessarily resonant at any amateur
>>>>> radio frequency (but fits your space) fed by a tuner seems to be the
>>>>> ticket. When we built our house, I ran a wire just under the ridge
>>>>> line as a back-up antenna.
>>>>>
>>>>
>>>> Thanks for your comments Mr. McLaughlin,
>>>>
>>>> In the following paper
>>>> http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf you
>>>> see a sierpinski construction containing 1 triangle gasket with 4
>>>> additional sierpinski subgaskets.
>>>> The perfromance is mildly impressive. For example, the 5 gaskets seem
>>>> to act as 5 tuned
>>>> "bowtie antennas" with the resonance points divided by 2 (with the
>>>> slight exception of first
>>>> gasket to 1st subgasket), a distict advantage for hams.What this means
>>>> of course
>>>> is a multiband, multi-resonant antenna, with a possible infinite
>>>> number of subgaskets, although the
>>>> paper deals with only 5. No tuner should be required (except for 1st
```

>>>> gasket to 1st subgasket).
>>>> Or. for a dipole, none of those LC circuits need be added to the dipole
>>>> (ugh) to have
>>>> 'resonance' at several bands. For each band, you just construct more
>>>> triangles.
>>>> The input return loss is rather good as well. I would really
>>>> approeciate your comments
>>>> if you could take a look at the paper I referenced above.
>>>>
>>>> TKS ES 73
>>>> de AI4QJ
>>>>
>>> well, lets see... 88.9 mm high at 520MHz.... at 30m that would be 100x
>>> taller or about 29' tall, and of course 29' wide... and since it was
>>> built ion 1.588mm thick substrate you need 6" thick fiberglass backing
>>> for it(don't say you don't need the substrate, that is an integral part
>>> of how that patch works). can anyone say sailboat? you are going to
>>> need a big foundation to hold that sucker for sure!
>>>
>> True, the substrate is needed when using as a monopole. However, is a
>> sunstrate required for a bowtie antenna?
> no, but without the substrate the size will be larger and performance
> different. the dielectric loading of the back halves of the conductors
> will affect the overall impedance as well as the velocity factor.

I do agree that the antenna is too big for my purposes so I am shelving the
Sierpinski idea. Thanks all, for your inputs.

2591. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 22:36:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <v2s3s3hejfd16aotcjdrd1fu7r9p3q755p@4ax.com>
Source record: 27713

On Sun, 24 Feb 2008 22:04:36 GMT, "Dave" <noone@nowhere.com> wrote:

>Oh, and don't
>forget to copper plate your yard to scale up the sheet of copper they used
>as a ground plane.

Hi Dave,

I didn't read the paper close enough for the details, but from the description of the radiator it would appear that the copper IS the radiator, and it was etched from the sheet.

In other words building it on a substrate was more a mechanical consideration (and a way to ease the implementation of geometry) than it was an electrical (RF) consideration.

73's
Richard Clark, KB7QHC

2592. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-24 23:58:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13s415ubi9oh1c@corp.supernews.com>
Source record: 27714

Ed_G wrote:
>> For an electrical safety ground, you should follow the requirements of
>> the National Electrical Code (NEC).
>>
>> Roy Lewallen, W7EL
>>
>
> True, but rather impractical for most hams, I suspect. I would
> have to run a #6 or larger cable over 100' to bond the ground rod just
> outside my ham shack to the building power entry ground.
>
> So.... would I be better off just relying on the wall outlet ground
> to my equipment? I'm just looking for electrical power safety, plus a
> little help in possible static dissipation.

The whole purpose of wall outlet grounds is electrical safety. You should hope your wall outlet ground is connected to a ground system which conforms to the NEC. If not, you might be facing some hazards when using electrical appliances, and might have trouble collecting insurance money if an electrical fire ever happens. I don't see much purpose in making another ground system if your home electrical system is properly grounded according to code. If it isn't, you'd better spend your effort in bringing it up to code, then using it for electrical safety.

Roy Lewallen, W7EL

2593. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 00:09:48 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13s41qcj2457lc0@corp.supernews.com>
Source record: 27715

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:14j3s3h3120h7ej7st4fuathf35n59nsj0@4ax.com...
> On 24 Feb 2008 19:57:16 GMT, "Ed_G"
> <Huckleberry_REMOVE_@bigvalley.net> wrote:
>
>> True, but rather impractical for most hams, I suspect.
>
> Hi Ed,
>
> The risk of life is a major issue of practicality.
> Let's take that to be a fact and proceed to another common action that
> is frequently taken. Let's say you are having problems with noise in
> your rigs, or strange modulations riding on your signal, or tuning
> issues. You might reach for the antenna connector behind your tuner.
> The tuner is strapped to ground, and the cable's coaxial shield
> supplies this ground to that remote drive point.
>
> As you lean over the tuner, you hold it with one hand, you grab the
> coax connector shell, unscrew it and as it separates from the jack
> connection the ground currents seek the path formerly through the coax
> shield and instead travel through you, hand to hand - across the
> heart, and you are killed.
>
> Where do we send the flowers?
>
> p.s. By the way, all those problems I described that caused you to
> remove that connector? They come from poor grounding exactly as
> described.
>
> 73's
> Richard Clark, KB7QHC

Something like this hapened at a repeater. The power company had lost its neutral comming into the repeater building. The antenna was going to be changed out and when the man on the tower unhooked the coax from the antenna (up around 100 feet on the tower) he got a bad shock. Good thing he had on a good full body safety harnnes.

The only ground was the tower ground as the ground wire from the meter or fuse box had been taken off. All the power had been comming through the coax from the repeater cabinet to ground.

2594. Re: LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 02:17:58 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <2bb53d41-130f-4633-85f1-e9726e88c163@q70g2000hsb.googlegroups.com>
Source record: 27716

On Feb 24, 4:37 am, "Dave" <no...@nowhere.com> wrote:
> "K7ITM" <k7...@msn.com> wrote in message
>
> news:49115b34-632e-4cc8-bac6-1e820995e6d3@u10g2000prn.googlegroups.com...
>
> > Anyone have any practical LPY (log-periodic Yagi) antenna designs they
> > care to share? Something with about 4% or 5% bandwidth in the VHF/low
> > UHF range should do well--the element diameters should be appropriate
> > for scaling the design to my frequencies of interest. 10dBi or so
> > gain is probably fine.
>
> > Cheers,
> > Tom
>
> define "log period yagi"??? ramsey has a line of products that they call
> 'log periodic and yagi' pcb antennas that has apparently been smushed into
> "LPY" as the prefix to their part numbers... but 'Yagi' antennas are one
> thing, and 'Log Periodic Dipole Array' antennas are something else. The
> only place they cross practically that i have seen is the use of a log
> periodic section feed section in between yagi style tuned parasitic elements
> to give a wider bandwidth feed point... in this case it is usually just 2 or
> 3 elements worth of lpda feeding the yagi which i have always considered
> just a way to add buzzwords to your antenna design description.

Yes, that's the design. I have data on a couple that suggest a pretty
"flat" gain across a modest range of frequencies, with a relatively
abrupt drop in gain outside that range. Googling got me to the
printed circuit antennas (I guess for wireless networks and the like),
but they aren't suitable to scale for what I want to do--too many
things different about them (flat elements on a dielectric substrate,
versus round elements in air).

Cheers,
Tom

2595. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 02:40:48 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A4EBE00F648BHuckleberrybigvalley@198.186.192.196>
Source record: 27717

> The whole purpose of wall outlet grounds is electrical safety. You
> should hope your wall outlet ground is connected to a ground system
> which conforms to the NEC. If not, you might be facing some hazards
when
> using electrical appliances, and might have trouble collecting
insurance
> money if an electrical fire ever happens. I don't see much purpose in
> making another ground system if your home electrical system is
properly
> grounded according to code. If it isn't, you'd better spend your
effort
> in bringing it up to code, then using it for electrical safety.
>

OK. I may now consider that my electrical outlet will provide the
necessariy equipment ground.

Just to present the facts, this is a brand new home with brand new
electrical service in a nearly new neighborhood with new electrical
underground services.... so I must assume that everything was done
properly and to new to have deteriorated.

Secondly, in reference to my grounding my equipment, No, I would
not be relying on coax shields for grounding. My reference to my own
ground system outside the shack was for a DC ground for each and every
piece of my shack equipment which would be tied individually to a common
shack ground bonded by large cable to an outside ground system.

(Richard, you anticipated my ground intentions incorrectly as I
would never use a coax connection for grounding....) But I do
understand ground currents.... so perhaps I'd be better off just letting
the equipment ground itself through the Outlet's little bitty #12 wire
all the way back to the meter box ground.)

Ed K7AAT

2596. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 02:50:52 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <g2qwj.10454$0o7.3162@newssvr13.news.prodigy.net>
Source record: 27718

Gene Fuller wrote:
> I must have missed the messages in which you resolved this 20 year
> battle through your pioneering analysis technique.

I didn't say it had been resolved. Those guys argue
about real-world class-C amplifiers. I didn't want
to discuss sources at all but Keith led me down the
primrose path. :-)

The small part of the argument that I can resolve is
the ideal class-A voltage and current sources. But
perhaps that resolution will spill over into the
more complicated configurations. I don't recall
anyone else considering what effect interference
has on energy redistribution inside an RF source.

But I indeed do have it figured out for ideal linear
voltage and current sources. Not only does it agree
with the results of other valid analysis methods,
but it answers the question: What happens to the
reflected energy when it is incident upon an ideal
linear source?
--
73, Cecil http://www.w5dxp.com

2597. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 03:16:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n3c4s3pi9i4ccspafo1u5vmfsip9b79c3j@4ax.com>
Source record: 27719

On 25 Feb 2008 02:40:48 GMT, "Ed_G"
<Huckleberry_REMOVE_@bigvalley.net> wrote:

> (Richard, you anticipated my ground intentions incorrectly as I
>would never use a coax connection for grounding....) But I do
>understand ground currents.... so perhaps I'd be better off just letting
>the equipment ground itself through the Outlet's little bitty #12 wire
>all the way back to the meter box ground.)

Hi Ed,

I may have incorrectly anticipated, but you haven't really described
any ground out at that remote point that was tied into the safety
ground at the service entrance - unless it is in this reference to
"little bitty #12 wire."

Do you have remote power through 100' of #12? It isn't clear. If you
don't and the far end is floating perhaps you are driving a dipole,
that too isn't clear - so then, no remote ground is called for.

However, as you are 100 feet up, looking over the dunes along the
coast (I imagine) out over the sea, this is a natural site for a
vertical for DX. Ground would be called for and we return to
potential differences.

So, to reduce any future "anticipation," is the remote site bonded to
the service ground of your home?

73's
Richard Clark, KB7QHC

2598. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 04:11:58 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A4ECD75885E9Huckleberrybigvalley@198.186.192.196>
Source record: 27720

> So, to reduce any future "anticipation," is the remote site bonded to
> the service ground of your home?
>
>

Let me rephrase my situation.

New house near completion. My shack will be at the far corner from the power service entrance.

I was thinking of just putting a couple ground rods (bonded together) just outside my ham shack and letting them be my equipment chassis ground, probably through a #6 wire from shack to ground rods. My intent was primarily for DC safety, plus a little 'static' dissipation.

As pointed out by one of you guys, I should meet NEC code, which would mandate my bonding this separate ground I would install with the house service entrance ground. My problem with that is that it would require a run of cable from the ground rods at least 100 feet to get down and around the house to the service entrance. This is not really practical nor desirable on my part.

While I understand the potential for ground loops, I deem it a rather small likelyhood in relation to the static dissipation benefit I'd get with the closer separate ground I could install. Others here seem to disagree with me, so I closed my previous post with the comment that perhaps I'd be better off forgetting my shack ground and just let the equipment be grounded through the individual power cords to the outlet ground.

Now that I may have cleared my situation up, what do you guys think?

Ed K7AAT

PS: Richard, just missing a view of the Pacific... about a half of a mile away ... and I may reconsider a vertical antenna instead of the dipole I was going to use.

2599. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 04:26:36 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47c2437d$0$22881$4c368faf@roadrunner.com>
Source record: 27721

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:h3r3s35m153vn4n17i9rmm28e9bhgslub3@4ax.com...
> On Sun, 24 Feb 2008 16:01:33 -0500, "AI4QJ" <dfinn1@nc.rr.com> wrote:
>
>>True, the substrate is needed when using as a monopole. However, is a
>>sunstrate required for a bowtie antenna?
>
> Hi Dan,
>
> As I pointed out earlier, if you find a working model, you need only
> scale. What I left unsaid (and I presumed was the natural
> understanding) is that it will exhibit the same characteristics.
>
> Take away the substrate, and you take away (alter) some of those
> characteristics. Which one(s)? Good question. Examine the original
> model in the absence of the substrate and you will find your answer.
> However, this is cold comfort as no one has access to work that is 10
> years old (and was probably never performed).
>
> Well, in fact I doubt it will have much disturbance with the
> fundamental properties, but the details will certainly drift. That
> is, the fractal nature of the design still remains. It will not
> resonate at the same frequency, but its comb of harmonic action will
> probably match the published work (maybe, there are others here better
> versed in patch designs than myself). Certainly it won't perturb the
> far field action to any great degree. Most of the radiation lobes
> will probably look the same.
>
> 73's
> Richard Clark, KB7QHC

My attic is large enough for a bent full size G5RV with no bends less than 90 degrees. It functions (i.e. it and the feedline radiates well, roughly as designed, and little RF feedback comes back to the radio). Of course, it is multiband and I do use a tuner but I can bypass it and still get out on 40/80/20m. Ten meters is not so good with or without a tuner; 15 and 17 seem to be OK. I was thinking that if I could bend a full size G5RV and fit it in my attic (2 X 54 foot lengths), I should be able to put up a fuill size Sierpinski for at least 40m with no additional bending (it is already bent into triangles). However, as dave and you have pointed out, when you actually try to scale the thing, it is very large and the bent G5RV is still a better choice for me. Thanks for the suggestions. This idea is hereby shelved from my list of projects under consideration (more of them get shelved than implemented ;-))

73 de AI4QJ

2600. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 04:53:13 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <3uf4s3tpgesplh01ri2taq7r2s2q75mrd1@4ax.com>
Source record: 27722

On Sun, 24 Feb 2008 15:15:34 +0100, "Francesco L."
<franlanc@NOSPAMtin.it> wrote:

>> Hi Francesco,
>>
>> On the ground, or elevated?
>>
>Both cases please. I did a reasearch on arrl antenna book, low band dxing
>and newsgroups and got a bit confused, so I need more tips. There are too
>many options, I mean: at a certain height above the ground, atop the roof,
>on the ground and so on, so I'm trying to collect as much info as possible
>in order to get the overall picture.
>Thanks
>

If you are calling 'low band' those frequencies below the AM broadcast band, any antenna you use will be of compromise size (less than 1/4 wave tall, less than 1/4 wave ground radials and less than 1/2 wave high.) A full length dipole is probably a challenge.

That being said, I operate mobile HF mostly. The car body is generally a poor, but raised ground plane. On 40 and up, communications are competitive enough to make contacts and communicate during normal open band hours (give or take SW Broadcast stations.) Because of power restrictions, 60 Meters works well mobile as competition is restricted to ERP 50 watts as radiated from a dipole antenna. 75/80 Meters is tough due to band conditions and antenna size in wavelengths and the number of high power stations on the air.

Your ground plane antenna whether on the ground or in the air will likely be very short. Even though its height and the length of the ground radials (raised or on the ground) will be longer, think of the effect of the mobile. Even though it has a shortened ground radial system, it does work. If you can match the antenna, you can probably work with it.

My experience is that the better the ground and the longer the vertical element (within limitations), the better the antenna works. I doubt there is much data reflecting various lengths of shortened ground radials as there could be too many variations. However, there is a manufacturer who has a vertical trap-multiband antenna that uses one tuned ground radial for each band made up of helical wire and/or a loading coil.

If you can't make a full 1/4 wave vertical, then do your best to make it as tall as possible, as many, and as long radials as you can, or

make the antenna as high as you can with four radials as long as you can, maybe loaded by helical or loading coil windings.

I hope this helps
Buck
N4PGW

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

2601. Sell HID Conversion Kit $45us/pc

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 07:58:29 UTC
From: tony <ice_cream0129@126.com>
Message-ID: <b06e8700-ca71-4341-a4a1-270d1067ee68@s8g2000prg.googlegroups.com>
Source record: 27723

we selling HID Kit in housinghouse.com

$45us/pc and very cheap UPS shipment.

the first kit shipment is $37.5us and the other kit shipment $26us/pc.

for example:if you buy one kit the shipment is $37.5us.
if you buy three kit the shipment is $37.5us +$26us+$26us=$89.5.

if you have some question contact me please,my E-mail is
housinghouse@live.cn.

2602. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 08:22:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13s4ume5bfasc06@corp.supernews.com>
Source record: 27724

Ed_G wrote:
>
> Let me rephrase my situation.
>
> New house near completion. My shack will be at the far corner from
> the power service entrance.
>
> I was thinking of just putting a couple ground rods (bonded together
>) just outside my ham shack and letting them be my equipment chassis
> ground, probably through a #6 wire from shack to ground rods. My intent
> was primarily for DC safety, plus a little 'static' dissipation.
>
> As pointed out by one of you guys, I should meet NEC code, which
> would mandate my bonding this separate ground I would install with the
> house service entrance ground. My problem with that is that it would
> require a run of cable from the ground rods at least 100 feet to get
> down and around the house to the service entrance. This is not really
> practical nor desirable on my part.
>
> While I understand the potential for ground loops, I deem it a
> rather small likelyhood in relation to the static dissipation benefit
> I'd get with the closer separate ground I could install. Others here
> seem to disagree with me, so I closed my previous post with the comment
> that perhaps I'd be better off forgetting my shack ground and just let
> the equipment be grounded through the individual power cords to the
> outlet ground.
>
> Now that I may have cleared my situation up, what do you guys
> think?
>
>
> Ed K7AAT
>
> PS: Richard, just missing a view of the Pacific... about a half of a
> mile away ... and I may reconsider a vertical antenna instead of the
> dipole I was going to use.

I still recommend just using the outlet ground.

I don't think you'd accomplish anything by adding the ground rods you mention, and it might even cause a hazard as some others have said. It certainly won't be any better than your household wiring system ground for safety or static discharge. What I would do is make sure all your equipment is grounded through the household wiring safety (outlet) ground. Its purpose is electrical safety, and that's what it's designed,

installed, and inspected for. Ungrounded equipment can be connected to grounded equipment or to the mains safety ground -- if it has a power cord, replace the cord with a 3-wire cord and connect the safety ground to the chassis and cabinet.

Roy Lewallen, W7EL

2603. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 08:45:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <q0u4s3plhmtchtscu9ngv7bob26rh3734t@4ax.com>
Source record: 27725

On Sun, 24 Feb 2008 23:26:36 -0500, "AI4QJ" <nospam@hotmail.com>
wrote:

>However, as dave and you have pointed out, when you
>actually try to scale the thing, it is very large and the bent G5RV is still
>a better choice for me.

Hi Dan,

Fractals come with many promises, but ALL of them cannot be met by one design. The literature would suggest they can, only because they speak of the conglomerate of benefits without meting them out to those designs individually.

For instance, resonance may be found in a small footprint, but not gain. Bandwidth can be found in a design, but not a small one. Also with gain, this takes space. The fields that result rarely show any symmetry, so often times the best launch angle is into outer space (nearly all my research was with vertical monopoles), and shifting up to the next resonance twirls that launch angle like spin-the-bottle.

To close the matter, fractals exhibit every natural tendency as any conventional design when it comes to match/gain/bandwidth. Something is nearly always sacrificed. There are rare exceptional fractals, but they have all the winning quality of a Pyrrhic victory.

I would suggest you invest your attention towards an Off Center Fed Dipole with a 4:1 BalUn and heavy choking of the driveline along frequent intervals. It will exhibit your sought after resonance harmonics of the fundamental where they most useful feed point is at 40% from the end (although there are others as well).

For what would be a standard 80M dipole fed 10% from the end are resonances at: 3.7 MHz, 7.6 MHz, 11.4 MHz, 15.3 MHz, 19.1 MHz, 23 MHz and 26.8 MHz. Some of them are blistering mismatches (80M is not really a resonance, but merely a dip) but it goes with the turf.

73's
Richard Clark, KB7QHC

2604. Online RF & Microwave Engineering Calculator Tool FREE to use

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 11:17:11 UTC
From: risabhm@gmail.com
Message-ID: <cb9145bc-7061-47a6-b510-1d33bcab3425@e25g2000prg.googlegroups.com>
Source record: 27726

Hello Guys,

I found an interesting website at www.calculatoredge.com an online engineering calculator for formula and equations you can solve at click of a button, If you like this website send links to your friends and engineering group members.

Tom

2605. Re: n8wwm rules with an iron fist

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 12:09:43 UTC
From: Denny <k8do@mailblocks.com>
Message-ID: <b80040b0-1144-4aed-9ac3-ef99fc2d4851@64g2000hsw.googlegroups.com>
Source record: 27727
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.shortwave

>
> It appears CB radio has made a resurgence. What a bunch of morons.
>
> mike

Idiots like that are a big part of why I only contest...

denny - k8do

2606. Re: Online RF & Microwave Engineering Calculator Tool FREE to use

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 12:34:51 UTC
From: amdx <amdx@knology.net>
Message-ID: <d691b$47c2b59d$18d6b40c$11273@KNOLOGY.NET>
Source record: 27728

<risabhm@gmail.com> wrote in message
news:cb9145bc-7061-47a6-b510-1d33bcab3425@e25g2000prg.googlegroups.com...
> Hello Guys,
>
> I found an interesting website at www.calculatoredge.com an online
> engineering calculator for formula and equations you can solve at
> click of a button, If you like this website send links to your
> friends and engineering group members.
>
> Tom

Thanks, that's a very comprehensive list of calculators.
Covers electronic engineering, electrical engineering, physics, Mechanical
Engineering, Metalurgy, chemical engineering, optical,
civil, structural and more! It's worth looking at.

2607. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 14:21:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <5aAwj.9189$5K1.4348@newssvr12.news.prodigy.net>
Source record: 27729

AI4QJ wrote:
> My attic is large enough for a bent full size G5RV with no bends less than
> 90 degrees. It functions (i.e. it and the feedline radiates well, roughly as
> designed, and little RF feedback comes back to the radio). Of course, it is
> multiband and I do use a tuner but I can bypass it and still get out on
> 40/80/20m. Ten meters is not so good with or without a tuner; 15 and 17 seem
> to be OK.

Here's some G5RV information:

http://www.cebik.com/wire/g5rv.html
http://www.vk1od.net/G5RV
http://www.w8ji.com/g5rv_facts.htm

The standard G5RV performs well on 80/40/20/12m.
Not very well on the other HF bands due to high
SWR on the coax.
--
73, Cecil http://www.w5dxp.com

2608. Re: Oddball Antenna Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 14:25:38 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fpuj57$1oi$1@aioe.org>
Source record: 27730

"Roy Lewallen" wrote
> If you do a bit of analysis with a modeling program, I think you'll find
> that if you generate a circularly polarized signal, it'll become nearly
> linearly polarized once it reflects from the ground. ... There might
> be a way to generate a signal that's circularly polarized after
> reflection, but I don't know how to do it.

Roy, won't a c-pol signal remain c-pol after a low-angle terrain reflection, except that its rotation sense is reversed? (The magnitudes of the v-pol and h-pol reflection components are nearly the same, but there is a 180-degree phase reversal in the v-pol reflection with respect to the h-pol reflection.)

This has been applied with good results in analog TV broadcasts using c-pol, because a c-pol receiving antenna rejects reflections of the transmitted signal -- which effectively reduces the multipath "ghosts" seen on a TV set when linearly polarized receive antennas are used.

RF

2609. Re: Online RF & Microwave Engineering Calculator Tool FREE to use

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 14:44:10 UTC
From: Mr Fed UP <mrfedup@bellsouth.net>
Message-ID: <SuAwj.109215$L%6.44091@bignews3.bellsouth.net>
Source record: 27731

<risabhm@gmail.com> wrote in message
news:cb9145bc-7061-47a6-b510-1d33bcab3425@e25g2000prg.googlegroups.com...
> Hello Guys,
>
> I found an interesting website at www.calculatoredge.com an online
> engineering calculator for formula and equations you can solve at
> click of a button, If you like this website send links to your
> friends and engineering group members.
>
> Tom

Thanks for posting .,, added to my fav's list.
Still can not find the equation for
Income $ > Computer Toys $ wanted. + Radio Toys $ wanted + Living Expenses
needed $

Cheers
K4TWO 73 ret' dis' fixed fun lol

2610. s il vous plait;;;ici F5MNC

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 14:59:46 UTC
From: berny <f5mnc@yahoo.fr>
Message-ID: <2410275711c20a2f95ed037b05685f2f@localhost.talkaboutradio.com>
Source record: 27732

JE ne comprends pas le faite que mon adresse personelle soit inscrite sur ce site et de plus les commentaires non justifiés sur ma personne je ne veux de mal à personne alors s il vous plait veuillez enlever ces commentaires ainsi que mon adresse personnelle de ce site.. j ai toujours eu du respect pour le radioamateurisme et je ne comprends pas cet acharnement sur ma personne merci encore de faire le necessaire pour effaçer les commentaires à mon sujet ... 73 F5MNC

--
Message posted using http://www.talkaboutradio.com/group/rec.radio.amateur.antenna/
More information at http://www.talkaboutradio.com/faq.html

2611. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 15:16:19 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fpum48$1gdg$1@f04n12.cac.psu.edu>
Source record: 27733

AI4QJ wrote:
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:ah41s39soi2nidqo8ffhao0kpjj6rarmhm@4ax.com...
>> On Sat, 23 Feb 2008 16:23:56 -0500, "AI4QJ" <nospam@hotmail.com>
>> wrote:
>>
>>> 1. A realtively compact multiband antenna.
>> Hi Dan,
>>
>> This is not unique to fractals and easily achieved by many other
>> means.
>
> I guess sierpinski also happens to be 'fractal' for some people because it
> happens to have a repeating pattern, similar to fractals. So does a fan
> dipole.

Sierpinski is considered fractal by every reference I know.

> Yes, I need to spend more time calculating the lengths os the gaskets and I
> haven't done that yet. However, it is an antenna construction so coil or
> capacitive 'shorteners' may have to be tolerated, reducing the gain.

Did you mean bandwidth?

>>> 4. Resonant points of each gasket divided by 2. Thus no tuner.
>> A Gamma match does much the same thing (no tuner). As for the
>> "resonant points" - again, easier to write than to demonstrate (let's
>> just simplifiy this and say impossible).
>
> EASY to demonstrate, see Table 1, Column 5 (F(n+1)/F(n)).
>
> http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf

I just have to see one of these for 160 meters!

>> Which returns me to the rhetorical question of what's your time worth?
>
> Rhetorical response: Enjoyment is suitable compensation when one is having
> fun.

Very true. Many things can be made to radiate, bedsprings, gutters, and
one fellow even had a tube full of salt water on his jeep as an antenna.
And all of 'em probably had fun designing and building them. I'm tempted
to try the water one myself.

I wonder if a tree, which can be turned into an antenna without a lot of
trouble, could be considered a fractal antenna?

- 73 de Mike N3LI -

2612. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 16:13:20 UTC
From: "Francesco L." <flancellotta@gmail.com>
Message-ID: <f225cfd7-6bad-45a4-bdf4-f58a0272e0ab@28g2000hsw.googlegroups.com>
Source record: 27734

>
> If you can't make a full 1/4 wave vertical, then do your best to make
> it as tall as possible, as many, and as long radials as you can, or
> make the antenna as high as you can with four radials as long as you
> can, maybe loaded by helical or loading coil windings.
>
My referral to "low band dxing" was just incidental. That was because
info about ground radials are scattered here and there. My target is
to realize a 2 element phased array (which I'm already assembling)
completely homemade and was wondering about the impact that a few or a
lot of radials can have on the system. Obviously I'm talking about a
fixed station, not mobile. Anyway thanks for the contribution, much
appreciated, of you all.
Francesco, ik8vwa

2613. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 16:49:12 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <20c3ed89-4ce5-4ea9-849e-a46bcefecc21@e10g2000prf.googlegroups.com>
Source record: 27735

On Feb 24, 11:37 am, "Ralph Mowery" <rmowery28...@earthlink.net>
wrote:
> "David G. Nagel" <nagel.da...@sbcglobal.net> wrote in
messagenews:Zgiwj.10375$0o7.2406@newssvr13.news.prodigy.net...
>
> > Locate a piece of rebar in the concrete and carefully chip the concrete
> > away until you reach the metal. Then attach a heavy gage wire to the rebar
> > and close the hole with concrete patch. You will now have access to the
> > grounding grid.
>
> > Dave WD9BDZ
>
> One should never have any rebar exposed to the air. It will rust and expand
> breaking the concrete. If put in correctly, it will be about 3 inches
> inside the concrete.

Correct, Ralph. Also, NEVER allow the possibility of a lightening
strike to enter rebar in concrete. You will explode the concrete
because of the tremendous localized heating. There goes your
foundation and/or pad your house is setting on. The building
inspectors in Central Oregon do check the footings and foundation
before concrete is poured and would quickly notice a connection from
the rebar to the outside world.

Paul, KD7HB
Redmond, OR

2614. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 16:56:42 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <10s5s3pt110pf14j65bqlc02qn1mq0nmi1@4ax.com>
Source record: 27736

On 25 Feb 2008 04:11:58 GMT, "Ed_G"
<Huckleberry_REMOVE_@bigvalley.net> wrote:

>
>> So, to reduce any future "anticipation," is the remote site bonded to
>> the service ground of your home?
>>
>>
>
> Let me rephrase my situation.
>
> New house near completion. My shack will be at the far corner from
>the power service entrance.
>
> I was thinking of just putting a couple ground rods (bonded together
>) just outside my ham shack and letting them be my equipment chassis
>ground, probably through a #6 wire from shack to ground rods. My intent
>was primarily for DC safety, plus a little 'static' dissipation.
>
> As pointed out by one of you guys, I should meet NEC code, which
>would mandate my bonding this separate ground I would install with the
>house service entrance ground. My problem with that is that it would
>require a run of cable from the ground rods at least 100 feet to get
>down and around the house to the service entrance. This is not really
>practical nor desirable on my part.

>
After you take your first couple of lightning strikes you will feel
that a 100' of #6 ground wire to the power ground for the antenna
system ground is a simple requirementl.

I will probably never build another house but if I do, the first
consideration will be proper grounding for both NEC and lightning
protection.

Experience has led me to believe that if you cannot tie a new ground
rod back to the panel ground you should not have the ground rod.

John Ferrell W8CCW
"Life is easier if you learn to
plow around the stumps"

2615. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 17:21:17 UTC
From: richardharrison@webtv.net
Message-ID: <26789-47C2F90D-1224@storefull-3252.bay.webtv.net>
Source record: 27737

Buck, N4PGW wrote:
"---or make the antenna as high as you can with four rafials as long as you can, maybe loaded by helical or loading coil windings."

Yes, a ground-plane antenna needs resonant radials or at least with its vertical radiator it needs to make a resonant system.

According to J.D. Kraus, radial conductor ground-plane antennas were originated by G.H. Brown. Story is that Brown said only two radials were needed (for equilibrium?). RCA`s marketing department insisted on four and that`s how it`s been ever since.

Best regards, Richard Harrison, KB5WZI

2616. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 17:38:10 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <62Dwj.660720$kj1.122064@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27738

pdrahn@coinet.com wrote:
> On Feb 24, 11:37 am, "Ralph Mowery" <rmowery28...@earthlink.net>
> wrote:
>> "David G. Nagel" <nagel.da...@sbcglobal.net> wrote in
messagenews:Zgiwj.10375$0o7.2406@newssvr13.news.prodigy.net...
>>
>>> Locate a piece of rebar in the concrete and carefully chip the concrete
>>> away until you reach the metal. Then attach a heavy gage wire to the rebar
>>> and close the hole with concrete patch. You will now have access to the
>>> grounding grid.
>>> Dave WD9BDZ
>> One should never have any rebar exposed to the air. It will rust and expand
>> breaking the concrete. If put in correctly, it will be about 3 inches
>> inside the concrete.
>
> Correct, Ralph. Also, NEVER allow the possibility of a lightening
> strike to enter rebar in concrete. You will explode the concrete
> because of the tremendous localized heating. There goes your
> foundation and/or pad your house is setting on. The building
> inspectors in Central Oregon do check the footings and foundation
> before concrete is poured and would quickly notice a connection from
> the rebar to the outside world.
>
> Paul, KD7HB
> Redmond, OR

Interesting. Here in Florida, the lightning capital of the continental US, the ordinary electrical service grounding mechanism is *only* via bonding to the metal in the foundation. New house construction will not pass inspection without such a connection unless other more complex arrangements are fashioned. There are typically no driven ground rods, and water pipes are usually non-conductive. (The NEC no longer allows water pipes to serve as the sole ground in any case.)

73,
Gene
W4SZ

2617. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 18:42:37 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <x_Dwj.49411$9j6.40205@attbi_s22>
Source record: 27739

> Interesting. Here in Florida, the lightning capital of the continental
> US, the ordinary electrical service grounding mechanism is *only* via
> bonding to the metal in the foundation. New house construction will not
> pass inspection without such a connection unless other more complex
> arrangements are fashioned. There are typically no driven ground rods, and
> water pipes are usually non-conductive. (The NEC no longer allows water
> pipes to serve as the sole ground in any case.)
>
> 73,
> Gene
> W4SZ

Must be a recent rules change Gene. I used to manufacture and sell an instrument to the power companies in FL, a meter that they would connect between one 120 Volt leg of the service drop and the residential ground rod, and drive the rod for a 25 Ohm ground. Typically, if they were installing pad mount transformers for underground service, they would install another ground rod there.

The Withlacoochee Co-Op, which serviced some of the highest sand dunes in FL, would often drive 60 feet of ground rod to reach the required conductance.

W4ZCB

2618. Re: s il vous plait;;;ici F5MNC

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 18:54:35 UTC
From: dfinn1@nc.rr.com
Message-ID: <9cfa3486-7d88-4057-87fb-65dfe1977f0e@p73g2000hsd.googlegroups.com>
Source record: 27740

On Feb 25, 9:59 am, "berny" <f5...@yahoo.fr> wrote:
> JE ne comprends pas le faite que mon adresse personelle soit inscrite sur
> ce site et de plus les commentaires non justifiés sur ma personne je ne
> veux de mal à personne alors s il vous plait veuillez enlever ces
> commentaires ainsi que mon adresse personnelle de ce site.. j ai toujours
> eu du respect pour le radioamateurisme et je ne comprends pas cet
> acharnement sur ma personne merci encore de faire le necessaire pour
> effaçer les commentaires à mon sujet ... 73 F5MNC
>
> --
> Message posted usinghttp://www.talkaboutradio.com/group/rec.radio.amateur.antenna/
> More information athttp://www.talkaboutradio.com/faq.html

Berne, je être non sûr comment votre poteau hériter
rec.radio.amateur.antenna mais naturellement personne ici être
removing votre poteau ou votre adresser etcetera ce USENET newsgroup,
être heureux pour vous joindre dans mais notre habituel langue être
dans anglais. _ 73 De AI4QJ

2619. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 20:51:18 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A4FA1AEDE0B0jxp16psuedu@128.118.141.40>
Source record: 27741

"Francesco L." <flancellotta@gmail.com> wrote in news:f225cfd7-6bad-45a4-bdf4-f58a0272e0ab@28g2000hsw.googlegroups.com:

>
>>
>> If you can't make a full 1/4 wave vertical, then do your best to make
>> it as tall as possible, as many, and as long radials as you can, or
>> make the antenna as high as you can with four radials as long as you
>> can, maybe loaded by helical or loading coil windings.
>>
> My referral to "low band dxing" was just incidental. That was because
> info about ground radials are scattered here and there. My target is
> to realize a 2 element phased array (which I'm already assembling)
> completely homemade and was wondering about the impact that a few or a
> lot of radials can have on the system. Obviously I'm talking about a
> fixed station, not mobile. Anyway thanks for the contribution, much
> appreciated, of you all.
> Francesco, ik8vwa

In Low band Dxing and also QST there was information on the number of radials verses their length. If I remember correctly the basic information was that distances between the far ends (end that is the farthest from the feed point) of the radial needed to be some set fraction of a wavelength at the highest frequency to maximize the performance of a vertical with radials of any length. So as the radials become shorter fewer of them are needed to meet this requirement. This not to say that few short radial works as well as longer radials but for any length of radials there is an optimal number required and putting down more gains very little. For wave radial this number is 120 but far fewer are needed for say 1/8 wave radials.
I don t remember the wave length that the article suggested so I will not make a wild guess.

John, W3JXP

2620. Re: LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 21:28:29 UTC
From: Dave <noone@nowhere.com>
Message-ID: <1qGwj.21361$6t3.9090@trndny07>
Source record: 27742

"K7ITM" <k7itm@msn.com> wrote in message
news:2bb53d41-130f-4633-85f1-e9726e88c163@q70g2000hsb.googlegroups.com...
> On Feb 24, 4:37 am, "Dave" <no...@nowhere.com> wrote:
>> "K7ITM" <k7...@msn.com> wrote in message
>>
>> news:49115b34-632e-4cc8-bac6-1e820995e6d3@u10g2000prn.googlegroups.com...
>>
>> > Anyone have any practical LPY (log-periodic Yagi) antenna designs they
>> > care to share? Something with about 4% or 5% bandwidth in the VHF/low
>> > UHF range should do well--the element diameters should be appropriate
>> > for scaling the design to my frequencies of interest. 10dBi or so
>> > gain is probably fine.
>>
>> > Cheers,
>> > Tom
>>
>> define "log period yagi"??? ramsey has a line of products that they call
>> 'log periodic and yagi' pcb antennas that has apparently been smushed
>> into
>> "LPY" as the prefix to their part numbers... but 'Yagi' antennas are one
>> thing, and 'Log Periodic Dipole Array' antennas are something else. The
>> only place they cross practically that i have seen is the use of a log
>> periodic section feed section in between yagi style tuned parasitic
>> elements
>> to give a wider bandwidth feed point... in this case it is usually just 2
>> or
>> 3 elements worth of lpda feeding the yagi which i have always considered
>> just a way to add buzzwords to your antenna design description.
>
> Yes, that's the design. I have data on a couple that suggest a pretty
> "flat" gain across a modest range of frequencies, with a relatively
> abrupt drop in gain outside that range. Googling got me to the
> printed circuit antennas (I guess for wireless networks and the like),
> but they aren't suitable to scale for what I want to do--too many
> things different about them (flat elements on a dielectric substrate,
> versus round elements in air).
>
> Cheers,
> Tom

for hf you want to look for 'owa', "optimized wideband array" antennas, and
also for yagi designs with dual driven elements like the m-squared 40m4lldd.
The advantages are a wider swr bandwidth and perhaps an improvement in the
gain or f/b bandwidth. you may also find some info searching for

'lpda-yagi' hybrids, though probably most of those are more for vhf/uhf.

2621. Re: LORAN - C

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 21:33:09 UTC
From: Wim Ton <wton@bluewin.ch>
Message-ID: <47C33415.8000400@bluewin.ch>
Source record: 27743

Richard Clark wrote:
> On Sun, 24 Feb 2008 08:32:17 -0800, "George" <nospam@nospam.com>
> wrote:
>
>> Anybody have a source of information on LORAN - C antenna design? Googling
>> hasn't turned up much at all.
>
> Hi George,
>
> Use a CB whip with matching.
>
Can one use a ferrite antenna?

Wim

2622. Re: Shortened radials: which length?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 21:41:12 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13s6dfq24bjia37@corp.supernews.com>
Source record: 27744

Richard Harrison wrote:
> . . .
> According to J.D. Kraus, radial conductor ground-plane antennas were
> originated by G.H. Brown. Story is that Brown said only two radials were
> needed (for equilibrium?). RCA`s marketing department insisted on four
> and that`s how it`s been ever since.

That's a true story, also related in Brown's autobiography _And Part of Which I Was_. Two radials are necessary for near cancellation of their fields, to allow a circular pattern. The marketeers felt that it didn't look symmetrical enough to be marketed as an omnidirectional antenna so insisted on adding two more.

Two radials produce a very circular pattern in a directly horizontal direction. The pattern becomes non-circular above and below horizontal, but only very slightly for moderate angles above and below. I took advantage of knowing that story when I was asked not long ago to design an omnidirectional antenna to go in a small essentially flat volume. It ended up as a variation of a ground plane with two radials, implemented as flat traces on a PC board substrate. I built a prototype with copper tape and had it measured in an anechoic chamber at a test lab. It had the most circular pattern the lab technicians had ever seen, better than their very expensive reference antenna. The extreme quality of the circularity was actually a lucky coincidence because there are factors such as feedline coupling which cause some variation even in a lab environment. But it left no doubt that the pattern circularity was in fact very good in spite of the apparently asymmetrical construction. Brown was right.

George Brown, one of the pioneers of television, was also the inventor of the turnstile antenna, widely used for TV broadcasting. And he's the Brown of Brown, Lewis, and Epstein's seminal paper on radial ground systems. He also had a legendary sense of humor. One of his most famous stunts was substituting a blue-dyed banana for the yellow one in a bowl of fruit used to test the first color TV broadcast, causing a great deal of head-scratching among the engineers at the other end trying to figure out what was wrong with the color transmission. Walt Maxwell, W2DU, worked with Brown at RCA.

Roy Lewallen, W7EL

2623. Re: s il vous plait;;;ici F5MNC

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 22:13:07 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <k3Hwj.8878$IG1.4175@bignews9.bellsouth.net>
Source record: 27745

"berny" <f5mnc@yahoo.fr> wrote in message
news:2410275711c20a2f95ed037b05685f2f@localhost.talkaboutradio.com...
> JE ne comprends pas le faite que mon adresse personelle soit inscrite sur
> ce site et de plus les commentaires non justifiés sur ma personne je ne
> veux de mal personne alors s il vous plait veuillez enlever ces
> commentaires ainsi que mon adresse personnelle de ce site.. j ai toujours
> eu du respect pour le radioamateurisme et je ne comprends pas cet
> acharnement sur ma personne merci encore de faire le necessaire pour
> effaçer les commentaires mon sujet ... 73 F5MNC
>
> --
> Message posted using
> http://www.talkaboutradio.com/group/rec.radio.amateur.antenna/
> More information at http://www.talkaboutradio.com/faq.html
>

We didn't do it - it must have been one of your french thingies falling off
the do-hickies.
Nous ne parle-pas Francais. Sprechen zee la morse code?
a half- wave does not mean "just showing your palm".
(Its an english-language group, so would you care to rephrase the post?)

2624. Re: Oddball Antenna Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 22:28:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13s6g7p3ot1tqa6@corp.supernews.com>
Source record: 27746

Richard Fry wrote:
> "Roy Lewallen" wrote
>> If you do a bit of analysis with a modeling program, I think you'll
>> find that if you generate a circularly polarized signal, it'll become
>> nearly linearly polarized once it reflects from the ground. ... There
>> might
>> be a way to generate a signal that's circularly polarized after
>> reflection, but I don't know how to do it.
> --------
>
> Roy, won't a c-pol signal remain c-pol after a low-angle terrain
> reflection, except that its rotation sense is reversed? (The magnitudes
> of the v-pol and h-pol reflection components are nearly the same, but
> there is a 180-degree phase reversal in the v-pol reflection with
> respect to the h-pol reflection.)
>
> This has been applied with good results in analog TV broadcasts using
> c-pol, because a c-pol receiving antenna rejects reflections of the
> transmitted signal -- which effectively reduces the multipath "ghosts"
> seen on a TV set when linearly polarized receive antennas are used.

A head-on reflection to a flat surface results in the polarization sense reversal you mention. But reflection at a shallow angle doesn't. To see why, get the EZNEC demo program and run separate elevation plots of a dipole and a vertical, save the first plot, then superimpose it on the second. Begin with a perfect ground. You'll see that the field from the horizontal antenna is zero at zero elevation angle, while the field from the vertical is maximum. So if you reflect a circularly polarized signal from a perfect ground at a very low angle, you'll end up with a vertically (linearly) polarized field. The horizontal component disappears (that is, the field disappears each time it rotates to horizontal) because the reflection is equal in magnitude to and out of phase with the direct signal, so the two sum to zero at a distant point. If you look at a higher angle where the horizontal and vertical fields are equal, that's an angle at which you'd maintain circular polarization if those same two antennas were spaced and phased for circular polarization. At the elevation angle of the next null in the horizontal field, you'll again get a purely vertically polarized field. The conditions change when the ground has a finite conductivity, but you can use the same general process to understand what happens.

EZNEC+ or NEC-2 users can model particular antennas and directly see what happens to the polarization circularity. In EZNEC+, click on the Desc Options line, Plot and Fields tabs, and choose one of the circular polarization choices for Fields To Plot. Then run a calculation and look

at the plot. You get the polarization circularity by clicking the FF Tab button to show the pattern data in tabular form. The AxR column shows the axial ratio - the ratio of major to minor axis in dB. 0 dB represents perfect circularity, 99.99 dB means the field is completely linear, and in between represents various degrees of elliptical polarization. Begin with an antenna in free space and verify its polarization circularity in some direction. Then elevate the antenna, add a ground, and note the effect. A simple test antenna is a pair of crossed dipoles, very close but not touching, fed in quadrature, which will generate fairly good circular polarization broadside to the plane containing the antennas.

Roy Lewallen, W7EL

2625. Re: LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-25 22:48:32 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <3ffe034e-780b-4d92-b433-9d6ceaec5920@34g2000hsz.googlegroups.com>
Source record: 27747

On Feb 25, 1:28 pm, "Dave" <no...@nowhere.com> wrote:
> "K7ITM" <k7...@msn.com> wrote in message
>
> news:2bb53d41-130f-4633-85f1-e9726e88c163@q70g2000hsb.googlegroups.com...
>
>
>
> > On Feb 24, 4:37 am, "Dave" <no...@nowhere.com> wrote:
> >> "K7ITM" <k7...@msn.com> wrote in message
>
> >>news:49115b34-632e-4cc8-bac6-1e820995e6d3@u10g2000prn.googlegroups.com...
>
> >> > Anyone have any practical LPY (log-periodic Yagi) antenna designs they
> >> > care to share? Something with about 4% or 5% bandwidth in the VHF/low
> >> > UHF range should do well--the element diameters should be appropriate
> >> > for scaling the design to my frequencies of interest. 10dBi or so
> >> > gain is probably fine.
>
> >> > Cheers,
> >> > Tom
>
> >> define "log period yagi"??? ramsey has a line of products that they call
> >> 'log periodic and yagi' pcb antennas that has apparently been smushed
> >> into
> >> "LPY" as the prefix to their part numbers... but 'Yagi' antennas are one
> >> thing, and 'Log Periodic Dipole Array' antennas are something else. The
> >> only place they cross practically that i have seen is the use of a log
> >> periodic section feed section in between yagi style tuned parasitic
> >> elements
> >> to give a wider bandwidth feed point... in this case it is usually just 2
> >> or
> >> 3 elements worth of lpda feeding the yagi which i have always considered
> >> just a way to add buzzwords to your antenna design description.
>
> > Yes, that's the design. I have data on a couple that suggest a pretty
> > "flat" gain across a modest range of frequencies, with a relatively
> > abrupt drop in gain outside that range. Googling got me to the
> > printed circuit antennas (I guess for wireless networks and the like),
> > but they aren't suitable to scale for what I want to do--too many
> > things different about them (flat elements on a dielectric substrate,
> > versus round elements in air).
>
> > Cheers,
> > Tom

>
> for hf you want to look for 'owa', "optimized wideband array" antennas, and
> also for yagi designs with dual driven elements like the m-squared 40m4lldd.
> The advantages are a wider swr bandwidth and perhaps an improvement in the
> gain or f/b bandwidth. you may also find some info searching for
> 'lpda-yagi' hybrids, though probably most of those are more for vhf/uhf.

Hi Dave, and thanks for the reply. I'll try some searches on those keywords. Often, just finding the right keyword for a search is well over half the battle.

I perhaps didn't make it clear that I'm interested in optimizing the design for my particular application, which is up around 450MHz, so designs already at VHF/low-UHF are probably going to have reasonable element diameter-to-length ratios and may offer some ideas about good mechanical design. I'll happily spend some time with simulations to optimize the design for my application, but it helps a lot to start with a design that's close to what I want in the final implementation at least with respect to d/l ratios and percentage bandwidth.

Cheers,
Tom

2626. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 00:42:59 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47c36094$0$24111$4c368faf@roadrunner.com>
Source record: 27748

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:5aAwj.9189$5K1.4348@newssvr12.news.prodigy.net...
> AI4QJ wrote:
>> My attic is large enough for a bent full size G5RV with no bends less
>> than 90 degrees. It functions (i.e. it and the feedline radiates well,
>> roughly as designed, and little RF feedback comes back to the radio). Of
>> course, it is multiband and I do use a tuner but I can bypass it and
>> still get out on 40/80/20m. Ten meters is not so good with or without a
>> tuner; 15 and 17 seem to be OK.
>
> Here's some G5RV information:
>
> http://www.cebik.com/wire/g5rv.html
> http://www.vk1od.net/G5RV
> http://www.w8ji.com/g5rv_facts.htm
>
> The standard G5RV performs well on 80/40/20/12m.
> Not very well on the other HF bands due to high
> SWR on the coax.

Yes, that would agree with my experience. Also, I found it almost impossible
to tune into 17m. I was thinking about just connecting the ladder line
direct to the tuner and eliminating the small length of coax. That should
take care of the dissipation in the coax. That may not help with 17 meters
but it should minimize losses on the other bands.

73 de AI4QJ

2627. Re: LORAN - C

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 00:47:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <gco6s3l55pqip9mesfbg4enquu2tclr6e1@4ax.com>
Source record: 27749

On Mon, 25 Feb 2008 22:33:09 +0100, Wim Ton <wton@bluewin.ch> wrote:

>> Use a CB whip with matching.
>>
>Can one use a ferrite antenna?

Hi Wim,

I presume you mean a loop antenna on a ferrite bar. I cannot see why
not.

73's
Richard Clark, KB7QHC

2628. can't you even go a day without forging my name Dloyd to your porn filth?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 01:07:22 UTC
From: an old friend <kb9rqz@hotmail.com>
Message-ID: <2f82dc51-fbe9-4780-b99a-8dfef383c3e2@k2g2000hse.googlegroups.com>
Source record: 27750
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.shortwave

On Feb 24, 9:40 am, "Channel Master" <chann...@yahoo.com> wrote:
> This

2629. Re: Oddball Antenna Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 01:30:17 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fpvq3f$g1f$1@aioe.org>
Source record: 27601

"Roy Lewallen" wrote
> A head-on reflection to a flat surface results in the polarization sense
> reversal you mention. But reflection at a shallow angle doesn't. (etc)

Thanks for the reply. I was recalling the experimental results that RCA gathered in fixed and mobile tests in the Chicago loop when Ch 7 (ABC) installed an RCA c-pol transmit antenna on Sears Tower there in the 1970s. The ghost-reduction for same-sense c-pol tx and rx antennas was clearly evident, and quite remarkable.

The link below leads to a scan of several graphs showing why this was true for those near-in tests. RCA published a paper about it, which I will try to find and provide a link.

http://i62.photobucket.com/albums/h85/rfry-100/HVReflections.jpg

RF

2630. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 01:30:24 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <QYJwj.256794$MJ6.169864@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27602

Harold E. Johnson wrote:
>> Interesting. Here in Florida, the lightning capital of the continental
>> US, the ordinary electrical service grounding mechanism is *only* via
>> bonding to the metal in the foundation. New house construction will not
>> pass inspection without such a connection unless other more complex
>> arrangements are fashioned. There are typically no driven ground rods, and
>> water pipes are usually non-conductive. (The NEC no longer allows water
>> pipes to serve as the sole ground in any case.)
>>
>> 73,
>> Gene
>> W4SZ
>
> Must be a recent rules change Gene. I used to manufacture and sell an
> instrument to the power companies in FL, a meter that they would connect
> between one 120 Volt leg of the service drop and the residential ground rod,
> and drive the rod for a 25 Ohm ground. Typically, if they were installing
> pad mount transformers for underground service, they would install another
> ground rod there.
>
> The Withlacoochee Co-Op, which serviced some of the highest sand dunes in
> FL, would often drive 60 feet of ground rod to reach the required
> conductance.
>
> W4ZCB
>
>

I don't know when the change was made. I discovered this rule when our house was being built in 2003. I noticed that there were no ground rods, and I started asking questions and looking into the code. Florida follows the NEC without exception. No modifications or local electrical codes are allowed. Of course the AHJ can override almost anything if he decides to.

As you know, the electrical utilities generally are not bound by the NEC or other codes. They follow their own rules. Also, there are a lot of preexisting cases where the foundation steel is not connected to the outside of the concrete. Ground rods must be used. In those cases your ground-checker instrument would still be useful.

73,
Gene
W4SZ

2631. Re: Oddball Antenna Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 01:43:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13s6rla48m19ba5@corp.supernews.com>
Source record: 27603

Richard Fry wrote:
> "Roy Lewallen" wrote
>> A head-on reflection to a flat surface results in the polarization sense
>> reversal you mention. But reflection at a shallow angle doesn't. (etc)
> _____
>
> Thanks for the reply. I was recalling the experimental results that RCA
> gathered in fixed and mobile tests in the Chicago loop when Ch 7 (ABC)
> installed an RCA c-pol transmit antenna on Sears Tower there in the 1970s.
> The ghost-reduction for same-sense c-pol tx and rx antennas was clearly
> evident, and quite remarkable.
>
> The link below leads to a scan of several graphs showing why this was true
> for those near-in tests. RCA published a paper about it, which I will try
> to find and provide a link.
>
> http://i62.photobucket.com/albums/h85/rfry-100/HVReflections.jpg

Sorry, I can't get enough out of these graphs to come to any conclusions. But the equations for reflection coefficient as a function of polarization and ground conductivity and permittivity are well known (cf. Kraus, _Antennas_) and are used by NEC-2 and EZNEC. So conclusions based on reflection coefficients should be the same. Perhaps the multipath reflections involved in TV broadcasting are primarily from surfaces more or less normal to the radiated signal.

Roy Lewallen, W7EL

2632. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 02:31:52 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qSKwj.2920$pl4.235@newssvr22.news.prodigy.net>
Source record: 27604

AI4QJ wrote:
> Yes, that would agree with my experience. Also, I found it almost impossible
> to tune into 17m. I was thinking about just connecting the ladder line
> direct to the tuner and eliminating the small length of coax. That should
> take care of the dissipation in the coax. That may not help with 17 meters
> but it should minimize losses on the other bands.

At my last QTH, I experimented with a variable length
matching section for a G5RV. Using the ladder-line-length
selector described on my notuner dipole web page, I found
the optimum matching section lengths for the G5RV on all
HF bands. It worked like a charm. Here are the optimum
matching section lengths that I measured.

Optimum length of G5RV matching section

75m 30.5 ft
40m 34.5 ft
30m 20.7 ft
20m 33.0 ft
17m 12.5 ft
15m 29.5 ft
12m 30.5 ft
10m 23.4 ft
--
73, Cecil http://www.w5dxp.com

2633. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 05:19:38 UTC
From: AI4QJ <nospam@hotmail.com>
Message-ID: <47c3a16b$0$30709$4c368faf@roadrunner.com>
Source record: 27605

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:qSKwj.2920$pl4.235@newssvr22.news.prodigy.net...
> AI4QJ wrote:
>> Yes, that would agree with my experience. Also, I found it almost
>> impossible to tune into 17m. I was thinking about just connecting the
>> ladder line direct to the tuner and eliminating the small length of coax.
>> That should take care of the dissipation in the coax. That may not help
>> with 17 meters but it should minimize losses on the other bands.
>
> At my last QTH, I experimented with a variable length
> matching section for a G5RV. Using the ladder-line-length
> selector described on my notuner dipole web page, I found
> the optimum matching section lengths for the G5RV on all
> HF bands. It worked like a charm. Here are the optimum
> matching section lengths that I measured.
>
> Optimum length of G5RV matching section
>
> 75m 30.5 ft
> 40m 34.5 ft
> 30m 20.7 ft
> 20m 33.0 ft
> 17m 12.5 ft
> 15m 29.5 ft
> 12m 30.5 ft
> 10m 23.4 ft
> --
> 73, Cecil http://www.w5dxp.com

Thank you Cecil, that data is very helpful.

73 de AI4QJ

2634. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 06:42:34 UTC
From: Eric Gordon <egordon@mho.net>
Message-ID: <-62dnf5mEoR3KV7anZ2dnUVZ_uyinZ2d@mho.net>
Source record: 27606
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

WHAT A JACKASS. OOOPPPSSSSS SORRY, HE'S A REPUBLICAN. SORRY, NO OFFENSE
TO THE JACKASSES OF THE WORLD. HE'S AN INSULT TO HUMANITY, BUT NOT TOTALLY
UNEXPECTED FROM A REPUBLICAN
"laborkei" <laborkeiNOSPAM@hotmail.com> wrote in message
news:I6sjj.51910$Mu4.41373@bignews7.bellsouth.net...
> Attention all Amateur Operators.
> Please Read, and send your comments to the ARRL and Romney Website.
>
>
> Wednesday 16 November 2005 @ 15:48:10 | Eastern Massachusetts ARRL Romney
> 'Disses' Amateur Radio In
> Televised Town Meeting Posted on Wednesday16 November 2005 @ 15:48:10
>
> Governor Mitt Romney dismissed the role of Amateur Radio operators in
> emergency communications
> during a televised 'town meeting' program last night on WCVB's 'When
> Disaster Strikes: Segment Two.'
> The program featured public safety and volunteer organization officials
> from
> across Massachusetts
> among its audience.
>
> Host and moderator Natalie Jacobson asked an increasingly-agitated
> Governor
> Romney questions about
> communications interoperability, and communication without commercial
> power.
> Romney was next asked
> by Jacobson, '...so does it come down to ham radio?...'
>
> The Governor replied in a disgusted tone, 'No, we don't need to deal with
> ham radio operators...'
>
> Embarrassed public safety officials later tried to put in a good word for
> Amateur Radio. National
> Weather Service Warning Coordination Meteorologist Glenn Field was
> prepared
> to state the importance
> of Amateur Radio, when Salvation Army Colonel Fred Van Brunt was called
> upon. Van Brunt remarked
> about his organization's quest to improve its communications capabilities

> and how Amateur Radio has
> aided his organization. 'The ham radio situation helps a great deal,' he
> stated.
>
> 'I have already written and submitted a letter to the Governor's Office,'
> wrote Eastern MA Section
> Emergency Coordinator Rob Macedo, KD1CY. 'I have also written an email to
> Natalie Jacobson.'
>
> ARRL Section Manager Mike Neilsen, W1MPN sent a section-wide email today
> to
> all Eastern MA ARRL
> members describing the incident along with actions he and his staff were
> taking to mitigate the
> situation.
>
> '[Romney's] attitude about us sets an unfortunate tone within the state's
> executive branch,' wrote
> Neilsen. 'As a former military officer, I see this as a failure in
> leadership. My immediate concern
> is our working relationship within the [Massachusetts Emergency
> Management
> Team] environment.'
> Neilsen intends to address the Governor's comments as 'an urgent matter'
> at
> a meeting on November 17
> with Don Carlton from the Massachusetts Emergency Management Agency.
>
> 'I was very disturbed about what the Governor stated on the program,'
> wrote
> Ron Wood, W1PLW, the
> section's Public Information Coordinator. 'It does show that more work is
> needed by all hams in the
> section. It's a great idea to write letters explaining the good we do.'
> Wood
> is attempting to
> schedule a meeting with the Governor's office tomorrow so that EMA ARRL
> staffers might discuss the
> matter further.
>
> Tom Kinahan, N1CPE wrote that Governor Romney's comment has made 'a PR
> problem' for Kinahan in his
> role as MA State RACES Officer.
>
> 'I've got a roster of over 150 Amateur Radio operators that support local
> communities, and those of
> us that directly support the state government. There are at least double
> that in terms of people
> that are actually out there that I don't have formal paperwork on that
> support Amateur Radio

> emergency communications in some organized manner... The Governor has
> said
> that he 'certainly
> doesn't need to rely on ham radio' -- where does that leave the RACES
> program now?'
>
> 'I am ashamed tonight that I am a Republican!' remarked one ham radio
> viewer. '[Romney] speaks in
> derogatory tones about hams. He certainly shows an ignorance as to what
> we
> do and are capable of. I
> suggest a grass roots campaign of local hams calling the State House and
> The
> Governor's Office to
> protest.'
>
>
> --
>
>
>

2635. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 13:06:05 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <19Uwj.50483$9j6.3704@attbi_s22>
Source record: 27607

> I don't know when the change was made. I discovered this rule when our
> house was being built in 2003. I noticed that there were no ground rods,
> and I started asking questions and looking into the code. Florida follows
> the NEC without exception. No modifications or local electrical codes are
> allowed. Of course the AHJ can override almost anything if he decides to.
>
> As you know, the electrical utilities generally are not bound by the NEC
> or other codes. They follow their own rules. Also, there are a lot of
> preexisting cases where the foundation steel is not connected to the
> outside of the concrete. Ground rods must be used. In those cases your
> ground-checker instrument would still be useful.
>
> 73,
> Gene
> W4SZ

I should have put a smiley face somewhere in the same zip code with the "recent" Gene. My experience ended in 1986 when I retired. Back then, (And for a good many years before) it was known as a "NEMA" Ground and 25 Ohms was the value.

I had a country home near Brooksville, FL, with some acreage and 5 towers (Tallest 160 feet) for a little contesting. Being there only on weekends, it WAS a fairly high maintenance property. Hardly a time when I went there that there was not evidence of some lightning damage, even with considerable effort to minimize it. Before cell phones, I was close to being the highest thing in the county.

Regards
W4ZCB

2636. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 13:17:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <95645285-71d2-48a1-9d83-435e7ee2b9d0@q33g2000hsh.googlegroups.com>
Source record: 27608

On Feb 21, 9:53 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
>
> Hey Keith, how about this one?
>

```
>                Rs             Pfor=50w-->
>          +----/\/\/-----+----------------------+
>          |    50 ohm            <--Pref         |
>          |                                      |
>         Vs                   45 degrees     RLoad+j0
>       100v RMS               50 ohm line        |
>          |                                      |
>          |                                      |
>          +--------------+----------------------+
```

>
> The dissipation in the source resistor is:
>
> P(Rs) = 50w + Pref
>
> How can anyone possibly argue that reflected power
> is *never* dissipated in the source resistor? :-)

It is time for a more complete analysis. For the sake of an
example let us set Rload to 150 ohms. That makes a nice
voltage RC at the load of 0.5.

Vs = 100 V rms

At the generator end
Vf.g = 50 V rms
Pf.g = 50 W avg

Vr.g = 25 V rms
Pr.g = 12.5 W avg

At the source resistor, before the reflection returns, the
dissipation in the source resistor is
Prs.br = 50 W avg
and after the reflection returns it is
Prs.ar = 62.5 W avg

Yup, it sure looks like that reflected wave is dissipated in the
source resistor since 62.5 = 50 + 12.5, does it not?

But let us examine in more detail...

Vs = 100 V rms
Vs(t) = 141 cos(wt)

Vf.g = 50 V rms
Vf.g(t) = 70.7 cos(wt)

Pf.g = 50 W avg
Pf.g(t) = 50 cos(2wt) + 50

Vr.g = 25 V rms
Vr.t(t) = 35.35 cos(wt-90degrees)

Pr.g = 12.5 W avg
Pr.g(t) = 12.5 cos(2wt) + 12.5

The power in the source resistor, before the reflection returns is
Prs.br = 50 W avg
Prs.br(t) = 50 cos(2wt) + 50

and after the reflection returns
Prs.ar = 62.5 W avg
Prs.ar(t) = 62.5 cos(2wt-53.13degrees) + 62.5

So, while the average powers seem to sum nicely to support the
claim, when the actual power as a function of time is examined
it can be seen that the power in the source resistor is NOT the
sum of its dissipation pre-reflection plus the power from the
reflection.

This solidly disproves the claim that the reflected power is
dissipated in the source resistor.

You may find the spreadsheet at
http://keith.dysart.googlepages.com/generator,line,load,reflection
useful in taking some of the tedium out of the calculations.
And yes, if your anti-virus tools do not like Excel macros, you may
have to invoke your authority over your tools. (They do know who is
boss, do they not?)

...Keith

2637. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 14:03:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <r_Uwj.12758$Ch6.12692@newssvr11.news.prodigy.net>
Source record: 27609

Keith Dysart wrote:
> This solidly disproves the claim that the reflected power is
> dissipated in the source resistor.

I will respond to your posted data after awhile. In the
meantime, let's correct the misconception contained in
your above statement.

No one is asserting that reflected power is *always*
dissipated in the source resistor so that discussion
is a dead horse. The assertion that I am making is:

Reflected RF energy is *sometimes* dissipated (converted
to heat) in the source resistor and sometimes it is not.
With an ideal voltage or current source, I can tell you
when it happens and when it doesn't happen along with
the quantitative values involved.

What is being questioned is Roy's assertion in his
"Food for Thought" paper. Quoting:

"THE REVERSE POWER IS NOT DISSIPATED IN OR ABSORBED BY
THE SOURCE RESISTANCE."

It seems clear that he is saying that reverse power is
never dissipated in the source resistance. That is
simply not true. Sometimes, there is nowhere else for
the reflected energy to go.

> And yes, if your anti-virus tools do not like Excel macros, you may
> have to invoke your authority over your tools. (They do know who is
> boss, do they not?)

I am reluctant to turn off my firewall and virus protection
while I download the EXCEL file. I once had a virus/worm
that even survived a reformatting of my hard drive. Apparently,
it was stored somewhere besides the hard drive.
--
73, Cecil http://www.w5dxp.com

2638. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 14:27:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MlVwj.4888$Mh2.4412@nlpi069.nbdc.sbc.com>
Source record: 27610

Keith Dysart wrote:
> So, while the average powers seem to sum nicely to support the
> claim, when the actual power as a function of time is examined
> it can be seen that the power in the source resistor is NOT the
> sum of its dissipation pre-reflection plus the power from the
> reflection.

Whoa Keith, Dr. Best's power equation that is being used
does not work for instantaneous powers. It is adapted from
the irradiance equation from optical physics which is a
time averaged power density. The irradiance equation
does NOT work for instantaneous powers even in the
field of optical physics and it is not supposed to.

Trying to use Dr. Best's power equation on instantaneous
powers is akin to trying to measure the feedpoint impedance
of an antenna with a DC ohm-meter. It is the misuse of a
tool. All powers or power densities appearing in the
power equation *must* be integrated over at least one
complete cycle. Instantaneous powers are simply excluded
from this energy model that we have been discussing.

Note that every voltage, current, and power in Dr. Best's
QEX article is an average value.

I have made absolutely no assertions about instantaneous
powers so your instantaneous power data is irrelevant to
my assertions. When I say "power", I am always talking about
time averaged power - never about instantaneous power.

You are free to make assertions about instantaneous power
but those assertions do not apply to my statements
about average power. They may be interesting to you but
have nothing to do with anything that I have been saying.
--
73, Cecil http://www.w5dxp.com

2639. Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 21:34:03 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <fB%wj.188319$3m6.167535@fe2.news.blueyonder.co.uk>
Source record: 27611

I'm in the process of building a homebrew Cobwebb Ariel.

I have found two different sizes for the twin cable elements, figure 8 42 strand 0.2mm, but on the Cobwebb web site it says figure 8 84 strand.

Also in the Cobwebb revealed PDF doc that I downloaded on page 5 it says each core is 42 strands of 0.2mm diameter and on page 7 of the same doc it says figure 8 84 strand. So I'm a little confused.

Does anyone know what is the correct cable to use, 42 strand 0.2mm or 84 strand 0.2mm?

Many thanks

2640. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-26 22:18:36 UTC
From: dplatt@radagast.org
Message-ID: <sqfe95-9lh.ln1@radagast.org>
Source record: 27612

In article <fB%wj.188319$3m6.167535@fe2.news.blueyonder.co.uk>,
Barrett <barrett@blueyounder.co.uk> wrote:

>I'm in the process of building a homebrew Cobwebb Ariel.
>
>I have found two different sizes for the twin cable elements, figure 8 42
>strand 0.2mm, but on the Cobwebb web site it says figure 8 84 strand.
>
>Also in the Cobwebb revealed PDF doc that I downloaded on page 5 it says
>each core is 42 strands of 0.2mm diameter and on page 7 of the same doc it
>says figure 8 84 strand. So I'm a little confused.
>
>Does anyone know what is the correct cable to use, 42 strand 0.2mm or 84
>strand 0.2mm?

As I read it, this is two-conductor "zipcord" cable, with 42 strands
in each of two separate conductors, for a total of 84 strands.

I doubt that the wire gauge or strand count is very significant, let
alone critical. You could probably build this from whatever sort of
stranded zipcord-type loudspeaker or appliance-wire cable you have
locally available (as long as it's not too thin-gauge) without
noticing a significant electrical difference.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2641. noise canceling Elevator /HF?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 02:38:44 UTC
From: ml <m@di.net>
Message-ID: <m-587AFE.21383526022008@news.verizon.net>
Source record: 27613

hi

I've had some interference from 1 to 30 caused by new elevator
equipment.

my building lookes like a long but narrow rectangle

it's about (rounding off) 100ft long maybe 50ft wide i'd guess

on each far end of the rectangle is an elevator room

both throw out same type noise

my antenna a horiz dipole center tuned (SGC) is ontop of the Eastern
one

some have recomended to help cancel the noise i try a noise
canceling device like a timewave anc4(others are simular so i'll use
anc4 as example)

i happened to have one hooked up anyway and already had a small
antenna extra up there i taped to the side of the elevator room it
picks up noise fantastic

the anc never really seemed to fix the noise i am really trying to
kill thou i will say over all in general every now and then some
noise (not by my building) can really be cancled by it when it
works it's great but it works so poorly for my situation*(not the
above elevator noise) but the other far an few randum noise i wouldnt
recomend one unless you specifically know it can help your specific
instance

sorry to a side track but it leads me to so why didn't this kill my
noise

(lets forget about that 2nd elevator for a second)

so turns out these things are designed to 'null' noise a)further away
than both your main antenna and noise antenna and b) presumes you can
sepereate the noise antenna from main ant.

i sorta understood 'b' didn't know about a

further the 2nd elevator is about 80 feet i can't tell if the
noise from it is getting over to the other side/elevator where my
antenna is aka east side if it is i realize my question below
becomes very complex

so question

how does one design a device ie what kind and whom can design essentially a anc4 like device that can create a null in the situation i have lets assume the 2nd elevator is not causing me issues

not even sure the theory behind it, i sorta understand how the anc 4 works thou

anyone have any ideas? any partial or total null could really help me out if it's poss to create one w/o sacrficing my rx sensitivity overall too much

2642. Re: LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 03:07:36 UTC
From: no@spam.net
Message-ID: <vqk9s391r43jilavc54tbjvgqfg71dejqe@4ax.com>
Source record: 27614

what's the high and low frequency you want to cover and how long do
you want the boom to be?
me

On Sun, 24 Feb 2008 18:17:58 -0800 (PST), K7ITM <k7itm@msn.com> wrote:

>On Feb 24, 4:37 am, "Dave" <no...@nowhere.com> wrote:
>> "K7ITM" <k7...@msn.com> wrote in message
>>
>> news:49115b34-632e-4cc8-bac6-1e820995e6d3@u10g2000prn.googlegroups.com...
>>
>> > Anyone have any practical LPY (log-periodic Yagi) antenna designs they
>> > care to share? Something with about 4% or 5% bandwidth in the VHF/low
>> > UHF range should do well--the element diameters should be appropriate
>> > for scaling the design to my frequencies of interest. 10dBi or so
>> > gain is probably fine.
>>
>> > Cheers,
>> > Tom

2643. Re: noise canceling Elevator /HF?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 03:22:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <dhl9s3phqronsdo996bsr71klklavo4vud@4ax.com>
Source record: 27615

On Wed, 27 Feb 2008 02:38:44 GMT, ml <m@di.net> wrote:

>i happened to have one hooked up anyway and already had a small
>antenna extra up there i taped to the side of the elevator room it
>picks up noise fantastic
>
>the anc never really seemed to fix the noise i am really trying to
>kill thou i will say over all in general every now and then some
>noise (not by my building) can really be cancled by it when it
>works it's great but it works so poorly for my situation*(not the
>above elevator noise) but the other far an few randum noise i wouldnt
>recomend one unless you specifically know it can help your specific
>instance

Hi Myles,

There's the old saying that "if a little works, a lot works better."

But possibly not in this case.

If you have your sense antenna right up against the noise source, you are certainly inducing huge noise fields into that sense antenna's line. Much too much. Pull that sense antenna away 40 feet (put it between the two elevator sheds). 40 feet will still be plenty close.

Also make sure you have all lines going topside CHOKED! And in several places along the way.

73's
Richard Clark, KB7QHC

2644. Re: LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 07:02:37 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <d53093d0-204e-482c-b7c1-eb31926592b8@u72g2000hsf.googlegroups.com>
Source record: 27616

On Feb 26, 7:07 pm, n...@spam.net wrote:
> what's the high and low frequency you want to cover and how long do
> you want the boom to be?
> me
>
> On Sun, 24 Feb 2008 18:17:58 -0800 (PST), K7ITM <k7...@msn.com> wrote:
> >On Feb 24, 4:37 am, "Dave" <no...@nowhere.com> wrote:
> >> "K7ITM" <k7...@msn.com> wrote in message
>
> >>news:49115b34-632e-4cc8-bac6-1e820995e6d3@u10g2000prn.googlegroups.com...
>
> >> > Anyone have any practical LPY (log-periodic Yagi) antenna designs they
> >> > care to share? Something with about 4% or 5% bandwidth in the VHF/low
> >> > UHF range should do well--the element diameters should be appropriate
> >> > for scaling the design to my frequencies of interest. 10dBi or so
> >> > gain is probably fine.
>
> >> > Cheers,
> >> > Tom

Let's see...500MHz to 1.05*500MHz = 525MHz; boom long enough to get me
about 10dBi over that range. I'll scale it to my particular
frequencies of interest, so any other ~5% bandwidth in that general
vicinity of frequencies would be fine too.

Cheers,
Tom

2645. 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 10:20:12 UTC
From: Cheers <moussa_el@hotmail.com>
Message-ID: <MPG.222fc84286896731989844@freenews.iinet.net.au>
Source record: 27617

Hi

can someone explain how to connect 2 voltage 4:1 baluns in series to
achieve 16:1

Thanks
--
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the poster, and specifically may not be published in,
or used by http://www.jlaforums.com

2646. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 10:53:18 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <yibxj.193115$3m6.103166@fe2.news.blueyonder.co.uk>
Source record: 27618

Ok Dave, I will see what I have in the shed.
Trouble I have is that I only have a SWR meter to do the tuning and I have heard the thickness of the wire can change the length of wire used by quit a lot. So I really needed to get it very close for the tuning as I don't have an analyzer to use.

Thanks

"Dave Platt" <dplatt@radagast.org> wrote in message
news:sqfe95-9lh.ln1@radagast.org...
> In article <fB%wj.188319$3m6.167535@fe2.news.blueyonder.co.uk>,
> Barrett <barrett@blueyounder.co.uk> wrote:
>
>>I'm in the process of building a homebrew Cobwebb Ariel.
>>
>>I have found two different sizes for the twin cable elements, figure 8 42
>>strand 0.2mm, but on the Cobwebb web site it says figure 8 84 strand.
>>
>>Also in the Cobwebb revealed PDF doc that I downloaded on page 5 it says
>>each core is 42 strands of 0.2mm diameter and on page 7 of the same doc it
>>says figure 8 84 strand. So I'm a little confused.
>>
>>Does anyone know what is the correct cable to use, 42 strand 0.2mm or 84
>>strand 0.2mm?
>
> As I read it, this is two-conductor "zipcord" cable, with 42 strands
> in each of two separate conductors, for a total of 84 strands.
>
> I doubt that the wire gauge or strand count is very significant, let
> alone critical. You could probably build this from whatever sort of
> stranded zipcord-type loudspeaker or appliance-wire cable you have
> locally available (as long as it's not too thin-gauge) without
> noticing a significant electrical difference.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!
>

2647. Re: noise canceling Elevator /HF?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 11:28:42 UTC
From: ml <m@di.net>
Message-ID: <m-386B6A.06284227022008@news.verizon.net>
Source record: 27619

In article <dhl9s3phqronsdo996bsr71klklavo4vud@4ax.com>,
Richard Clark <kb7qhc@comcast.net> wrote:

> On Wed, 27 Feb 2008 02:38:44 GMT, ml <m@di.net> wrote:
>
> >i happened to have one hooked up anyway and already had a small
> >antenna extra up there i taped to the side of the elevator room it
> >picks up noise fantastic
> >
> >the anc never really seemed to fix the noise i am really trying to
> >kill thou i will say over all in general every now and then some
> >noise (not by my building) can really be cancled by it when it
> >works it's great but it works so poorly for my situation*(not the
> >above elevator noise) but the other far an few randum noise i wouldnt
> >recomend one unless you specifically know it can help your specific
> >instance
>
> Hi Myles,
>
> There's the old saying that "if a little works, a lot works better."
>
> But possibly not in this case.
>
> If you have your sense antenna right up against the noise source, you
> are certainly inducing huge noise fields into that sense antenna's
> line. Much too much. Pull that sense antenna away 40 feet (put it
> between the two elevator sheds). 40 feet will still be plenty close.
>
> Also make sure you have all lines going topside CHOKED! And in
> several places along the way.
>
> 73's
> Richard Clark, KB7QHC

hi Rich

thanks for the reply

i have a balun on both ends never thought of chokes hmmm maybe i
can rummage up some snap on of a partucular size/material think
dxengineering has nice chokes

the companies that make these noice devices say the above you
proposed won't work at all, however your idea is ceartainly worth
trying and a fun experiment only way i'll learn and know fer sure

and the chokes are easy to do can't hurt

as an aside:

i dunno why i was thinking the closer the sense at is the better but
not the case

2648. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 12:00:24 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <T76dnSjoi7cUzVjanZ2dneKdnZydnZ2d@pipex.net>
Source record: 27620

> can someone explain how to connect 2 voltage 4:1 baluns in series to
> achieve 16:1
==========

With say one 4:1 balun having 2 windings Aa and Bb and the second 4:1
balun having 2 windings Cc and Dd with A & a etc the ends of a
particular winding , connect the windings as follows :

a to B , b to C , c to D

Connect grounded unbalanced side to bC connection

Connect the hot unbalanced side either to aB or cD connection

Connect balanced line between A and d

The above applies when the 2 existing baluns being wound with 2 windings
each with the 2 corresponding ends being A and B , a and b for one
balun and C and D , c and d for the other balun.

I should have made an ASCII drawing of the 4 windings in series ,but I
didn't expect it to be transmitted correctly ,so I hope the above
description makes sense .

Frank GM0CSZ / KN6WH

2649. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 12:51:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <f1dxj.8114$xq2.6149@newssvr21.news.prodigy.net>
Source record: 27621

Cheers wrote:
> can someone explain how to connect 2 voltage 4:1 baluns in series to
> achieve 16:1

Assuming you are trying to match 50 ohms to 800
ohms, the first one would need to be a 50:200 unun
and the second one would need to be a 200:800 balun.

Where does the 800+j0 ohm impedance that you
are trying to match come from?
--
73, Cecil http://www.w5dxp.com

2650. Re: noise canceling Elevator /HF?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 16:11:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <f41bs392udn91kbj8rmdi8pjduqkis5ses@4ax.com>
Source record: 27622

On Wed, 27 Feb 2008 11:28:42 GMT, ml <m@di.net> wrote:

>the companies that make these noice devices say the above you
>proposed won't work at all, however your idea is ceartainly worth
>trying and a fun experiment only way i'll learn and know fer sure

Hi Myles,

What they may be talking about is noise that arrives over the air (radiation) won't be materially affected by chokes - or at least not enough. However, where chokes do work best is with noise over the wire (conduction) and your sense antenna sitting right on top of the elevator shack is tightly coupled (and why I suggested putting it further away).

>and the chokes are easy to do can't hurt

However, knowing their impedance characteristic is important because you may end up thinking they weren't useful for the wrong reason (they didn't present enough impedance).

A ferrite choke at the feed point consisting of 50 mixed beads of Amidon types #75 and #73 (or #77) over RG58 will be about a foot long. A couple more of these along the line (one a quarter wave away from the feed point for a low band, and another a quarter wave away at the high band) will help decouple it further. At a minimum, over the HF band it will present something on the order of 1000 Ohms to those noise currents traveling on the braid outer surface. The attenuation ratio of this Z to your front end Z is not very considerable (low teens of dB) but still useful. At the proximity you are with sitting on top of the elevator shack, distance with the square law will help far more - you only want to sense the noise, not pull it into your ham shack.

You will need to choke ALL lines going topside in this manner (your principle antenna, your sense antenna, your control leads to your SGC) such that this sounds like an investment of roughly 150-450 beads.

I would move the sense antenna first as that is the cheapest test for noise reduction that could bring the greatest return - pick the low hanging fruit first.

73's
Richard Clark, KB7QHC

2651. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 17:21:01 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <1_gxj.141358$LD6.134908@fe3.news.blueyonder.co.uk>
Source record: 27623

Question about the elements.

Does the speaker wire need to be kept very straight (no twisting) or doesn't
it matter if there twisted?

Thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:yibxj.193115$3m6.103166@fe2.news.blueyonder.co.uk...
> Ok Dave, I will see what I have in the shed.
> Trouble I have is that I only have a SWR meter to do the tuning and I
> have heard the thickness of the wire can change the length of wire used by
> quit a lot. So I really needed to get it very close for the tuning as I
> don't have an analyzer to use.
>
> Thanks
>
>
>
> "Dave Platt" <dplatt@radagast.org> wrote in message
> news:sqfe95-9lh.ln1@radagast.org...
>> In article <fB%wj.188319$3m6.167535@fe2.news.blueyonder.co.uk>,
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>>>I'm in the process of building a homebrew Cobwebb Ariel.
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>>>each core is 42 strands of 0.2mm diameter and on page 7 of the same doc
>>>it
>>>says figure 8 84 strand. So I'm a little confused.
>>>
>>>Does anyone know what is the correct cable to use, 42 strand 0.2mm or 84
>>>strand 0.2mm?
>>
>> As I read it, this is two-conductor "zipcord" cable, with 42 strands
>> in each of two separate conductors, for a total of 84 strands.
>>
>> I doubt that the wire gauge or strand count is very significant, let
>> alone critical. You could probably build this from whatever sort of
>> stranded zipcord-type loudspeaker or appliance-wire cable you have
>> locally available (as long as it's not too thin-gauge) without
>> noticing a significant electrical difference.

>>
>> --
>> Dave Platt <dplatt@radagast.org> AE6EO
>> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>> I do _not_ wish to receive unsolicited commercial email, and I will
>> boycott any company which has the gall to send me such ads!
>>
>
>
>

2652. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 17:55:12 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ed8bs39mrc4cjof6fubj0bi50dskn1pv62@4ax.com>
Source record: 27624

On Wed, 27 Feb 2008 17:21:01 GMT, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>Question about the elements.
>
>Does the speaker wire need to be kept very straight (no twisting) or doesn't
>it matter if there twisted?

>> Ok Dave, I will see what I have in the shed.
>> Trouble I have is that I only have a SWR meter to do the tuning and I
>> have heard the thickness of the wire can change the length of wire used by
>> quit a lot. So I really needed to get it very close for the tuning as I
>> don't have an analyzer to use.

For wire running in a zip cord, point-to-point, you will use more wire
by twisting than running straight. This will affect the tune if, as
you say, length is critical.

As for being critical; there are many variables that contribute to the
state of tune, wire length being one of them, but not the sole
variable. The presence or absence of insulation, and how thick it is
will be another variable. Proximity to other materials in the
construction will be yet another variable. Proximity to other
environmental disturbances will contribute more variables. You are
almost guaranteed to not be resonant the first time.

Your SWR meter is sufficient for the purposes of tuning your antenna.
Simply take readings at close frequency intervals to chart a curve of
match (or mismatch as the case may be). Do this with the antenna IN
PLACE. Note from this curve how much you are off your desired
frequency. Make a slight (emphasis on slight) adjustment and repeat
the curve building exercise with the antenna IN PLACE. You will now
have a reference (the first curve) and a delta (the difference between
the reference and your second curve). This should tell you how much
you need to adjust to achieve match.

73's
Richard Clark, KB7QHC

2653. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 19:11:26 UTC
From: dplatt@radagast.org
Message-ID: <u7pg95-rfi.ln1@radagast.org>
Source record: 27625

In article <1_gxj.141358$LD6.134908@fe3.news.blueyonder.co.uk>,
Barrett <barrett@blueyounder.co.uk> wrote:

> Ok Dave, I will see what I have in the shed.
> Trouble I have is that I only have a SWR meter to do the tuning and I
> have heard the thickness of the wire can change the length of wire used by
> quit a lot. So I really needed to get it very close for the tuning as I
> don't have an analyzer to use.

At these frequencies, the diameter of the wire is such a small
fraction of the antenna's length that small changes in the diameter
aren't going to matter very much.

As far as tuning and reproducibility goes, there's going to be a
bigger issue with this sort of antenna design (or any made from this
type of wire) - stretching of the wire under tension. This sort of
stranded, soft-drawn copper wire is prone to stretch quite a bit under
tension, both immediately and over time. You're likely to find the
antenna's tuning changing a bit, at least, over the course of its
lifetime, as the wires sag and stretch under their own weight.

Wire antennas are often made of "hard-drawn" copper wire, or of
soft-drawn wire which is pre-stretched to avoid such sagging and
de-tuning. I'm not sure whether zipcord-type appliance or speaker
wire could/should be pre-stretched in this way - I suspect that the
PVC insulation might be weakened by doing so and that the wire might
snap.

>Question about the elements.
>
>Does the speaker wire need to be kept very straight (no twisting) or doesn't
>it matter if there twisted?

I wouldn't twist it tightly - this _might_ add enough inductance to
alter the tuning by a detectable amount. A bit of loose twisting
ought not to matter. I don't think you have to be pedantic about
keeping it absolutely un-twisted.

As to tuning and SWR - as long as your rig has some sort of basic
autotuner that can handle a moderate SWR (say, 3:1 or better), and as
long as you get the antenna's tuning reasonably close (SWR minimum
somewhere inside each band you're going to be using), and as long as
you use a not-too-terribly-long run of good coax (RG-8 thickness
preferred), I really don't think you have to worry about trying to get
the lowest-possible SWR for the antenna itself. At HF, the amount of
"excess loss" in the cable, and in the ATU due to a moderate SWR is

not large, and probably will not make an appreciable difference in
your ability to either hear or be heard.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2654. Wire Antenna/ Tree interaction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 21:11:57 UTC
From: marc <amarcpassy@gmail.com>
Message-ID: <b751efc7-0b80-405e-a91b-d13623160a68@q78g2000hsh.googlegroups.com>
Source record: 27626

I'm a noob, and I'm considering installing a wire antenna using the sole tree on my lot as one end. My question is "Is it dangerous if the antenna touches the tree branches/leaves during transmit?" I'm less worried about performance right now and more safety.

Marc
W5AMP

2655. ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 22:20:59 UTC
From: Sonny Hood <wrhood@cox.net>
Message-ID: <cgobs31kn4i6oinn2eh2age01vm13oi1sp@4ax.com>
Source record: 27627

After Google search no luck on any data on gain for this antenna.
Just installed with apex at 33 feet and has 27 degrees full length is
116.63 feet long and has a reduced length of 2.064%. Is there any
gain over a point incident antenna? k4wys@cox.net

2656. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 22:47:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6Mlxj.12713$J41.12100@newssvr14.news.prodigy.net>
Source record: 27628

Sonny Hood wrote:
> After Google search no luck on any data on gain for this antenna.
> Just installed with apex at 33 feet and has 27 degrees full length is
> 116.63 feet long and has a reduced length of 2.064%. Is there any
> gain over a point incident antenna? k4wys@cox.net

You can model that antenna with the free demo version
of EZNEC available from www.eznec.com.

Your configuration is unclear. How far above ground
are the ends of the inverted V?
--
73, Cecil http://www.w5dxp.com

2657. Re: Wire Antenna/ Tree interaction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 22:48:52 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fq4pcl$r8p$1@news.jpl.nasa.gov>
Source record: 27629

marc wrote:
> I'm a noob, and I'm considering installing a wire antenna using the
> sole tree on my lot as one end. My question is "Is it dangerous if
> the antenna touches the tree branches/leaves during transmit?" I'm
> less worried about performance right now and more safety.
>
> Marc
> W5AMP

how much power?

I used to have a dipole outside my apartment and the wires would touch some of the leaves/branches. I used a tuner at the feedpoint. On 40m (only), running 100W, it would arc to the tree on damp nights.

So, the real answer is, it depends. 100W dissipated in one spot could probably start a fire. a few watts lost in miscellaneous crackling and sparks, probably not.

If your wire antenna goes to an insulator, then to a rope/cable that goes to the tree, then you're probably much better off than just flinging the antenna wire through the branches. (the latter is popular with backpack portable...)

And, if you're that close to the tree, you're probably inducing some RF currents in the tree, so RF fields safety is an issue. Again, it depends. Power, operating mode, style of operation, whether there's any access controls to the area where the tree is, how high the antenna is, how big the tree is, etc.

2658. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 22:57:55 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fq4ptj$n0$1@news.jpl.nasa.gov>
Source record: 27630

Sonny Hood wrote:
> After Google search no luck on any data on gain for this antenna.
> Just installed with apex at 33 feet and has 27 degrees full length is
> 116.63 feet long and has a reduced length of 2.064%. Is there any
> gain over a point incident antenna? k4wys@cox.net

What sort of accuracy are you looking for? At what frequency?
length of 116.63 ft implies you're working 75 or 80m? So the feedpoint
is 10m (1/8th wavelength) off the ground?

You'll have some directivity over an isotrope, but not as much as a
dipole. You'll almost certainly have some loss due to the ground.

27 degrees is the droop? Endpoints about 6 feet off the ground?

Assuming "average soil" and copper wire.

-2.5dBi straight up is the peak gain

At 15 degrees above the horizon, about -6dBi off the end, about -7.5dBi
broadside.

2659. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-27 23:05:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13sbr6lapmpo0d2@corp.supernews.com>
Source record: 27631

The gain and pattern will be very close to that of a dipole at a height of about 24 feet. Maximum field strength will be straight up, and quite dependent on the ground characteristics.

What's a point incident antenna?

Roy Lewallen, W7EL

Sonny Hood wrote:
> After Google search no luck on any data on gain for this antenna.
> Just installed with apex at 33 feet and has 27 degrees full length is
> 116.63 feet long and has a reduced length of 2.064%. Is there any
> gain over a point incident antenna? k4wys@cox.net

2660. Re: noise canceling Elevator /HF?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 00:25:45 UTC
From: ml <m@di.net>
Message-ID: <m-438BBF.19254127022008@news.verizon.net>
Source record: 27632

In article <f41bs392udn91kbj8rmdi8pjduqkis5ses@4ax.com>,
Richard Clark <kb7qhc@comcast.net> wrote:

> On Wed, 27 Feb 2008 11:28:42 GMT, ml <m@di.net> wrote:
>
> >the companies that make these noice devices say the above you
> >proposed won't work at all, however your idea is ceartainly worth
> >trying and a fun experiment only way i'll learn and know fer sure
>
> Hi Myles,
>
> What they may be talking about is noise that arrives over the air
> (radiation) won't be materially affected by chokes - or at least not
> enough. However, where chokes do work best is with noise over the
> wire (conduction) and your sense antenna sitting right on top of the
> elevator shack is tightly coupled (and why I suggested putting it
> further away).
>
> >and the chokes are easy to do can't hurt
>
> However, knowing their impedance characteristic is important because
> you may end up thinking they weren't useful for the wrong reason (they
> didn't present enough impedance).
>
> A ferrite choke at the feed point consisting of 50 mixed beads of
> Amidon types #75 and #73 (or #77) over RG58 will be about a foot
> long. A couple more of these along the line (one a quarter wave away
> from the feed point for a low band, and another a quarter wave away at
> the high band) will help decouple it further. At a minimum, over the
> HF band it will present something on the order of 1000 Ohms to those
> noise currents traveling on the braid outer surface. The attenuation
> ratio of this Z to your front end Z is not very considerable (low
> teens of dB) but still useful. At the proximity you are with sitting
> on top of the elevator shack, distance with the square law will help
> far more - you only want to sense the noise, not pull it into your ham
> shack.
>
> You will need to choke ALL lines going topside in this manner (your
> principle antenna, your sense antenna, your control leads to your SGC)
> such that this sounds like an investment of roughly 150-450 beads.
>
> I would move the sense antenna first as that is the cheapest test for
> noise reduction that could bring the greatest return - pick the low
> hanging fruit first.

>
> 73's
> Richard Clark, KB7QHC

ok thanks again rich, i shoulda been more specific the company made no comments about chokes only there noise cancling device those where my last comments about your comments which differed from their comments so despite all the commenting i will still try what you said cause it seems like it might work it seems logical

my coax for hf is LMR400 as far as chokes go i presume the types wouldn't change but i guess i'll need few more chokes on roof?

come to think of it i dn't have any chokes on my temp prob, sgc control etc i do on the shack end hmmm

i wonder if i cut power to the sgc and if i still get the noice it can't be a deffive sgc just to be scientific to rule it out

thanks rich for helping so much

2661. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 00:45:30 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A52777B8125Enonenowhere@61.9.191.5>
Source record: 27633

Sonny Hood <wrhood@cox.net> wrote in
news:cgobs31kn4i6oinn2eh2age01vm13oi1sp@4ax.com:

> After Google search no luck on any data on gain for this antenna.
> Just installed with apex at 33 feet and has 27 degrees full length is
> 116.63 feet long and has a reduced length of 2.064%. Is there any
> gain over a point incident antenna? k4wys@cox.net

I don't understand some of your terminology or precision.

However, as others have told you, a dipole close to ground has a major lobe that is upwards, and probably at the zenith.

The maximum gain depends on height and ground chacteristics. The article at http://www.vk1od.net/buddipole/index.htm shows the modelled pattern of a 40m inverted V and Buddipole and you will see from Fig 2 and Table 1 that the major lobe may be quite high (zenith), and the max gain may be quite high in the case of the inverted V (>6dBi). The Buddipole maximum gain is affected to some extent by the antenna's conductor losses, but greatly by the proximity to ground and losses in heating the soil.

Your antenna looks like it is intended for 80m (you leave us guessing), so it is at lower relative height than the inverted V in the article.

Owen

2662. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 02:29:00 UTC
From: Cheers <moussa_el@hotmail.com>
Message-ID: <MPG.2230ab4befbfbd9c989845@freenews.iinet.net.au>
Source record: 27634

Hi Cecil

In article <f1dxj.8114$xq2.6149@newssvr21.news.prodigy.net>,
nospam@w5dxp.com says...

> Assuming you are trying to match 50 ohms to 800
> ohms, the first one would need to be a 50:200 unun
> and the second one would need to be a 200:800 balun.
>
> Where does the 800+j0 ohm impedance that you
> are trying to match come from?
>
is 900 ohms 3-wire Version of the WBFD

```
|----------|A|----------|
|---------'\/\/\,-------|
|----------|B|----------|
```

http://www.cebik.com/wire/wbfd.html

--
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2663. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 02:36:30 UTC
From: Cheers <moussa_el@hotmail.com>
Message-ID: <MPG.2230ad1c9e17df00989846@freenews.iinet.net.au>
Source record: 27635

In article <T76dnSjoi7cUzVjanZ2dneKdnZydnZ2d@pipex.net>,
abcgm0csz.kn6whxyz@dsl.pipex.com says...
> > can someone explain how to connect 2 voltage 4:1 baluns in series to
> > achieve 16:1
> ==========
>
> With say one 4:1 balun having 2 windings Aa and Bb and the second 4:1
> balun having 2 windings Cc and Dd with A & a etc the ends of a
> particular winding , connect the windings as follows :
>
> a to B , b to C , c to D
>
> Connect grounded unbalanced side to bC connection
>
> Connect the hot unbalanced side either to aB or cD connection
>
> Connect balanced line between A and d
>
>
> The above applies when the 2 existing baluns being wound with 2 windings
> each with the 2 corresponding ends being A and B , a and b for one
> balun and C and D , c and d for the other balun.
>
>
> I should have made an ASCII drawing of the 4 windings in series ,but I
> didn't expect it to be transmitted correctly ,so I hope the above
> description makes sense .
>
> Frank GM0CSZ / KN6WH
>
Hi Frank

Thanks for the info., will have a go at it.

--
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the poster, and specifically may not be published in,
or used by http://www.jlaforums.com

2664. Re: LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 03:29:01 UTC
From: no@spam.net
Message-ID: <gg9cs3dueejgj0p5k8gkescucgkjqm76fi@4ax.com>
Source record: 27636

On Tue, 26 Feb 2008 23:02:37 -0800 (PST), K7ITM <k7itm@msn.com> wrote:
>Let's see...500MHz to 1.05*500MHz = 525MHz; boom long enough to get me
>about 10dBi over that range. I'll scale it to my particular
>frequencies of interest, so any other ~5% bandwidth in that general
>vicinity of frequencies would be fine too.
>
>Cheers,
>Tom

This is a Log Periodic design. Double booms, 1 inch square, spaced
1.4 inches c-c. Boom length ~55 inches.

Sweep for 500-525 MHz
Free Space Gain - 11.6 - 12.6 dBi
vswr <1.7:1.0

X is the position of the element along the boom.
Y is the length of each "half-element". With a double boom design,
one half of the dipole is mounted to one boom and the other half is
mounted to the other boom.

Coax attached to the front of the booms, shield to one, center to the
other. Do not run coax between the booms.

Booms can be electrically shorted to each other behind element # 1.

You don't have to be this accurate, my calculator defaults to 5
places. Simply convert lenghts to the nearest mm is the easiest.

x y
End 0
1 2, 5.78592,
2 6.16586, 5.61234,
3 10.2067, 5.44397,
4 14.1264, 5.28065,
5 17.9285, 5.12223,
6 21.6165, 4.96857,
7 25.1939, 4.81951,
8 28.6639, 4.67492,
9 32.0299, 4.53468,
10 35.2948 , 4.39864,
11 38.4618, 4.26668,
12 41.5338, 4.13868,
13 44.5137 ,4.01452
14 47.4041 , 3.89408,
15 50.2079, 3.77726,

16 52.9275, 3.66394,
End 54.9275

have fun

2665. Re: LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 04:06:25 UTC
From: no@spam.net
Message-ID: <fdccs39oellbhld75ihojeol120459r9d1@4ax.com>
Source record: 27637

On Wed, 27 Feb 2008 22:29:01 -0500, no@spam.net wrote:

>On Tue, 26 Feb 2008 23:02:37 -0800 (PST), K7ITM <k7itm@msn.com> wrote:
>>Let's see...500MHz to 1.05*500MHz = 525MHz; boom long enough to get me
>>about 10dBi over that range. I'll scale it to my particular
>>frequencies of interest, so any other ~5% bandwidth in that general
>>vicinity of frequencies would be fine too.
>>
>>Cheers,
>>Tom

Log-Yagi design. Four driven elements, reflector & director.
Probably about 8 dBi maybe.

Ele Length Position
R 1.019' 0
DR1 0.984' 0.168'
DR2 0.924' 0.266'
DR3 0.868' 0.359'
DR4 0.815' 0.446'
D 0.902' 0.742'

Split DR1-DR4 and transpose feed. Place hairpin at DR1 if needed
for matching.

2666. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 05:52:32 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13scj12t1ati9ec@corp.supernews.com>
Source record: 27638

You need to be aware that there's a good chance that this might not work, or at least not like you think it will.

An impedance transforming balun includes one or more windings connected across the two conductors. The impedance of the winding itself appears across the conductors as a shunt impedance. In order for the winding itself not to have an appreciable effect on the system, the winding impedance must be at least several times the impedance of the circuit to which it's connected. A rule of thumb is that it should be a minimum of 5 times the impedance of the circuit, with 10 times being better. That means that a 4:1 balun intended to transform 200 to 50 ohms would have a high-Z winding impedance of around 1000 - 2000 ohms. When a balun is designed for multiband use, the impedance is likely to be on the low side at the lower end of the frequency range, since this is where it's hardest to get high impedance. Also, if the impedance is too high at the low end, you can run into resonance or other problems at the high end.

The bottom line of all this is that you're likely to be putting a winding impedance of somewhere around 1000 - 2000 ohms in parallel with your 800 ohm antenna. If this impedance is pretty purely inductive, it will have a profound effect on the tuning of the antenna. If it's fairly resistive, it'll also dissipate a good fraction of the power you apply to it. So don't be too surprised if you see either or both these effects.

If you have an antenna analyzer you can terminate the high Z end with around 800 ohms of resistance and measure the input impedance. I'm sure you won't see anything that much resembles 50 + j0, at least not over much of a frequency range. If your antenna isn't resonant so it doesn't present close to 800 + j0 ohms to the balun, you'll likely see additional effects.

Roy Lewallen, W7EL

2667. Re: LPY antenna designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 07:24:50 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <89ff7d8c-6783-4670-af0d-caa5a587e4f1@d21g2000prf.googlegroups.com>
Source record: 27639

On Feb 27, 8:06 pm, n...@spam.net wrote:
> On Wed, 27 Feb 2008 22:29:01 -0500, n...@spam.net wrote:
> >On Tue, 26 Feb 2008 23:02:37 -0800 (PST), K7ITM <k7...@msn.com> wrote:
> >>Let's see...500MHz to 1.05*500MHz = 525MHz; boom long enough to get me
> >>about 10dBi over that range. I'll scale it to my particular
> >>frequencies of interest, so any other ~5% bandwidth in that general
> >>vicinity of frequencies would be fine too.
>
> >>Cheers,
> >>Tom
>
> Log-Yagi design. Four driven elements, reflector & director.
> Probably about 8 dBi maybe.
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> Ele Length Position
> R 1.019' 0
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> DR4 0.815' 0.446'
> D 0.902' 0.742'
>
> Split DR1-DR4 and transpose feed. Place hairpin at DR1 if needed
> for matching.

Thanks for both those designs. I'll have a look at them and see if I
can get reasonable modeling results, probably this weekend. I'd about
given up that anyone would have any designs to offer, and appreciate
that you put some effort into the replies.

Cheers,
Tom

2668. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 08:26:41 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <5fuxj.204279$3m6.170184@fe2.news.blueyonder.co.uk>
Source record: 27640

The only thing left that I'm not sure about is the true length of the
element for 17m. I have read that the length on page 4 of Cobwebb revealed
for this band is wrong.

It says the Tapping point 2300 and the length 4400.

Is the Tapping point correct and the length wrong or are they both wrong?

What should they both be?

Many thanks

"Dave Platt" <dplatt@radagast.org> wrote in message
news:u7pg95-rfi.ln1@radagast.org...
> In article <1_gxj.141358$LD6.134908@fe3.news.blueyonder.co.uk>,
> Barrett <barrett@blueyounder.co.uk> wrote:
>
>> Ok Dave, I will see what I have in the shed.
>> Trouble I have is that I only have a SWR meter to do the tuning and I
>> have heard the thickness of the wire can change the length of wire used
>> by
>> quit a lot. So I really needed to get it very close for the tuning as I
>> don't have an analyzer to use.
>
> At these frequencies, the diameter of the wire is such a small
> fraction of the antenna's length that small changes in the diameter
> aren't going to matter very much.
>
> As far as tuning and reproducibility goes, there's going to be a
> bigger issue with this sort of antenna design (or any made from this
> type of wire) - stretching of the wire under tension. This sort of
> stranded, soft-drawn copper wire is prone to stretch quite a bit under
> tension, both immediately and over time. You're likely to find the
> antenna's tuning changing a bit, at least, over the course of its
> lifetime, as the wires sag and stretch under their own weight.
>
> Wire antennas are often made of "hard-drawn" copper wire, or of
> soft-drawn wire which is pre-stretched to avoid such sagging and
> de-tuning. I'm not sure whether zipcord-type appliance or speaker
> wire could/should be pre-stretched in this way - I suspect that the
> PVC insulation might be weakened by doing so and that the wire might
> snap.
>
>>Question about the elements.
>>
>>Does the speaker wire need to be kept very straight (no twisting) or

>>doesn't
>>it matter if there twisted?
>
> I wouldn't twist it tightly - this _might_ add enough inductance to
> alter the tuning by a detectable amount. A bit of loose twisting
> ought not to matter. I don't think you have to be pedantic about
> keeping it absolutely un-twisted.
>
> As to tuning and SWR - as long as your rig has some sort of basic
> autotuner that can handle a moderate SWR (say, 3:1 or better), and as
> long as you get the antenna's tuning reasonably close (SWR minimum
> somewhere inside each band you're going to be using), and as long as
> you use a not-too-terribly-long run of good coax (RG-8 thickness
> preferred), I really don't think you have to worry about trying to get
> the lowest-possible SWR for the antenna itself. At HF, the amount of
> "excess loss" in the cable, and in the ATU due to a moderate SWR is
> not large, and probably will not make an appreciable difference in
> your ability to either hear or be heard.
>
>
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!
>

2669. Re: Forward and Reverse Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 12:59:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kfyxj.7578$Mw.7082@nlpi068.nbdc.sbc.com>
Source record: 27641

Keith Dysart wrote:
> So, while the average powers seem to sum nicely to support the
> claim, when the actual power as a function of time is examined
> it can be seen that the power in the source resistor is NOT the
> sum of its dissipation pre-reflection plus the power from the
> reflection.

Here's a quote from "Optics", by Hecht, concerning power
density (irradiance). "Furthermore, since the power
arriving cannot be measured instantaneously, the detector
must integrate the energy flux over some finite time, 'T'.
If the quantity to be measured is the net energy per unit
area received, it depends on 'T' and is therefore of limited
utility. If however, the 'T' is now divided out, a highly
practical quantity results, one that corresponds to the
average energy per unit area per unit time, namely 'I'."
'I' is the irradiance (*AVERAGE* power density).

i.e. The irradiance/interference equation does not work
for instantaneous powers which are "of limited utility".
--
73, Cecil http://www.w5dxp.com

2670. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 13:29:54 UTC
From: Sonny Hood <wrhood@cox.net>
Message-ID: <0ddds3ptigireh11pn7f5sujj6e3avgj9p@4ax.com>
Source record: 27642

Cecil, the antenna ends are 6.3 feet above earth ground which is
approx. 5 feet above the water table. I haven't used the program, yet.

On Wed, 27 Feb 2008 22:47:30 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>Sonny Hood wrote:
>> After Google search no luck on any data on gain for this antenna.
>> Just installed with apex at 33 feet and has 27 degrees full length is
>> 116.63 feet long and has a reduced length of 2.064%. Is there any
>> gain over a point incident antenna? k4wys@cox.net
>
>You can model that antenna with the free demo version
>of EZNEC available from www.eznec.com.
>
>Your configuration is unclear. How far above ground
>are the ends of the inverted V?

2671. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 13:34:34 UTC
From: Sonny Hood <wrhood@cox.net>
Message-ID: <budds39147fiej1semrc1tp6mo7oekq3r8@4ax.com>
Source record: 27643

On Wed, 27 Feb 2008 15:05:54 -0800, Roy Lewallen <w7el@eznec.com>
wrote:

>The gain and pattern will be very close to that of a dipole at a height
>of about 24 feet. Maximum field strength will be straight up, and quite
>dependent on the ground characteristics.
>
>What's a point incident antenna?
>
Hi Roy, I consider it the radiation point of a "0" length element
which radiates in spherical direction.
>Roy Lewallen, W7EL
>
>Sonny Hood wrote:
>> After Google search no luck on any data on gain for this antenna.
>> Just installed with apex at 33 feet and has 27 degrees full length is
>> 116.63 feet long and has a reduced length of 2.064%. Is there any
>> gain over a point incident antenna? k4wys@cox.net

2672. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 13:48:02 UTC
From: stephen.roberts.m0sjr@googlemail.com
Message-ID: <324b567f-d102-4052-94b8-0fdfc963924f@d21g2000prf.googlegroups.com>
Source record: 27644

The cable used for the Cobwebb is:-

A very heavy duty twin cable with a 'figure 8' profile ideal for high
power speaker connection suitable for power amplifiers up to 500W
output.
42/0.15mm plain copper conductor
Rating 60V rms 6A
Overall size 5.7 x 2.9mm
Sheathed in white PVC with black polarity identification stripe

You can find it on the RAPID ELECTRONICS website at www.rapidonline.com
Part No. 01-0157.

Regards

Steve
==========

On Feb 26, 9:34 pm, "Barrett" <barr...@blueyounder.co.uk> wrote:
> I'm in the process of building a homebrew Cobwebb Ariel.
>
> I have found two different sizes for the twin cable elements, figure 8 42
> strand 0.2mm, but on the Cobwebb web site it says figure 8 84 strand.
>
> Also in the Cobwebb revealed PDF doc that I downloaded on page 5 it says
> each core is 42 strands of 0.2mm diameter and on page 7 of the same doc it
> says figure 8 84 strand. So I'm a little confused.
>
> Does anyone know what is the correct cable to use, 42 strand 0.2mm or 84
> strand 0.2mm?
>
> Many thanks

2673. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 13:50:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <e_yxj.3211$pl4.2686@newssvr22.news.prodigy.net>
Source record: 27645

Sonny Hood wrote:
> Roy Lewallen <w7el@eznec.com> wrote:
>> What's a point incident antenna?
>>
> Hi Roy, I consider it the radiation point of a "0" length element
> which radiates in spherical direction.

It's called an isotropic antenna and that's where the
'i' in dBi comes from.
--
73, Cecil http://www.w5dxp.com

2674. Antenna suggestions for Vertex FTL-2011 mounted on Metal and fiberglass railroad equipment.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 17:18:53 UTC
From: DVoeltz <dvoeltz@pie.midco.net>
Message-ID: <4c790678-bc7c-4ed4-a44c-05ed4635ae34@p43g2000hsc.googlegroups.com>
Source record: 27646

I'm new to this and need your help in selecting which antennas to use on my railroad motorcars.

The radio will be moved between two pieces of equipment. One cab has a flat metal roof and the other has a fiberglass cab. I would like an antenna that I can unscrew from the cab when traveling the equipment down the road on a trailer. The radio will be using the NARCOA licensed frequency of 151.625 MHz. I understand that this frequency is in what is known as the VHF-High Land Mobile Radio (LMR) Service band, and uses a modulation known as narrow band (5 kHz deviation) FM. I will be using a Vertex FLT 2011 40 Watt radio.

Based on the little I know about this, I understand a special antenna will be needed for the fiberglass cab since there is no ground plane. Both antenna will be mounted directly to the roof through a hole. The radio will be mount within 2 feet of where this hole will be drilled so I only need a short wire to connect from the antenna to the back of the radio.

If you can offer me suggestions as to which antennas to use, I would be most appreciative. Please excuse me if I misused some of the language of the hobby.

Thanks in advance.

Dave in Pierre, SD

To see pictures of what this equipment is, go to:

www.narcoa.org

2675. Re: Wire Antenna/ Tree interaction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 17:24:34 UTC
From: AK <nomail@aol.com>
Message-ID: <m7Cxj.53938$yE1.23219@attbi_s21>
Source record: 27647

"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:fq4pcl$r8p$1@news.jpl.nasa.gov...
> marc wrote:
>> I'm a noob, and I'm considering installing a wire antenna using the
>> sole tree on my lot as one end. My question is "Is it dangerous if
>> the antenna touches the tree branches/leaves during transmit?" I'm
>> less worried about performance right now and more safety.
>>
>> Marc
>> W5AMP

Marc - I have a thickly wooded side yard where I run 80 and 40 meter dipoles through and over a number of tree limbs. I don't believe that at HF frequencies (VHF & UHF is different) that the limbs and leaves make any significant difference - unless the RF power is actually shorting into the limbs and leaves. It will do this, if the wires are not insulated.

I run a KW (when needed) to dipoles that use #14 stranded house wire. The antenna wires are threaded through the limbs and leaves, resting on some of the branches. The dipoles work quite well. I do not see any fluxuation in the SWR when it rains or the wind is blowing, so I believe the nominal 600-volt wire insulation is sufficient to prevent shorting. (I try to keep the ends of the wires off the limbs.) The insulation on the wire will not hurt your radiated radio signal. Good luck. Andy K4YKZ (KN4YKZ in '58)

2676. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 19:44:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13se3oq76rjv6c3@corp.supernews.com>
Source record: 27648

Sonny Hood wrote:
> On Wed, 27 Feb 2008 15:05:54 -0800, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>> The gain and pattern will be very close to that of a dipole at a height
>> of about 24 feet. Maximum field strength will be straight up, and quite
>> dependent on the ground characteristics.
>>
>> What's a point incident antenna?
>>
> Hi Roy, I consider it the radiation point of a "0" length element
> which radiates in spherical direction.

Oh, that would be an isotropic source. Gain relative to an isotropic source usually assumes that the source is in free space, so you get an automatic 3 dB of gain when you restrict your antenna to a hemisphere by adding a ground plane.

There's no single answer to your question, since the gain is strikingly different in each direction and at each elevation angle. The maximum gain occurs straight up, and you'd only be interested in that figure if you're doing NVIS work -- and it would vary quite markedly depending on ground conditions.

The simplest way to find the gain relative to isotropic (dBi) at any particular azimuth or elevation angle is by modeling. The free EZNEC demo program at http://eznec.com is adequate, and the Test Drive tutorial in the included manual takes you through the building of a similar antenna. You can easily modify the example to imitate your antenna.

Roy Lewallen, W7EL

2677. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 19:47:13 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <5dExj.210118$3m6.151968@fe2.news.blueyonder.co.uk>
Source record: 27649

Hi Steve
Do you have the correct measurement for the 17m element?

A lot of people say 4400 is incorrect as its too long.

Many thanks

<stephen.roberts.m0sjr@googlemail.com> wrote in message
news:324b567f-d102-4052-94b8-0fdfc963924f@d21g2000prf.googlegroups.com...
> The cable used for the Cobwebb is:-
>
> A very heavy duty twin cable with a 'figure 8' profile ideal for high
> power speaker connection suitable for power amplifiers up to 500W
> output.
> 42/0.15mm plain copper conductor
> Rating 60V rms 6A
> Overall size 5.7 x 2.9mm
> Sheathed in white PVC with black polarity identification stripe
>
> You can find it on the RAPID ELECTRONICS website at www.rapidonline.com
> Part No. 01-0157.
>
> Regards
>
> Steve
> ==========
>
> On Feb 26, 9:34 pm, "Barrett" <barr...@blueyounder.co.uk> wrote:
>> I'm in the process of building a homebrew Cobwebb Ariel.
>>
>> I have found two different sizes for the twin cable elements, figure 8 42
>> strand 0.2mm, but on the Cobwebb web site it says figure 8 84 strand.
>>
>> Also in the Cobwebb revealed PDF doc that I downloaded on page 5 it says
>> each core is 42 strands of 0.2mm diameter and on page 7 of the same doc
>> it
>> says figure 8 84 strand. So I'm a little confused.
>>
>> Does anyone know what is the correct cable to use, 42 strand 0.2mm or 84
>> strand 0.2mm?
>>
>> Many thanks
>
>

2678. Re: Antenna suggestions for Vertex FTL-2011 mounted on Metal and fiberglass railroad equipment.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-28 21:31:57 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <6876f3e6-c224-415e-ad50-2a1a0c37d832@s13g2000prd.googlegroups.com>
Source record: 27650

On Feb 28, 9:18 am, DVoeltz <dvoe...@pie.midco.net> wrote:
> I'm new to this and need your help in selecting which antennas to use
> on my railroad motorcars.
>
> The radio will be moved between two pieces of equipment. One cab has
> a flat metal roof and the other has a fiberglass cab. I would like an
> antenna that I can unscrew from the cab when traveling the equipment
> down the road on a trailer. The radio will be using the NARCOA
> licensed frequency of 151.625 MHz. I understand that this frequency is
> in what is known as the VHF-High Land Mobile Radio (LMR) Service band,
> and uses a modulation known as narrow band (5 kHz deviation) FM. I
> will be using a Vertex FLT 2011 40 Watt radio.
>
> Based on the little I know about this, I understand a special antenna
> will be needed for the fiberglass cab since there is no ground plane.
> Both antenna will be mounted directly to the roof through a hole. The
> radio will be mount within 2 feet of where this hole will be drilled
> so I only need a short wire to connect from the antenna to the back of
> the radio.
>
> If you can offer me suggestions as to which antennas to use, I would
> be most appreciative. Please excuse me if I misused some of the
> language of the hobby.
>
> Thanks in advance.
>
> Dave in Pierre, SD
>
> To see pictures of what this equipment is, go to:
>
> www.narcoa.org

Hi, Dave.
Sure looks like fun! Someone here in Redmond, Oregon has one of the
cars. Seen it parked on a truck and then on the ground in front of his
garage.

The antenna you want to use will in a large part depend on what
distance and over what terrain you need to communicate. If only a few
miles, then a simple ground plane antenna will work. The antenna will
add less than 18 inches to the height of the roof, so you may not need
to remove it for transport.

I am not familiar with the class of license you are operating under, so will not comment on antenna brands or installation. This seems to be a commercial type installation, rather than an amateur radio installation, so a licensed installer may be needed. If so, they will have the antenna information you need.

Best regards,
Paul, KD7HB

2679. SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 00:51:16 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A52AB752D939Huckleberrybigvalley@198.186.192.196>
Source record: 27651

Our ARES group plans on installing an Inverted V antenna on the second story flat roof edge of a local building. The antenna mast is 13 feet tall above the roof edge. The Inverted V will run parallel the edge of the roof and be approximately 35 - 40 feet per leg. Our primary operations will be 80/75/40M with a desired ability on 60M. The building custodian/owner will not tolerate open wire feedline with its associated standoffs due to aesthetic considerations, so we must feed this antenna with coax fastened to the mast. At the base of the mast, on the roof, we will be using an SGC-237 antenna coupler.

The above setup is a given, with no room for compromise.

My questions for this group are as follows:

Would we be better feeding the above antenna feedpoint with twin coax runs, using the center conductors as a 'balanced' feedline, or would we be better of using a single coax to the feedline? In either case, the coax runs will not exceed 20 feet and we must accept the losses in them. Email response from SGC seems to indicate we would be better off with a single feedline, but I am dubious about the SGC Tech Rep's response since he/she does not seem concerned about feedline radiation.

Also, what recomendations do you guys have for use of a balun? I believe, at the least, we would need a 1:1 balun at the Input of the SGC coupler so as to keep RF from getting back down the shield and into the building. SGC response seems to indiate they don't think a balun is necessary anywhere, which is another reason I am not thrilled with their response.

Comments?

Ed K7AAT

2680. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 01:09:11 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13senbee4lk8s8d@corp.supernews.com>
Source record: 27652

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in message
news:Xns9A52AB752D939Huckleberrybigvalley@198.186.192.196...
>
> Our ARES group plans on installing an Inverted V antenna on the
> second story flat roof edge of a local building. The antenna mast is 13
> feet tall above the roof edge. The Inverted V will run parallel the edge
> of the roof and be approximately 35 - 40 feet per leg. Our primary
> operations will be 80/75/40M with a desired ability on 60M. The

I think you are going to have a difficult time operating on 80 meters if you
can not get around 120 feet of overall length. Then it may be difficult on
40 meters. If limiated to one single wire , coax fed, look at the off
center fed antenna.

2681. Re: Antenna suggestions for Vertex FTL-2011 mounted on Metal and fiberglass railroad equipment.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 01:58:34 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <176dnU9H64FX-1ranZ2dnUVZ_ryqnZ2d@comcast.com>
Source record: 27653

On Thu, 28 Feb 2008 09:18:53 -0800, DVoeltz wrote:

> I'm new to this and need your help in selecting which antennas to use on
> my railroad motorcars.

How doggone cool! I saw a group of cars going through the bald eagle valley in central PA last fall. I didn't know there was a big organized group.

> The radio will be moved between two pieces of equipment. One cab has a
> flat metal roof and the other has a fiberglass cab. I would like an
> antenna that I can unscrew from the cab when traveling the equipment
> down the road on a trailer. The radio will be using the NARCOA licensed
> frequency of 151.625 MHz. I understand that this frequency is in what is
> known as the VHF-High Land Mobile Radio (LMR) Service band, and uses a
> modulation known as narrow band (5 kHz deviation) FM. I will be using a
> Vertex FLT 2011 40 Watt radio.
>
> Based on the little I know about this, I understand a special antenna
> will be needed for the fiberglass cab since there is no ground plane.
> Both antenna will be mounted directly to the roof through a hole. The
> radio will be mount within 2 feet of where this hole will be drilled so
> I only need a short wire to connect from the antenna to the back of the
> radio.

Ideally there would be a ground plane for both, but it seems that most antenna mounts of the mag mount variety are getting their ground from the electrical system, then the body of the car. If the whole body is fiberglass, you could run some wires to use as ground plane under or on top of the roof. They won't be very long.

You might want to get an antenna that has a removeable mast so that you can just unscrew the antenna and leave the coax cable in place. If the whole thing has to go with the car, you'll probably want a clamp on.

re you averse to building your own antenna? a 1/4 wave ground plane would work very well, is easy to construct if you have some soldering skills, and is very inexpensive. Rough details are that it would take around 18.and a half inch wire for the vertical section, and 4 wires of that length for the radials.

If you are interested in that route, let me know and we can fill you in on the details.

> To see pictures of what this equipment is, go to:
>

> www.narcoa.org

where does one get hild of one of those cars?

--
-73 de Mike N3LI -

2682. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 02:08:18 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <C5-dne78HPuA9FranZ2dnUVZ8vidnZ2d@bt.com>
Source record: 27654

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in message
news:Xns9A52AB752D939Huckleberrybigvalley@198.186.192.196...
>
> Our ARES group plans on installing an Inverted V antenna on the
> second story flat roof edge of a local building. The antenna mast is 13
> feet tall above the roof edge. The Inverted V will run parallel the edge
> of the roof and be approximately 35 - 40 feet per leg. Our primary
> operations will be 80/75/40M with a desired ability on 60M. The
> building custodian/owner will not tolerate open wire feedline with its
> associated standoffs due to aesthetic considerations, so we must feed
> this antenna with coax fastened to the mast. At the base of the mast,
> on the roof, we will be using an SGC-237 antenna coupler.
>
> The above setup is a given, with no room for compromise.
>
> My questions for this group are as follows:
>
> Would we be better feeding the above antenna feedpoint with twin coax
> runs, using the center conductors as a 'balanced' feedline, or would we
> be better of using a single coax to the feedline? In either case, the
> coax runs will not exceed 20 feet and we must accept the losses in them.
> Email response from SGC seems to indicate we would be better off with a
> single feedline, but I am dubious about the SGC Tech Rep's response
> since he/she does not seem concerned about feedline radiation.
>
> Also, what recomendations do you guys have for use of a balun? I
> believe, at the least, we would need a 1:1 balun at the Input of the SGC
> coupler so as to keep RF from getting back down the shield and into the
> building. SGC response seems to indiate they don't think a balun is
> necessary anywhere, which is another reason I am not thrilled with
> their response.
>
> Comments?
>
>
> Ed K7AAT

If the SGC-237 coupler is on the roof and properly grounded, try it the way the SGC rep suggested. Any feedline radiation should occur from the antenna side of the coupler and might help with getting a bit more signal out. Go with the simplest solution first and run a single coax to the coupler from the transceiver. Maybe it will work just fine.

If there are problems with RF on the coax outer, add some ferrite beads over the coax to form an RF choke.

Look at more complex solutions when you have actually identified a problem rather than worrying in advance over something that probably won't happen.

Mike G0ULI

2683. odd readings from watt meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 03:11:49 UTC
From: James Barrett <xucaen@comcast.net>
Message-ID: <jJKdnT2aFaLJ6lranZ2dnUVZ_rSrnZ2d@comcast.com>
Source record: 27655

Hi, I have put up a dipole and I admit it is not a very good one, about 20 feet up, approx 60 ft. It works great as a receiving antenna and I'm having fun listening, but so far no one can hear me. I have an Icom IC-735, and using SSB, the watt meter on the radio shows full power as I talk, but the watt meter on the tuner barely moves. In CW mode both meters go all the way. Is this a typical symptom of a poor quality antenna or does it indicate some other problem (besides my antenna making skills)?

Any advice is appreciated.

Thanks,

Jim

2684. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 03:17:16 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <5bses3dcifi024tlnfc1buak0qu9v1nm85@4ax.com>
Source record: 27656

On 29 Feb 2008 00:51:16 GMT, "Ed_G"
<Huckleberry_REMOVE_@bigvalley.net> wrote:

>
> Our ARES group plans on installing an Inverted V antenna on the
>second story flat roof edge of a local building. The antenna mast is 13
>feet tall above the roof edge. The Inverted V will run parallel the edge
>of the roof and be approximately 35 - 40 feet per leg. Our primary
>operations will be 80/75/40M with a desired ability on 60M. The
>building custodian/owner will not tolerate open wire feedline with its
>associated standoffs due to aesthetic considerations, so we must feed
>this antenna with coax fastened to the mast. At the base of the mast,
>on the roof, we will be using an SGC-237 antenna coupler.
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> Would we be better feeding the above antenna feedpoint with twin coax
>runs, using the center conductors as a 'balanced' feedline, or would we
>be better of using a single coax to the feedline? In either case, the
>coax runs will not exceed 20 feet and we must accept the losses in them.
>Email response from SGC seems to indicate we would be better off with a
>single feedline, but I am dubious about the SGC Tech Rep's response
>since he/she does not seem concerned about feedline radiation.
>
> Also, what recomendations do you guys have for use of a balun? I
>believe, at the least, we would need a 1:1 balun at the Input of the SGC
>coupler so as to keep RF from getting back down the shield and into the
>building. SGC response seems to indiate they don't think a balun is
>necessary anywhere, which is another reason I am not thrilled with
>their response.
>
> Comments?
>
>
> Ed K7AAT
My SGC-237 is hard to mess up. Where ever you attach the wire to the
tuner is the beginning of the antenna. The coax attach will simply be
a matched line to the transceiver. I would be inclined to simply
attach the coax to the inverted V as you outlined and use it.

The antenna is in an environment that will not model well. The
radiation from the coax will have an effect on the aggregate
performance but nothing you can really measure.

Although I doubt anyone can explain just how it works, the SGC-237 and the wire you have described will work fine.

Modern antenna tuners perform a lot like Magic in my estimation.

My own feeble experiments have led me to believe that it is worthwhile to put an antenna analyzer on the configuration and make sure that the array is NOT resonant on any frequency of interest. The tuner seems to like that best.

Power supply: I have a very old telephone power supply tweaked down to 12 volts. I leave it on 24/7.

John Ferrell W8CCW
"Life is easier if you learn to
plow around the stumps"

2685. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 03:22:00 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A52C5035971EHuckleberrybigvalley@198.186.192.196>
Source record: 27657

> My SGC-237 is hard to mess up. Where ever you attach the wire to the
> tuner is the beginning of the antenna. The coax attach will simply be
> a matched line to the transceiver. I would be inclined to simply
> attach the coax to the inverted V as you outlined and use it.
>
> The antenna is in an environment that will not model well. The
> radiation from the coax will have an effect on the aggregate
> performance but nothing you can really measure.
>
> Although I doubt anyone can explain just how it works, the SGC-237 and
> the wire you have described will work fine.
>
> Modern antenna tuners perform a lot like Magic in my estimation.
>
> My own feeble experiments have led me to believe that it is worthwhile
> to put an antenna analyzer on the configuration and make sure that the
> array is NOT resonant on any frequency of interest. The tuner seems to
> like that best.
>
> Power supply: I have a very old telephone power supply tweaked down to
> 12 volts. I leave it on 24/7.
>

Thanks for the feedback, John. I imagine that we will end up doing
as you suggested. We WILL test the antenna on the ground with a
temporary mast to see if there are any issues, but we also realize that
things can, and probably will, change when it is permanently mounted on
the building. One of the reasons I am posing these questions here now
is that once the antenna is up, it will be difficult to get the
building personal (its a firehouse) to lower the mast for changes.
Its a rigid one piece aluminum mast that will be bolted at its base to
the building.

73

Ed K7AAT

2686. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 03:30:16 UTC
From: Cheers <moussa_el@hotmail.com>
Message-ID: <MPG.22320b364309a474989847@freenews.iinet.net.au>
Source record: 27658

In article <13scj12t1ati9ec@corp.supernews.com>, w7el@eznec.com says...
> You need to be aware that there's a good chance that this might not
> work, or at least not like you think it will.
>
> An impedance transforming balun includes one or more windings connected
> across the two conductors. The impedance of the winding itself appears
> across the conductors as a shunt impedance. In order for the winding
> itself not to have an appreciable effect on the system, the winding
> impedance must be at least several times the impedance of the circuit to
> which it's connected. A rule of thumb is that it should be a minimum of
> 5 times the impedance of the circuit, with 10 times being better. That
> means that a 4:1 balun intended to transform 200 to 50 ohms would have a
> high-Z winding impedance of around 1000 - 2000 ohms. When a balun is
> designed for multiband use, the impedance is likely to be on the low
> side at the lower end of the frequency range, since this is where it's
> hardest to get high impedance. Also, if the impedance is too high at the
> low end, you can run into resonance or other problems at the high end.
>
> The bottom line of all this is that you're likely to be putting a
> winding impedance of somewhere around 1000 - 2000 ohms in parallel with
> your 800 ohm antenna. If this impedance is pretty purely inductive, it
> will have a profound effect on the tuning of the antenna. If it's fairly
> resistive, it'll also dissipate a good fraction of the power you apply
> to it. So don't be too surprised if you see either or both these effects.
>
> If you have an antenna analyzer you can terminate the high Z end with
> around 800 ohms of resistance and measure the input impedance. I'm sure
> you won't see anything that much resembles 50 + j0, at least not over
> much of a frequency range. If your antenna isn't resonant so it doesn't
> present close to 800 + j0 ohms to the balun, you'll likely see
> additional effects.
>
> Roy Lewallen, W7EL
>
Hi Roy

to my understanding the load is purely resistive according to this
article http://www.cebik.com/wire/wbfd.html
anyway have a read and tell me what you think I am quiet interested in
others opinion on this one.
finding the right non inductive resistor has proven to be a challenge so
far.
no one told me home brewing antenna is a dark art :-)

--
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2687. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 04:04:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <svLxj.4393$tW.1578@nlpi070.nbdc.sbc.com>
Source record: 27659

Ed_G wrote:
> The above setup is a given, with no room for compromise.

Your antenna is already quite compromised with a
~490:1 SWR on 75m at the antenna feedpoint. The line
loss with RG-213 is about 4.5 dB and the tuner is
required to match 0.55-j48 ohms, another lossy
situation. Your antenna system efficiency may be ~10%.

How about turning your 13 foot pole into a radiator
and using the dipole wires for a top hat?
--
73, Cecil http://www.w5dxp.com

2688. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 04:14:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MELxj.4396$tW.2804@nlpi070.nbdc.sbc.com>
Source record: 27660

Cheers wrote:
> finding the right non inductive resistor has proven to be a challenge so
> far.

I have a bunch of 600 ohm 50 watt non-inductive resistors.
My email address is w5dxp@hotmail.com
--
73, Cecil http://www.w5dxp.com

2689. Re: odd readings from watt meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 04:53:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13sf3ufd4ie578a@corp.supernews.com>
Source record: 27661

James Barrett wrote:
> Hi, I have put up a dipole and I admit it is not a very good one, about
> 20 feet up, approx 60 ft. It works great as a receiving antenna and I'm
> having fun listening, but so far no one can hear me. I have an Icom
> IC-735, and using SSB, the watt meter on the radio shows full power as
> I talk, but the watt meter on the tuner barely moves. In CW mode both
> meters go all the way. Is this a typical symptom of a poor quality
> antenna or does it indicate some other problem (besides my antenna
> making skills)?
>
> Any advice is appreciated.
>
> Thanks,
>
> Jim

By the symptoms you describe, I'd say that the reason for the difference is simply that the meter on the tuner is much slower responding than the meter on the rig.

Roy Lewallen, W7EL

2690. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 05:31:11 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <8b695012-3fdf-4938-8ffa-ea9caf8049e4@h11g2000prf.googlegroups.com>
Source record: 27662

On Feb 28, 7:30 pm, Cheers <moussa...@hotmail.com> wrote:
> In article <13scj12t1ati...@corp.supernews.com>, w...@eznec.com says...
>
> > You need to be aware that there's a good chance that this might not
> > work, or at least not like you think it will.
>
> > An impedance transforming balun includes one or more windings connected
> > across the two conductors. The impedance of the winding itself appears
> > across the conductors as a shunt impedance. In order for the winding
> > itself not to have an appreciable effect on the system, the winding
> > impedance must be at least several times the impedance of the circuit to
> > which it's connected. A rule of thumb is that it should be a minimum of
> > 5 times the impedance of the circuit, with 10 times being better. That
> > means that a 4:1 balun intended to transform 200 to 50 ohms would have a
> > high-Z winding impedance of around 1000 - 2000 ohms. When a balun is
> > designed for multiband use, the impedance is likely to be on the low
> > side at the lower end of the frequency range, since this is where it's
> > hardest to get high impedance. Also, if the impedance is too high at the
> > low end, you can run into resonance or other problems at the high end.
>
> > The bottom line of all this is that you're likely to be putting a
> > winding impedance of somewhere around 1000 - 2000 ohms in parallel with
> > your 800 ohm antenna. If this impedance is pretty purely inductive, it
> > will have a profound effect on the tuning of the antenna. If it's fairly
> > resistive, it'll also dissipate a good fraction of the power you apply
> > to it. So don't be too surprised if you see either or both these effects.
>
> > If you have an antenna analyzer you can terminate the high Z end with
> > around 800 ohms of resistance and measure the input impedance. I'm sure
> > you won't see anything that much resembles 50 + j0, at least not over
> > much of a frequency range. If your antenna isn't resonant so it doesn't
> > present close to 800 + j0 ohms to the balun, you'll likely see
> > additional effects.
>
> > Roy Lewallen, W7EL
>
> Hi Roy
>
> to my understanding the load is purely resistive according to this
> articlehttp://www.cebik.com/wire/wbfd.html
> anyway have a read and tell me what you think I am quiet interested in
> others opinion on this one.
> finding the right non inductive resistor has proven to be a challenge so
> far.

> no one told me home brewing antenna is a dark art :-)
>
> --
> The information contained in this post is copyright of
> the poster, and specifically may not be published in,
> or used by http://www.jlaforums.com

You may find it better to just wind your own transformer. 16:1 impedance ratio is 4:1 turns ratio. You can twist four wires together to make a quadrifilar cable that you use to put a few turns on a ferrite toroid. Then connect the windings all in series (say 1--2--3--4). The center tap, between 2 and 3, would connect to the coax feedline outer conductor, and the tap between 1 and 2 to the coax center. The outer leads--the start and stop of the whole thing--connect to the antenna. As for impedances of the windings and losses, this is one of those "your mileage may vary" things. I'd claim you don't need the impedance at the lowest frequency of interest to be too much higher than the 800 ohms resistive, since reactance is in quadrature to resistance and it's not the same as two resistances in parallel. For example, if you use a core that gives you, say, 0.3uH/turn, and you put 4 turns of the quadrifilar cable on it, the 16 turns when you put the four wires in series gives you about 256*0.3 or 75uH. At 3.5MHz (looks like the practical low end for that antenna), that's 1.65k ohms inductive, and that in parallel with 800 ohm resistive is about 650+j300 ohms. Through 16:1 (if the 16:1 is perfect, which of course it won't be, but should be decent), that's about 40+j20, which is about 1.6:1 SWR, which shouldn't upset the apple cart. Though coils wound on ferrites get resistive at higher frequencies, if you pick the right ferrite, by the time the balun's winding impedance is significantly resistive, it should also be quite high, so loss is not necessarily a big deal. Also, you can put about 2300pF in series between the balun and the feedline center conductor, and it will significantly correct the reactance at 3.5MHz -- and become progressively more like a short at higher frequencies, taking itself out of the picture. If the winding reactance behaves like a linear inductor versus frequency, the series capacitor will work very well. Assuming the idealized case--800 ohm resistive load, 4:1 turns ratio transformer that looks like a pure 75uH across the full winding--the worst SWR is 1.24 at 3.5MHz, 1.18 at 4.0MHz, and falls monotonically to practically 1:1 at 30MHz. (And I can get to even better match across the whole frequency range, even with only 50uH transformer inductance, by adding a cap in series between the transformer output and the antenna...) My advice: stay with a relatively low impedance, relatively few turns on the 4:1 turns-ratio transformer, and correct the low end with a bit of series capacitance. That will help you avoid problems with parasitic capacitances (etc) at high frequency. Use an appropriate core material that doesn't "die" and become resistive at 10MHz. Though my model is idealized, I expect you should be able to come acceptably close to it in practice.

Though my suggested design does not agree with Roy's suggested reactance 5 times the resistance it's across (my suggestion being only a couple times, or even less), I want to be clear that I'm in full agreement about the need to be careful about the _effects_ of low reactance at low frequencies, resonances and capacitive reactance parasitics at high frequencies, and dissipative ferrite at high frequencies. You're bound to learn a lot in the effort to get it working really right.

Cheers,
Tom

2691. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 06:35:12 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A52E5C4DBDEFHuckleberrybigvalley@198.186.192.196>
Source record: 27663

>
> Your antenna is already quite compromised with a
> ~490:1 SWR on 75m at the antenna feedpoint. The line
> loss with RG-213 is about 4.5 dB and the tuner is
> required to match 0.55-j48 ohms, another lossy
> situation. Your antenna system efficiency may be ~10%.
>
> How about turning your 13 foot pole into a radiator
> and using the dipole wires for a top hat?

The aluminum 2" mast will be side mounted on the wood building... about 5 feet below the edge of the roof. The remaining 14 or so feet will be above the roof. With two 35 foot wires off the top, do you really think that would work to our needs better? There is one problem with this setup, though.... I do not think there is a suitable ground on the building roof. I suppose it is possible to run a simple wire straight down from the area near the bottom of the mast to the ground..... the SGC-237 would still have to sit on the roof and be connected to this now lowered feedpoint.....

I think it would be easier to extend the length of our inverted V legs. I had posted their length between 35 and 40 feet, but if we run out of building to extend the ends to, I suppose we could go on straight down from the end mounts, toward the ground a bit. Even an additional 10 feet could be had on each leg with the new ends being still 10 feet above the ground. It IS a wooden structure, for the most part.

Ed

2692. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 06:49:42 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A53B53A849E9nonenowhere@61.9.191.5>
Source record: 27664

John Ferrell <johnferrell@sprintmail.com> wrote in
news:5bses3dcifi024tlnfc1buak0qu9v1nm85@4ax.com:

> My SGC-237 is hard to mess up. Where ever you attach the wire to the
> tuner is the beginning of the antenna. The coax attach will simply be
> a matched line to the transceiver. I would be inclined to simply
> attach the coax to the inverted V as you outlined and use it.
>

John,

Any conductors or transmission lines carrying a net current (or common mode current) will contribute to radiation. If your meaning of "antenna" is something that contributes to radiation, then the feedline on both sides of the ATU might be part of the "antenna" no matter what you might declare.

If Ed connects parallel line from the centre of the dipole to the hot and common terminals of the ATU, there is likely to be common mode current on the parallel line adjacent to the ATU. If the only connection on the tx side of the ATU is the coax, then it will also have a common mode current adjacent to the ATU and near enough to equal to the common mode current on the other side of the ATU.

That is not to say it won't work. People regularly build antennas with radiating feedlines, some (mainly commercial interests) even call that out as a significant advantage.

Nevertheless, there are downsides and some measures to minimise the common mode current on the feedline may be warranted... or even necessitated down the track.

Ed has been deliberating over a solution to this problem for a long time. It has been discussed to some depth!

Owen

2693. RF Calculator Tool Online - Solve Antenna Equations and Electronic Circuit equations

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 07:14:58 UTC
From: EngineerEDGE <calculatoredge@gmail.com>
Message-ID: <c8acde51-3aeb-4024-8f6f-091ffd8ca1ba@i12g2000prf.googlegroups.com>
Source record: 27665

Hello Friends,

Check this website www.calculatoredge.com you will find several RF Calculator Tool, you donot need to learn the formula to solve the equations, if you have inputs then you can just enter into and get the equations solved.

You also get free magazine subscription on this website, I guess it is useful

Tom

2694. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 10:38:23 UTC
From: stephen.roberts.m0sjr@googlemail.com
Message-ID: <ce6cfe15-f2cb-44fe-96c5-e55455486f22@d62g2000hsf.googlegroups.com>
Source record: 27666

The measurements in the booklet were taken from an actual cobwebb.

The lengths and tapping points for the Tee match, need to be adjusted
during the initial tests.

An Antenna Analyser is very helpful during set-up and you may have to
beg or borrow one for testing.

However, in tests, the following dimensions have been used
successfully:-

Band Element Length Shorting point
10M 2540 mm 1560 mm
12M 2930 mm 1790 mm
15M 3450 mm 2080 mm
17M 4060 mm 2220 mm
20M 5150 mm 2720 mm

Hope this helps

Steve.
==========
On Feb 28, 7:47 pm, "Barrett" <barr...@blueyounder.co.uk> wrote:
> Hi Steve
> Do you have the correct measurement for the 17m element?
>
> A lot of people say 4400 is incorrect as its too long.
>
> Many thanks
>
> <stephen.roberts.m0...@googlemail.com> wrote in message
>
> news:324b567f-d102-4052-94b8-0fdfc963924f@d21g2000prf.googlegroups.com...
>
>
>
> > The cable used for the Cobwebb is:-
>
> > A very heavy duty twin cable with a 'figure 8' profile ideal for high
> > power speaker connection suitable for power amplifiers up to 500W
> > output.
> > 42/0.15mm plain copper conductor
> > Rating 60V rms 6A
> > Overall size 5.7 x 2.9mm
> > Sheathed in white PVC with black polarity identification stripe
>

> > You can find it on the RAPID ELECTRONICS website atwww.rapidonline.com
> > Part No. 01-0157.
>
> > Regards
>
> > Steve
> > ==========
>
> > On Feb 26, 9:34 pm, "Barrett" <barr...@blueyounder.co.uk> wrote:
> >> I'm in the process of building a homebrew Cobwebb Ariel.
>
> >> I have found two different sizes for the twin cable elements, figure 8 42
> >> strand 0.2mm, but on the Cobwebb web site it says figure 8 84 strand.
>
> >> Also in the Cobwebb revealed PDF doc that I downloaded on page 5 it says
> >> each core is 42 strands of 0.2mm diameter and on page 7 of the same doc
> >> it
> >> says figure 8 84 strand. So I'm a little confused.
>
> >> Does anyone know what is the correct cable to use, 42 strand 0.2mm or 84
> >> strand 0.2mm?
>
> >> Many thanks- Hide quoted text -
>
> - Show quoted text -

2695. Re: RF Calculator Tool Online - Solve Antenna Equations and Electronic Circuit equations

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 10:40:05 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <47C7E105.5090000@nosspam.activ8.net.au>
Source record: 27667

Looks good. I learnt a new word though - "Ampacity"
Won't find that in the OED :)
Alan

EngineerEDGE wrote:
> Hello Friends,
>
> Check this website www.calculatoredge.com you will find several RF
> Calculator Tool, you donot need to learn the formula to solve the
> equations, if you have inputs then you can just enter into and get the
> equations solved.
>
> You also get free magazine subscription on this website, I guess it is
> useful
>
> Tom

2696. Re: odd readings from watt meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 11:59:07 UTC
From: Dave <noone@nowhere.com>
Message-ID: <fsSxj.4684$A93.4076@trndny08>
Source record: 27668

that sounds like something is wrong. try a whistle, see if that gets the external meter to move properly. then try cw up in the ssb band and see that the swr isn't wildly different. make sure that the meter you are watching on the radio isn't the alc or swr or mic audio or compression instead of power output also, some radios use the meters for multiple things and it could change without you noticing from cw to ssb since cw doesn't have mic audio or compression levels.

"James Barrett" <xucaen@comcast.net> wrote in message news:jJKdnT2aFaLJ6lranZ2dnUVZ_rSrnZ2d@comcast.com...
> Hi, I have put up a dipole and I admit it is not a very good one, about
> 20 feet up, approx 60 ft. It works great as a receiving antenna and I'm
> having fun listening, but so far no one can hear me. I have an Icom
> IC-735, and using SSB, the watt meter on the radio shows full power as I
> talk, but the watt meter on the tuner barely moves. In CW mode both meters
> go all the way. Is this a typical symptom of a poor quality antenna or
> does it indicate some other problem (besides my antenna making skills)?
>
> Any advice is appreciated.
>
> Thanks,
>
> Jim

2697. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 14:59:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <D5Vxj.3221$fX7.1165@nlpi061.nbdc.sbc.com>
Source record: 27669

Ed_G wrote:
> There is one
> problem with this setup, though.... I do not think there is a suitable
> ground on the building roof.

I was thinking you could lay some radials on the roof
to obtain your ground plane. You could also insulate
the pole from the mounts using sections of PVC pipe.

> I think it would be easier to extend the length of our inverted V
> legs. I had posted their length between 35 and 40 feet, but if we run
> out of building to extend the ends to, I suppose we could go on
> straight down from the end mounts, toward the ground a bit.

I had assumed that your "no compromise" statement included
antenna length. A full-sized dipole would certainly solve
your 75m problem but then the full-wave dipole would be
mostly non-functional on 40m when fed with coax.

Here's another idea. *Change the pole support to fiberglass*,
use heavy duty 300 ohm balanced line, and run the 300 ohm
feedline inside the fiberglass pole to the dipole. You could
use the G5RV length of 51 feet per dipole element. With such
a configuration, the feedpoint impedance on 3.8 MHz would be
about 20-j130 ohms and on 7.2 MHz would be about 100-j450 ohms
which the SGC would have no trouble matching. This could
multiply your system efficiency by maybe 6-8.
--
73, Cecil http://www.w5dxp.com

2698. Re: odd readings from watt meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 15:25:05 UTC
From: ltdoc@yahoo.com
Message-ID: <d8cbe0e1-e933-40a0-b16f-9ff2890afae2@u72g2000hsf.googlegroups.com>
Source record: 27670

Jim,
I'm wondering what frequency you are trying to use this antenna on?
If it's a frequency where the length of the antenna isn't even close
to the 'ideal' length, the readings would seem about right, sort of,
at least when comparing SSB and CW. What frequency(s)?
- 'Doc

(Receivers aren't near as 'picky' about somethings as transmitters
are. Dang near anything can be used to receive.)

2699. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 15:35:26 UTC
From: ltdoc@yahoo.com
Message-ID: <91fb2216-236b-41ca-83df-bd7bfa6b2437@s37g2000prg.googlegroups.com>
Source record: 27671

Antenna tuners 'like' antennas that are 'too long' better than
antennas that are 'too short'. That doesn't say anything about how
well that 'too long'/'too short' antenna will perform, just that the
average tuner will find it easier to deal with one that's 'too long'.
(Easier to 'cram' more capacitance into a tuner than inductance.) If
this antenna is a doublet, 'balanced', why would you need a
'groundplane'? And while I'd guess that it'll never be 'ideal', the
building is acting as a 'groundplane' anyway, sort of.
- 'Doc

(What am I not understanding about the situation?)

2700. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 17:22:38 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A535F62D604DHuckleberrybigvalley@198.186.192.196>
Source record: 27672

> Antenna tuners 'like' antennas that are 'too long' better than
> antennas that are 'too short'. That doesn't say anything about how
> well that 'too long'/'too short' antenna will perform, just that the
> average tuner will find it easier to deal with one that's 'too long'.
> (Easier to 'cram' more capacitance into a tuner than inductance.) If
> this antenna is a doublet, 'balanced', why would you need a
> 'groundplane'? And while I'd guess that it'll never be 'ideal', the
> building is acting as a 'groundplane' anyway, sort of.
> - 'Doc
>
> (What am I not understanding about the situation?)

I don't think you are missing anything; your comments sound reasonable to me. The building is the nearly new local firehouse HQ. The Chief and staff have outlined very strict parameters for our antenna location and setup. They fabricated the aluminum mast and will install it on the side of the building per their own design. Even at that, they gritted their teeth at the visual impact it has. No stand-off supported open ladder line for us! We must work with this and I don't see any feed alternative than coax. The only thing we 'may' have some flexibility with is the length of the antenna. (Sorry Cecil, I guess I should have mentioned that up front). We are limited to the length of the side of the building, which I estimated would give us up to 40 feet of element from the top of the mast. However, in hindsignt, I believe we could at that end point drop some additional length down off the end for a longer antenna.... would probably give us better operation on 75 & 80.

Ed

2701. Re: Cobwebb antenna question?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 17:29:10 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <GhXxj.214391$3m6.148652@fe2.news.blueyonder.co.uk>
Source record: 27673

Thank you Steve and every one else for your help. Its very much appreciated.

73

<stephen.roberts.m0sjr@googlemail.com> wrote in message
news:ce6cfe15-f2cb-44fe-96c5-e55455486f22@d62g2000hsf.googlegroups.com...
The measurements in the booklet were taken from an actual cobwebb.

The lengths and tapping points for the Tee match, need to be adjusted
during the initial tests.

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beg or borrow one for testing.

However, in tests, the following dimensions have been used
successfully:-

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10M 2540 mm 1560 mm
12M 2930 mm 1790 mm
15M 3450 mm 2080 mm
17M 4060 mm 2220 mm
20M 5150 mm 2720 mm

Hope this helps

Steve.
==========
On Feb 28, 7:47 pm, "Barrett" <barr...@blueyounder.co.uk> wrote:
> Hi Steve
> Do you have the correct measurement for the 17m element?
>
> A lot of people say 4400 is incorrect as its too long.
>
> Many thanks
>
> <stephen.roberts.m0...@googlemail.com> wrote in message
>
> news:324b567f-d102-4052-94b8-0fdfc963924f@d21g2000prf.googlegroups.com...
>
>
>
> > The cable used for the Cobwebb is:-
>
> > A very heavy duty twin cable with a 'figure 8' profile ideal for high
> > power speaker connection suitable for power amplifiers up to 500W
> > output.

> > 42/0.15mm plain copper conductor
> > Rating 60V rms 6A
> > Overall size 5.7 x 2.9mm
> > Sheathed in white PVC with black polarity identification stripe
>
> > You can find it on the RAPID ELECTRONICS website atwww.rapidonline.com
> > Part No. 01-0157.
>
> > Regards
>
> > Steve
> > ==========
>
> > On Feb 26, 9:34 pm, "Barrett" <barr...@blueyounder.co.uk> wrote:
> >> I'm in the process of building a homebrew Cobwebb Ariel.
>
> >> I have found two different sizes for the twin cable elements, figure 8
> >> 42
> >> strand 0.2mm, but on the Cobwebb web site it says figure 8 84 strand.
>
> >> Also in the Cobwebb revealed PDF doc that I downloaded on page 5 it
> >> says
> >> each core is 42 strands of 0.2mm diameter and on page 7 of the same doc
> >> it
> >> says figure 8 84 strand. So I'm a little confused.
>
> >> Does anyone know what is the correct cable to use, 42 strand 0.2mm or
> >> 84
> >> strand 0.2mm?
>
> >> Many thanks- Hide quoted text -
>
> - Show quoted text -

2702. Re: odd readings from watt meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 17:47:56 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <6zXxj.642$pp6.15@bignews3.bellsouth.net>
Source record: 27674

"Dave" <noone@nowhere.com> wrote in message
news:fsSxj.4684$A93.4076@trndny08...
> that sounds like something is wrong. try a whistle, see if that gets the
> external meter to move properly. then try cw up in the ssb band and see
> that the swr isn't wildly different. make sure that the meter you are
> watching on the radio isn't the alc or swr or mic audio or compression
> instead of power output also, some radios use the meters for multiple
> things and it could change without you noticing from cw to ssb since cw
> doesn't have mic audio or compression levels.
>
> "James Barrett" <xucaen@comcast.net> wrote in message
> news:jJKdnT2aFaLJ6lranZ2dnUVZ_rSrnZ2d@comcast.com...
>> Hi, I have put up a dipole and I admit it is not a very good one, about
>> 20 feet up, approx 60 ft. It works great as a receiving antenna and I'm
>> having fun listening, but so far no one can hear me. I have an Icom
>> IC-735, and using SSB, the watt meter on the radio shows full power as I
>> talk, but the watt meter on the tuner barely moves. In CW mode both
>> meters go all the way. Is this a typical symptom of a poor quality
>> antenna or does it indicate some other problem (besides my antenna making
>> skills)?
>>
>> Any advice is appreciated.
>>
>> Thanks,
>>
>> Jim

On SSB, no power output is produced until the carrier (which is later
suppressed) is modulated. Yeah, you could know this, but it is possible that
you do not. This is in case of the latter.

As the previous responder said (my memory is bad - sorry), if your meter is
slow, the modulated voice peaks may not show up on the meter.

Ed, NM2K

2703. DOUGAY LOVES TRUCKSTOPS!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 17:50:35 UTC
From: dogie patrol <dp@dogiecatcher.com>
Message-ID: <47c845f7$1@news.x-privat.org>
Source record: 27675
Cross-posted to: rec.radio.cb,alt.ham-radio.vhf-uhf,rec.radio.amateur.policy,rec.radio.amateur.antenna

http://img172.imageshack.us/img172/4585/n8wwmad2yq4.jpg

2704. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 18:30:05 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-A2FFD5.09300229022008@netnews.worldnet.att.net>
Source record: 27676

In article <Xns9A52AB752D939Huckleberrybigvalley@198.186.192.196>,
"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote:

we will be using an SGC-237 antenna coupler.

> Comments?
> Ed K7AAT

Ok, first thing, NONE of the Lumped Constant Binary Switch Tuners like SGC's Knockoff of the SEA Design, will tune ANYWHERE within a few percent of the Natural Halfwave Point of the antenna. So you must design the Antenna, so as to move that Halfwave Point to a section of the HF Spectrum that you NEVER plan on using. Second thing, none of the SGC Employees around today, were around when this Tuner and it's Operating software was designed, and most don't have much experience with actual operational considerations.
Thirdly, After a lot of experimentation with the SEA1612b Series Tuners, from which the SGC's were plagiarized, when using them to drive a dipole, there are two schools of thought. One school says that you should add a 1:1 Balun on the output of the tuner between the RF Ground Stud, and RF Output Connection to make your Balanced Feed. Second school says to take the Feedline Coax, Dc Power Lines, and Tuning Feedback Wire, and wind them, in a Bifilar fashion on an appropriate Torriod to decouple the Tuner from Radio Feed and connect the dipole to the RF Ground Stud, and the RF Output Connection.
I have used both Systems on Maritime Mobile Limited Coast Stations, around Alaska, and find that they both work about Equally Poor. It should be noted here, however that Alaska is notorious for not having any kind of decent RF Grounding Soil, so usually this type of Antenna System works much better than an type of Longwire antenna that needs a good RF Ground, to work against. Where a GOOD RF Ground is available, (Salt Water) the Longwire Antenna outperforms the Tuner Driven Dipole, ever time, but without that GOOD RF Ground, the Tuner Driven Dipole works better than just about anything else, especially over a wide range of Frequency Bands available, in both the Maritime and Amateur Radio HF spectrums.

Bruce in alaska

--
Bruce in alaska
add <path> after <fast> to reply

2705. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 20:30:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <1YZxj.7862$Mw.4126@nlpi068.nbdc.sbc.com>
Source record: 27677

Ed_G wrote:
> They fabricated the aluminum mast and will install
> it on the side of the building per their own design.

Get them to fabricate a piece of fiberglass tubing
and all your problems will disappear.
--
73, Cecil http://www.w5dxp.com

2706. why the flase echarges Dloyd

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 21:10:23 UTC
From: an old friend <kb9rqz@hotmail.com>
Message-ID: <0921cbf0-5334-4696-a89a-0fa6b509d79b@u10g2000prn.googlegroups.com>
Source record: 27678
Cross-posted to: rec.radio.cb,alt.ham-radio.vhf-uhf,rec.radio.amateur.policy,rec.radio.amateur.antenna

On Feb 29, 12:50 pm, "dogie patrol" <d...@dogiecatcher.com> wrote:
>

2707. Re: odd readings from watt meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 23:24:46 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <8rSdnVo4f4t6DlXanZ2dneKdnZydnZ2d@pipex.net>
Source record: 27679

> On SSB, no power output is produced until the carrier (which is later
> suppressed) is modulated. Yeah, you could know this, but it is possible that
> you do not. This is in case of the latter.
>
> As the previous responder said (my memory is bad - sorry), if your meter is
> slow, the modulated voice peaks may not show up on the meter.
==========
However there are umpteen circuits for a'peak-picker/holder' which with
a set suitable time constant will enable any meter to sense the peak
and hold it until the next peak. I don't mean just a simple capacitor

Frank GM0CSZ / KN6WH

2708. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 23:29:33 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A539D9AD1278Huckleberrybigvalley@198.186.192.196>
Source record: 27680

>
> Get them to fabricate a piece of fiberglass tubing
> and all your problems will disappear.

I fully agree, but we have absolutely no input in regards to the mast they have provided, and to attempt to persuade them otherwise would only jeopardize the situaion, so we must accept what they have provided and work with it.

Ed

2709. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-02-29 23:34:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MD0yj.14494$Ej5.3619@newssvr29.news.prodigy.net>
Source record: 27681

Ed_G wrote:
>> Get them to fabricate a piece of fiberglass tubing
>> and all your problems will disappear.
>
> I fully agree, but we have absolutely no input in regards to the mast
> they have provided, and to attempt to persuade them otherwise would only
> jeopardize the situaion, so we must accept what they have provided and work
> with it.

There is someone, somewhere, who has the authority to
change the mast from aluminum to fiberglass for the
purpose of multiplying your radiation efficiency by
a factor of 7. I would seek that person out and bend
his/her ear.
--
73, Cecil http://www.w5dxp.com

2710. Re: odd readings from watt meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 01:07:14 UTC
From: nm5k@wt.net
Message-ID: <4760e84a-2edb-4b15-8025-e89216f09d56@i29g2000prf.googlegroups.com>
Source record: 27682

On Feb 28, 9:11 pm, James Barrett <xuc...@comcast.net> wrote:
> Hi, I have put up a dipole and I admit it is not a very good one, about
> 20 feet up, approx 60 ft. It works great as a receiving antenna and I'm
> having fun listening, but so far no one can hear me. I have an Icom
> IC-735, and using SSB, the watt meter on the radio shows full power as
> I talk, but the watt meter on the tuner barely moves. In CW mode both
> meters go all the way. Is this a typical symptom of a poor quality
> antenna or does it indicate some other problem (besides my antenna
> making skills)?
>
> Any advice is appreciated.
>
> Thanks,
>
> Jim

Dunno. Seems a bit strange if no one can hear you.
It sounds like you are using an average reading meter,
vs a peak reading meter.
In the case of an average meter, on SSB voice peaks
you will usually see about 1/3 of your actual output.
IE: with a 100w radio, I'd expect peaks of appx 35w
on the meter. Barely moving seems to be a problem.
Being as the rig seems to be doing full power in CW
mode, I doubt the antenna is the problem. As long as
the SWR is under 2:1 you should be doing full output.
It can probably actually be a bit worse, and still do full
power in many cases.
So that makes me wonder if you might have a mic drive
problem, etc..
What mike are you using? Most older icoms require a
mic preamp. If not, you won't get full drive.
And I think the 735 is one that requires the mic preamp.
Even my 706 requires a preamp if I'm not using a stock
mic. If not, I won't get full drive.
Try the stock hand mike, if you are using something else,
and see what happens.
Average meters will usually read only about 1/3 of actual
output, but barely moving the meter is not right, if CW
if reading correctly. You should see peaks of 25-35
watts if it's working right. Near full power peaks if using
an actual peak reading meter. Most passive "capacitor"
meter hang circuits only read about 80% of full power.
MK

2711. Re: DOUGAY LOVES TRUCKSTOPS!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 03:23:16 UTC
From: Steve <moparholic@hotmail.com>
Message-ID: <20080229222320.214$eb@newsreader.com>
Source record: 27683
Cross-posted to: rec.radio.cb,alt.ham-radio.vhf-uhf,rec.radio.amateur.policy,rec.radio.amateur.antenna

"dogie patrol" <dp@dogiecatcher.com> wrote:
> http://img172.imageshack.us/img172/4585/n8wwmad2yq4.jpg
>
The spineless twat is probably pissing himself and asking someone for a
quarter.

--
http://NewsReader.Com/

2712. stop the lies dloyd

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 03:26:08 UTC
From: old freind <kb9rqz-4@hotmail.com>
Message-ID: <dbc4ddee-1280-43e3-b953-0f5970f5a844@8g2000hse.googlegroups.com>
Source record: 27684
Cross-posted to: rec.radio.cb,alt.ham-radio.vhf-uhf,rec.radio.amateur.policy,rec.radio.amateur.antenna

```
On Feb 29, 10:23 pm, Steve <moparho...@hotmail.com> wrote:
> "dogie patrol" <d...@dogiecatcher.com> wrote:
> >http://img172.imageshack.us/img172/4585/n8wwmad2yq4.jpg
>
> The spineless twat is probably pissing himself and asking someone for a
> quarter.
>
> --
>                    http://NewsReader.Com/
```

2713. Re: odd readings from watt meters

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 04:10:37 UTC
From: Dan Finn <dfinn1@nc.rr.com>
Message-ID: <47c8d73c$0$1109$4c368faf@roadrunner.com>
Source record: 27685

<nm5k@wt.net> wrote in message
news:4760e84a-2edb-4b15-8025-e89216f09d56@i29g2000prf.googlegroups.com...
> On Feb 28, 9:11 pm, James Barrett <xuc...@comcast.net> wrote:
>> Hi, I have put up a dipole and I admit it is not a very good one, about
>> 20 feet up, approx 60 ft. It works great as a receiving antenna and I'm
>> having fun listening, but so far no one can hear me. I have an Icom
>> IC-735, and using SSB, the watt meter on the radio shows full power as
>> I talk, but the watt meter on the tuner barely moves. In CW mode both
>> meters go all the way. Is this a typical symptom of a poor quality
>> antenna or does it indicate some other problem (besides my antenna
>> making skills)?
>>
>> Any advice is appreciated.
>>
>> Thanks,
>>
>> Jim
>
> Dunno. Seems a bit strange if no one can hear you.
> It sounds like you are using an average reading meter,
> vs a peak reading meter.
> In the case of an average meter, on SSB voice peaks
> you will usually see about 1/3 of your actual output.
> IE: with a 100w radio, I'd expect peaks of appx 35w
> on the meter. Barely moving seems to be a problem.
> Being as the rig seems to be doing full power in CW
> mode, I doubt the antenna is the problem. As long as
> the SWR is under 2:1 you should be doing full output.
> It can probably actually be a bit worse, and still do full
> power in many cases.
> So that makes me wonder if you might have a mic drive
> problem, etc..
> What mike are you using? Most older icoms require a
> mic preamp. If not, you won't get full drive.
> And I think the 735 is one that requires the mic preamp.
> Even my 706 requires a preamp if I'm not using a stock
> mic. If not, I won't get full drive.
> Try the stock hand mike, if you are using something else,
> and see what happens.
> Average meters will usually read only about 1/3 of actual
> output, but barely moving the meter is not right, if CW
> if reading correctly. You should see peaks of 25-35
> watts if it's working right. Near full power peaks if using
> an actual peak reading meter. Most passive "capacitor"

> meter hang circuits only read about 80% of full power.
> MK

Also, anybody can make a mistake. I'm sure you know this already but is it possible that your drive setting on the transceiver for MIC (for SSB) is too low but the drive setting for CW is good? (Not sure if you could get a good reading on your transceiver if this were the case). MK has a more likely scenario.

Let us know what happened if you figure it out.

de AI4QJ

2714. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 06:01:04 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A53DFFBB9A39Huckleberrybigvalley@198.186.192.196>
Source record: 27686

> There is someone, somewhere, who has the authority to
> change the mast from aluminum to fiberglass for the
> purpose of multiplying your radiation efficiency by
> a factor of 7. I would seek that person out and bend
> his/her ear.

Believe me, Cecil, that is not the case here. This is a very small community. The Fire Chief and his Deputy have ultimate authority over this building. Besides, to attempt to go over his head would merely jeopardize the good relations we already have which allowed us to get this far anyway. We'll leave well enough alone and work with what we have. If it weren't for the fact that we need operation on 3589 & 3980, ~7090 & 7248, and hopefully 60M, we'd probably have just gone with a trapped wire antenna off this mast instead of using the SGC-237 (which we already possess).

Thanks.

Ed

2715. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 06:07:11 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A53E1053BE85Huckleberrybigvalley@198.186.192.196>
Source record: 27687

> Ok, first thing, NONE of the Lumped Constant Binary Switch Tuners like
> SGC's Knockoff of the SEA Design, will tune ANYWHERE within a few
> percent of the Natural Halfwave Point of the antenna. So you must
design
> the Antenna, so as to move that Halfwave Point to a section of the
> HF Spectrum that you NEVER plan on using. Second thing, none of the
SGC
> Employees around today, were around when this Tuner and it's Operating
> software was designed, and most don't have much experience with actual
> operational considerations.
> Thirdly, After a lot of experimentation with the SEA1612b Series
Tuners,
> from which the SGC's were plagiarized, when using them to drive a
> dipole, there are two schools of thought. One school says that you
> should add a 1:1 Balun on the output of the tuner between the RF
Ground
> Stud, and RF Output Connection to make your Balanced Feed. Second
school
> says to take the Feedline Coax, Dc Power Lines, and Tuning Feedback
> Wire, and wind them, in a Bifilar fashion on an appropriate Torriod
> to decouple the Tuner from Radio Feed and connect the dipole to the
> RF Ground Stud, and the RF Output Connection.
> I have used both Systems on Maritime Mobile Limited Coast Stations,
> around Alaska, and find that they both work about Equally Poor. It
> should be noted here, however that Alaska is notorious for not having
> any kind of decent RF Grounding Soil, so usually this type of Antenna
> System works much better than an type of Longwire antenna that needs a
> good RF Ground, to work against. Where a GOOD RF Ground is available,
> (Salt Water) the Longwire Antenna outperforms the Tuner Driven Dipole,
> ever time, but without that GOOD RF Ground, the Tuner Driven Dipole
> works better than just about anything else, especially over a wide
range
> of Frequency Bands available, in both the Maritime and Amateur Radio
HF
> spectrums.
>
> Bruce in alaska

Bruce,

Thanks for the response to my query. I have a couple comments to
these. One, we already own a new SGC-237 coupler, so that is what we
will use. Two, thanks for the info on the SGC personnel.... that
might explain why some of their responses to my emails didn't seem to
make sense... especially their comments about NOT needing any balun.

Three, and more direct to my initial questions, it appears we will be using coax between the coupler output and the antenna feedpoint.... up to 20 feet of low loss... we'll just eat the loss. But more importantly, I had intended, and will proceed along the lines of your comments on baluns, by installing a 1:1 balun at the input to the tuner. This will, at least, keep the RF out of the building and our station location.

thanks.

Ed

2716. Coax Switching Boxes (receive only)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 13:18:38 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <coydnSZU1fQ2ylTanZ2dnUVZ_vKunZ2d@comcast.com>
Source record: 27688

Hello,

I would like to purchase an "inexpensive" simple, coax antenna switch for occasionally switching two antennas into my scanner.

Freq. range up to about the scanners limit of 1.3 GHz

Receive only.

Looked at the Daiwa, and for the $ seems like the way to go, but I thought I'd ask first.
Any opinions on the Daiwa ?

Any others to consider also that aren't too expensive ?

Ace hardware has a coax switching box, I guess for TV's mainly, with pushbuttons.
Think this would do the job for my scanner stuff, or probably just junk ?
It's really cheap at about $8

Thanks,
Bob

2717. Re: Coax Switching Boxes (receive only)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 13:48:38 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <fd3iEuF26VyHFwl6@g3ohx.demon.co.uk>
Source record: 27689

In message <coydnSZU1fQ2ylTanZ2dnUVZ_vKunZ2d@comcast.com>, Robert11
<rgsros@notme.com> writes
>Hello,
>
>I would like to purchase an "inexpensive" simple, coax antenna switch for
>occasionally switching two antennas into my scanner.
>
>Freq. range up to about the scanners limit of 1.3 GHz
>
>Receive only.
>
>Looked at the Daiwa, and for the $ seems like the way to go, but I thought
>I'd ask first.
>Any opinions on the Daiwa ?
>
>Any others to consider also that aren't too expensive ?
>
>Ace hardware has a coax switching box, I guess for TV's mainly, with
>pushbuttons.
>Think this would do the job for my scanner stuff, or probably just junk ?
>It's really cheap at about $8
>
>Thanks,
>Bob

A CATV A-B switch? It should only be a few dollars. Although the spec
may only be up to (say) 870Mhz, they are probably OK (for your purpose)
to 1.3GHz +.
--

Ian

2718. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 15:03:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Neeyj.11097$0o7.4533@newssvr13.news.prodigy.net>
Source record: 27690

Ed_G wrote:
>> There is someone, somewhere, who has the authority to
>> change the mast from aluminum to fiberglass for the
>> purpose of multiplying your radiation efficiency by
>> a factor of 7. I would seek that person out and bend
>> his/her ear.
>
> Believe me, Cecil, that is not the case here. This is a very
> small community. The Fire Chief and his Deputy have ultimate authority
> over this building.

If the goal of those guys is to sabotage amateur
radio communications, they have probably succeeded.
It's like them going to fight a fire with big holes
in the hoses.
--
73, Cecil http://www.w5dxp.com

2719. Re: Coax Switching Boxes (receive only)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 15:21:13 UTC
From: ltdoc@yahoo.com
Message-ID: <73142747-23f2-4742-a407-0080ef3579f0@h25g2000hsf.googlegroups.com>
Source record: 27691

Bob,
Receivers just aren't as 'picky' about switches as transmitters are,
so almost anything would probably work just fine. If you're into
making things instead of buying them, a look in the junk box would
probably be profitable. If not, then ... whatever grabs you.
- 'Doc

2720. Re: Coax Switching Boxes (receive only)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 17:08:22 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <a4gyj.2405$dB.986@trnddc01>
Source record: 27692

<ltdoc@yahoo.com> wrote in message
news:73142747-23f2-4742-a407-0080ef3579f0@h25g2000hsf.googlegroups.com...
> Bob,
> Receivers just aren't as 'picky' about switches as transmitters are,
> so almost anything would probably work just fine. If you're into
> making things instead of buying them, a look in the junk box would
> probably be profitable. If not, then ... whatever grabs you.
> - 'Doc
>
The one parameter receivers are "picky" about is port-port isolation.
Switches made for HF switching will likely have very poor port-port
isolation at VHF and above. The result is the receiver hears the selected
antenna and some of the unselected antenna. This may or may not be a
problem.
Dale W4OP

2721. Re: Coax Switching Boxes (receive only)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 17:26:43 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <HF+kS4XTHZyHFwHO@g3ohx.demon.co.uk>
Source record: 27693

In message <a4gyj.2405$dB.986@trnddc01>, Dale Parfitt
<parinc1@verizon.net> writes
>
><ltdoc@yahoo.com> wrote in message
>news:73142747-23f2-4742-a407-0080ef3579f0@h25g2000hsf.googlegroups.com...
>> Bob,
>> Receivers just aren't as 'picky' about switches as transmitters are,
>> so almost anything would probably work just fine. If you're into
>> making things instead of buying them, a look in the junk box would
>> probably be profitable. If not, then ... whatever grabs you.
>> - 'Doc
>>
>The one parameter receivers are "picky" about is port-port isolation.
>Switches made for HF switching will likely have very poor port-port
>isolation at VHF and above. The result is the receiver hears the selected
>antenna and some of the unselected antenna. This may or may not be a
>problem.
>Dale W4OP
>
A decent cable TV A-B switch should have an isolation of at least
something like 40dB at 870MHz. [I think I measured an old Jerrold switch
as being around 70dB.] While probably less at 1.3GHz, it's probably
still sufficient.
--
Ian

2722. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 17:58:02 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <d9KdndCdcN9NBVTaRVnyhQA@pipex.net>
Source record: 27694

> Thanks for the feedback, John. I imagine that we will end up doing
> as you suggested. We WILL test the antenna on the ground with a
> temporary mast to see if there are any issues, but we also realize that
> things can, and probably will, change when it is permanently mounted on
> the building. One of the reasons I am posing these questions here now
> is that once the antenna is up, it will be difficult to get the
> building personnel (its a firehouse) to lower the mast for changes.
> Its a rigid one piece aluminum mast that will be bolted at its base to
> the building.
==========
Suggest you fit a pulley at the top of the mast such you can lower and
subsequently change the antenna using a halyard.

Frank GM0CSZ / KN6WH

2723. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 18:19:56 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-25B5D6.09195501032008@netnews.worldnet.att.net>
Source record: 27695

In article <Xns9A53E1053BE85Huckleberrybigvalley@198.186.192.196>,
"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote:

>
> Bruce,
>
> Thanks for the response to my query. I have a couple comments to
> these. One, we already own a new SGC-237 coupler, so that is what we
> will use. Two, thanks for the info on the SGC personnel.... that
> might explain why some of their responses to my emails didn't seem to
> make sense... especially their comments about NOT needing any balun.
> Three, and more direct to my initial questions, it appears we will be
> using coax between the coupler output and the antenna feedpoint.... up
> to 20 feet of low loss... we'll just eat the loss. But more
> importantly, I had intended, and will proceed along the lines of your
> comments on baluns, by installing a 1:1 balun at the input to the
> tuner. This will, at least, keep the RF out of the building and our
> station location.
>
> thanks.
>
> Ed
>

Ed, you would be Much Better Off, if they would allow you to use (2)
runs of Coax, side by side up the mast, and connect only the Center
Conductor of each, to the tuner, with the shield left open on each end
and sealed against water intrusion. Even if taped to the aluminum mast.
This would provide a much better situation than a single coax feed.
Also if you are stuck with a single coax, then make SURE, that the
shield side of the coax is connected to the Ground Stud of the tuner.

--
Bruce in alaska
add <path> after <fast> to reply

2724. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 18:39:34 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A546C6FEE56DHuckleberrybigvalley@198.186.192.196>
Source record: 27696

>
> Ed, you would be Much Better Off, if they would allow you to use (2)
> runs of Coax, side by side up the mast, and connect only the Center
> Conductor of each, to the tuner, with the shield left open on each end
> and sealed against water intrusion. Even if taped to the aluminum
mast.
> This would provide a much better situation than a single coax feed.
> Also if you are stuck with a single coax, then make SURE, that the
> shield side of the coax is connected to the Ground Stud of the tuner.
>

Well! That was part of my original question in this thread! I had
intended to do just that, but some here seemed to steer me toward a
single coax, including SGC personnel. I do NOT think we have any
decent ground at all available anywhere near the roof location where
this antenna mast will be located, so I was unsure if the twin coax
feed would be OK without grounding the shields. Left floating, I
don't know what effect, if any, we will have for incidental radiation.
One thing for sure, it won't be any worse than using a single coax with
no balun at the feedpoint.

Ed

2725. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 22:40:51 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A5495588624EHuckleberrybigvalley@198.186.192.196>
Source record: 27697

> If the goal of those guys is to sabotage amateur
> radio communications, they have probably succeeded.
> It's like them going to fight a fire with big holes
> in the hoses.

It the goal was to sabotage our communications, they would have denied permission to use their facilities totally, let alone, not have purchased and fabricated the nice aluminum mast which they did for us. Admittedly, they seem overly concerned with the visual impact of things, but beggars can't be choosers! Tnx.

Ed

2726. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-01 22:56:42 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13sjnp9pu0uera8@corp.supernews.com>
Source record: 27698

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in message
news:Xns9A5495588624EHuckleberrybigvalley@198.186.192.196...
>
>> If the goal of those guys is to sabotage amateur
>> radio communications, they have probably succeeded.
>> It's like them going to fight a fire with big holes
>> in the hoses.
>
>
> It the goal was to sabotage our communications, they would have denied
> permission to use their facilities totally, let alone, not have purchased
> and fabricated the nice aluminum mast which they did for us. Admittedly,
> they seem overly concerned with the visual impact of things, but beggars
> can't be choosers! Tnx.
>
> Ed
>

Right off I would say they are the beggars. It is your group that is
supporting them.

2727. Re: DOUGAY LOVES TRUCKSTOPS!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 02:56:37 UTC
From: HAHAHAHAH!!!! <keyklownzrnutjobs@yahoo.com>
Message-ID: <f0788680-d3b3-4ae0-acc2-a585e85d75de@y77g2000hsy.googlegroups.com>
Source record: 27699
Cross-posted to: rec.radio.cb,alt.ham-radio.vhf-uhf,rec.radio.amateur.policy,rec.radio.amateur.antenna

```
On Feb 29, 10:23 pm, Steve <moparho...@hotmail.com> wrote:
> "dogie patrol" <d...@dogiecatcher.com> wrote:
> >http://img172.imageshack.us/img172/4585/n8wwmad2yq4.jpg
>
> The spineless twat is probably pissing himself and asking someone for a
> quarter.
>
> --
>                    http://NewsReader.Com/

nope, that's your mother doing that, puss.
```

2728. Re: stop the lies dloyd

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 03:07:50 UTC
From: an old friend <kb9rqz@yahoo.com>
Message-ID: <7b338563-ac31-4457-bb83-1cf6412d6741@64g2000hsw.googlegroups.com>
Source record: 27700
Cross-posted to: rec.radio.cb,alt.ham-radio.vhf-uhf,rec.radio.amateur.policy,rec.radio.amateur.antenna

```
On Feb 29, 10:26 pm, old freind <kb9rq...@hotmail.com> wrote:
> On Feb 29, 10:23 pm, Steve <moparho...@hotmail.com> wrote:
>
>
>
> > "dogie patrol" <d...@dogiecatcher.com> wrote:
> > >http://img172.imageshack.us/img172/4585/n8wwmad2yq4.jpg
>
> > The spineless twat is probably pissing himself and asking someone for a
> > quarter.
>
> > --
> >                     http://NewsReader.Com/- Hide quoted text -
>
> - Show quoted text -
```

2729. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 04:45:14 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A55A0200B85Enonenowhere@61.9.191.5>
Source record: 27551

Bruce in alaska <fast@btpost.net> wrote in news:fast-25B5D6.09195501032008
@netnews.worldnet.att.net:

...
> Ed, you would be Much Better Off, if they would allow you to use (2)
> runs of Coax, side by side up the mast, and connect only the Center
> Conductor of each, to the tuner, with the shield left open on each end
> and sealed against water intrusion.

What does this do, what does it achieve?

Owen

2730. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 05:38:45 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A54DC30ADBBEHuckleberrybigvalley@64.209.0.91>
Source record: 27552

>> Ed, you would be Much Better Off, if they would allow you to use (2)
>> runs of Coax, side by side up the mast, and connect only the Center
>> Conductor of each, to the tuner, with the shield left open on each
>> end and sealed against water intrusion.
>
> What does this do, what does it achieve?
>
> Owen
>

My expertise is weak in this area, but just guessing.... using twin coax in the above configuration, if the shields were grounded, would allow the feedling between the antenna coupler and the feedpoint to be 'balanced' and yet the shields would not radiate as they would with a single coax run.

Perhaps others, here, will either expand on this, or correct my misconception.

Ed K7AAT

2731. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 06:46:45 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A55B4B9E5077nonenowhere@61.9.191.5>
Source record: 27553

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
news:Xns9A54DC30ADBBEHuckleberrybigvalley@64.209.0.91:

>
>>> Ed, you would be Much Better Off, if they would allow you to use (2)
>>> runs of Coax, side by side up the mast, and connect only the Center
>>> Conductor of each, to the tuner, with the shield left open on each
>>> end and sealed against water intrusion.
>>
>> What does this do, what does it achieve?
>>
>> Owen
>>
>
>
> My expertise is weak in this area, but just guessing.... using
twin
> coax in the above configuration, if the shields were grounded, would

But that is not what was said. I read it to say "with the shield left
open on each end".

> allow the feedling between the antenna coupler and the feedpoint to be
> 'balanced' and yet the shields would not radiate as they would with a
> single coax run.

Bunk. The only reason the shields would not radiate would be if they
carried equal but opposite currents. That is most unlikely in this case.

Let us just consider a simple example. Assumption is that skin effect on
the coax is fully effective, a reasonable assumption at HF.

Make a quarter wave vertical of a piece of RG213 supported on sky hooks.
Make no connection to the shield at either end, and connect the feed line
between a ground plane / counterpoise / whatever and the centre conductor
of the vertical piece of coax.

What current flows on the outside surface of the vertical coax?

The current on the outside surface of the vertical coax adjacent to the
bottom end of the isolated shield is the same as the current flowing on
the inner conductor adjacent to the same end of the shield.

Does the outer conductor 'shield' the vertical so that it will not
radiate?

No, the outside surface of the shield is the radiatior, it just has a
quarter wave o/c stub in series from the feedline to the radiating
element.

>
> Perhaps others, here, will either expand on this, or correct my
> misconception.

Owen

2732. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 13:36:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <M3yyj.59684$Pv2.28234@newssvr23.news.prodigy.net>
Source record: 27554

Ed_G wrote:
> My expertise is weak in this area, but just guessing.... using twin
> coax in the above configuration, if the shields were grounded, would
> allow the feedline between the antenna coupler and the feedpoint to be
> 'balanced' and yet the shields would not radiate as they would with a
> single coax run.

Side-by-side runs of RG-11 (Z0=150 ohms) would reduce
the SWR on the coax and change the impedance seen by
the tuner from 0.3-j69 ohms to 1.9-j154 ohms which is
quite an improvement. You can increase that feedpoint
impedance even more to 2.5-j170 ohms by using side-by-
side runs of RG-133 (Z0=190 ohms) if you can find it.
--
73, Cecil http://www.w5dxp.com

2733. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 13:39:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <i6yyj.59685$Pv2.26648@newssvr23.news.prodigy.net>
Source record: 27555

Owen Duffy wrote:
> Does the outer conductor 'shield' the vertical so that it will not
> radiate?
>
> No, the outside surface of the shield is the radiatior, it just has a
> quarter wave o/c stub in series from the feedline to the radiating
> element.

Owen, feedline radiation in this particular system might
increase the efficiency which would be a good thing.
--
73, Cecil http://www.w5dxp.com

2734. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 14:04:07 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <rtyyj.10255$5K1.8727@newssvr12.news.prodigy.net>
Source record: 27556

Cecil Moore wrote:
> Ed_G wrote:
>> My expertise is weak in this area, but just guessing.... using twin
>> coax in the above configuration, if the shields were grounded, would
>> allow the feedline between the antenna coupler and the feedpoint to be
>> 'balanced' and yet the shields would not radiate as they would with a
>> single coax run.
>
> Side-by-side runs of RG-11 (Z0=150 ohms) would reduce
> the SWR on the coax and change the impedance seen by
> the tuner from 0.3-j69 ohms to 1.9-j154 ohms which is
> quite an improvement. You can increase that feedpoint
> impedance even more to 2.5-j170 ohms by using side-by-
> side runs of RG-133 (Z0=190 ohms) if you can find it.

I forgot to say that these figures are from EZNEC which
assumes lossless feedlines. Real-world impedances would
be much higher due to coax losses.
--
73, Cecil http://www.w5dxp.com

2735. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 18:11:14 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A5567A25A3C9Huckleberrybigvalley@198.186.192.196>
Source record: 27557

> Bunk. The only reason the shields would not radiate would be if they
> carried equal but opposite currents. That is most unlikely in this
> case.
>

If both shields, (ungrounded) are tied together, and the two
center conductors are acting as a 'balanced' feedline, how can current
flow on the outsides of the shields, if the interior currents of the two
center conductors are always 180 out of phase?

Ed

2736. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 18:28:19 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-E03524.09281902032008@netnews.worldnet.att.net>
Source record: 27558

In article <Xns9A546C6FEE56DHuckleberrybigvalley@198.186.192.196>,
"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote:

> >
> > Ed, you would be Much Better Off, if they would allow you to use (2)
> > runs of Coax, side by side up the mast, and connect only the Center
> > Conductor of each, to the tuner, with the shield left open on each end
> > and sealed against water intrusion. Even if taped to the aluminum
> mast.
> > This would provide a much better situation than a single coax feed.
> > Also if you are stuck with a single coax, then make SURE, that the
> > shield side of the coax is connected to the Ground Stud of the tuner.
> >
>
>
> Well! That was part of my original question in this thread! I had
> intended to do just that, but some here seemed to steer me toward a
> single coax, including SGC personnel. I do NOT think we have any
> decent ground at all available anywhere near the roof location where
> this antenna mast will be located, so I was unsure if the twin coax
> feed would be OK without grounding the shields. Left floating, I
> don't know what effect, if any, we will have for incidental radiation.
> One thing for sure, it won't be any worse than using a single coax with
> no balun at the feedpoint.
>
>
> Ed

"Left Floating" so that there is less Capacitance to RF Ground, and more
distance between the vertical parallel Feedlines. It would even help
if you can use twin Coax Runs, to put them on opposite sides of the
Aluminum Mast, which would give you more separation with the same
Coupling Capacitance to the Mast. Capacitive coupling to RF Ground,
is the Killer here, and you MUST reduce that, as much as possible,
if your system is going to have any chance at reasonable operation.

--
Bruce in alaska
add <path> after <fast> to reply

2737. Matching Coax Impedance: To Receiver or To Antenna ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 19:36:58 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <ysOdnUH_wMtKnFbanZ2dnUVZ_vCknZ2d@comcast.com>
Source record: 27559

Hello,

Have a Scantenna antenna (receive only) in attic.
It came with 75 ohm RG 6 coax, so presumably the output has a 75 ohm impedance.
How this varies with freq. I have no idea.

Have a new scanner that says to use 50 ohm coax.

From old posts, the consensus seems to be that it doesn't matter if you use 50 or 75 ohm coax for
a run that I have of about 50 feet.

Do you folks agree with this ?

From a somewhat more rigorous and theoretical view, should the coax, even it hardly matters, be matched to the antenna output impedance, or the input impedance of the scanner ? Why ? (again, receive only)

Any thoughts on this would be most appreciated.

Thanks,
Bob

2738. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 19:59:56 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A5647109B50Enonenowhere@61.9.191.5>
Source record: 27560

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
news:Xns9A5567A25A3C9Huckleberrybigvalley@198.186.192.196:

>
>> Bunk. The only reason the shields would not radiate would be if they
>> carried equal but opposite currents. That is most unlikely in this
>> case.
>>
>
>
> If both shields, (ungrounded) are tied together, and the two

At both ends?

This is the first mention of shields tied together, I certainly didn't read that into Bruce's "with the shield left open on each end ".

> center conductors are acting as a 'balanced' feedline, how can
> current flow on the outsides of the shields, if the interior currents
> of the two center conductors are always 180 out of phase?

The analysis in this case is different, but if I understand your scenario, the outer surface of the two coaxes which are tied together at both ends but connected to nothing else still carries the common mode current. that exists on the two open wire conductors just prior to entering the coax assembly. No, you cannot guarantee that those currents are equal and opposite, ie that there is no common mode current, and the common mode current will flow entirely on the outside surface of the outer conductors of the coax assembly when connected as you now propose.

Bruce hasn't explained what his configuration is supposed to do, so we are still guessing about that one.

There is no answer to this problem, because the problem is ill defined. You have just added a new element in tying the shields together. Other questions exist like what other connections exist between tx feed line, ATU, ant feed line, mast, roofing / rain gutters, any other conductors.

Somethimes knowing how to describe a problem is knowing the answer to the problem... or conversely, not knowning the answer is the result of not knowing how to describe the problem.

Owen

2739. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 20:09:20 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A557BA83D68BHuckleberrybigvalley@198.186.192.196>
Source record: 27561

>>
>> If both shields, (ungrounded) are tied together, and the two
>
> At both ends?
>
> This is the first mention of shields tied together, I certainly didn't
> read that into Bruce's "with the shield left open on each end
> ".

That's because I added that to the mix. Bruce's comment was a suggestion for me. I have not done this yet, but my original post under this thread was solliciting comments on using twin coax to feed a balanced antenna, or using a single coax feed under the specific set of circumstances I outlined.

About the common mode current.... please explain how this would be an issue with the outer shields of two coaxes, shields tied together but going nowhere (no ground), and the balanced antenna fed by the two center conductors. I do not see common mode current being a factor, but I'm willing to listen and learn.

Ed

2740. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 20:15:01 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A557C9EAFCF9Huckleberrybigvalley@198.186.192.196>
Source record: 27562

> "Left Floating" so that there is less Capacitance to RF Ground, and
> more distance between the vertical parallel Feedlines. It would even
> help if you can use twin Coax Runs, to put them on opposite sides of
> the Aluminum Mast, which would give you more separation with the same
> Coupling Capacitance to the Mast. Capacitive coupling to RF Ground,
> is the Killer here, and you MUST reduce that, as much as possible,
> if your system is going to have any chance at reasonable operation.
>

Please read my response and question just posted to Owen. With both
shields tied together, but not grounded, nor connected to the antenna
either, I do not understand how common mode current is an issue on the
shields.

We could use the mast as a physical separation as you suggested, (
the mast is not grounded, either, but again, what is the point, if the
two coax shields were "as one" anyway?

Ed
I

2741. Re: Matching Coax Impedance: To Receiver or To Antenna ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 20:16:17 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <e2ee6286-460b-4798-bd24-2bfe7179f41f@h25g2000hsf.googlegroups.com>
Source record: 27563

On 2 mar, 20:36, "Robert11" <rgs...@notme.com> wrote:
> Hello,
>
> Have a Scantenna antenna (receive only) in attic.
> It came with 75 ohm RG 6 coax, so presumably the output has a 75 ohm
> impedance.
> How this varies with freq. I have no idea.
>
> Have a new scanner that says to use 50 ohm coax.
>
> From old posts, the consensus seems to be that it doesn't matter if you use
> 50 or 75 ohm coax for
> a run that I have of about 50 feet.
>
> Do you folks agree with this ?
>
> From a somewhat more rigorous and theoretical view, should the coax, even it
> hardly matters, be matched to the antenna output impedance, or the input
> impedance of the scanner ? Why ? (again, receive only)
>
> Any thoughts on this would be most appreciated.
>
> Thanks,
> Bob

Hello Bob,

For reception with a scanner, using 75 Ohm instead of 50 Ohm cable
will not make a big difference.

Your Scantenna will also not have a 50 Ohms output impedance all over
the band. It will be higher, lower and/or reactive, depending on the
frequency.

Your scanner will also not present 50 Ohms to the antenna all over the
tuning range. It is even unlikely that your scanner will have maximum
sensitivity when driven from 50 Ohms all over the tuning range. There
will be frequency ranges where maximum sensitivity (input power, not
voltage) will be reached with other then 50 Ohm output impedance of
the source.

When you should do rigorous measurements with your setup (that is with
RG6) with respect to a 50 Ohm setup, there will be frequency ranges
where your setup will give best sensitivity and where the 50 Ohms
setup will give best sensitivity.

So Bob, don't worry when using RG6 75 Ohms coaxial cable.

Best regards,

Wim
PA3DJS'
www.tetech.nl (Dutch).

2742. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 21:24:00 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A5655517224Fnonenowhere@61.9.191.5>
Source record: 27564

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
news:Xns9A557BA83D68BHuckleberrybigvalley@198.186.192.196:

> That's because I added that to the mix. Bruce's comment was a

Ok, well here is a model to shape your thinking and moving the goal posts.

At frequencies where skin effect is fully developed, and that is a reasonable assumption for most practical coaxial cables at HF, the current on the inside surfaace of the outer conductor is equal to but opposite in direction to the current on the outside surface of the inner conductor. This is TEM mode propagation.

At the end of the isolated outer conductor, this current must flow somewhere, and it flows around the end onto the outside surface of the outer conductor (effectively changing direction as it does so). So, at that point, the current flowing on the outside of the outer conductor is exactly equal to the current flowing on the outside of the inner conductor.

Leaving aside the effects of changing Zo by substitution of coax for plain conductors:

If you use two coax lines in parallel with the shields isolated, it makes very little difference, the current that would have flowed on the two plain conductors now flows on the outer of the coax lines. The common mode current is the sum of the currents in both coax shields, as it would be for plain conductors.

If you join the shields together at each end, the sheilds together now carry the common mode current. A different equivalent circuit, but almost the same outcome.

Most of these 'shielded solutions' arise from a lack of understanding of how the coaxial transmission line works in TEM mode.

For example, I saw an ham advise someone that station ground connections were subject to noise pickup and the best improvement he could make was to shield the ground lead. In his case, his shack was on the first floor of the building, and his 7m vertical ground lead to the earth stakes etc was a source of noise, so he used 7m of RG213 with the shield and inner bonded to the earth stake and the shield left isolated at the top end.

Firstly, this is not a 'shield' at radio frequencies, but what he did achieve was to insert a s/c stub in series with his station ground conductor. The impedance of that series stub at 7.1MHz is 3056.20-

j1509.30 ohms... not a good outcome.

It might have 'fixed' his RF feeback problem, but it didn't improve the station earth at all, it degraded it severely.

Owen

2743. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 22:25:37 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A5592C3C3DF3Huckleberrybigvalley@198.186.192.196>
Source record: 27565

>
> At frequencies where skin effect is fully developed, and that is a
> reasonable assumption for most practical coaxial cables at HF, the
> current on the inside surfaace of the outer conductor is equal to but
> opposite in direction to the current on the outside surface of the
> inner conductor. This is TEM mode propagation.
>
> At the end of the isolated outer conductor, this current must flow
> somewhere, and it flows around the end onto the outside surface of the
> outer conductor (effectively changing direction as it does so). So, at
> that point, the current flowing on the outside of the outer conductor
> is exactly equal to the current flowing on the outside of the inner
> conductor.
>
> Leaving aside the effects of changing Zo by substitution of coax for
> plain conductors:
>
> If you use two coax lines in parallel with the shields isolated, it
> makes very little difference, the current that would have flowed on
> the two plain conductors now flows on the outer of the coax lines. The
> common mode current is the sum of the currents in both coax shields,
> as it would be for plain conductors.
>
> If you join the shields together at each end, the sheilds together now
> carry the common mode current. A different equivalent circuit, but
> almost the same outcome.

The last paragraph above is where I lose you..... when the shields
are joined together. Yes, I understand inside the shield RF
current flowing around the end and to the outer side.... HOWEVER, the
OTHER center conductor is inducing RF current flowing in the opposite
direction. Since both these inside currents are 'shorted' at the ends
of the two shields, I fail to see how you can have any current flowing
on the outer shield since the two opposite currents should cancel....
????

Ed

2744. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 22:53:53 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A56648E6ECE2nonenowhere@61.9.191.5>
Source record: 27566

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
news:Xns9A5592C3C3DF3Huckleberrybigvalley@198.186.192.196:

> of the two shields, I fail to see how you can have any current flowing
> on the outer shield since the two opposite currents should cancel....
> ????

I already said that as I understand your variable configuration, it is most unlikely that there is zero common mode current, or close to it.
Irrespective of the magnitude of the common mode current, the mechanism is that the coax doesn't 'shield' it.

Owen

2745. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-02 23:34:53 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A559E818FAF7Huckleberrybigvalley@198.186.192.196>
Source record: 27567

>
> I already said that as I understand your variable configuration, it is
> most unlikely that there is zero common mode current, or close to it.
> Irrespective of the magnitude of the common mode current, the
> mechanism is that the coax doesn't 'shield' it.

No, I wouldn't say "shield" would be a proper term, either. But I would suggest that a "cancellation" similar to radiation in a balanced feedline, would be pertinent.

Ed

2746. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 00:07:48 UTC
From: dplatt@radagast.org
Message-ID: <k3sr95-l53.ln1@radagast.org>
Source record: 27568

> My expertise is weak in this area, but just guessing.... using twin
>coax in the above configuration, if the shields were grounded, would
>allow the feedling between the antenna coupler and the feedpoint to be
>'balanced' and yet the shields would not radiate as they would with a
>single coax run.
>
> Perhaps others, here, will either expand on this, or correct my
>misconception.

Using the center conductors of two pieces of coax, with shields bonded together, does create a balanced transmission line. Its characteristic impedance is twice that of the coax itself. The higher impedance of this feedline will cause the voltages on the line to be higher than on a single coax, and the currents lower (all else being equal, of course) and thus reduce I^2*R losses. This can be beneficial if this line is being used between an antenna and a transmatch/tuner/coupler, where a relatively high SWR may be expected on the transmission line.

The OP might want to consider a two-coax run of RG-6 cable, for a total line impedance of 150 ohms. Satellite-dish RG-6 is available in both black and white - the white coax might help reduce visibility if it's cable-tied to the metal mast.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

2747. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 01:28:13 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A567EB936016nonenowhere@61.9.191.5>
Source record: 27569

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
news:Xns9A559E818FAF7Huckleberrybigvalley@198.186.192.196:

>
>>
>> I already said that as I understand your variable configuration, it is
>> most unlikely that there is zero common mode current, or close to it.
>> Irrespective of the magnitude of the common mode current, the
>> mechanism is that the coax doesn't 'shield' it.
>
>
> No, I wouldn't say "shield" would be a proper term, either. But I
> would suggest that a "cancellation" similar to radiation in a balanced
> feedline, would be pertinent.

Then I will leave you to your view that the system is balanced.

Owen

2748. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 01:42:49 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A55B4329A698Huckleberrybigvalley@198.186.192.196>
Source record: 27570

>>
>> No, I wouldn't say "shield" would be a proper term, either. But I
>> would suggest that a "cancellation" similar to radiation in a balanced
>> feedline, would be pertinent.

>
> Then I will leave you to your view that the system is balanced.
>
> Owen

I would have preferred an explanation of your view on why it wouldn't
be, but I thank you for all your prior discussion.

Ed K7AAT

2749. Re: Sierpinski monopole/dipole carpet antenna (SC) for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 02:16:19 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <4oidnZUpzevvwlbanZ2dnUVZ_vyinZ2d@bright.net>
Source record: 27571

Dear AI4QJ:

It took me a while to find the time to do so, but I have given the
referenced paper a good look.
If their calculations and data can be believed, their antenna is about
60% of the size of the previous example. However, it is still large when
scaled to HF. What it has going for itself is the possibility of designing
multiple (low Z) resonances at two or more well spaced frequencies. One can
envision radio systems needing that sort of capability. (Beacons, cell
phone systems, GPS systems)
My conclusion - giving the paper all benefits of my doubts - is that
this antenna's performance can be matched by other designs over the HF
frequency bands and do so with significantly less mechanical complexity.
Papers have been written that suggest one may let a wire meander within a
volume using a random-walk and in a few iterations find an antenna that is
as "good" as antennas such as shown in the referenced paper.
Keeping in mind the first rule of HF antennas: virtually everything
"works" Antenna design starts with setting down the desired end result and
the physical/fiscal limitations. The complex interaction of the relevant
parameters gives antenna design (as is also the case with the design of
aircraft, bullets, and many other things) its appeal.
If you do not already have the third edition of my mentor's book
(Antennas by John D. Kraus) I recommend its purchase and study.

Wish that I had better news for you. Antennas are exciting, but not
magic. 73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"AI4QJ" <nospam@hotmail.com> wrote in message
news:47c08c96$0$4956$4c368faf@roadrunner.com...
>
> "J. Mc Laughlin" <jcm@power-net.net> wrote in message
> news:Uf-dnWv3m6Glv13anZ2dnUVZ_quhnZ2d@bright.net...
>> Dear AI4QJ: Work through the numbers found in the paper. Each
>> full-size triangle has a height and width of about 0.26 WL at the lower
>> resonant frequency. Assume a balanced pair of full-size triangles and
>> one has the length of a 0.5 WL dipole. The latter is much more easy to
>> tune!
>>
>> The only positive thing about this antenna is the possibility of having a
>> second resonance at about two times the lower resonance.
>>
>> A somewhat fat dipole that is not necessarily resonant at any amateur

>> radio frequency (but fits your space) fed by a tuner seems to be the
>> ticket. When we built our house, I ran a wire just under the ridge line
>> as a back-up antenna.
>>
>
> Thanks for your comments Mr. McLaughlin,
>
> In the following paper
> http://www.antlab.ee.ucla.edu/~johng/fractals/puente.pdf you
> see a sierpinski construction containing 1 triangle gasket with 4
> additional sierpinski subgaskets.
> The performance is mildly impressive. For example, the 5 gaskets seem to
> act as 5 tuned
> "bowtie antennas" with the resonance points divided by 2 (with the slight
> exception of first
> gasket to 1st subgasket), a distict advantage for hams.What this means of
> course
> is a multiband, multi-resonant antenna, with a possible infinite number
> of subgaskets, although the
> paper deals with only 5. No tuner should be required (except for 1st
> gasket to 1st subgasket).
> Or. for a dipole, none of those LC circuits need be added to the dipole
> (ugh) to have
> 'resonance' at several bands. For each band, you just construct more
> triangles.
> The input return loss is rather good as well. I would really approeciate
> your comments
> if you could take a look at the paper I referenced above.
>
> TKS ES 73
> de AI4QJ
>

2750. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 03:02:25 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A568EB11C74Anonenowhere@61.9.191.5>
Source record: 27572

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
news:Xns9A55B4329A698Huckleberrybigvalley@198.186.192.196:

>
>>>
>>> No, I wouldn't say "shield" would be a proper term, either.
>>> But I
>>> would suggest that a "cancellation" similar to radiation in a
>>> balanced feedline, would be pertinent.
>
>>
>> Then I will leave you to your view that the system is balanced.
>>
>> Owen
>
>
>
> I would have preferred an explanation of your view on why it
> wouldn't
> be, but I thank you for all your prior discussion.

From my first post on the topic:

"If Ed connects parallel line from the centre of the dipole to the hot
and
common terminals of the ATU, there is likely to be common mode current on
the parallel line adjacent to the ATU. If the only connection on the tx
side of the ATU is the coax, then it will also have a common mode current
adjacent to the ATU and near enough to equal to the common mode current
on the other side of the ATU."

Sure, you can fabricate a parallel line from two coaxial lines, it just
has much more loss than a conventional air spaced line... and although it
is short, you intend operating it at extreme VSWR. The shielded twin line
you synthesise does not have any magic properties in supressing or
shielding feed line radiation.

Note that I am avoiding the term balanced line that some have used.
Balance is not forced by line geometry, but is a result of the
environment, so balanced lines are balanced by external factors, not the
line geometry.

Owen

PS: I wonder if you had considered end feeding the Inverted V with the
ATU. IIRC you had a sheet metal roof. You could just fix the tuner to the

roof, connect the ground terminal to the roof sheet, and take a wire from the ATU output terminal to the end of the inverted V (which is a continuous conductor across the apex). This is an unbalanced load connected to an unbalanced output. Is that too easy?

2751. Re: Matching Coax Impedance: To Receiver or To Antenna ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 04:53:09 UTC
From: Dan Finn <dfinn1@nc.rr.com>
Message-ID: <47cb8427$0$6506$4c368faf@roadrunner.com>
Source record: 27573

"Robert11" <rgsros@notme.com> wrote in message
news:ysOdnUH_wMtKnFbanZ2dnUVZ_vCknZ2d@comcast.com...
> Hello,
>
> Have a Scantenna antenna (receive only) in attic.
> It came with 75 ohm RG 6 coax, so presumably the output has a 75 ohm
> impedance.
> How this varies with freq. I have no idea.

Theoretically, characteristic impedance does not vary with frequency. But depending upon the quality of the dielectric, it will probably take a downward turn at about 1 GHz. It should hold on the 800MHz frequencies you are mostly interested in for the trunked frequencies.

>
> Have a new scanner that says to use 50 ohm coax.

For receive, the difference bewteen 75 ohm and 50 ohm will be nil.

>
> From old posts, the consensus seems to be that it doesn't matter if you
> use 50 or 75 ohm coax for
> a run that I have of about 50 feet.
>
> Do you folks agree with this ?

Yes, even for longer than 50 feet.

>
> From a somewhat more rigorous and theoretical view, should the coax, even
> it hardly matters, be matched to the antenna output impedance, or the
> input impedance of the scanner ?

Yes ;-) But as you say it hardly matters.

> Why ? (again, receive only)

Mismatches reduce the maximum power available from the signal to your receiver back end. However, in your case the SWR of (25/125 +1)/(1-25/125) =1.5. Thus Vmax/Vmin= 1.5 and the power lost by the mismatch = 20log (1.5) = 3.6dB.

If you were matching 50 ohm to 50 ohms on the other hand, then the power lost would be 20log(1+0)/(1-0) = 20log(1) = 0 power lost.

Compare that against the back end gain specs on your receiver, which may be 10X the 3.6dB(power) value or more, and you can see that the loss of the 75 to 50 ohm mismatch is not significant. Even for transmitting purposes, an

SWR of 1.5 is actually quite good.

>
> Any thoughts on this would be most appreciated.
>
> Thanks,
> Bob
73 de AI4QJ

2752. am/fm tuner,gps lcd screen

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 06:37:46 UTC
From: Jane Cheung <Jane.Cheung.211914f@radiobanter.com>
Message-ID: <Jane.Cheung.211914f@radiobanter.com>
Source record: 27579

Hi everybody,

We are a agent of MITSUMI (Japan brand) in Shenzhen,China.We supply
am/fm tuner,gps lcd screen from 1.8'' to 8''.
Website:www.mitsumi.co.jp/english.

Welcome to contact me by email:amanda@goldfullsemi.com for more
information about our products.I will give you my best service and
competitive price,good quality etc.Thank you.

My contact : msn:jane0891@hotmail.com
email:amanda@goldfullsemi.com

--
Jane Cheung

2753. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 07:25:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13sn9vteo0m3825@corp.supernews.com>
Source record: 27574

Ed_G wrote:
>
> If both shields, (ungrounded) are tied together, and the two > center conductors are acting as a 'balanced' feedline, how can current
> flow on the outsides of the shields, if the interior currents of the two
> center conductors are always 180 out of phase?

The answer is that making the feedline physically symmetrical doesn't make it "act as a balanced feedline". A feedline is balanced and not radiating only when the common mode current is zero, i.e., the currents on the two conductors are equal in magnitude and opposite in phase. Making a line physically symmetrical doesn't guarantee or cause this. Nor, for that matter, does making a line physically asymmetrical (e.g., coax) necessarily cause a line to become unbalance. There's more about this at http://eznec.com/Amateur/Articles/Baluns.pdf.

Roy Lewallen, W7EL

2754. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 07:48:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13snb9mg6igotd1@corp.supernews.com>
Source record: 27575

Perhaps a little amplification of what Owen has said will help clarify the situation.

Suppose we have a twinlead transmission line, one conductor of which is carrying a current of 2 amps at one point, and the other 3 amps at the same point. For simplicity, we'll assume that the currents are exactly out of phase. The common mode current (as we'll define it*) is 3 - 2 = 1 amp. (We can directly subtract them due to the assumption that they're exactly out of phase; otherwise we'd have to do a vector addition.) So the line will radiate exactly as though there was a single conductor carrying one amp. This is an unbalanced, radiating feedline.

Now let's replace the line with a coax line of the same impedance so it doesn't otherwise alter the system. What we'll find is that the center conductor will carry 2 amps. The inner surface of the outer conductor, which is always forced to be equal and opposite, carries 2 amps of opposite polarity, that is, 2 amps going exactly the opposite direction. On the outside of the shield is one amp, our common mode current. The inner and outer shield currents combine at the cable ends to become 3 amps. This line will also radiate just like a single conductor carrying one amp.

Finally let's look what happens when we use two coax lines with the shields connected but floating. Suppose the 2 amps is on the center of coax A and 3 amps on the center of coax B. On the inside of the coax A shield is 2 amps flowing one way (the direction opposite the current on the center conductor). On the inside of the coax B shield is 3 amps, flowing the other way. What happens at the ends of the shield? At each end, the 2 amps flowing one way will add to the 3 amps the other way (since they're connected at the ends so there's a path from one to the other), resulting in a 1 amp current which flows down the outside of the shield. This radiates just the same as the others, like a one amp current flowing on a single conductor. Using dual coax has accomplished nothing.

The way to prevent the feedline, whatever the type, from radiating, is to force the currents on the two conductors to be equal and opposite. This can be done by making both the antenna and the tuner symmetrical, in which case any of the three lines will be balanced and not radiate. Another way is to use one or more common mode chokes (current baluns) which will also balance any of the three line types. But just changing from one type of line to another doesn't do it.

I've simplified this analysis to deal only with constant currents, such as you'd approximately have with an electrically short transmission line. But the individual currents maintain the same ratio all along

longer lines, so the same result occurs.

(*) Common mode current is sometimes defined as half the vector sum of the two conductor currents, rather than simply the sum as done here. If you use the other definition, you assume that the common mode current is flowing on each of the two conductors to determine the amount of radiation you'll get. The end result is the same either way.

Roy Lewallen, W7EL

2755. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 07:49:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13snbbg8a5nmdd8@corp.supernews.com>
Source record: 27576

Ed_G wrote:
>
> Please read my response and question just posted to Owen. With both
> shields tied together, but not grounded, nor connected to the antenna
> either, I do not understand how common mode current is an issue on the
> shields.
>
> We could use the mast as a physical separation as you suggested, (
> the mast is not grounded, either, but again, what is the point, if the
> two coax shields were "as one" anyway?

I hope my recent postings have helped answer your question.

Roy Lewallen, W7EL

2756. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 07:53:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13snbkfjt2315fc@corp.supernews.com>
Source record: 27577

Dave Platt wrote:
>> My expertise is weak in this area, but just guessing.... using twin
>> coax in the above configuration, if the shields were grounded, would
>> allow the feedling between the antenna coupler and the feedpoint to be
>> 'balanced' and yet the shields would not radiate as they would with a
>> single coax run.
>>
>> Perhaps others, here, will either expand on this, or correct my
>> misconception.
>
> Using the center conductors of two pieces of coax, with shields bonded
> together, does create a balanced transmission line. . .

There's a semantic problem here. I and many others consider "balanced" to mean non-radiating, which requires that the two conductors carry equal and opposite currents. Others call any physically symmetrical line "balanced". As I explained in another recent posting (and in the article at http://eznec.com/Amateur/Articles/Baluns.pdf), making a line symmetrical doesn't make it balanced -- that is, it doesn't guarantee equal and opposite conductor currents and therefore doesn't guarantee that it won't radiate. A coax line can be balanced and a symmetrical twinlead line can be unbalanced.

Roy Lewallen, W7EL

2757. Re: Grounding in Sand

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 09:54:51 UTC
From: cliff wright <c.c.wright@paradise.net.nz>
Message-ID: <47cbcae8@clear.net.nz>
Source record: 27578

Harold E. Johnson wrote:
>>I don't know when the change was made. I discovered this rule when our
>>house was being built in 2003. I noticed that there were no ground rods,
>>and I started asking questions and looking into the code. Florida follows
>>the NEC without exception. No modifications or local electrical codes are
>>allowed. Of course the AHJ can override almost anything if he decides to.
>>
>>As you know, the electrical utilities generally are not bound by the NEC
>>or other codes. They follow their own rules. Also, there are a lot of
>>preexisting cases where the foundation steel is not connected to the
>>outside of the concrete. Ground rods must be used. In those cases your
>>ground-checker instrument would still be useful.
>>
>>73,
>>Gene
>>W4SZ
>
>
> I should have put a smiley face somewhere in the same zip code with the
> "recent" Gene. My experience ended in 1986 when I retired. Back then, (And
> for a good many years before) it was known as a "NEMA" Ground and 25 Ohms
> was the value.
>
> I had a country home near Brooksville, FL, with some acreage and 5 towers
> (Tallest 160 feet) for a little contesting. Being there only on weekends, it
> WAS a fairly high maintenance property. Hardly a time when I went there that
> there was not evidence of some lightning damage, even with considerable
> effort to minimize it. Before cell phones, I was close to being the highest
> thing in the county.
>
> Regards
> W4ZCB
>
>
Here of course we are talking about a safety ground connection. But for
RF grounding you could you a counterpoise to your antenna. Just a wire
array under the antenna system as used in the western desert in WW2.
That would help to make the performance of your antennas more
predictable at any rate.
Here in NZ I am having ground troubles in a new subdivision. On a heavy
clay soil with a reasonably heavy annual rainfall ~50 inches/year.
The utility company appears to have very badly balanced the 3 phase
underground power phases and it looks like we have quite a high current
circulating between local grounds on our mains earth neutral system.

Result, a lot of rf noise coming up the ground connection and even being radiated into antennas on local AM radio and ham equipment. They have been working on the problem but after 8 months we still have an s6/7 noise level across the HF bands.
We are still on their case however.
73's cliff wright ZL1BDA.

2758. Re: Matching Coax Impedance: To Receiver or To Antenna ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 11:32:24 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <b29bc2bb-d430-439f-9368-23c0115fb54c@34g2000hsz.googlegroups.com>
Source record: 27580

Hello Dan,

Can it be that Bob's situation is better with respect to losses?

75 Ohms load in a 50 Ohms system gives reflection coefficient of
(75-50)/(75+50) = 0.2 (voltage or current reflection).

So the power loss in this transition = 0.2^2 = 0.04 (4%, 0.18 dB).

The absolute worst-case situation would be when you have a quarter
wave line between a 50 Ohms source and a 50 Ohms load. The 75 Ohms
quarter wave line with 50 Ohms load will show a real impedance of
75^2/50 = 112.5 Ohm. This results in a reflection coefficient of
0.38, hence a power loss of 0.15 (0.7 dB). Of course when the line is
0.5 lambda long, there will be no additional loss.

Best regards,

Wim

2759. Large Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 13:29:11 UTC
From: EE123 <onyx49@juno.com>
Message-ID: <c8f1f9cc-ac00-44ec-be68-04ed17b5b978@c33g2000hsd.googlegroups.com>
Source record: 27581

Right now I am looking at modifying a unit that receives 850, 900
frequencies.
What I am curious about is the concept of small antennas only in
reverse.
A small antenna might be a autombile antenna used for AM reception.

So, taking the unit to receive 850, 900 MHz freuquences, how well
would it receive 2.4 GHZ frequences?
It would seem that it would receive 2.4 GHZ well due to the concept of
effective length but I am not sure.

Any comments?

Thanks, Dave

2760. Re: Large Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 14:23:27 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <VfydndH2K-VslFHanZ2dnUVZ8tqinZ2d@bt.com>
Source record: 27582

"EE123" <onyx49@juno.com> wrote in message
news:c8f1f9cc-ac00-44ec-be68-04ed17b5b978@c33g2000hsd.googlegroups.com...
>
> Right now I am looking at modifying a unit that receives 850, 900
> frequencies.
> What I am curious about is the concept of small antennas only in
> reverse.
> A small antenna might be a autombile antenna used for AM reception.
>
> So, taking the unit to receive 850, 900 MHz freuquences, how well
> would it receive 2.4 GHZ frequences?
> It would seem that it would receive 2.4 GHZ well due to the concept of
> effective length but I am not sure.
>
> Any comments?
>
> Thanks, Dave
>
>
Dave

While it is true that the antenna will be several wavelengths long and will work reasonably well for receiving there are other factors to take into consideration. As frequencies get higher, signal levels are generally at lower levels. There isn't so much atmospheric noise to overcome and at frequencies above VHF, most communications are line of sight.

For this reason transmitter powers are generally much lower and directional antennae are used as the cheapest way of boosting signal strengths. Log periodic and yagi antenna designs are among the best known types of directional antennae, but other designs can be used very effectively.

Your AM automobile antenna receiving pattern will be broken up into a series of lobes due to its being several wavelengths long at 850-900 MHz. The performance in any given direction will be a bit of a lottery. Have a look at the EZNEC program to get some idea of how the transmitting and receiving patterns of antennae change with frequency and multiple wavelengths of antenna.

For all round (omni directional) reception, the height the antenna is mounted is more critical than anything else. Whatever design you decide upon, get your antenna as high as possible and connect it to the receiver using good quality, low loss cable. Satellite cable will do at a pinch. Even a simple dipole antenna mounted vertically and clear of obstructions around 30 feet up should provide a host of signals. The dipole elements only need

to be around 6 inches long. That should give you an idea of what signals are about and you can progress from there.

Mike G0ULI

2761. Re: Large Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 15:07:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GtUyj.5166$pl4.134@newssvr22.news.prodigy.net>
Source record: 27583

EE123 wrote:
> So, taking the unit to receive 850, 900 MHz freuquences, how well
> would it receive 2.4 GHZ frequences?

If it is vertical and omnidirectional, it will probably
become an end-fire antenna at the higher frequencies.
That means it will likely be directional but mostly
in an up direction. The same thing happens when
a 19 inch vertical whip is used on 440 MHz.
--
73, Cecil http://www.w5dxp.com

2762. Field strength / power / path loss calculator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 17:08:24 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A5729FB9E670nonenowhere@61.9.191.5>
Source record: 27584

If you regularly have need to calculate field strength / power / path loss according to Friis transmission formula, you may find a little calculator I have written to be handy.

The calculator is called FSC (for field strength calculator) and is a Windows application, more specifically it requires the .NET Framework V2 which is installed on most recent computers, or can be downloaded from Microsoft at no charge.

The calculator is described at http://www.vk1od.net/fsc and can be downloaded and used at no charge.

Owen

2763. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 17:11:25 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A565D7DFE083Huckleberrybigvalley@198.186.192.196>
Source record: 27585

>> Using the center conductors of two pieces of coax, with shields
>> bonded together, does create a balanced transmission line. . .

> There's a semantic problem here. I and many others consider "balanced"
> to mean non-radiating, which requires that the two conductors carry
> equal and opposite currents. Others call any physically symmetrical
> line "balanced". As I explained in another recent posting (and in the
> article at http://eznec.com/Amateur/Articles/Baluns.pdf), making a
> line symmetrical doesn't make it balanced -- that is, it doesn't
> guarantee equal and opposite conductor currents and therefore doesn't
> guarantee that it won't radiate. A coax line can be balanced and a
> symmetrical twinlead line can be unbalanced.
>
> Roy Lewallen, W7EL
>

In the past, I normally have always used a balanced tuner on my balanced antenna systems..... this one under discussion, being one of those SGC antenna couplers, is NOT balanced..... It did not occur to me that the currents through the twin coax feedlines to the balanced antenna would not be equal. So, to make sure I am understanding you correctly, this un-symmetrical current could also occur in open ladder-line?

Obviously the weakness of my antenna knowledge has been exposed. My thanks to Roy, AND to Owen.

Ed

2764. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 17:15:01 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A565E1ABEA3CHuckleberrybigvalley@198.186.192.196>
Source record: 27586

Owen Duffy <none@no.where> wrote in
news:Xns9A568EB11C74Anonenowhere@61.9.191.5:

> "Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
> news:Xns9A55B4329A698Huckleberrybigvalley@198.186.192.196:
>
>>
>>>>
>>>> No, I wouldn't say "shield" would be a proper term, either.
>>>> But I
>>>> would suggest that a "cancellation" similar to radiation in a
>>>> balanced feedline, would be pertinent.
>>
>>>
>>> Then I will leave you to your view that the system is balanced.
>>>
>>> Owen
>>
>>
>>
>> I would have preferred an explanation of your view on why it
>> wouldn't
>> be, but I thank you for all your prior discussion.
>
> From my first post on the topic:
>
> "If Ed connects parallel line from the centre of the dipole to the hot
> and
> common terminals of the ATU, there is likely to be common mode current
> on the parallel line adjacent to the ATU. If the only connection on
> the tx side of the ATU is the coax, then it will also have a common
> mode current adjacent to the ATU and near enough to equal to the
> common mode current on the other side of the ATU."
>
> Sure, you can fabricate a parallel line from two coaxial lines, it
> just has much more loss than a conventional air spaced line... and
> although it is short, you intend operating it at extreme VSWR. The
> shielded twin line you synthesise does not have any magic properties
> in supressing or shielding feed line radiation.
>
> Note that I am avoiding the term balanced line that some have used.
> Balance is not forced by line geometry, but is a result of the
> environment, so balanced lines are balanced by external factors, not
> the line geometry.

>
> Owen
>
> PS: I wonder if you had considered end feeding the Inverted V with the
> ATU. IIRC you had a sheet metal roof. You could just fix the tuner to
> the roof, connect the ground terminal to the roof sheet, and take a
> wire from the ATU output terminal to the end of the inverted V (which
> is a continuous conductor across the apex). This is an unbalanced load
> connected to an unbalanced output. Is that too easy?
>
>

Owen, after reading Roy's explanation, I came back to this one
and what you have been saying is now more clear to me.

I will have to check what is available for end feed on the roof,
but it is a completely rubber covered roof and I doubt there is any
convinent way to access a ground. Tnx.

Ed

2765. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 17:28:46 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqhcge$v23$2@news.jpl.nasa.gov>
Source record: 27587

Sonny Hood wrote:
> On Wed, 27 Feb 2008 15:05:54 -0800, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>
>>The gain and pattern will be very close to that of a dipole at a height
>>of about 24 feet. Maximum field strength will be straight up, and quite
>>dependent on the ground characteristics.
>>
>>What's a point incident antenna?
>>
>
> Hi Roy, I consider it the radiation point of a "0" length element
> which radiates in spherical direction.

Careful there. A "zero length" (or infinitesimal) dipole (aka a
Hertzian dipole) does not have an isotropic (spherical) pattern. It has
1.64dBi directivity, as I recall.

2766. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 18:21:58 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <blXyj.2376$4m3.1972@bignews7.bellsouth.net>
Source record: 27588

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in message
news:Xns9A565E1ABEA3CHuckleberrybigvalley@198.186.192.196...
> Owen Duffy <none@no.where> wrote in
> news:Xns9A568EB11C74Anonenowhere@61.9.191.5:
>
>> "Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
>> news:Xns9A55B4329A698Huckleberrybigvalley@198.186.192.196:
>>
>>>
>>>>>
>>>>> No, I wouldn't say "shield" would be a proper
>>>>> term, either.
>>>>> But I
>>>>> would suggest that a "cancellation" similar to
>>>>> radiation in a
>>>>> balanced feedline, would be pertinent.
>>>
>>>>
>>>> Then I will leave you to your view that the system is
>>>> balanced.
>>>>
>>>> Owen
>>>
>>>
>>>
>>> I would have preferred an explanation of your view on
>>> why it
>>> wouldn't
>>> be, but I thank you for all your prior discussion.
>>
>> From my first post on the topic:
>>
>> "If Ed connects parallel line from the centre of the
>> dipole to the hot
>> and
>> common terminals of the ATU, there is likely to be common
>> mode current
>> on the parallel line adjacent to the ATU. If the only
>> connection on
>> the tx side of the ATU is the coax, then it will also
>> have a common
>> mode current adjacent to the ATU and near enough to equal
>> to the
>> common mode current on the other side of the ATU."

>>
>> Sure, you can fabricate a parallel line from two coaxial
>> lines, it
>> just has much more loss than a conventional air spaced
>> line... and
>> although it is short, you intend operating it at extreme
>> VSWR. The
>> shielded twin line you synthesise does not have any magic
>> properties
>> in supressing or shielding feed line radiation.
>>
>> Note that I am avoiding the term balanced line that some
>> have used.
>> Balance is not forced by line geometry, but is a result
>> of the
>> environment, so balanced lines are balanced by external
>> factors, not
>> the line geometry.
>>
>> Owen
>>
>> PS: I wonder if you had considered end feeding the
>> Inverted V with the
>> ATU. IIRC you had a sheet metal roof. You could just fix
>> the tuner to
>> the roof, connect the ground terminal to the roof sheet,
>> and take a
>> wire from the ATU output terminal to the end of the
>> inverted V (which
>> is a continuous conductor across the apex). This is an
>> unbalanced load
>> connected to an unbalanced output. Is that too easy?
>>
>>
>
>
> Owen, after reading Roy's explanation, I came back
> to this one
> and what you have been saying is now more clear to me.
>
> I will have to check what is available for end feed on
> the roof,
> but it is a completely rubber covered roof and I doubt
> there is any
> convinent way to access a ground. Tnx.
>
> Ed
>
>

What about running radials made of lengths of burlar alarm metal tape? A coat of black spray paint will make them nearly invisible on a black roof.

I didn't see your frequency requirements, but I have had excellent results from a Cushcraft R7. I am amazed at just how well it works, even on 75m (by accident!).

Ed, NM2K

2767. Re: tv ant look alike? LP

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 19:00:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <XUXyj.4264$fX7.3428@nlpi061.nbdc.sbc.com>
Source record: 27589

Dave Platt wrote:
> It's important to understand that with digital TV, the "station
> number" displayed on the TV, and to which you tune, doesn't
> necessarily correspond to the actual RF frequency.

I just got my first HDTV. My rabbit ears work just
fine on the HDTV signals. Here in Tyler, TX, I get
analog channels 7, 19, 51, & 56. I now get additional
digital channels 7.1, 7.2, 7.3, 19.1, 19.2, 22.3,
51.1, 51.2, 56.1, & 56.2. Incidentally, 7.1 is VHF
Channel 10.
--
73, Cecil http://www.w5dxp.com

2768. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 20:00:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13som61s3is9kc7@corp.supernews.com>
Source record: 27590

Ed_G wrote:
> In the past, I normally have always used a balanced tuner on my
> balanced antenna systems..... this one under discussion, being one of
> those SGC antenna couplers, is NOT balanced..... It did not occur to me
> that the currents through the twin coax feedlines to the balanced
> antenna would not be equal. So, to make sure I am understanding you
> correctly, this un-symmetrical current could also occur in open ladder-
> line?

Yes, that's correct. I suggest taking a look at the article I posted the link to -- it discusses this in more detail.

> Obviously the weakness of my antenna knowledge has been exposed. My
> thanks to Roy, AND to Owen.

Glad to help.

Roy Lewallen, W7EL

2769. Re: ? 75M Inverted Vee GAIN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 20:02:12 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13soma69u4b2p0e@corp.supernews.com>
Source record: 27591

Jim Lux wrote:
> Sonny Hood wrote:
>> On Wed, 27 Feb 2008 15:05:54 -0800, Roy Lewallen <w7el@eznec.com>
>> wrote:
>>
>>
>>> The gain and pattern will be very close to that of a dipole at a
>>> height of about 24 feet. Maximum field strength will be straight up,
>>> and quite dependent on the ground characteristics.
>>>
>>> What's a point incident antenna?
>>>
>>
>> Hi Roy, I consider it the radiation point of a "0" length element
>> which radiates in spherical direction.
>
>
> Careful there. A "zero length" (or infinitesimal) dipole (aka a
> Hertzian dipole) does not have an isotropic (spherical) pattern. It has
> 1.64dBi directivity, as I recall.

His definition fits the description of an isotropic antenna. It's not a dipole or any other kind of real antenna, and has a directivity of one by definition.

Roy Lewallen, W7EL

2770. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 20:04:53 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-9F5BB9.11045303032008@netnews.worldnet.att.net>
Source record: 27592

In article <Xns9A557C9EAFCF9Huckleberrybigvalley@198.186.192.196>,
"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote:

> > "Left Floating" so that there is less Capacitance to RF Ground, and
> > more distance between the vertical parallel Feedlines. It would even
> > help if you can use twin Coax Runs, to put them on opposite sides of
> > the Aluminum Mast, which would give you more separation with the same
> > Coupling Capacitance to the Mast. Capacitive coupling to RF Ground,
> > is the Killer here, and you MUST reduce that, as much as possible,
> > if your system is going to have any chance at reasonable operation.
> >
>
>
> Please read my response and question just posted to Owen. With both
> shields tied together, but not grounded, nor connected to the antenna
> either, I do not understand how common mode current is an issue on the
> shields.
>
> We could use the mast as a physical separation as you suggested, (
> the mast is not grounded, either, but again, what is the point, if the
> two coax shields were "as one" anyway?
>
>
> Ed
> I

Most of the discussion here is more esoteric, than practical. You have
an imposed Antenna Requirement, that gives you little wiggle room in
what you can do. I have given you the ideas, that are proven in the
Real World, for installations with similar requirements. As I stated
in my first post, these type systems, ALL preform equally BAD, when
compared to the Antenna Systems, that these type tuners were DESIGNED
to feed. They are intended to feed a Marconi Vertical, with a very
Low Impedance RF Ground. That is where they work BEST. Everything else
will be a poorer situation. How poor, will depend on a BIG pile of
variables, most of which are esoteric in significance, and will
not make a significant difference in actual Practical Performance of the
Station. Again as I stated in my last post, Capitative Coupling to
RF Ground is the BIG Killer, the second largest problem is selecting
antenna length, so as the Natural Impedance of the antenna is NOT
anywhere near a frequency that you need to operate on. All the rest,
is Picking Nits, and can be discussed at infinitum, without changing
the actual performance in any significant way. One of the posters
suggested building an "counterpoise", (God, I hate that Term) RF Ground
from Aluminum Alarm Tape, on the roof, and then feeding what would be

essentially a end feed wire antenna. That would be preferable, IF you could get the Biggies to go along, but that was NOT, part of the original Problem. In the real WORLD, your Comm's are going to depend more on, if the Band is Open, for your Distance, and Frequency, to the destination, than the Antenna design, and if the Band is NOT open, you aren't going to talk, as Ground Wave Comm's are not usually a significant part of HF Communications.

Just a note, for historical purposes. There was a highly modified SEA1612B Tuner that was designed to feed a Balanced Antenna. It was fabricated out of Two, (2) Tuner Boards, using a Common CPU/Sensor System, that determined the configuration of the Switched Elements on one side of the Antenna, and then locked the same configuration on the Second board for the other side. This scheme was developed by Don Hollingsworth Sr. at G&L Marine Radio, in Seattle, Washington, and was deployed in one or two installations of Maritime Mobile Limited Coast Stations. I never did hear just how well they worked.

--
Bruce in alaska
add <path> after <fast> to reply

2771. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 20:22:22 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A574ADE2BED4nonenowhere@61.9.191.5>
Source record: 27593

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
news:Xns9A52AB752D939Huckleberrybigvalley@198.186.192.196:

>
> Our ARES group plans on installing an Inverted V antenna on the
> second story flat roof edge of a local building. The antenna mast is
> 13 feet tall above the roof edge. The Inverted V will run parallel the
> edge of the roof and be approximately 35 - 40 feet per leg. Our
> primary operations will be 80/75/40M with a desired ability on 60M.
> The building custodian/owner will not tolerate open wire feedline with
> its associated standoffs due to aesthetic considerations, so we must
> feed this antenna with coax fastened to the mast. At the base of the
> mast, on the roof, we will be using an SGC-237 antenna coupler.
>
> The above setup is a given, with no room for compromise.
>
> My questions for this group are as follows:
>
> Would we be better feeding the above antenna feedpoint with twin
> coax
> runs, using the center conductors as a 'balanced' feedline, or would
> we be better of using a single coax to the feedline? In either case,
> the coax runs will not exceed 20 feet and we must accept the losses in
> them. Email response from SGC seems to indicate we would be better

Ed,

I would consider the following:

Mount the ATU at an accessible place on the masting near the lowest end.
Bond the ATT's ground terminal to the mast.

If there is a lighting protection conductor, steel rain gutter, steel
roof in proximity of the base of the mast, bond the base of the mast to
them also using substantial conductors (>16mm^2).

At the top of the mast, bond one side of the dipole to the mast.

Run an RG213 or better coax from the ATU to the top of the mast, bond the
shield at both ends to the mast. Connect the inner conductor at the top
to the other side of the dipole, and at the bottom to the output terminal
on the ATU. You must treat the ends of the coax to prevent water ingress.
LDF4-50 would be an even better choice because its closed cell bonded
foam dielectric is better protection against water ingress (it also has
lower loss and higher breakdown voltage). I would not use a foil shielded
coax.

Connect the DC / control wires and input coax to the base of the tuner, but route them through a common mode choke. You may well be able to use RG58C/U for the input feed line (depending on length). Wind several turns of the coax and DC / control wires together through a large ferrite toroid (#43 should be fine). Two or three of these chokes should probably be adequate. You may also want one or two chokes where you enter the equipment room.

Treat all connections to prevent corrosion, especially considering dissimilar metals.

There is likely to be common mode current on the feedline / mast above and below the tuner. The chokes reduce the extent of it to minimise the contibution of the feedline to the radiation system / RFI and conversely feed line noise pickup, and act to reduce RF "flowing into the shack".

> off with a single feedline, but I am dubious about the SGC Tech Rep's
> response since he/she does not seem concerned about feedline
> radiation.

You can take measures as above to minimise the downsides of the lack of system symmetry.

SGC have recommended attaching symmetric loads to their assymetric tuners for a long time (they sell tuners, and didn't at the time have a balanced tuner), and hams have proved it "works" whatever that means.

>
> Also, what recomendations do you guys have for use of a balun?

See the discussion above about a common mode choke.

> I
> believe, at the least, we would need a 1:1 balun at the Input of the
> SGC coupler so as to keep RF from getting back down the shield and
> into the building. SGC response seems to indiate they don't think a
> balun is necessary anywhere, which is another reason I am not
> thrilled with their response.

See above.

Owen

2772. WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-03 23:37:36 UTC
From: W4NNG <mh@soalex.us>
Message-ID: <8Z%yj.7939$XO4.2669@newsfe19.lga>
Source record: 27594

Hello fellow HRO's

I've got a 50ft tower w/ rotor. Been thinking mounting a 2.4 Ghz WiFi antenna on the rotor to see what it picks up in way of WAP / WLAN's

To get around cable loss problem was going to put a USB adapter at antenna then run USB cable up tower. Have tested USB at ~ 5X it's spec'd range but suspect the 60 - 70' run will be way too long.

Anyone know of a way to 'remodulate' so to speak to 802.11 wirelessly link the output from the antenna mounted adapter back to computer?

Thanks for any thoughts

Bob

W4NNG

2773. Re: Wire Antenna/ Tree interaction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 00:18:00 UTC
From: Homer J <homerj@home.com>
Message-ID: <2100f$47cc9516$ce947013$17749@DIALUPUSA.NET>
Source record: 27595

You can match any thing to a transmitter with a good antenna tuner, the question is the radiation resistance low enough to efficently transfer energy to free space?

When using a G5RV that was close but not touching the branch of tree I got a flat match, could receive well but did not get out worth a damn. Moving the antenna to an area where there were no trees and using 2 30 Rohn telescopic masts as end poles made a big difference, got a flat match, RX and TX were great.

My 2 cents worth on the subject but I as usual someone will say they transmit great with the branchs laying right on the wire.

I agree with the arcing and fire saw that happen when a wet branch connected with a 660 VAC line on a utility pole once.

Homer J

"marc" <amarcpassy@gmail.com> wrote in message
news:b751efc7-0b80-405e-a91b-d13623160a68@q78g2000hsh.googlegroups.com...
> I'm a noob, and I'm considering installing a wire antenna using the
> sole tree on my lot as one end. My question is "Is it dangerous if
> the antenna touches the tree branches/leaves during transmit?" I'm
> less worried about performance right now and more safety.
>
> Marc
> W5AMP

2774. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 00:41:19 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <k-WdnZFsGt3SB1HanZ2dnUVZ8vydnZ2d@pipex.net>
Source record: 27596

W4NNG wrote:
> Hello fellow HRO's
>
> I've got a 50ft tower w/ rotor. Been thinking mounting a 2.4 Ghz WiFi
> antenna on the rotor to see what it picks up in way of WAP / WLAN's
>
> To get around cable loss problem was going to put a USB adapter at antenna
> then run USB cable up tower. Have tested USB at ~ 5X it's spec'd range but
> suspect the 60 - 70' run will be way too long.
>
> Anyone know of a way to 'remodulate' so to speak to 802.11 wirelessly link
> the output from the antenna mounted adapter back to computer?
==========
You might wish to consider a wireless router ,with detachable antenna
instead ,either with a standard antenna ,all in a wx-proof enclosure or
with an external high gain antenna.
The advantage of using a router is using a ethernet (cat5) cable of any
length. You obviously have to strap a 12V-DC power cable to the cat5
cable for 'feeding' the router.
The router produces enough heat to keep itself dry in its wx proof
enclosure.

When using a USB2 wireless adaptor you will need special amplifying 5
metres long cables (I believe up to 3 can be put in series making the
max length approx 15 metres which is short of your 20+ metres
Moreover you would have to wx-proof the joints which contain the amplifiers
When using a USB adapter you might be in a position to fit this device
in the focal point of a satellite dish which with its high gain (but
being directive) would possibly not necessitate installation on top of a
mast , enabling a shorter distance to your 'service point'
Just some ideas ....

Frank GM0CSZ / KN6WH

2775. Re: Wire Antenna/ Tree interaction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 01:35:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13sp9ro95q6fi18@corp.supernews.com>
Source record: 27597

Homer J wrote:
> You can match any thing to a transmitter with a good antenna tuner, the
> question is the radiation resistance low enough to efficently transfer
> energy to free space?

The radiation resistance is simply an imaginary circuit element whose dissipation represents the energy transferred to free space. So 100% of the energy supplied to the radiation resistance, whatever its value, is transferred to free space -- by definition.

That said, the radiation resistance does play a role in determining what percentage of the power supplied to the antenna is radiated and what percentage is dissipated as heat. The formula is:

Efficiency = Rrad / (Rloss + Rrad)

where Rrad is the radiation resistance and Rloss the loss resistance. It's essential that both values be referred to the same point. So you can see from this simple formula that for a fixed amount of loss, the higher the radiation resistance, the higher the efficiency. But also keep in mind that the signal from a 79% efficient antenna is only 1 dB lower than from a 100% efficient antenna, so there's not much point in worrying about the last few (or, often, many) percent.

The feedpoint impedance, part of which is the radiation resistance, has to be matched in order to get power to it in the first place. And most tuners are efficient only over a limited range of impedances. So very high or low radiation resistance can result in loss in the tuner, reducing your overall efficiency.

> When using a G5RV that was close but not touching the branch of tree I
> got a flat match, could receive well but did not get out worth a damn.
> Moving the antenna to an area where there were no trees and using 2 30
> Rohn telescopic masts as end poles made a big difference, got a flat
> match, RX and TX were great.

A good impedance match doesn't tell you anything about the antenna or system efficiency. But on HF if you can hear signals a lot better than they can hear you, it's a sign of poor system (antenna and tuner) efficiency.

> My 2 cents worth on the subject but I as usual someone will say they
> transmit great with the branchs laying right on the wire.

The effect of branches touching the wire depends very strongly on where along the antenna the branches touch relative to the points of highest E field. So two people could have very different results from touching

branches. Also, you could have very different results on different bands
from the same antenna and same branches.

> . . .

Roy Lewallen, W7EL

2776. Re: RF Calculator Tool Online - Solve Antenna Equations and Electronic Circuit equations

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 01:51:31 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqi9v3$800$1@news.jpl.nasa.gov>
Source record: 27600

Alan Peake wrote:
> Looks good. I learnt a new word though - "Ampacity"
> Won't find that in the OED :)
> Alan
>
>
You'll find it in the National Electrical Code, though....
(and in the Electrical Engineering Dictionary, published by CRC)

2777. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 01:55:37 UTC
From: Cheers <moussa_el@hotmail.com>
Message-ID: <MPG.22373b00ee9cb091989848@freenews.iinet.net.au>
Source record: 27598

In article <MELxj.4396$tW.2804@nlpi070.nbdc.sbc.com>, nospam@w5dxp.com
says...
> Cheers wrote:
> > finding the right non inductive resistor has proven to be a challenge so
> > far.
>
> I have a bunch of 600 ohm 50 watt non-inductive resistors.
> My email address is w5dxp@hotmail.com
>
Hi

Sent you an email to the above address few days ago, have you received
it?

--
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or used by http://www.jealous.com

2778. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 01:58:39 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqiacf$d7v$1@news.jpl.nasa.gov>
Source record: 27599

W4NNG wrote:
> Hello fellow HRO's
>
> I've got a 50ft tower w/ rotor. Been thinking mounting a 2.4 Ghz WiFi
> antenna on the rotor to see what it picks up in way of WAP / WLAN's
>
> To get around cable loss problem was going to put a USB adapter at antenna
> then run USB cable up tower. Have tested USB at ~ 5X it's spec'd range but
> suspect the 60 - 70' run will be way too long.
>
> Anyone know of a way to 'remodulate' so to speak to 802.11 wirelessly link
> the output from the antenna mounted adapter back to computer?
>
> Thanks for any thoughts
>
> Bob
>
> W4NNG
>
>
>
>
Use ethernet up the tower and PoE (Power over Ethernet). There's lots of
off the shelf solutions here.

RF interference to/from the Ethernet (or USB for that matter) would be
an issue.

You can also do fiber optics (for ethernet, you can pick up
ethernet:fiber media converters surplus quite cheaply.. Then it's just
the fiber cable with connectors already attached, which can be found
fairly inexpensively, if you scrounge. Fiber is cheaper than coax, in
general.)

Or, as someone else suggested, use a second wireless adapter with a
directional antenna to bridge it to your shack. Then all you need up
the tower is DC power.

You might be able to do it with something like a single WRT54, too.

2779. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 02:22:12 UTC
From: Cheers <moussa_el@hotmail.com>
Message-ID: <MPG.22374137a334434d989849@freenews.iinet.net.au>
Source record: 27501

In article <MPG.222fc84286896731989844@freenews.iinet.net.au>,
moussa_el@hotmail.com says...
>
> Hi
>
> can someone explain how to connect 2 voltage 4:1 baluns in series to
> achieve 16:1
>
> Thanks
>
Bit of update

finished the antenna and got it up and running yesterday, the only HF
gear I have ATM is a 27MHz SSB Cb radio (12 watt), got 1.5-1.6/SWR, so I
guess is working ?:-) (lot of thanks for those who helped)

I was lucky to find 2mm(SQ) tinned wire Insulated, I made the resistor
out of 20 x 18k CF 1w resistor soldered in parallel.
my next question is how much power this antenna can or should handle?
I was thinking somewhere around 20 watts ?

--
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the poster, and specifically may not be published in,
or used by http://www.jlaforums.com

2780. Re: Matching Coax Impedance: To Receiver or To Antenna ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 02:28:54 UTC
From: Dan Finn <dfinn1@nc.rr.com>
Message-ID: <47ccb3e5$0$24094$4c368faf@roadrunner.com>
Source record: 27502

"Wimpie" <wimtel@tetech.nl> wrote in message
news:b29bc2bb-d430-439f-9368-23c0115fb54c@34g2000hsz.googlegroups.com...
> Hello Dan,
>
> Can it be that Bob's situation is better with respect to losses?
>
> 75 Ohms load in a 50 Ohms system gives reflection coefficient of
> (75-50)/(75+50) = 0.2 (voltage or current reflection).

We agree at this point. My SWR of 1.5 was calculated by (1 + rho)/(1-rho) = 1.2/.8 = 1.5. Given that the SWR = 1.5 Vmax/Vmin = 1.5. The mismatch produces a reflected to forward voltage "gain" on the transmission line of 1.5 to 1. In dB, this gain is expressed as 10log(Vout/Vin). Since this is a ratio, the impedance cancels, and we know that power is proportional to voltage squared, thus Ploss would be 2 X 10log(Vout/Vin) = 20 log(1.5) = 3.6dB. If this seems like a "lot" when compared to your 0.18dB, intuitively it seems right to me since the impedance mismatch is actually fairly large, i.e the 75 ohm coax has 50% higher characteristic impedance than the 50 ohm load, even though it ultimately does not make a big difference when compared to the gain of the back end of the receiver that converts microvolt signals to millivolt levels.

> So the power loss in this transition = 0.2^2 = 0.04 (4%, 0.18 dB).

If I made a mistake, this would explain why. I need to find a reference that has the derivation showing that rho**2 = power lost. Since rho is unitless and power is in units of watts, it seems unlikley on the face of it unless something is being cancelled out that I am unaware of. If you have such a reference handy, please post it. Otherwise I will try to find it myself. It has been about 40 years since I took my last RF course so maybe you can understand if I am a bit rusty ;-)

> The absolute worst-case situation would be when you have a quarter
> wave line between a 50 Ohms source and a 50 Ohms load. The 75 Ohms
> quarter wave line with 50 Ohms load will show a real impedance of
> 75^2/50 = 112.5 Ohm. This results in a reflection coefficient of
> 0.38, hence a power loss of 0.15 (0.7 dB). Of course when the line is
> 0.5 lambda long, there will be no additional loss.

I think that, other than resistive losses, the length of a transmission line has absolutely nothing to do with the SWR (and power loss due to mismatch) OTHER THAN the impedance discontinuity of the match at the antenna feedpoint. In the above example I assumed a perfect match and was only considering the mismatch of the load to the characteristic impedance of the coax.
>

> Best regards,
>
> Wim

73 de AI4QJ

2781. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 03:00:21 UTC
From: ml <m@di.net>
Message-ID: <m-9B2477.22001903032008@news.verizon.net>
Source record: 27503

In article <Xns9A52AB752D939Huckleberrybigvalley@198.186.192.196>,
"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote:

> Our ARES group plans on installing an Inverted V antenna on the
> second story flat roof edge of a local building. The antenna mast is 13
> feet tall above the roof edge. The Inverted V will run parallel the edge
> of the roof and be approximately 35 - 40 feet per leg. Our primary
> operations will be 80/75/40M with a desired ability on 60M. The
> building custodian/owner will not tolerate open wire feedline with its
> associated standoffs due to aesthetic considerations, so we must feed
> this antenna with coax fastened to the mast. At the base of the mast,
> on the roof, we will be using an SGC-237 antenna coupler.
>
> The above setup is a given, with no room for compromise.
>
> My questions for this group are as follows:
>
> Would we be better feeding the above antenna feedpoint with twin coax
> runs, using the center conductors as a 'balanced' feedline, or would we
> be better of using a single coax to the feedline? In either case, the
> coax runs will not exceed 20 feet and we must accept the losses in them.
> Email response from SGC seems to indicate we would be better off with a
> single feedline, but I am dubious about the SGC Tech Rep's response
> since he/she does not seem concerned about feedline radiation.
>
> Also, what recomendations do you guys have for use of a balun? I
> believe, at the least, we would need a 1:1 balun at the Input of the SGC
> coupler so as to keep RF from getting back down the shield and into the
> building. SGC response seems to indiate they don't think a balun is
> necessary anywhere, which is another reason I am not thrilled with
> their response.
>
> Comments?
>
>
> Ed K7AAT

hi Ed

you might try using a plastic mast (pvc or fiberglass) with enought
strength to survive the load and weather thats hollow and try running
laddar line inside

you can use some solid plastic pipe some ham places sell it or
even a short piece ofmetal mast if you can cut a small slot in

the plastic such that it's integraity is good or u can run the
laddar line down the outside of the plastic pipe pprobably easist
and paint it all black w/rf ok paint very hard to see the feed line
then

way back when i spoke to somone that was 'smart' at sgc and they said
using a short piece of laddar line to feed the dipole (as they way i
happened to do mine almost exactly as you described) they said it was
less than ideal but not bad as long as the laddar line was i believe
less than 10??ft long they said the output definately shouldn't
have any balun as far as the coax feeding the tuner?? most
seemed to agree it wasn't needed but i thru one in anyway both on
the roof and in my shack

my set up thou slightly different than yours unscientifically seems to
work very well, i don't have nasty stuff on my coax run to the tuner
my swr even w/a very short dipole is nearly almost always max at 1.2
worst case the tuner tunes in seconds and i've enjoyed some pretty
good fun the total length of my dipole is maybe less than 40ft

is my set up ideal? or good as a beam? i'd guess not but i had co
op board roof constraints as you sorta have so it's best effort
and i've had a blast with it from 160 to 6m

i got a bunch of my ideas for it's actual design and final construction
from my fooling aournd , here in this group , sgc personal I think i
spoke to the original owner once, there manuals and googling

goodluck Ed

2782. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 03:18:19 UTC
From: W4NNG <mh@soalex.us>
Message-ID: <Dc3zj.9821$QC.193@newsfe20.lga>
Source record: 27504

Thanks for all the suggestions

Don't understand the '... second wireless adapter ...' suggestion? where's
it get power?

I've got an EUB-362EXT adapter. (has an SMA connect) Was the longest range
device I could find. Antenna will be connected directly to it, rather than
using the adapter dipole inserted inside a reflector

FWIW - The EUB adapter significantly out-performs a low cost linksys usb
adapter both using their own antenna's. Parked at same location linksys
found 2 WAP's the EUB found 8

"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:fqiacf$d7v$1@news.jpl.nasa.gov...
W4NNG wrote:
> Hello fellow HRO's
>
> I've got a 50ft tower w/ rotor. Been thinking mounting a 2.4 Ghz WiFi
> antenna on the rotor to see what it picks up in way of WAP / WLAN's
>
> To get around cable loss problem was going to put a USB adapter at antenna
> then run USB cable up tower. Have tested USB at ~ 5X it's spec'd range
but
> suspect the 60 - 70' run will be way too long.
>
> Anyone know of a way to 'remodulate' so to speak to 802.11 wirelessly link
> the output from the antenna mounted adapter back to computer?
>
> Thanks for any thoughts
>
> Bob
>
> W4NNG
>
>
>
>
Use ethernet up the tower and PoE (Power over Ethernet). There's lots of
off the shelf solutions here.

RF interference to/from the Ethernet (or USB for that matter) would be
an issue.

You can also do fiber optics (for ethernet, you can pick up
ethernet:fiber media converters surplus quite cheaply.. Then it's just

the fiber cable with connectors already attached, which can be found fairly inexpensively, if you scrounge. Fiber is cheaper than coax, in general.)

Or, as someone else suggested, use a second wireless adapter with a directional antenna to bridge it to your shack. Then all you need up the tower is DC power.

You might be able to do it with something like a single WRT54, too.

2783. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 04:05:49 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <xU3zj.9633$C1.1984@trnddc07>
Source record: 27505

```
" W4NNG" <mh@soalex.us> wrote in message
news:Dc3zj.9821$QC.193@newsfe20.lga...
> Thanks for all the suggestions
>
> Don't understand the '... second wireless adapter ...' suggestion?
> where's
> it get power?
>
> I've got an EUB-362EXT adapter. (has an SMA connect) Was the longest
> range
> device I could find. Antenna will be connected directly to it, rather
> than
> using the adapter dipole inserted inside a reflector
>
> FWIW - The EUB adapter significantly out-performs a low cost linksys usb
> adapter both using their own antenna's. Parked at same location linksys
> found 2 WAP's the EUB found 8
>

Hi Bob

It would seem that Frank's (KN6WH) suggestion about using a Bridge or
Router, or Switch avoids alot of the USB limitations. Have you tried using
a CAT 5 device located at the top of the tower?
I thought the CAT 5 devices were far better than USB for remote WiFi.
But, if you have data / experience that shows otherwise, I'd like to learn
more about why the USB is chosen.

Jerry KD6JDJ
```

2784. Re: 2 x 4 to 1 voltage balun in series

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 04:39:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <to4zj.14859$Ej5.10880@newssvr29.news.prodigy.net>
Source record: 27506

Cheers wrote:

>> I have a bunch of 600 ohm 50 watt non-inductive resistors.
>> My email address is w5dxp@hotmail.com
>>
> Sent you an email to the above address few days ago, have you received
> it?

Sorry, no, I didn't get it. It must have gone into the
junk folder which gets automatically deleted. Please
send it again and I'll look for it.
--
73, Cecil http://www.w5dxp.com

2785. supply GPS+GSM+WIFI car antenna, GPS+GSM shark fin car antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 05:39:37 UTC
From: antentech@gmail.com
Message-ID: <7cdbd833-3cc9-4a6d-b3d9-b4f4e2618737@e10g2000prf.googlegroups.com>
Source record: 27507

Dongguan Antentech Industrial Ltd. is the world's leading designer and manufacturer of antenna, management solutions for the telecommunications, data-communications, general electronics, network equipment, automotive and medical equipment industries. Main products is car antenna, interphone antenna, TV+FM+DMB car antenna, spring antenna, GPS+GSM+WIFI car antenna, decorating antenna, flexible antenna, coaxial cables, connector and accessories. To obtain optimum performance from these products, specific solutions are worked out in close cooperation with our customer to accommodate his special needs, including design of function and appearance and OEM according customer drawing.

Dongguan Antentech Industrial Ltd.
Address: fifth building Prosperity plaza, lianhu industry district, tangxia town, dongguan city, china.
Tel: 86-769-26565758
Fax: 86-769-87938418
Email: antentech@yahoo.com
Website: http://www.antentech.com

2786. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 09:15:59 UTC
From: Jeff <jeff@local.host>
Message-ID: <47cd1395$0$1341$834e42db@reader.greatnowhere.com>
Source record: 27508

Maybe I am missing something here, but if you put a wireless router at the top of the tower why do you need anything else other than power up the mast? You can can talk to the router locally over the air without the need for a cable connection.

Jeff

2787. Re: Matching Coax Impedance: To Receiver or To Antenna ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 11:47:56 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <3dfe89d3-6327-485d-8b02-3b3b58aecf2c@p73g2000hsd.googlegroups.com>
Source record: 27509

On 4 mar, 03:28, "Dan Finn" <dfi...@nc.rr.com> wrote:
> "Wimpie" <wim...@tetech.nl> wrote in message
>
> news:b29bc2bb-d430-439f-9368-23c0115fb54c@34g2000hsz.googlegroups.com...
>
> > Hello Dan,
>
> > Can it be that Bob's situation is better with respect to losses?
>
> > 75 Ohms load in a 50 Ohms system gives reflection coefficient of
> > (75-50)/(75+50) = 0.2 (voltage or current reflection).
>
> We agree at this point. My SWR of 1.5 was calculated by (1 + rho)/(1-rho) =
> 1.2/.8 = 1.5. Given that the SWR = 1.5 Vmax/Vmin = 1.5. The mismatch
> produces a reflected to forward voltage "gain" on the transmission line of
> 1.5 to 1. In dB, this gain is expressed as 10log(Vout/Vin). Since this is a
> ratio, the impedance cancels, and we know that power is proportional to
> voltage squared, thus Ploss would be 2 X 10log(Vout/Vin) = 20 log(1.5) =
> 3.6dB. If this seems like a "lot" when compared to your 0.18dB, intuitively
> it seems right to me since the impedance mismatch is actually fairly large,
> i.e the 75 ohm coax has 50% higher characteristic impedance than the 50 ohm
> load, even though it ultimately does not make a big difference when compared
> to the gain of the back end of the receiver that converts microvolt signals
> to millivolt levels.
>
> > So the power loss in this transition = 0.2^2 = 0.04 (4%, 0.18 dB).
>
> If I made a mistake, this would explain why. I need to find a reference that
> has the derivation showing that rho**2 = power lost. Since rho is unitless
> and power is in units of watts, it seems unlikley on the face of it unless
> something is being cancelled out that I am unaware of. If you have such a
> reference handy, please post it. Otherwise I will try to find it myself. It
> has been about 40 years since I took my last RF course so maybe you can
> understand if I am a bit rusty ;-)
>
> > The absolute worst-case situation would be when you have a quarter
> > wave line between a 50 Ohms source and a 50 Ohms load. The 75 Ohms
> > quarter wave line with 50 Ohms load will show a real impedance of
> > 75^2/50 = 112.5 Ohm. This results in a reflection coefficient of
> > 0.38, hence a power loss of 0.15 (0.7 dB). Of course when the line is
> > 0.5 lambda long, there will be no additional loss.
>
> I think that, other than resistive losses, the length of a transmission line
> has absolutely nothing to do with the SWR (and power loss due to mismatch)

> OTHER THAN the impedance discontinuity of the match at the antenna
> feedpoint. In the above example I assumed a perfect match and was only
> considering the mismatch of the load to the characteristic impedance of the
> coax.
>
>
>
> > Best regards,
>
> > Wim
>
> 73 de AI4QJ

Hello Dan,

To help you a bit: Assume a source with 1Veff EMK and 50 Ohms output impedance.

Calculate the power dissipated in a load of 50 Ohms. When you do this, you will find 5mW dissipated into the load. 0.5Veff will be across the load.

Now, do the same for a 75 Ohms load, you will find 4.8 mW (that is 0.18 dB below 5mW). So 0.2mW (4%) is reflected back to the load. Check you SWR instrument, probably it gives both SWR and reflect power on the scale.

Note that this calculus is for linear systems, hence not valid for most power amplifiers because these want to see a 50 Ohms load, but do not show a 50 Ohm output impedance in general.

Regarding length of transmission lines. When using a 75 Ohms line in a 50 Ohms system, you have two transitions where reflections occurs; at the load and at the source. These reflection will interfere and depending of the amount of wavelength between the load and source, constructive or destructive interference occurs. Search for quarter wave transformer. When you put two, quarter wave transformers (with same cable impedance) behind each other, the input impedance will be equal to the load impedance (assuming loss free cable).

When the VSWR in the cable becomes excessive (high voltage and high current regions), the effective cable loss will increase (with respect to the published values).

Best regards,

Wim
PA3DJS
www.tetech.nl (Dutch)

2788. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 11:52:18 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <689a6807-4287-46a4-8917-b395e38370ba@u10g2000prn.googlegroups.com>
Source record: 27510

Gentlemen.

It is now over two weeks since Art made his offer to Denny to supply a model of his new antenna for testing, (and should by now have been delivered), which gives all the naysayers a last chance to nail their colours to the mast.
For my part it is my belief that Art's antenna will be a major advance in the design of antenna's of the future, so, what say you gentlemen, do you agree, or disagree?.

Just to make things even, it is my belief that someone, who has the respect of most ham's in this group,(including the indomitable Richard) has a finger in this pie.

Derek.

2789. R/S RG6 Coax Quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 12:55:31 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <QO6dnWsJ8aNe21DanZ2dnUVZ_oWdnZ2d@comcast.com>
Source record: 27511

Hello,

Is R/S RG6 coax of "decent" quality for a receive only application (to a scanner) ?

Or, should it be avoided like the plague, and go to one of the on-line radio supplier sources ?

Thanks,
B.

2790. Re: Matching Coax Impedance: To Receiver or To Antenna ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 13:17:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FZbzj.11694$Ru4.6114@newssvr19.news.prodigy.net>
Source record: 27512

Dan Finn wrote:
> I need to find a reference that
> has the derivation showing that rho**2 = power lost.

If the source is a signal generator equipped with a
circulator and load resistor, that would be the case.

For more ordinary sources, there are many variables.
It depends upon the phase angle between the forward
wave and reflected wave at the source and upon the
source impedance seen by the reflected wave.
--
73, Cecil http://www.w5dxp.com

2791. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 13:47:34 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <yladneU_yuYJz1DanZ2dnUVZ8sSrnZ2d@pipex.net>
Source record: 27513

Jeff wrote:
> Maybe I am missing something here, but if you put a wireless router at the
> top of the tower why do you need anything else other than power up the mast?
> You can can talk to the router locally over the air without the need for a
> cable connection.
==========
In that case you need 2 routers ,R-1 in top of the mast with a
(sensitive) internal or external antenna having one of its ethernet
ports connected to an ethernet port of the second wireless router R-2
serving as a wireless bridge and fitted lower on the mast ,having a not
so sensitive antenna but sufficient for communication with any wireless
router or adapter inside the house/shack.
R-2 should be set to communicate on an 'extremity' channel say channel
13 ,which will hopefully not be needed by R-1. This to avoid that the 2
routers 'bite' each other .

A (wireless) router is a bi-directional input-output device .
When the wireless side is receiving it passes the information on to the
ethernet port serving as output and vice versa.

Hope the above makes sense

Frank GM0CSZ / KN6WH

2792. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 14:09:09 UTC
From: Jeff <jeff@local.host>
Message-ID: <47cd5870$0$1344$834e42db@reader.greatnowhere.com>
Source record: 27514

> In that case you need 2 routers ,R-1 in top of the mast with a (sensitive)
> internal or external antenna having one of its ethernet ports connected to
> an ethernet port of the second wireless router R-2 serving as a wireless
> bridge and fitted lower on the mast ,having a not so sensitive antenna but
> sufficient for communication with any wireless router or adapter inside
> the house/shack.
> R-2 should be set to communicate on an 'extremity' channel say channel 13
> ,which will hopefully not be needed by R-1. This to avoid that the 2
> routers 'bite' each other .
>
> A (wireless) router is a bi-directional input-output device .
> When the wireless side is receiving it passes the information on to the
> ethernet port serving as output and vice versa.
>
> Hope the above makes sense
>

Surely all you need is a wireless card in the pc that you wish to connect to the router on the mast. If you happen to have a router in the house as well it is no different to your next door neighbour having a WiFi network. You just connect to whichever router you wish to.

Jeff

2793. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 15:00:09 UTC
From: amdx <amdx@knology.net>
Message-ID: <c3074$47cd63fa$450139ad$26070@KNOLOGY.NET>
Source record: 27515

" W4NNG" <mh@soalex.us> wrote in message
news:8Z%yj.7939$XO4.2669@newsfe19.lga...
> Hello fellow HRO's
>
> I've got a 50ft tower w/ rotor. Been thinking mounting a 2.4 Ghz WiFi
> antenna on the rotor to see what it picks up in way of WAP / WLAN's
>
> To get around cable loss problem was going to put a USB adapter at antenna
> then run USB cable up tower. Have tested USB at ~ 5X it's spec'd range
> but
> suspect the 60 - 70' run will be way too long.
>
> Anyone know of a way to 'remodulate' so to speak to 802.11 wirelessly link
> the output from the antenna mounted adapter back to computer?
>
> Thanks for any thoughts
>
> Bob
>
> W4NNG
>

Hi Bob,
I have done something similar to what you want to do. I picked up MFJs yagi
antenna MFJ-1800
http://www.mfjenterprises.com/man/pdf/MFJ-1800.pdf
and a $13.00 wireless USB adapter. I adapted an N connector to the wireless
USB adapter.
(a little troublesome, large connector, small adapter) I then connected the
N connector/adapter assy
to the yagi. I mounted the whole thing in a 4" pvc pipe. I purchased two 15
ft USB male to female cords.
I found I had intermitent performance, The problem was 30 ft of USB cords,
I cut back to one 15ft cord
and the ass'y works wonderfully. I can see over 20 wifi signals from where
I'm at, only 3 to 4 are strong
signals (over 50%, whatever that means). While trying to solve the
intermitent performance I did find
there are cords available with amplifiers built inline to extend the usable
USB cable length. I did not try
these I just moved my yagi. The others are way ahead of my knowledge
regarding the wireless router and
it's operation on top of your tower.
Mike

2794. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 16:04:15 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <QbidnaiLutQB71DanZ2dneKdnZydnZ2d@pipex.net>
Source record: 27516

Jeff wrote:
>> In that case you need 2 routers ,R-1 in top of the mast with a (sensitive)
>> internal or external antenna having one of its ethernet ports connected to
>> an ethernet port of the second wireless router R-2 serving as a wireless
>> bridge and fitted lower on the mast ,having a not so sensitive antenna but
>> sufficient for communication with any wireless router or adapter inside
>> the house/shack.
>> R-2 should be set to communicate on an 'extremity' channel say channel 13
>> ,which will hopefully not be needed by R-1. This to avoid that the 2
>> routers 'bite' each other .
>>
>> A (wireless) router is a bi-directional input-output device .
>> When the wireless side is receiving it passes the information on to the
>> ethernet port serving as output and vice versa.
>>
>> Hope the above makes sense
>>
>
>
> Surely all you need is a wireless card in the pc that you wish to connect to
> the router on the mast. If you happen to have a router in the house as well
> it is no different to your next door neighbour having a WiFi network. You
> just connect to whichever router you wish to.
>
==========
As long as you use the 2 routers connected with their ethernet ports
,with each router on a different Wifi channel

One outdoor router on top of the mast won't be enough. When that router
receives its WiFi signal from a remote station ,it outputs that signal
to its ethernet port(s) , so in order for the indoor PC with a WiFi
port to receive that signal ,you need a WiFi bridge eg another wireless
router connected piggy-back with the one on top of the mast ; there is
no escape from it.

In the end it will highly likely be easier and more cost-effective to
run an ethernet cat5 cable from the router on top of the mast to the
indoor PC along the router's low voltage power supply cable , of course
unless the router on top of the mast has its own local battery nearby
which is being charged by a local solar panel , doing away with (long)
cables altogether.

Frank GM0CSZ / KN6WH

2795. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 16:44:57 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <d0fzj.9681$C1.7025@trnddc07>
Source record: 27517

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:QbidnaiLutQB71DanZ2dneKdnZydnZ2d@pipex.net...
> Jeff wrote:
>>> In that case you need 2 routers ,R-1 in top of the mast with a
>>> (sensitive) internal or external antenna having one of its ethernet
>>> ports connected to an ethernet port of the second wireless router R-2
>>> serving as a wireless bridge and fitted lower on the mast ,having a not
>>> so sensitive antenna but sufficient for communication with any wireless
>>> router or adapter inside the house/shack.
>>> R-2 should be set to communicate on an 'extremity' channel say channel
>>> 13 ,which will hopefully not be needed by R-1. This to avoid that the 2
>>> routers 'bite' each other .
>>>
>>> A (wireless) router is a bi-directional input-output device .
>>> When the wireless side is receiving it passes the information on to the
>>> ethernet port serving as output and vice versa.
>>>
>>> Hope the above makes sense
>>>
>>
>>
>> Surely all you need is a wireless card in the pc that you wish to connect
>> to the router on the mast. If you happen to have a router in the house
>> as well it is no different to your next door neighbour having a WiFi
>> network. You just connect to whichever router you wish to.
>>
> =================
> As long as you use the 2 routers connected with their ethernet ports ,with
> each router on a different Wifi channel
>
> One outdoor router on top of the mast won't be enough. When that router
> receives its WiFi signal from a remote station ,it outputs that signal to
> its ethernet port(s) , so in order for the indoor PC with a WiFi port to
> receive that signal ,you need a WiFi bridge eg another wireless router
> connected piggy-back with the one on top of the mast ; there is no escape
> from it.
>
> In the end it will highly likely be easier and more cost-effective to run
> an ethernet cat5 cable from the router on top of the mast to the indoor PC
> along the router's low voltage power supply cable , of course unless the
> router on top of the mast has its own local battery nearby which is being
> charged by a local solar panel , doing away with (long) cables altogether.
>
>

> Frank GM0CSZ / KN6WH

Hi Frank

I'd like to learn more about WiFi DX. So, this post is a request for information

If this was *my* project, I'd install a Wireless Bridge at the top of the tower and supply it with both a CAT 5 cable and a pair of wires to power it. I'd also have a Router at the ground for connection to the LAN.
What would be the problem with installing a Wireless Switch atop the tower with it's CAT 5 and power wires to allow the ground based computer with its RJ 45 port to "see" the signals from the nearby wireles sites? Wouldnt that allow using only one CAT 5 device? Then, it is possible to connect to the Internet (thru any WiFi site you are able to receive and enter) with only one Wireless device.
I I thought it was possible to connect to the Internet with only one Wireless device. And, a CAT 5 cable device is far better than a USB cable for long cable runs.

Jerry

2796. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 17:23:14 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqk0i1abm1@news.jpl.nasa.gov>
Source record: 27520

W4NNG wrote:
> Thanks for all the suggestions
>
> Don't understand the '... second wireless adapter ...' suggestion? where's
> it get power?

if you set up two wireless to ethernet bridges back to back you can use the second to relay the traffic on the "wide area" one back to your shack. (e.g. the "remodulate" function asked for). You could also just use a single 802.11 device up top, configured as an access point in infrastructure mode, with no ethernet connected. It will repeat out all the packets, and, so, with a directional antenna at the shack pointed at your towertop AP you can communicate. However, managing the AP will be a challenge, especially if there's an RFI issue.

Power would be separately supplied, but you can put a small regulated DC supply up at the top. My own preference would be to use a quiet DC/DC converter with wide input range, so you don't care about voltage drop on the wires heading up.

>
> I've got an EUB-362EXT adapter. (has an SMA connect) Was the longest range
> device I could find. Antenna will be connected directly to it, rather than
> using the adapter dipole inserted inside a reflector
>
> FWIW - The EUB adapter significantly out-performs a low cost linksys usb
> adapter both using their own antenna's. Parked at same location linksys
> found 2 WAP's the EUB found 8
>
>
> "Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
> news:fqiacf$d7v$1@news.jpl.nasa.gov...
> W4NNG wrote:
>
>>Hello fellow HRO's
>>
>>I've got a 50ft tower w/ rotor. Been thinking mounting a 2.4 Ghz WiFi
>>antenna on the rotor to see what it picks up in way of WAP / WLAN's
>>
>>To get around cable loss problem was going to put a USB adapter at antenna
>>then run USB cable up tower. Have tested USB at ~ 5X it's spec'd range
>
> but
>
>>suspect the 60 - 70' run will be way too long.

>>
>>Anyone know of a way to 'remodulate' so to speak to 802.11 wirelessly link
>>the output from the antenna mounted adapter back to computer?
>>
>>Thanks for any thoughts
>>
>>Bob
>>
>>W4NNG
>>
>>
>>
>>
>
> Use ethernet up the tower and PoE (Power over Ethernet). There's lots of
> off the shelf solutions here.
>
> RF interference to/from the Ethernet (or USB for that matter) would be
> an issue.
>
> You can also do fiber optics (for ethernet, you can pick up
> ethernet:fiber media converters surplus quite cheaply.. Then it's just
> the fiber cable with connectors already attached, which can be found
> fairly inexpensively, if you scrounge. Fiber is cheaper than coax, in
> general.)
>
> Or, as someone else suggested, use a second wireless adapter with a
> directional antenna to bridge it to your shack. Then all you need up
> the tower is DC power.
>
> You might be able to do it with something like a single WRT54, too.
>
>

2797. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 17:27:29 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqk0q0ckj1@news.jpl.nasa.gov>
Source record: 27522

Jeff wrote:
> Maybe I am missing something here, but if you put a wireless router at the
> top of the tower why do you need anything else other than power up the mast?
> You can can talk to the router locally over the air without the need for a
> cable connection.
>
> Jeff
>
>

there are some practical details. For one thing, a lot of wireless access points don't provide full control functionality over the wireless port (for security, among other reasons). For instance, changing the RF channel number is trickier "over the air".

The other thing has to do with available data bandwidth.. 802.11 PHY is essentially a half duplex protocol (i.e. it doesn't Tx and Rx at the same time). If you set up two units back to back, you can run the second link on a different channel for your "shack to tower" link, so those packets don't have to go over the air on the "tower top" unit.

Lots of possibilities, lots of ways to do it.

2798. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 17:29:05 UTC
From: gsm@mendelson.com
Message-ID: <slrnfsr1k7.2ir.gsm@cable.mendelson.com>
Source record: 27518

Jerry wrote:
> If this was *my* project, I'd install a Wireless Bridge at the top of the
> tower and supply it with both a CAT 5 cable and a pair of wires to power it.
> I'd also have a Router at the ground for connection to the LAN.
> What would be the problem with installing a Wireless Switch atop the tower
> with it's CAT 5 and power wires to allow the ground based computer with its
> RJ 45 port to "see" the signals from the nearby wireles sites? Wouldnt
> that allow using only one CAT 5 device? Then, it is possible to connect to
> the Internet (thru any WiFi site you are able to receive and enter) with
> only one Wireless device.
> I I thought it was possible to connect to the Internet with only one
> Wireless device. And, a CAT 5 cable device is far better than a USB cable
> for long cable runs.

You can also create a "MESH" network where the router acts as an access point relaying data between nodes. I have a Linksys access point that will do it with others of the same model, and the famous Linksys WRTG54-L running one of the Linux distributions for it (for example Tomato) can do it.

Then all you need is a router running a similar system near the base of the tower, and one on top of it.

Using a gain antenna is also possible to increase your range, but you have to be careful about gain. In the U.S. you can increase the output power 10 times (from 100mw EIRP to 1W EIRP) for mobile devices (up to 4W EIRP for directional point to point links).

Here in Israel, there is a limit of 100mW EIRP, no matter what, even for licensed hams (25W limit for satellite use only).

Geoff.

--
Geoffrey S. Mendelson, Jerusalem, Israel gsm@mendelson.com N3OWJ/4X1GM
IL Voice: (07)-7424-1667 U.S. Voice: 1-215-821-1838
Visit my 'blog at http://geoffstechno.livejournal.com/

2799. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 17:30:13 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqk0v5ckj2@news.jpl.nasa.gov>
Source record: 27521

Jerry wrote:
> "Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
> news:QbidnaiLutQB71DanZ2dneKdnZydnZ2d@pipex.net...
>
>>Jeff wrote:
>>
>>>>In that case you need 2 routers ,R-1 in top of the mast with a
>>>>(sensitive) internal or external antenna having one of its ethernet
>>>>ports connected to an ethernet port of the second wireless router R-2
>>>>serving as a wireless bridge and fitted lower on the mast ,having a not
>>>>so sensitive antenna but sufficient for communication with any wireless
>>>>router or adapter inside the house/shack.
>>>>R-2 should be set to communicate on an 'extremity' channel say channel
>>>>13 ,which will hopefully not be needed by R-1. This to avoid that the 2
>>>>routers 'bite' each other .
>>>>
>>>>A (wireless) router is a bi-directional input-output device .
>>>>When the wireless side is receiving it passes the information on to the
>>>>ethernet port serving as output and vice versa.
>>>>
>>>>Hope the above makes sense
>>>>
>>>
>>>
>>>Surely all you need is a wireless card in the pc that you wish to connect
>>>to the router on the mast. If you happen to have a router in the house
>>>as well it is no different to your next door neighbour having a WiFi
>>>network. You just connect to whichever router you wish to.
>>>
>>
>>==========
>>As long as you use the 2 routers connected with their ethernet ports ,with
>>each router on a different Wifi channel
>>
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>>receives its WiFi signal from a remote station ,it outputs that signal to
>>its ethernet port(s) , so in order for the indoor PC with a WiFi port to
>>receive that signal ,you need a WiFi bridge eg another wireless router
>>connected piggy-back with the one on top of the mast ; there is no escape
>>from it.
>>
>>In the end it will highly likely be easier and more cost-effective to run
>>an ethernet cat5 cable from the router on top of the mast to the indoor PC
>>along the router's low voltage power supply cable , of course unless the

>>router on top of the mast has its own local battery nearby which is being
>>charged by a local solar panel , doing away with (long) cables altogether.
>>
>>
>>Frank GM0CSZ / KN6WH
>
>
> Hi Frank
>
> I'd like to learn more about WiFi DX. So, this post is a request for
> information
>
> If this was *my* project, I'd install a Wireless Bridge at the top of the
> tower and supply it with both a CAT 5 cable and a pair of wires to power it.

I'd use PowerOverEthernet (PoE).. runs the power up the Cat 5, and it's
already galvanically isolated. Off the shelf adapters to feed the power
in and take it out.

2800. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 17:31:44 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqk120ckj3@news.jpl.nasa.gov>
Source record: 27523

Geoffrey S. Mendelson wrote:
> Jerry wrote:
>
>> If this was *my* project, I'd install a Wireless Bridge at the top of the
>>tower and supply it with both a CAT 5 cable and a pair of wires to power it.
>>I'd also have a Router at the ground for connection to the LAN.
>> What would be the problem with installing a Wireless Switch atop the tower
>>with it's CAT 5 and power wires to allow the ground based computer with its
>>RJ 45 port to "see" the signals from the nearby wireles sites? Wouldnt
>>that allow using only one CAT 5 device? Then, it is possible to connect to
>>the Internet (thru any WiFi site you are able to receive and enter) with
>>only one Wireless device.
>> I I thought it was possible to connect to the Internet with only one
>>Wireless device. And, a CAT 5 cable device is far better than a USB cable
>>for long cable runs.
>
>
> You can also create a "MESH" network where the router acts as an access
> point relaying data between nodes. I have a Linksys access point that
> will do it with others of the same model, and the famous Linksys
> WRTG54-L running one of the Linux distributions for it (for example
> Tomato) can do it.
>
> Then all you need is a router running a similar system near the
> base of the tower, and one on top of it.
>
> Using a gain antenna is also possible to increase your range, but
> you have to be careful about gain. In the U.S. you can increase
> the output power 10 times (from 100mw EIRP to 1W EIRP) for mobile
> devices (up to 4W EIRP for directional point to point links).

If you want omni for the top of tower, you can put the gain antenna down
at the shack. 10-20dBi is easy to come by, and gives you a factor of
3-10 range improvement.

2801. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 18:00:40 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-8D9677.09004204032008@netnews.worldnet.att.net>
Source record: 27519

In article <47cd5870$0$1344$834e42db@reader.greatnowhere.com>,
"Jeff" <jeff@local.host> wrote:

> Surely all you need is a wireless card in the pc that you wish to connect to
> the router on the mast. If you happen to have a router in the house as well
> it is no different to your next door neighbour having a WiFi network. You
> just connect to whichever router you wish to.
>
> Jeff

Usually, WiFi Routers come with firmware, that only allow the RF Port to
communicate with the Ethernet Lan and Wan Ports, and not with other
connected client devices. This can be modified via a Open Source
firmware revision, but is NOT the usual case.
I for one, use a Buffalo AirStation G HP at the top of the tower,
feeding a 24dbi Panel Antenna. It is powered via the extra two Pairs in
the Ethernet cable, via a really nice little 9-18 Vdc Input/5 Vdc Output
Dc/Dc Switching Power Supply. This setup also has a really nice little
Trendnet IP400W Pan/Tilt/Zoom WebCam that is also connected to the Lan
side of the Router, and provides a easy way to picture the neighborhood.
Both devices, when operating, draw about 700ma and the whole system is
powered by a 12Vdc Solar charged 8D Battery, and the Dc/Dc takes care of
the voltage drop encountered in using the 24 Gauge wires in the Ethernet
Cable run of 100 ft.

--
Bruce in alaska
add <path> after <fast> to reply

2802. Re: R/S RG6 Coax Quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 18:06:49 UTC
From: dplatt@radagast.org
Message-ID: <pmf0a5-dkr.ln1@radagast.org>
Source record: 27524

>Hello,
>
>Is R/S RG6 coax of "decent" quality for a receive only application (to a
>scanner) ?

If they advertise/sell it as being acceptable for satellite-dish use,
I'd think it would be electrically fine for scanner applications.
Sat-rated RG6 is normally quad-shielded and has low losses up to above
1 GHz.

Pay plenty of attention to how you attach (crimp, probably) the
connector on the end, and to waterproofing the resulting connection to
the antenna. Water infiltration into the end of a cable is one of the
commoner failure modes.

Ordinary black plastic electrical tape, by itself, isn't really
adequate for the job. I usually use some combination of
self-amalgamating rubber tape, and Coax Seal or a similar putty, to
ensure waterproofing, and an outer layer of black electrical tape to
shield the inner waterproofing layers against sunlight/UV.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2803. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 18:23:38 UTC
From: nm5k@wt.net
Message-ID: <d9f24bd2-5ddd-4711-928c-f98bf68e092e@s12g2000prg.googlegroups.com>
Source record: 27525

On Mar 4, 5:52 am, Derek <blueyh...@yahoo.com.au> wrote:
> Gentlemen.
>
> It is now over two weeks since Art made his offer to Denny to supply a
> model of his new antenna for testing, (and should by now have been
> delivered), which gives all the naysayers a last chance to nail their
> colours to the mast.
> For my part it is my belief that Art's antenna will be a major
> advance in the design of antenna's of the future, so, what say you
> gentlemen, do you agree, or disagree?.

Sorry, I don't believe in the tooth fairy, free lunches, or dummy
loads on sticks. Or should I say dummy loads on towers...
>
> Just to make things even, it is my belief that someone, who has the
> respect of most ham's in this group,(including the indomitable
> Richard) has a finger in this pie.

Well, Yoda is pretty good at what he does. But I doubt if
even the force® can save this project.
Like I have said, if I thought it was possible to achieve full
size performance from a shoe box sized jumble of several
hundred feet of thin 22 gauge wire, I would have already built one.
But unfortunately, I have no such delusions of RF grandeur.
BTW, if even both of the Richards, "I'm not sure which one
you consider indomitable", had a finger in the pie, but
the rest of the world refused to stick their finger in the pie,
how would that make things even?
Myself, I have trouble seeing either one of them falling for
this fairy tale of full size antenna performance from a
mini sized dummy load on a stick. Even if it is air cooled.
Does this help clarify my stance on this small sized subject?
I try to avoid any gray areas that might give the impression
that I think this device even has a remote chance of it's
claimed full sized success as a radiator of RF.
But in case some still get confused by what I say, let me
rephrase in a manner that most all will understand.
What a load of horse manure says I...
MK

2804. Re: R/S RG6 Coax Quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 19:41:41 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A5843F7FA5B1nonenowhere@61.9.191.5>
Source record: 27526

"Robert11" <rgsros@notme.com> wrote in
news:QO6dnWsJ8aNe21DanZ2dnUVZ_oWdnZ2d@comcast.com:

> Hello,
>
> Is R/S RG6 coax of "decent" quality for a receive only application (to
> a scanner) ?
>

I wrote some notes on RG6 for transmitting applications at
http://www.vk1od.net/RG6/index.htm .

I know you were intereested in receive only, and a specific brand, but the issues discussed might be of intererest in selection of a cable type and connectors.

Owen

2805. Two antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 20:32:42 UTC
From: Epsilon Rho <epsilonrho@nospam.com>
Message-ID: <Rlizj.8612$tW.2615@nlpi070.nbdc.sbc.com>
Source record: 27527

I have purchased for very little money two identical VHF TV Yagi-Uda antennas. They have 300 ohm output impedance, 5 elements, wide band.

I am thinking to install both on the mast and connect both to a mixer in order to double the output. I m not an expert in antenna design and therefore I m asking for some clarifications:

1.. If my supposition is correct, at what vertical distance should I install the two antennas to avoid cross interference?
2.. I assume that to double the signal the cable type and length from the two antennas to the mixer has to be the same. Correct?

Thank you very much,

Gene

2806. The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 20:36:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <epizj.12580$5K1.10015@newssvr12.news.prodigy.net>
Source record: 27528

After discovering the error on Roy's web page at:

http://eznec.com/misc/Food_for_thought.pdf

I have begun a series of articles that convey "The Rest
of the Story" (Apologies to Paul Harvey). Part 1 of
these articles can be found at:

http://www.w5dxp.com/nointfr.htm

Stand by for the other three articles.
--
73, Cecil http://www.w5dxp.com

2807. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 21:55:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13srhaeb4tpgga4@corp.supernews.com>
Source record: 27529

Derek wrote:
> Gentlemen.
>
> It is now over two weeks since Art made his offer to Denny to supply a
> model of his new antenna for testing, (and should by now have been
> delivered), which gives all the naysayers a last chance to nail their
> colours to the mast.
> For my part it is my belief that Art's antenna will be a major
> advance in the design of antenna's of the future, so, what say you
> gentlemen, do you agree, or disagree?.
>
> Just to make things even, it is my belief that someone, who has the
> respect of most ham's in this group,(including the indomitable
> Richard) has a finger in this pie.
>
>
> Derek.

There are people who will happily believe most anything without any credible evidence. Examples abound - believers in homeopathy, astrology, and alien abductions to name just a very few. Believers in Art's antenna claims are in this category. I'm not.

Roy Lewallen, W7EL

2808. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 22:50:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Rmkzj.61068$Pv2.12581@newssvr23.news.prodigy.net>
Source record: 27530

Roy Lewallen wrote:
> There are people who will happily believe most anything without any
> credible evidence. Examples abound - believers in homeopathy, astrology,
> and alien abductions to name just a very few. Believers in Art's antenna
> claims are in this category. I'm not.

However, you and W8JI seem to believe that the delay through
a 75m bugcatcher loading coil can be 3 ns. Compared to that
belief, astrology seems pretty logical.
--
73, Cecil http://www.w5dxp.com

2809. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-04 23:55:23 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <Ljlzj.5922$dB.3837@trnddc01>
Source record: 27531

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13srhaeb4tpgga4@corp.supernews.com...
> Derek wrote:
>> Gentlemen.
>>
>> It is now over two weeks since Art made his offer to Denny to supply a
>> model of his new antenna for testing, (and should by now have been
>> delivered), which gives all the naysayers a last chance to nail their
>> colours to the mast.
>> For my part it is my belief that Art's antenna will be a major
>> advance in the design of antenna's of the future, so, what say you
>> gentlemen, do you agree, or disagree?.
>>
>> Just to make things even, it is my belief that someone, who has the
>> respect of most ham's in this group,(including the indomitable
>> Richard) has a finger in this pie.
>>
>>
>> Derek.
>
> There are people who will happily believe most anything without any
> credible evidence. Examples abound - believers in homeopathy, astrology,
> and alien abductions to name just a very few. Believers in Art's antenna
> claims are in this category. I'm not.
>
> Roy Lewallen, W7EL

Don't forget the Audiophools!

John, KD5YI

2810. From OP: Re: R/S RG6 Coax Quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 00:07:31 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <mZidnV0Qs6nZeVDanZ2dnUVZ_hKdnZ2d@comcast.com>
Source record: 27532

Hi Owen,

Interesting writeup.
Learned a lot from reading it.

Thanks,
Bob

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A5843F7FA5B1nonenowhere@61.9.191.5...
> "Robert11" <rgsros@notme.com> wrote in
> news:QO6dnWsJ8aNe21DanZ2dnUVZ_oWdnZ2d@comcast.com:
>
>> Hello,
>>
>> Is R/S RG6 coax of "decent" quality for a receive only application (to
>> a scanner) ?
>>
>
> I wrote some notes on RG6 for transmitting applications at
> http://www.vk1od.net/RG6/index.htm .
>
> I know you were intereested in receive only, and a specific brand, but the
> issues discussed might be of intererest in selection of a cable type and
> connectors.
>
> Owen

2811. برنامج خطير: ازالة الشوائب ويجعل البشرة صافية وبيضا رووووعه تم التحديث واضافة التعريب

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 00:20:20 UTC
From: manora <SAHAR1398@gmail.com>
Message-ID: <e5ececa8-b2d3-4fbf-a601-1aa54598440b@e10g2000prf.googlegroups.com>
Source record: 27533

برنامج خطير: ازالة الشوائب ويجعل البشرة صافية وبيضا رووووعه تم التحديث
واضافة التعريب
http://www.antya7la.com/vb/showthread.php?t=3240

برنامج Ashampoo Cd 2 Ipod 1.6.3 لإستخراج الملفات الصوتية من قرص الـ Cd
و نقلها إلى
http://www.antya7la.com/vb/showthread.php?p=10872#post10872

Ashampoo Magical Snap عملاق تصوير شاشة الكمبيوتر
http://www.antya7la.com/vb/showthread.php?p=10882#post10882

.. O ((راحت فلانـــة)) O .. ومضايقة صوتية !
http://www.antya7la.com/vb/showthread.php?p=10885&posted=1#post10885

قصات عالموضه
http://www.antya7la.com/vb/showthread.php?t=3343?goto=newpost

امانسجر الحب والرومانسية
http://www.antya7la.com/vb/showthread.php?t=1455

مجموعة رائعه جدا جدا من فراشي الفوتوشوب
http://www.antya7la.com/vb/showthread.php?t=3336

2812. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 01:00:31 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <43be5582-12df-431c-a709-80b7282f1985@e23g2000prf.googlegroups.com>
Source record: 27534

On Mar 4, 3:36 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> After discovering the error on Roy's web page at:
>
> http://eznec.com/misc/Food_for_thought.pdf
>
> I have begun a series of articles that convey "The Rest
> of the Story" (Apologies to Paul Harvey). Part 1 of
> these articles can be found at:
>
> http://www.w5dxp.com/nointfr.htm

Looks good. And well presented. There is only one small problem
with the analysis.

When the instantaneous energy flows are examined it can be seen
that Prs is not equal to 50 W plus Pref.

Taking just the second example (12.5 ohm load) for illustrative
purposes...

The power dissipated in Rs before the reflection arrives is
Prs.before = 50 + 50cos(2wt) watts

The reflected power at the source is
Pref.s = 18 + 18cos(2wt) watts

But the power dissipated in Rs after the reflection arrives is
Prs.after = 68 + 68cos(2wt-61.9degrees) watts

Prs.after is not Prs.before + Pref, though the averages do sum.

And since the energy flows must be accounted for on a moment by
moment basis (or we violate conservation of energy), it is the
instantaneous energy flows that provide the most detail and
allow us to conclude with certainty that Prs.after is not
Prs.before + Pref.

The same inequality holds for all the examples except those
with Pref equal to 0.

Thus these examples do not demonstrate that the reflected power
is dissipated in the source resistor.

...Keith

2813. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 01:21:32 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <efe8ff3b-6c1a-4b27-978a-b56aa084c449@u72g2000hsf.googlegroups.com>
Source record: 27535

On Mar 4, 8:00 pm, Keith Dysart <Keith.Dys...@gmail.com> wrote:
> On Mar 4, 3:36 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>
> > After discovering the error on Roy's web page at:
>
> >http://eznec.com/misc/Food_for_thought.pdf
>
> > I have begun a series of articles that convey "The Rest
> > of the Story" (Apologies to Paul Harvey). Part 1 of
> > these articles can be found at:
>
> >http://www.w5dxp.com/nointfr.htm
>
> Looks good. And well presented. There is only one small problem
> with the analysis.
>
> When the instantaneous energy flows are examined it can be seen
> that Prs is not equal to 50 W plus Pref.
>
> Taking just the second example (12.5 ohm load) for illustrative
> purposes...
>
> The power dissipated in Rs before the reflection arrives is
> Prs.before = 50 + 50cos(2wt) watts
>
> The reflected power at the source is
> Pref.s = 18 + 18cos(2wt) watts
>
> But the power dissipated in Rs after the reflection arrives is
> Prs.after = 68 + 68cos(2wt-61.9degrees) watts
>
> Prs.after is not Prs.before + Pref, though the averages do sum.
>
> And since the energy flows must be accounted for on a moment by
> moment basis (or we violate conservation of energy), it is the
> instantaneous energy flows that provide the most detail and
> allow us to conclude with certainty that Prs.after is not
> Prs.before + Pref.
>
> The same inequality holds for all the examples except those
> with Pref equal to 0.
>
> Thus these examples do not demonstrate that the reflected power
> is dissipated in the source resistor.

>
> ...Keith

I should have mentioned that there are some energy flows that do
add, as expected.

The energy delivered by the generator to the line (or equivalently,
the energy flowing in the line at the generator end) is the sum
of the forward and reverse energy flows...

Pf.g = 50 + 50cos(2wt)
Pr.g = -18 + 18cos(2wt)
Pline.g = 32 + 68cos(2wt)

And the energy delivered by the source is always equal to the
energy being dissipated in the resistor plus the energy being
delived to the line...

Prs = 68 + 68cos(2wt-61.9degrees)
Rline.g = 32 + 68cos(2wt)

Psource = 100 + 116.6cos(2wt-30.96degrees)

Psource is equal to Prs + Pline.g

So the energy flows that should add up, do add up.

...Keith

2814. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 03:25:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <apozj.8642$tW.6299@nlpi070.nbdc.sbc.com>
Source record: 27536

Keith Dysart wrote:
> When the instantaneous energy flows are examined it can be seen
> that Prs is not equal to 50 W plus Pref.

That is irrelevant. The power (irradiance) model
doesn't apply to instantaneous energy and power.
Hecht says as much in "Optics".

Nobody has ever claimed that the energy/power
analysis applies to instantaneous values. The
energy/power values are all based on RMS voltages
and currents. There is no such thing as an
instantaneous RMS value.
--
73, Cecil http://www.w5dxp.com

2815. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 03:27:52 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Yqozj.8644$tW.3567@nlpi070.nbdc.sbc.com>
Source record: 27537

Keith Dysart wrote:
> Thus these examples do not demonstrate that the reflected power
> is dissipated in the source resistor.

There are no reflections at the source so the reflected
energy flows through the source resistor. There is no
interference to redistribute any energy. There is no
other place for the reflected energy to go.
--
73, Cecil http://www.w5dxp.com

2816. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 04:16:32 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47ce1e9b$0$24102$4c368faf@roadrunner.com>
Source record: 27538

"Jerry" <j.jmartes@verizon.net> wrote in message
news:xU3zj.9633$C1.1984@trnddc07...
>
> " W4NNG" <mh@soalex.us> wrote in message
> news:Dc3zj.9821$QC.193@newsfe20.lga...
>> Thanks for all the suggestions
>>
>> Don't understand the '... second wireless adapter ...' suggestion?
>> where's
>> it get power?
>>
>> I've got an EUB-362EXT adapter. (has an SMA connect) Was the longest
>> range
>> device I could find. Antenna will be connected directly to it, rather
>> than
>> using the adapter dipole inserted inside a reflector
>>
>> FWIW - The EUB adapter significantly out-performs a low cost linksys usb
>> adapter both using their own antenna's. Parked at same location linksys
>> found 2 WAP's the EUB found 8
>>
>
> Hi Bob
>
> It would seem that Frank's (KN6WH) suggestion about using a Bridge or
> Router, or Switch avoids alot of the USB limitations. Have you tried
> using a CAT 5 device located at the top of the tower?
> I thought the CAT 5 devices were far better than USB for remote WiFi.
> But, if you have data / experience that shows otherwise, I'd like to learn
> more about why the USB is chosen.
>
> Jerry KD6JDJ
>
Placing a wireless router at the top of the tower is not a solution. I am
assuming of course that the OP wants to connect to other wireless routers. I
wanted to do something like this and all the computer tech people I asked
said wireless routers dont talk to each other wirelessly.

Jimmie

2817. Re: Two antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 04:20:22 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <lbpzj.5800$4m3.1060@bignews7.bellsouth.net>
Source record: 27539

"Epsilon Rho" <epsilonrho@nospam.com> wrote in message
news:Rlizj.8612$tW.2615@nlpi070.nbdc.sbc.com...
>I have purchased for very little money two identical VHF TV Yagi-Uda
> antennas. They have 300 ohm output impedance, 5 elements, wide band.
>
> I am thinking to install both on the mast and connect both to a mixer in
> order to double the output. I'm not an expert in antenna design and
> therefore I'm asking for some clarifications:
>
> 1.. If my supposition is correct, at what vertical distance should I
> install the two antennas to avoid cross interference?
> 2.. I assume that to double the signal the cable type and length from the
> two antennas to the mixer has to be the same. Correct?
>
>
> Thank you very much,
>

You could get close to 3db gain - or - one could cancel the other.
Here's a link with some explanations for ya
http://www.astronwireless.com/topic-archives-stacking-yagi-antennas.asp

2818. have a good time

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 04:28:52 UTC
From: youngruth4@gmail.com
Message-ID: <c48220c8-106e-4c49-918a-a82bd9d3992c@x41g2000hsb.googlegroups.com>
Source record: 27540

meet H0T singles in your area

http://www.getaction4ever.com

2819. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 04:37:10 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <Wrpzj.280450$MJ6.78950@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27541

Cecil Moore wrote:
> Keith Dysart wrote:
>> When the instantaneous energy flows are examined it can be seen
>> that Prs is not equal to 50 W plus Pref.
>
> That is irrelevant. The power (irradiance) model
> doesn't apply to instantaneous energy and power.
> Hecht says as much in "Optics".
>
> Nobody has ever claimed that the energy/power
> analysis applies to instantaneous values. The
> energy/power values are all based on RMS voltages
> and currents. There is no such thing as an
> instantaneous RMS value.

Interesting.

Do you also use only the RMS phase and RMS interference to come up with
your RMS answers?

8-)

73,
Gene
W4SZ

2820. Amateur Radio License Exam Preparation Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 08:05:02 UTC
From: Webmaster <webmaster@oaklanesoftware.com>
Message-ID: <3Aszj.11456$QC.2646@newsfe20.lga>
Source record: 27542

Amateur Radio License Exam Preparation Software
Getting your Amateur Radio License has never been easier. Effective February 23, 2007 the FCC removed the Morse Code requirements for all Amateur Radio License Classes . Since that date, applicants for a Technician, General or Extra Class Amateur Radio License no longer have to demonstrate proficiency in Morse Code. You just have to pass the applicable written examination.

That's where we come in. Our amateur radio license exam preparation software serves as a training aid to help amateurs and prospective amateurs pass the Volunteer Examiner Coordinator's (VEC's) administered exam. When you can consistently pass the exams given by our exam preparation software, you will almost certainly pass an actual Volunteer Examiner Coordinator's (VEC's) administered exam.

Our amateur radio license exam preparation software uses the latest officially released Volunteer Examiner Coordinator's (VEC's) approved question pools. The program breaks the test into different sub-element. Integrated into the software are illustrations and Part 97 rules pertaining to the current question. The program tracks the progress of the tests taken. Once you have mastered each sub-element you are ready for the officially administered exam.

Visit our web site at http://www.oaklanesoftware.com

2821. Amateur Radio License Exam Preparation Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 08:29:19 UTC
From: Webmaster <webmaster@oaklanesoftware.com>
Message-ID: <sRszj.11475$QC.1869@newsfe20.lga>
Source record: 27543
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital,rec.radio.amateur.digital.misc,rec.radio.amateur.dx

Amateur Radio License Exam Preparation Software
Getting your Amateur Radio License has never been easier. Effective February 23, 2007 the FCC removed the Morse Code requirements for all Amateur Radio License Classes . Since that date, applicants for a Technician, General or Extra Class Amateur Radio License no longer have to demonstrate proficiency in Morse Code. You just have to pass the applicable written examination.

That's where we come in. Our amateur radio license exam preparation software serves as a training aid to help amateurs and prospective amateurs pass the Volunteer Examiner Coordinator's (VEC's) administered exam. When you can consistently pass the exams given by our exam preparation software, you will almost certainly pass an actual Volunteer Examiner Coordinator's (VEC's) administered exam.

Our amateur radio license exam preparation software uses the latest officially released Volunteer Examiner Coordinator's (VEC's) approved question pools. The program breaks the test into different sub-element. Integrated into the software are illustrations and Part 97 rules pertaining to the current question. The program tracks the progress of the tests taken. Once you have mastered each sub-element you are ready for the officially administered exam.

Visit our web site at http://www.oaklanesoftware.com

2822. Re: Amateur Radio License Exam Preparation Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 08:55:39 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <fetzj.3756$Ta1.2984@bignews9.bellsouth.net>
Source record: 27544
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital,rec.radio.amateur.digital.misc,rec.radio.amateur.dx

"Webmaster" <webmaster@oaklanesoftware.com> wrote in message
news:sRszj.11475$QC.1869@newsfe20.lga...
> Amateur Radio License Exam Preparation Software
> Getting your Amateur Radio License has never been easier. Effective
> February 23, 2007 the FCC removed the Morse Code requirements for all
> Amateur Radio License Classes . Since that date, applicants for a
> Technician, General or Extra Class Amateur Radio License no longer have to
> demonstrate proficiency in Morse Code. You just have to pass the
> applicable written examination.
>
> That's where we come in. Our amateur radio license exam preparation
> software serves as a training aid to help amateurs and prospective
> amateurs pass the Volunteer Examiner Coordinator's (VEC's) administered
> exam. When you can consistently pass the exams given by our exam
> preparation software, you will almost certainly pass an actual Volunteer
> Examiner Coordinator's (VEC's) administered exam.
>
> Our amateur radio license exam preparation software uses the latest
> officially released Volunteer Examiner Coordinator's (VEC's) approved
> question pools. The program breaks the test into different sub-element.
> Integrated into the software are illustrations and Part 97 rules
> pertaining to the current question. The program tracks the progress of the
> tests taken. Once you have mastered each sub-element you are ready for the
> officially administered exam.
>
> Visit our web site at http://www.oaklanesoftware.com
>

Wait a little while and the FCC will grant us a single block license as they did in the Seventies for CB licensees. Then you can make up your own callsign and have at it. This is how dimly we are viewed by the powers-that-be.

Ed, NM2K

2823. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 09:24:02 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <SEtzj.10555$1_.2262@trnddc02>
Source record: 27545

"Jimmie D" <GFENDER@carolina.rr.com> wrote in message
news:47ce1e9b$0$24102$4c368faf@roadrunner.com...
>
> "Jerry" <j.jmartes@verizon.net> wrote in message
> news:xU3zj.9633$C1.1984@trnddc07...
>>
>> " W4NNG" <mh@soalex.us> wrote in message
>> news:Dc3zj.9821$QC.193@newsfe20.lga...
>>> Thanks for all the suggestions
>>>
>>> Don't understand the '... second wireless adapter ...' suggestion?
>>> where's
>>> it get power?
>>>
>>> I've got an EUB-362EXT adapter. (has an SMA connect) Was the longest
>>> range
>>> device I could find. Antenna will be connected directly to it, rather
>>> than
>>> using the adapter dipole inserted inside a reflector
>>>
>>> FWIW - The EUB adapter significantly out-performs a low cost linksys
>>> usb
>>> adapter both using their own antenna's. Parked at same location
>>> linksys
>>> found 2 WAP's the EUB found 8
>>>
>>
>> Hi Bob
>>
>> It would seem that Frank's (KN6WH) suggestion about using a Bridge or
>> Router, or Switch avoids alot of the USB limitations. Have you tried
>> using a CAT 5 device located at the top of the tower?
>> I thought the CAT 5 devices were far better than USB for remote WiFi.
>> But, if you have data / experience that shows otherwise, I'd like to
>> learn more about why the USB is chosen.
>>
>> Jerry KD6JDJ
>>
> Placing a wireless router at the top of the tower is not a solution. I am
> assuming of course that the OP wants to connect to other wireless routers.
> I wanted to do something like this and all the computer tech people I
> asked said wireless routers dont talk to each other wirelessly.
>
> Jimmie

Hi Jimmie

I am not experienced enough to contradict computer techs. But, I have used a *CAT 5 connected Wireless Bridge* to connect my computer to the Internet by wirelessly connecting to a distant Wireless Router. Maybe I'm using the wrong terminology. But, I want to indicate to the OP that using CAT 5 rather than USB can allow the "wireless device" to be located far away from the computer.

Jerry

2824. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 11:00:01 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a4d666f4-0c35-4982-937b-b18a3d455919@m36g2000hse.googlegroups.com>
Source record: 27546

On Mar 4, 10:25 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > When the instantaneous energy flows are examined it can be seen
> > that Prs is not equal to 50 W plus Pref.
>
> That is irrelevant. The power (irradiance) model
> doesn't apply to instantaneous energy and power.
> Hecht says as much in "Optics".
>
> Nobody has ever claimed that the energy/power
> analysis applies to instantaneous values.

Are you saying that conservation of energy does NOT apply to
instantaneous values?

> The
> energy/power values are all based on RMS voltages
> and currents. There is no such thing as an
> instantaneous RMS value.

I understand the analysis technique you are proposing. That
it leads to the wrong conclusion can be easily seen when the
instantaneous energy flows are studied. This merely demonstrates
that the analysis technique has its limitations.

The bottom line remains that the reflected energy is not
dissipated in the source resistor, even for the special cases
under discussion.

...Keith

2825. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 11:13:17 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4f23db8e-0bd7-44bc-a64f-c3c764a2dca4@i7g2000prf.googlegroups.com>
Source record: 27547

On Mar 4, 10:27 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Thus these examples do not demonstrate that the reflected power
> > is dissipated in the source resistor.
>
> There are no reflections at the source so the reflected
> energy flows through the source resistor. There is no
> interference to redistribute any energy. There is no
> other place for the reflected energy to go.

That is the conundrum, isn't it?

And yet the analysis of instantaneous energy flows definitely
shows that the reflected energy is not the energy being dissipated
in the source resistor.

Encountering this conundrum, and not wanting to give up on
conservation of energy, is what helped me form my views on
the nature of reflected energy.

...Keith

2826. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 11:19:04 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <47CE81A8.7090404@nosspam.activ8.net.au>
Source record: 27548

Keith Dysart wrote:
...
> The bottom line remains that the reflected energy is not
> dissipated in the source resistor, even for the special cases
> under discussion.
>
> ...Keith
>
What if the source resistor is of finite length :)
Alan

2827. china wholesale cheap chanel dsquared gucci kobe polo adidas puma shoes UGG boots

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 11:19:39 UTC
From: cnshoes96@yahoo.com.cn
Message-ID: <f4ae6f5d-ad6a-49e7-9724-853d4a8b092b@s37g2000prg.googlegroups.com>
Source record: 27549

Www.Urbanhotsale.Net wholesale brand clothing bape hoody,Discount Prada
Sneakers,china wholesale nike dunks,nike wholesale china
lacoste mens turbo low mix,gucci shoes for cheap,Air Jordan
discount,sneakers wholesale,suppliers for sneakers china,nike
wholesale,prada shoes,sneaker china,wholesale jordans,Order Sneakers
from China,gucci sneakers,china nike wholesale,nike
wholesale,wholesale sneakers,jordan china nike,wholesale
sneaker,china
wholesale shoes,air jordan shoes,wholesale shoes from china,nike
wholesale china,discoun chanel sandals
www.urbanhotsale.net china air jordans,versace jeans china
wholesale,coogi
sweater china wholesale,gucci sneakers,whole sale jordan,wholesale
cheapest bape shoes,wholesale jordans,China Wholesaler of Bape
hoodies,Bape clothes,Bape shoes,Wholesale Updated ED Hardy Clothes,Ed
Hardy Jeans

www.urbanhotsale.net Ed Hardy Hats,Evisu jeans,Nike Basketball
Sneakers,gucci sneakers china,china nike wholesaler,the cheapest
nike's,wholesale china nike,louis vuitton bag, bikiny,shoe
utlet,sneakers at wholesale,women prada sneakers,women prada
sneakers,wholesale sneakers,wholesale china bikini,suppliers of
branded clothing, sneaker wholesale,chinese jordan supplier,wholesale
jordans from china,2008 prada sneaker for men,china jordan wholesale

www.urbanhotsale.net jordan shoes on sale,China Nike Factory Jordan
Wholesale Suppliers,chinese nike supplier,china air jordan
suppliers,jordans shoes,gucci jordans,sneakers gucci china,Guccis &
Prada Sneakers,branded perfume wholesale china, jordan key chain for
air force 1,women gucci sneakers,Discount Gucci Sneakers,wholesale
prada shoes china,china wholesale suppliers,customized nike jordan
tennis shoes,Bape clothing bape shoes bape sta bapesta
sneakers,wholesale y3 trainers supplier

www.urbanhotsale.net air jordan gucci,retro jordan gucci,buying
sneakers
wholesale,jordans from china,cheapest nike,nike dunk sneaker
necklaces,Air Jordan Charm.jordan shoes on sale,china wholesale nike
jordan gucci prada sneakers rue religion jeans Hip hop clothing from
china at cheap prices

www.urbanhotsale.net Also Wholesale cheap rock republic jeans,Seven
jeans,Armani Jeans,Quality Abercrombie&Fitch (AF) coats,juicy couture

clothes,handbags,Coach handbags,Fendi Handbags,SunGlasses,Chloe handbag,AAA quality LV handbags,Chanel bags,Dior purse,authentic quality lacoste t-shirts AAA quality clothes cheap wholesale from china

2828. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 12:11:47 UTC
From: Denny <k8do@mailblocks.com>
Message-ID: <1ad6aa34-ad05-4322-9812-856250be0a33@s37g2000prg.googlegroups.com>
Source record: 27550

Art did ship me one of his antennas a week or two back... I have it in my shop...
I will indeed put this interesting antenna to an objective and thorough testing with a full report here... I am always excited to learn something new...

It is 19F outside this morning and blowing hard, with wind and snow forecast through the week and into the weekend, and I am unlikely to climb the big tower in this...
I will attempt within a week to put it on a small <50'> tower I have attached to my shop and get some baseline impedence and field strength measurements... Then as soon as the weather allows I will move it to the big tower for a good test against my full size antennas...

I am sorry to have to put this off a bit, but given the weather and that my family is hurting at the moment my free time is limited...

denny / k8do

2829. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 12:30:50 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <QMudnXOwTLqID1PanZ2dnUVZ8vudnZ2d@pipex.net>
Source record: 27401

> Placing a wireless router at the top of the tower is not a solution. I am
> assuming of course that the OP wants to connect to other wireless routers. I
> wanted to do something like this and all the computer tech people I asked
> said wireless routers dont talk to each other wirelessly.
==========
Correct ! and because of that you would need a wireless bridge
operating on a different RF channel than the wireless router which
'senses the neighbourhood'. To prevent clashes the wireless bridge
should operate on a channel not used by the other wireless router.
All of this refers to standard consumer type of routers.

Whatever , a single router connected by cat5 cable to the monitoring PC
indoors seems to be the most cost effective solution.
Cat5 can be laid underground when run in plastic water pipe ,together
with the power supply wiring for the router.

For the past 16 years our satellite dish is located away from the house.
Its 75 Ohms coax runs through 20mm OD polyethylene water pipe (blue
colour , as is nowadays standard in Europe)

Where the cable(s) leave the water pipe ,the pipe opening should point
downwards such that water ingress is prevented. The exits should be
left open to prevent condensation inside the water pipe.
I have never had a problem with any type of cable when run underground
this way.

Frank GM0CSZ / KN6WH

2830. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 13:12:01 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080305051201.3bebb9be.rsparks@elltel.net>
Source record: 27402

On Tue, 4 Mar 2008 17:00:31 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 4, 3:36 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> > After discovering the error on Roy's web page at:
> >
> > http://eznec.com/misc/Food_for_thought.pdf
> >
> > I have begun a series of articles that convey "The Rest
> > of the Story" (Apologies to Paul Harvey). Part 1 of
> > these articles can be found at:
> >
> > http://www.w5dxp.com/nointfr.htm
>
> Looks good. And well presented. There is only one small problem
> with the analysis.
>
> When the instantaneous energy flows are examined it can be seen
> that Prs is not equal to 50 W plus Pref.
>
> Taking just the second example (12.5 ohm load) for illustrative
> purposes...
>
> The power dissipated in Rs before the reflection arrives is
> Prs.before = 50 + 50cos(2wt) watts

How do you justify this conclusion? It seems to me that until the reflection arrives, the source will have a load of Rs = 50 ohms plus line = 50 ohms for a total of 100 ohms. Prs.before = 50 watts.

There would be no reflected power at the source until the reflection returns, making the following statements incorrect.

>
> The reflected power at the source is
> Pref.s = 18 + 18cos(2wt) watts
>
> But the power dissipated in Rs after the reflection arrives is
> Prs.after = 68 + 68cos(2wt-61.9degrees) watts
>
> Prs.after is not Prs.before + Pref, though the averages do sum.
>
> And since the energy flows must be accounted for on a moment by
> moment basis (or we violate conservation of energy), it is the
> instantaneous energy flows that provide the most detail and

> allow us to conclude with certainty that Prs.after is not
> Prs.before + Pref.
>
> The same inequality holds for all the examples except those
> with Pref equal to 0.
>
> Thus these examples do not demonstrate that the reflected power
> is dissipated in the source resistor.
>
> ...Keith

Rs is shown as a resistance on only one side of the line. It would simplify and focus the discussion if Rs were broken into two resistors, each placed on one side of the source to make the circuit balanced.
--
73, Roger, W7WKB

2831. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 14:06:04 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f7814608-4258-491d-a61b-a1456a32ab3a@e6g2000prf.googlegroups.com>
Source record: 27403

On Mar 5, 8:12 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Tue, 4 Mar 2008 17:00:31 -0800 (PST)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Mar 4, 3:36 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> > > After discovering the error on Roy's web page at:
>
> > >http://eznec.com/misc/Food_for_thought.pdf
>
> > > I have begun a series of articles that convey "The Rest
> > > of the Story" (Apologies to Paul Harvey). Part 1 of
> > > these articles can be found at:
>
> > >http://www.w5dxp.com/nointfr.htm
>
> > Looks good. And well presented. There is only one small problem
> > with the analysis.
>
> > When the instantaneous energy flows are examined it can be seen
> > that Prs is not equal to 50 W plus Pref.
>
> > Taking just the second example (12.5 ohm load) for illustrative
> > purposes...
>
> > The power dissipated in Rs before the reflection arrives is
> > Prs.before = 50 + 50cos(2wt) watts
>
> How do you justify this conclusion? It seems to me that until the reflection arrives,
the source will have a load of Rs = 50 ohms plus line = 50 ohms for a total of 100 ohms.
 Prs.before = 50 watts.

The voltage on Rs, before the reflection returns is
Vrs(t) = 70.7cos(wt)
Prs(t) = Vrs(t)**2/50
= 50 + 50cos(2wt)

Prs.before.average = average(Prs(t))
= 50
since the average of cos is 0.

My apologies for leaving out the "(t)" everywhere which would have
made it clearer.

> There would be no reflected power at the source until the reflection returns, making the
following statements incorrect.

I should have been more clear. The below applies after the reflected
wave returns.
And I should have included the "(t)" for greater clarity.

> > The reflected power at the source is
> > Pref.s = 18 + 18cos(2wt) watts
>
> > But the power dissipated in Rs after the reflection arrives is
> > Prs.after = 68 + 68cos(2wt-61.9degrees) watts
>
> > Prs.after is not Prs.before + Pref, though the averages do sum.
>
> > And since the energy flows must be accounted for on a moment by
> > moment basis (or we violate conservation of energy), it is the
> > instantaneous energy flows that provide the most detail and
> > allow us to conclude with certainty that Prs.after is not
> > Prs.before + Pref.
>
> > The same inequality holds for all the examples except those
> > with Pref equal to 0.
>
> > Thus these examples do not demonstrate that the reflected power
> > is dissipated in the source resistor.
>
> > ...Keith
>
> Rs is shown as a resistance on only one side of the line. It would simplify and focus
the discussion if Rs were broken into two resistors, each placed on one side of the source
to make the circuit balanced.

I am not sure how this would help. It would make the arithmetic
somewhat more
complex.

...Keith

2832. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 15:51:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8kzzj.8687$tW.2032@nlpi070.nbdc.sbc.com>
Source record: 27404

Gene Fuller wrote:
> Cecil Moore wrote:
>> Keith Dysart wrote:
>>> When the instantaneous energy flows are examined it can be seen
>>> that Prs is not equal to 50 W plus Pref.
>>
>> That is irrelevant. The power (irradiance) model
>> doesn't apply to instantaneous energy and power.
>> Hecht says as much in "Optics".
>>
>> Nobody has ever claimed that the energy/power
>> analysis applies to instantaneous values. The
>> energy/power values are all based on RMS voltages
>> and currents. There is no such thing as an
>> instantaneous RMS value.
>
> Interesting.

What is interesting is that in the formula for power
dissipated in the source resistor, the 50 watts is
an average power. It is an invalid procedure to try
to add instantaneous power to an average power.

> Do you also use only the RMS phase and RMS interference to come up with
> your RMS answers?

I didn't say anything about "RMS phase and RMS interference".
The phase angle used in Hecht's irradiance equation is the
phase between the electric fields of the two waves. The
magnitude of the interference is an average magnitude based
on the RMS values of voltage and current.

I do exactly what Eugene Hecht did in "Optics". He said:

"Furthermore, since the power
arriving cannot be measured instantaneously, the detector
must integrate the energy flux over some finite time, 'T'.
If the quantity to be measured is the net energy per unit
area received, it depends on 'T' and is therefore of limited
utility. If however, the 'T' is now divided out, a highly
practical quantity results, one that corresponds to the
average energy per unit area per unit time, namely 'I'."
'I' is the irradiance (*AVERAGE* power density).

i.e. The irradiance/interference equation does not work
for instantaneous powers which are "of limited utility".

--
73, Cecil http://www.w5dxp.com

2833. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 16:06:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Oxzzj.8688$tW.4983@nlpi070.nbdc.sbc.com>
Source record: 27405

Keith Dysart wrote:
> On Mar 4, 10:25 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> Nobody has ever claimed that the energy/power
>> analysis applies to instantaneous values.
>
> Are you saying that conservation of energy does NOT apply to
> instantaneous values?

Of course not. I am saying that the 50 watts in the
source resistor power equation is an average power.
It is invalid to try to add instantaneous power to
an average power, as you tried to do.

>> The
>> energy/power values are all based on RMS voltages
>> and currents. There is no such thing as an
>> instantaneous RMS value.
>
> I understand the analysis technique you are proposing. That
> it leads to the wrong conclusion can be easily seen when the
> instantaneous energy flows are studied. This merely demonstrates
> that the analysis technique has its limitations.

The proposed analysis technique is a tool. Trying to apply
that tool to instantaneous powers is like trying to use a
DC ohm-meter to measure the feedpoint impedance of an antenna.
Only a fool would attempt such a thing.

> The bottom line remains that the reflected energy is not
> dissipated in the source resistor, even for the special cases
> under discussion.

Saying it doesn't make it so, Keith. There is nothing to
keep the reflected energy from being dissipated in the
source resistor.

If the reflected energy is not dissipated in the source
resistor, where does it go? Please be specific because it
is obvious to me that there is nowhere else for it to go
in the special zero interference case presented.

Here are some of your choices:

1. Reflected energy flows through the resistor and into
the ground without being dissipated.

2. The 50 ohm resistor re-reflects the reflected energy
back toward the load. (Please explain how a 50 ohm load
on 50 ohm coax can cause a reflection.)

3. There's no such thing as reflected energy.

4. Reflected waves exist without energy.

5. _____.
--
73, Cecil http://www.w5dxp.com

2834. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 16:11:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <dDzzj.8692$tW.102@nlpi070.nbdc.sbc.com>
Source record: 27406

Keith Dysart wrote:
> On Mar 4, 10:27 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> Keith Dysart wrote:
>>> Thus these examples do not demonstrate that the reflected power
>>> is dissipated in the source resistor.
>> There are no reflections at the source so the reflected
>> energy flows through the source resistor. There is no
>> interference to redistribute any energy. There is no
>> other place for the reflected energy to go.
>
> That is the conundrum, isn't it?
>
> And yet the analysis of instantaneous energy flows definitely
> shows that the reflected energy is not the energy being dissipated
> in the source resistor.

Your analysis seems to be flawed. You are adding average
power terms to instantaneous power terms which is mixing
apples and oranges.
--
73, Cecil http://www.w5dxp.com

2835. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 17:21:17 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <eIAzj.11518$Mw.11445@nlpi068.nbdc.sbc.com>
Source record: 27407

Cecil Moore wrote:
> Keith Dysart wrote:
>> On Mar 4, 10:25 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>>> Nobody has ever claimed that the energy/power
>>> analysis applies to instantaneous values.
>>
>> Are you saying that conservation of energy does NOT apply to
>> instantaneous values?
>
> Of course not. I am saying that the 50 watts in the
> source resistor power equation is an average power.
> It is invalid to try to add instantaneous power to
> an average power, as you tried to do.
>
>>> The
>>> energy/power values are all based on RMS voltages
>>> and currents. There is no such thing as an
>>> instantaneous RMS value.
>>
>> I understand the analysis technique you are proposing. That
>> it leads to the wrong conclusion can be easily seen when the
>> instantaneous energy flows are studied. This merely demonstrates
>> that the analysis technique has its limitations.
>
> The proposed analysis technique is a tool. Trying to apply
> that tool to instantaneous powers is like trying to use a
> DC ohm-meter to measure the feedpoint impedance of an antenna.
> Only a fool would attempt such a thing.
>
>> The bottom line remains that the reflected energy is not
>> dissipated in the source resistor, even for the special cases
>> under discussion.
>
> Saying it doesn't make it so, Keith. There is nothing to
> keep the reflected energy from being dissipated in the
> source resistor.
>
> If the reflected energy is not dissipated in the source
> resistor, where does it go? Please be specific because it
> is obvious to me that there is nowhere else for it to go
> in the special zero interference case presented.
>
> Here are some of your choices:
>

> 1. Reflected energy flows through the resistor and into
> the ground without being dissipated.
>
> 2. The 50 ohm resistor re-reflects the reflected energy
> back toward the load. (Please explain how a 50 ohm load
> on 50 ohm coax can cause a reflection.)
>
> 3. There's no such thing as reflected energy.
>
> 4. Reflected waves exist without energy.
>
> 5. _____.

Gentlemen;

What I was taught long ago was that the phenomenon that we call reflected energy is radiated on the return. That portion of energy that is not radiated is re-reflected and is radiated. This continues until the level of energy no longer supports radiation. Resistance also dissipates a portion of the transmitted energy. That resistance includes the resistor under discussion above and that resistance found in the coax conductors.

Of course my Elmer could have been wrong.

Dave WD9BDZ

2836. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 18:03:09 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqmn8tavk1@news.jpl.nasa.gov>
Source record: 27413

```
Jimmie D wrote:
> "Jerry" <j.jmartes@verizon.net> wrote in message
> news:xU3zj.9633$C1.1984@trnddc07...
>
>>" W4NNG" <mh@soalex.us> wrote in message
>>news:Dc3zj.9821$QC.193@newsfe20.lga...
>>
>>>Thanks for all the suggestions
>>>
>>>Don't understand the '... second wireless adapter ...' suggestion?
>>>where's
>>>it get power?
>>>
>>>I've got an EUB-362EXT adapter. (has an SMA connect) Was the longest
>>>range
>>>device I could find. Antenna will be connected directly to it, rather
>>>than
>>>using the adapter dipole inserted inside a reflector
>>>
>>>FWIW - The EUB adapter significantly out-performs a low cost linksys usb
>>>adapter both using their own antenna's. Parked at same location linksys
>>>found 2 WAP's the EUB found 8
>>>
>>
>> Hi Bob
>>
>> It would seem that Frank's (KN6WH) suggestion about using a Bridge or
>>Router, or Switch avoids alot of the USB limitations. Have you tried
>>using a CAT 5 device located at the top of the tower?
>> I thought the CAT 5 devices were far better than USB for remote WiFi.
>>But, if you have data / experience that shows otherwise, I'd like to learn
>>more about why the USB is chosen.
>>
>> Jerry KD6JDJ
>>
>
> Placing a wireless router at the top of the tower is not a solution. I am
> assuming of course that the OP wants to connect to other wireless routers. I
> wanted to do something like this and all the computer tech people I asked
> said wireless routers dont talk to each other wirelessly.
>
Depends on the particular wireless box. Some D-Link boxes, for
instance, have a point-to-point or point-to-multi-point capability.
```

Also, if the box at the top of the tower is an access point in infrastructure mode, it essentially repeats packets that it receives. This is so that two computers that are connected to the AP can talk to each other.

2837. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 18:34:59 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nJBzj.12866$xq2.2436@newssvr21.news.prodigy.net>
Source record: 27408

David G. Nagel wrote:
> What I was taught long ago was that the phenomenon that we call
> reflected energy is radiated on the return. That portion of energy that
> is not radiated is re-reflected and is radiated. This continues until
> the level of energy no longer supports radiation. Resistance also
> dissipates a portion of the transmitted energy. That resistance includes
> the resistor under discussion above and that resistance found in the
> coax conductors.
>
> Of course my Elmer could have been wrong.

Your Elmer was parroting the party line which is:
Any reflected energy dissipated in the source was
never sourced in the first place. Therefore,
at the source (by convention and by definition):

Sourced power = forward power - reflected power

If that is true, it follows that all reflected power
must necessarily be re-reflected back toward the load
(even if, in the process, it violates the laws of physics
governing the reflection model). Since contradictions
don't exist in reality, there must be another explanation.

An antenna tuner which achieves a Z0-match allows no
reflected energy to be incident upon the source so, for
that most common configuration, all is well and your
Elmer was right about those Z0-matched systems.

However, when reflected energy is allowed to reach
the source, it is naive to think that none of that
reflected energy is ever dissipated in the source
resistance when the source resistance is dissipative
as it is in the example under discussion here.

Both of the following assertions are false:
1. Reflected energy is never dissipated in the source.
2. Reflected energy is always dissipated in the source.
Most assertions containing the words "always" and "never"
are false.

There will be three more parts on this topic published
on my web page. The top page will be on the subject
of interference which will explain how reflected energy
can be redistributed back toward the load after not
being re-reflected.

--
73, Cecil http://www.w5dxp.com

2838. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 18:38:24 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <0e7711a2-c0d4-4586-bd57-59996d52d0c1@z17g2000hsg.googlegroups.com>
Source record: 27409

On Mar 5, 11:11 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > On Mar 4, 10:27 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> >> Keith Dysart wrote:
> >>> Thus these examples do not demonstrate that the reflected power
> >>> is dissipated in the source resistor.
> >> There are no reflections at the source so the reflected
> >> energy flows through the source resistor. There is no
> >> interference to redistribute any energy. There is no
> >> other place for the reflected energy to go.
>
> > That is the conundrum, isn't it?
>
> > And yet the analysis of instantaneous energy flows definitely
> > shows that the reflected energy is not the energy being dissipated
> > in the source resistor.
>
> Your analysis seems to be flawed. You are adding average
> power terms to instantaneous power terms which is mixing
> apples and oranges.

I do not think that is the case.

The expression for instantaneous power in Rs before the reflection
(or, if you prefer, when a 50 ohm load is used), is

Prs(t) = 50 + 50cos(2wt)

It is trivial to compute the average of this since the average
of a sine wave is 0, but that does not make the expression the
sum of an average and an instantaneous power.

As an exercise, compute the power in a 50 ohm resistor that has
a 100 volt sine wave across at, that is
V(t) = 100 cos(wt)

You will find the result is of the form shown above.

So when you add the instantaneous power in Rs before the reflection
arrives with the instantaneous power from the reflection it will
not sum to the instantaneous power dissipated in Rs after the
reflection returns.

Thus conveniently showing that for this example, the reflected
power is not dissipated in Rs.

...Keith

2839. Re: Amateur Radio License Exam Preparation Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 18:38:50 UTC
From: Tehrasha Darkon <darkon@netins.net>
Message-ID: <pan.2008.03.05.18.38.49@netins.net>
Source record: 27410
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital,rec.radio.amateur.digital.misc,rec.radio.amateur.dx

On Wed, 05 Mar 2008 02:29:19 -0600, Webmaster wrote:

[snippity]

> That's where we come in. Our amateur radio license exam preparation
> software serves as a training aid to help amateurs and prospective
> amateurs pass the Volunteer Examiner Coordinator's (VEC's) administered
> exam. When you can consistently pass the exams given by our exam
> preparation software, you will almost certainly pass an actual Volunteer
> Examiner Coordinator's (VEC's) administered exam.

[snippity]

Or, save yourself the $30, and go here... http://www.radioexam.org/

2840. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 18:48:46 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <ab445d74-b4d5-4779-bdf5-c1e73760112b@s13g2000prd.googlegroups.com>
Source record: 27411

On Mar 5, 11:06 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > On Mar 4, 10:25 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> >> Nobody has ever claimed that the energy/power
> >> analysis applies to instantaneous values.
>
> > Are you saying that conservation of energy does NOT apply to
> > instantaneous values?
>
> Of course not. I am saying that the 50 watts in the
> source resistor power equation is an average power.
> It is invalid to try to add instantaneous power to
> an average power, as you tried to do.
>
> >> The
> >> energy/power values are all based on RMS voltages
> >> and currents. There is no such thing as an
> >> instantaneous RMS value.
>
> > I understand the analysis technique you are proposing. That
> > it leads to the wrong conclusion can be easily seen when the
> > instantaneous energy flows are studied. This merely demonstrates
> > that the analysis technique has its limitations.
>
> The proposed analysis technique is a tool. Trying to apply
> that tool to instantaneous powers is like trying to use a
> DC ohm-meter to measure the feedpoint impedance of an antenna.
> Only a fool would attempt such a thing.

You used your tool to attempt to show that the reflected power
is dissipated in Rs.

I did a finer grained analysis using instantaneous power to show
that it is not.

The use of averages in analysis can be misleading.

> > The bottom line remains that the reflected energy is not
> > dissipated in the source resistor, even for the special cases
> > under discussion.
>
> Saying it doesn't make it so, Keith. There is nothing to
> keep the reflected energy from being dissipated in the
> source resistor.
>

> If the reflected energy is not dissipated in the source
> resistor, where does it go? Please be specific because it
> is obvious to me that there is nowhere else for it to go
> in the special zero interference case presented.
>
> Here are some of your choices:
>
> 1. Reflected energy flows through the resistor and into
> the ground without being dissipated.
>
> 2. The 50 ohm resistor re-reflects the reflected energy
> back toward the load. (Please explain how a 50 ohm load
> on 50 ohm coax can cause a reflection.)
>
> 3. There's no such thing as reflected energy.
>
> 4. Reflected waves exist without energy.
>
> 5. _____.

Now you have got the issue. Since the reflected power is
not dissipated in Rs, the answer must be one of 1 to 5.

5. is probably the best choice.

And that is why it became necessary to rethink the nature
of energy in reflected waves.

...Keith

2841. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 18:58:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <43Czj.25008$J41.6805@newssvr14.news.prodigy.net>
Source record: 27412

Keith Dysart wrote:
> Thus conveniently showing that for this example, the reflected
> power is not dissipated in Rs.

The *average* reflected power is certainly dissipated in Rs
because there is nowhere else for it to go. Your instantaneous
power, according to Eugene Hecht, is "of limited utility" which
you have proved with your straw man assertion above.

I have made no assertions about instantaneous power. All of
my assertions have been about average power and you have proved
none of my assertions about average power to be false.

Here is what you are doing:
Cecil: My GMC pickup is white.
Keith: No, your GMC pickup has black tires.

Your diversions are obvious. Instantaneous power is irrelevant
to my assertions.
--
73, Cecil http://www.w5dxp.com

2842. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 19:25:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <CsCzj.25012$J41.3884@newssvr14.news.prodigy.net>
Source record: 27414

Keith Dysart wrote:
> You used your tool to attempt to show that the reflected power
> is dissipated in Rs.

The tool proves that the reflected average power is dissipated
in Rs because it has no where else to go. If instantaneous
reflected power were relevant, why don't we read about it in
any of the technical textbooks under the wave reflection model?

> I did a finer grained analysis using instantaneous power to show
> that it is not.

My tool is known not to work for instantaneous power and
was never intended to work for instantaneous power. So your
argument is just a straw man diversion. Eugene Hecht explains
why average power density (irradiance) must used instead of
instantaneous power.

"Furthermore, since the power
arriving cannot be measured instantaneously, the detector
must integrate the energy flux over some finite time, 'T'.
If the quantity to be measured is the net energy per unit
area received, it depends on 'T' and is therefore of limited
utility. If however, the 'T' is now divided out, a highly
practical quantity results, one that corresponds to the
average energy per unit area per unit time, namely 'I'."
'I' is the irradiance (*AVERAGE* power density).

> The use of averages in analysis can be misleading.

The misuse of a tool, designed to be used only with
averages, can be even more misleading. When you measure
an open-circuit using a DC ohm-meter on a dipole, are
you really going to argue that the DC ohm-meter is not
working properly? That's exactly what you are arguing here.
When one misuses a tool, as you are doing, one will get
invalid results. There's no mystery about that at all.

You are saying that the energy model, designed to be
used with average powers, does not work for instantaneous
values. When you try to use it for instantaneous values,
you are committing a well understood error. Why do you
insist on committing that error?

>> 5. _____.
>
> Now you have got the issue. Since the reflected power is

> not dissipated in Rs, the answer must be one of 1 to 5.
>
> 5. is probably the best choice.

Until you fill in the blank for number 5, you are just
firing blanks. :-) Exactly what laws of physics are you
intending to violate with your explanation?

> And that is why it became necessary to rethink the nature
> of energy in reflected waves.

Nope, it's not. Reflected waves obey the laws of superposition
and reflection physics. That's all you need to understand.
Now new laws of physics or logical diversions required.
--
73, Cecil http://www.w5dxp.com

2843. Hey Everybody

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 19:29:43 UTC
From: sqvru7dok7qe8o67898m@gmail.com
Message-ID: <a6a42e1e-7a1f-4e7b-b267-d8950ea2992d@q33g2000hsh.googlegroups.com>
Source record: 27415

Ok yes i am a Cam girl Guys .....So if you want to see me go here
http://www.2xrl.com/60
Not into Cam i understand ...Check out this cool site i found
http://www.2xrl.com/65

Or you can check out Mandys Sex Search .com for all your porn needs

2844. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 19:31:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <591dde67-3845-4161-acd9-70efdfd0608e@c33g2000hsd.googlegroups.com>
Source record: 27416

On Mar 5, 1:58 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Thus conveniently showing that for this example, the reflected
> > power is not dissipated in Rs.
>
> The *average* reflected power is certainly dissipated in Rs
> because there is nowhere else for it to go. Your instantaneous
> power, according to Eugene Hecht, is "of limited utility" which
> you have proved with your straw man assertion above.

Hecht seems to have sufficient reputation that I trust that he made
this statement in the context of optics and not in the context of
electrical circuits.

> I have made no assertions about instantaneous power. All of
> my assertions have been about average power and you have proved
> none of my assertions about average power to be false.

True. But analysis using instantaneous power reveals a different
answer.
Which is more likely to be correct?

> Here is what you are doing:
> Cecil: My GMC pickup is white.
> Keith: No, your GMC pickup has black tires.
>
> Your diversions are obvious. Instantaneous power is irrelevant
> to my assertions.

Only if you give up on conservation of energy in instantaneous flows.

...Keith

2845. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 20:35:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cuDzj.11534$Mw.1685@nlpi068.nbdc.sbc.com>
Source record: 27417

Keith Dysart wrote:
> Hecht seems to have sufficient reputation that I trust that he made
> this statement in the context of optics and not in the context of
> electrical circuits.

EM waves are EM waves, Keith, no matter what the frequency.
EM waves all obey the laws of reflection physics, superposition,
and conservation of energy principle. If you want to prove those
laws to be invalid and replace them with ones of your own design,
be our guest.

> But analysis using instantaneous power reveals a different
> answer. Which is more likely to be correct?

Analysis using an MFJ-259B on an antenna system reveals a
different impedance than is indicated by a DC ohm-meter.
So what? You used an average power tool, known to be
invalid for instantaneous powers, to incorrectly analyze
instantaneous powers. You are the one who made the error
- not the model. Your error was the (deliberate?) misuse
of the tool in order to try to create your straw man.

Using the power equation, derived from RMS values of
voltage, on instantaneous powers is an invalid thing
to do and will give known erroneous results which are
not the fault of the average power model. The fault is
in the *misuse* of the average power model.

We have already laid your straw man argument to rest
when we discussed the power in standing waves.

1. There is non-zero instantaneous power in standing waves.
2. There is zero average power in standing waves.

Does statement 1 contradict statement 2? Of course not.
They are both true. The same holds true for the present
discussion.

I have a probable explanation for your calculations. I
set the example up such that the average interference
is zero inside the source. It is entirely possible that
localized interference exists within each cycle such
that there is destructive interference for part of the
cycle and constructive interference in another part of
the cycle. In fact, based on the conservation of energy
principle, I am willing to state that is a fact and the
destructive interference magnitude exactly equals the

constructive interference magnitude for each cycle.
--
73, Cecil http://www.w5dxp.com

2846. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 20:36:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13su12pinpnlq5b@corp.supernews.com>
Source record: 27418

I highly recommend that you decouple the feedline with a current balun (common mode choke). Better yet would be two, spaced about a quarter wavelength apart. Small antennas can be made to look a lot better than they really are if the feedline is allowed to become part of the radiating antenna system, so unless the feedline is decoupled well, any measurements you make will be subject to speculation as to whether the radiation was from the antenna or the feedline.

Roy Lewallen, W7EL

Denny wrote:
> Art did ship me one of his antennas a week or two back... I have it in
> my shop...
> I will indeed put this interesting antenna to an objective and
> thorough testing with a full report here... I am always excited to
> learn something new...
>
> It is 19F outside this morning and blowing hard, with wind and snow
> forecast through the week and into the weekend, and I am unlikely to
> climb the big tower in this...
> I will attempt within a week to put it on a small <50'> tower I have
> attached to my shop and get some baseline impedence and field strength
> measurements... Then as soon as the weather allows I will move it to
> the big tower for a good test against my full size antennas...
>
>
> I am sorry to have to put this off a bit, but given the weather and
> that my family is hurting at the moment my free time is limited...
>
> denny / k8do

2847. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 20:44:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <QCDzj.14995$Ej5.9752@newssvr29.news.prodigy.net>
Source record: 27419

Roy Lewallen wrote:
> I highly recommend that you decouple the feedline with a current balun
> (common mode choke). Better yet would be two, spaced about a quarter
> wavelength apart.

Methinks if Denny does that, Art should have used
bigger wire for his coil.
--
73, Cecil http://www.w5dxp.com

2848. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 20:54:37 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <5be02927-e576-47b8-a738-961ea69ab0f4@x41g2000hsb.googlegroups.com>
Source record: 27420

On Mar 5, 8:06 am, Cecil Moore <nos...@w5dxp.com> wrote:
...blah, blah...

So consider the case of a section of lossless uniform transmission line of characteristic impedance R0, which I write as R instead of Z since it of course must be real-valued, connected between two sources S1 at end 1 and S2 at end 2. These sources each have source impedance R0: they are perfectly matched to the characteristic impedance of the line. The line is long enough that we can observe any standing waves that may be on it. (For believers in directional couplers, that can be short indeed, but it does not need to be short.) Source S1 is set to output a sinusoidal signal of amplitude A1 into a matched load, on frequency f1. Similarly S2 outputs a sinusoidal signal A2 into a matched load at frequency f2, which is distinct from f1.

It is easy to show mathematically, and to measure in practice, that the amplitude of the frequency f1 is constant along the line, and similarly that the amplitude of the frequency f2 is constant along the line. That is to say, there is no standing wave at either frequency. Energy at f1 travels on the line only in the direction from S1 to S2, and vice-versa for f2.

That says to me that the energy on the line at f1 is absorbed entirely by source S2, and the energy at f2 is absorbed entirely by S1, with no reflection at the boundaries between S1 and the line, and the line and S2.

At this point, I leave it as an exercise for the reader to interpret or explain exactly what is meant by "absorbed by." This may involve understanding that in a Thevenin or Norton simple model of each source, the energy delivered by the voltage or current source at any moment in time may not equal that which it would deliver into a matched load at the same point in the cycle...

Cheers,
Tom

2849. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 21:14:46 UTC
From: dplatt@radagast.org
Message-ID: <63f3a5-pum.ln1@radagast.org>
Source record: 27421

In article <13su12pinpnlq5b@corp.supernews.com>,
Roy Lewallen <w7el@eznec.com> wrote:

>I highly recommend that you decouple the feedline with a current balun
>(common mode choke). Better yet would be two, spaced about a quarter
>wavelength apart. Small antennas can be made to look a lot better than
>they really are if the feedline is allowed to become part of the
>radiating antenna system, so unless the feedline is decoupled well, any
>measurements you make will be subject to speculation as to whether the
>radiation was from the antenna or the feedline.

It would also be interesting to use a simple current probe to sweep
along the feedline, and see what sorts of currents might be flowing
along the outside of the feedline, both with and without a good
common-mode choke or two in the feedline.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2850. antenna impedance matching on small TX

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 21:19:50 UTC
From: Marcus Tait <marcus_taitNOSPAM@hotmail.com>
Message-ID: <q5adnZ2GDavrk1LanZ2dnUVZ8vudnZ2d@bt.com>
Source record: 27422

I have been designing a small transmitter on 400MHz. The output from the rf amp is a parallel LC tank and between the collecter and +V. When measuring the output on a specturm analyser i can get most output when centre tapped on the inductor. The output must then be matched to 50ohm as the spectrum analysers input is 50ohm. The anatenna for this transmitter is just going to be a 1/4 wave piece of wire. My question is that as i dont need to send the signal down any 50ohm cable could i just connect the antenna at the collector rather than tapping onto the inductor and then adjust the length of the antenna to increase its inpedance to match the output inpedance of the transmitter.

2851. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 21:27:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kfEzj.15001$Ej5.8407@newssvr29.news.prodigy.net>
Source record: 27423

K7ITM wrote:
> So consider the case of a section of lossless uniform transmission
> line of characteristic impedance R0, which I write as R instead of Z
> since it of course must be real-valued, connected between two sources
> S1 at end 1 and S2 at end 2. These sources each have source impedance
> R0: they are perfectly matched to the characteristic impedance of the
> line. The line is long enough that we can observe any standing waves
> that may be on it. (For believers in directional couplers, that can
> be short indeed, but it does not need to be short.) Source S1 is set
> to output a sinusoidal signal of amplitude A1 into a matched load, on
> frequency f1. Similarly S2 outputs a sinusoidal signal A2 into a
> matched load at frequency f2, which is distinct from f1.

What you have described is a system with two sources which
are incapable of interfering with each other because they
are not coherent. Note that this example bears zero resemblance
to a system where the sources are coherent, i.e. frequency-
locked and phase-locked and therefore, capable of interference.

> It is easy to show mathematically, and to measure in practice, that
> the amplitude of the frequency f1 is constant along the line, and
> similarly that the amplitude of the frequency f2 is constant along the
> line. That is to say, there is no standing wave at either frequency.
> Energy at f1 travels on the line only in the direction from S1 to S2,
> and vice-versa for f2.

Obviously true for non-coherent sources.

> That says to me that the energy on the line at f1 is absorbed entirely
> by source S2, and the energy at f2 is absorbed entirely by S1, with no
> reflection at the boundaries between S1 and the line, and the line and
> S2.

Obviously true for non-coherent sources.

Unfortunately, "non-coherent sources" is not the subject of
this discussion. The rules change between non-coherent, non-inter-
fering sources and coherent, interfering sources. I suggest you
reference the "Interference" chapter in "Optics", by Hecht.
--
73, Cecil http://www.w5dxp.com

2852. Re: antenna impedance matching on small TX

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 21:36:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NnEzj.8729$tW.1863@nlpi070.nbdc.sbc.com>
Source record: 27424

Marcus Tait wrote:
> My question is that as i dont need to send the
> signal down any 50ohm cable could i just connect the antenna at the
> collector rather than tapping onto the inductor and then adjust the length
> of the antenna to increase its inpedance to match the output inpedance of
> the transmitter.

Where is your ground plane?
--
73, Cecil http://www.w5dxp.com

2853. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 22:49:24 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <UrFzj.711491$kj1.111735@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27425

Cecil Moore wrote:
> Keith Dysart wrote:
>> Hecht seems to have sufficient reputation that I trust that he made
>> this statement in the context of optics and not in the context of
>> electrical circuits.
>
> EM waves are EM waves, Keith, no matter what the frequency.
> EM waves all obey the laws of reflection physics, superposition,
> and conservation of energy principle. If you want to prove those
> laws to be invalid and replace them with ones of your own design,
> be our guest.

Cecil,

It is likely that all of these interference-related items you like to
quote from Hecht are cast in an environment of lossless optical
components. The characteristic impedance is set by the index of
refraction of the various layers, but none of the optical layers have
any absorption.

Soooo, how does any of this optical stuff extend to making arguments
about the absorption or re-reflection of energy in the source resistor
for the HF case?

The laws of physics may be inviolate, but it is not quite so clear that
your derived and extended models share the same characteristic.

73,
Gene
W4SZ

2854. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-05 22:57:39 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <72673369-7ccd-4a84-b064-96ba4c22a17e@q78g2000hsh.googlegroups.com>
Source record: 27426

On Mar 5, 1:27 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> The rules change between non-coherent,
> non-interfering sources and coherent, interfering sources.

And exactly which part of "linear system" do you fail to understand?

2855. Re: Two antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 00:08:47 UTC
From: Epsilon Rho <epsilonrho@nospam.com>
Message-ID: <jCGzj.19786$0w.14281@newssvr27.news.prodigy.net>
Source record: 27427

Thanks for the lead.
Gene

2856. Re: antenna impedance matching on small TX

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 00:54:48 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <tefus35f3bvi7vtgastsj3gjov7hlp32nr@4ax.com>
Source record: 27428

On Wed, 5 Mar 2008 21:19:50 -0000, "Marcus Tait"
<marcus_taitNOSPAM@hotmail.com> wrote:

>I have been designing a small transmitter on 400MHz. The output from the rf
>amp is a parallel LC tank and between the collecter and +V. When measuring
>the output on a specturm analyser i can get most output when centre tapped
>on the inductor. The output must then be matched to 50ohm as the spectrum
>analysers input is 50ohm. The anatenna for this transmitter is just going to
>be a 1/4 wave piece of wire. My question is that as i dont need to send the
>signal down any 50ohm cable could i just connect the antenna at the
>collector rather than tapping onto the inductor and then adjust the length
>of the antenna to increase its inpedance to match the output inpedance of
>the transmitter.
>
My experience based opinion based on Amateur TV work from many years
back says that a half wave dipole with a link coupling (not critical)
to that inductor will spare you the agony of trying to find a ground
to serve the bottom end of that 1/4 wave wire.

Don't overlook the old practice of using a micro ammeter (or modern
equivalent) with a germanium diode across an identical dipole as a
field strength meter. Best keep the diode shorted when not in use to
protect the meter!

John Ferrell W8CCW
"Life is easier if you learn to
plow around the stumps"

2857. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 01:19:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <SEHzj.61181$Pv2.40825@newssvr23.news.prodigy.net>
Source record: 27429

Gene Fuller wrote:
> Soooo, how does any of this optical stuff extend to making arguments
> about the absorption or re-reflection of energy in the source resistor
> for the HF case?

What happens at a flat black interface in optics?
--
73, Cecil http://www.w5dxp.com

2858. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 01:25:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <iKHzj.18946$R84.6269@newssvr25.news.prodigy.net>
Source record: 27430

K7ITM wrote:
> On Mar 5, 1:27 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> The rules change between non-coherent,
>> non-interfering sources and coherent, interfering sources.
>
> And exactly which part of "linear system" do you fail to understand?

When two equal amplitude coherent signals are superposed,
the resulting power density can be four times the power
density of one of the single waves due to constructive
interference.

That is not true for two equal amplitude non-coherent
waves of different frequencies. The interference term
averages out to zero so there are no bright rings and
dark rings.

I'm surprised you don't know that.
--
73, Cecil http://www.w5dxp.com

2859. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 01:40:58 UTC
From: nm5k@wt.net
Message-ID: <3e21b536-1193-4c5b-bb18-564b676a70ab@q33g2000hsh.googlegroups.com>
Source record: 27431

On Mar 5, 3:14 pm, dpl...@radagast.org (Dave Platt) wrote:
> In article <13su12pinpnl...@corp.supernews.com>,
> Roy Lewallen <w...@eznec.com> wrote:
>
> >I highly recommend that you decouple the feedline with a current balun
> >(common mode choke). Better yet would be two, spaced about a quarter
> >wavelength apart. Small antennas can be made to look a lot better than
> >they really are if the feedline is allowed to become part of the
> >radiating antenna system, so unless the feedline is decoupled well, any
> >measurements you make will be subject to speculation as to whether the
> >radiation was from the antenna or the feedline.
>
> It would also be interesting to use a simple current probe to sweep
> along the feedline, and see what sorts of currents might be flowing
> along the outside of the feedline, both with and without a good
> common-mode choke or two in the feedline.
>

I agree. I think it's quite possible that even a decoupled feedline
will add enough radiation to make the antenna noticeably better
than it really is.
I'd prefer to see the source mounted *at* the antenna to make it
a decent comparison.
One problem with the decoupling that I can see, is if it's used on
160m, a quarter wave is about 125-130 feet plus or minus...
So even if you stack two chokes or baluns a quarter wave apart,
I can see the feedline noticeably radiating above the lower choke.
Of course, this condition will exist for all types of antennas,
but on the other hand, most antennas will be radiating quite
a bit more from the antenna, vs the feedline.
So the difference between the two sources are much larger,
and the feedline radiation is more likely to be swamped and
made a non issue as far as the total radiation.
But with such an inefficient small antenna, the feedline
radiation will be a much larger part of the total radiation.
My guess on the performance? Probably about the
same as the usual Isotron antenna used on 160m.
And even in the case of the Isotron, I bet a good portion of
the radiation is actually from the feedline.
I don't recall ever seeing any documentation of the Isotron
that recommended decoupling the feedline.
I don't have to stretch my mind to far to wonder why... :/
To quiet the naysayers, "like me", I'd mount a radio directly
to the base of the antenna with a coax union and

do FS tests at certain distances, and then likewise
with the full size antennas.
That would cure the feedline issue real fast.. lol..
Course, that may be more work than Denny wants to
take on..
You could compare it to a mobile set up though, and
keep things on the ground level for ease of testing.
I bet my mobile antenna would whip that thing.
It should, being it's bigger and has more efficient loading.
MK

2860. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 02:03:39 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <f7dc7dba-3329-4c75-b9d3-a20e5f606380@x30g2000hsd.googlegroups.com>
Source record: 27432

On Mar 5, 5:25 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> K7ITM wrote:
> > On Mar 5, 1:27 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> >> The rules change between non-coherent,
> >> non-interfering sources and coherent, interfering sources.
>
> > And exactly which part of "linear system" do you fail to understand?
>
> When two equal amplitude coherent signals are superposed,
> the resulting power density can be four times the power
> density of one of the single waves due to constructive
> interference.
>
> That is not true for two equal amplitude non-coherent
> waves of different frequencies. The interference term
> averages out to zero so there are no bright rings and
> dark rings.

Yes, yes, you've posted all that a billion times before in this NG.
Now, exactly what part of "linear system" do you fail to understand?

(I might also ask why you're going to so much trouble to be
disagreeable with something that agrees with what you were
posting...but I think I already know the answer to that one.)

2861. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 02:03:43 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <3ilzj.282977$MJ6.208863@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27433

Cecil Moore wrote:
> Gene Fuller wrote:
>> Soooo, how does any of this optical stuff extend to making arguments
>> about the absorption or re-reflection of energy in the source resistor
>> for the HF case?
>
> What happens at a flat black interface in optics?

And that would be relevant in what manner? Does Hecht discuss interference at flat black interfaces?

Nobody is questioning the laws of physics or Hecht's writings. Many are questioning your extensions to your own models. Name-dropping and invoking the sacred laws of physics do not automatically validate your models.

Did you ever wonder why all of the basic phenomena, both optical and RF, were known to the "ancients", yet you are the first one to pull everything together in this miraculous new version of a reflection model?

73,
Gene
W4SZ

2862. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 03:13:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AjJzj.15020$Ej5.2876@newssvr29.news.prodigy.net>
Source record: 27434

K7ITM wrote:
> Now, exactly what part of "linear system" do you fail to understand?

Have you stopped beating your wife?
--
73, Cecil http://www.w5dxp.com

2863. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 03:18:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qoJzj.15021$Ej5.11342@newssvr29.news.prodigy.net>
Source record: 27435

Gene Fuller wrote:
> Did you ever wonder why all of the basic phenomena, both optical and RF,
> were known to the "ancients", yet you are the first one to pull
> everything together in this miraculous new version of a reflection model?

I am the one quoting the wisdom of those ancients
which seems to have somehow fallen by the wayside
and been replaced by some pseudo scientific religion.
What is it about the conservation of energy principle
that you disagree with? What is it about the wave
reflection model that you disagree with? What is it
about the principle of superposition that you disagree
with?
--
73, Cecil http://www.w5dxp.com

2864. Re: antenna impedance matching on small TX

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 03:58:56 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <7JmdnYm1pKtk9lLanZ2dnUVZ_hadnZ2d@comcast.com>
Source record: 27436

"Marcus Tait" <marcus_taitNOSPAM@hotmail.com> wrote in message
news:q5adnZ2GDavrk1LanZ2dnUVZ8vudnZ2d@bt.com...
>I have been designing a small transmitter on 400MHz. The output from the rf
>amp is a parallel LC tank and between the collecter and +V. When measuring
>the output on a specturm analyser i can get most output when centre tapped
>on the inductor. The output must then be matched to 50ohm as the spectrum
>analysers input is 50ohm. The anatenna for this transmitter is just going
>to be a 1/4 wave piece of wire. My question is that as i dont need to send
>the signal down any 50ohm cable could i just connect the antenna at the
>collector rather than tapping onto the inductor and then adjust the length
>of the antenna to increase its inpedance to match the output inpedance of
>the transmitter.
>
I would take a look at how remote garage door openers are configured. They
operate in roughly your frequency range. Mine has a range of about 100 feet.
A 1/4 wave antenna has an input impedance of 37 Ohms, but I suspect you will
not want to do that.

Tam

Tam

2865. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 05:04:27 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080305210427.a1094de3.rsparks@elltel.net>
Source record: 27437

On Wed, 5 Mar 2008 06:06:04 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 5, 8:12 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Tue, 4 Mar 2008 17:00:31 -0800 (PST)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Mar 4, 3:36 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> > > > After discovering the error on Roy's web page at:
> >
> > >http://eznec.com/misc/Food_for_thought.pdf
> >
> > > > I have begun a series of articles that convey "The Rest
> > > > of the Story" (Apologies to Paul Harvey). Part 1 of
> > > > these articles can be found at:
> >
> > >http://www.w5dxp.com/nointfr.htm
> >
> > > Looks good. And well presented. There is only one small problem
> > > with the analysis.
> >
> > > When the instantaneous energy flows are examined it can be seen
> > > that Prs is not equal to 50 W plus Pref.
> >
> > > Taking just the second example (12.5 ohm load) for illustrative
> > > purposes...
> >
> > > The power dissipated in Rs before the reflection arrives is
> > > Prs.before = 50 + 50cos(2wt) watts
> >
> > How do you justify this conclusion? It seems to me that until the reflection arrives,
the source will have a load of Rs = 50 ohms plus line = 50 ohms for a total of 100 ohms.
Prs.before = 50 watts.
>
> The voltage on Rs, before the reflection returns is
> Vrs(t) = 70.7cos(wt)
> Prs(t) = Vrs(t)**2/50
> = 50 + 50cos(2wt)
>
> Prs.before.average = average(Prs(t))
> = 50
> since the average of cos is 0.

For the equation Vrs(t) = 70.7cos(wt), are you finding the 70.7 from sqrt(50^2 + 50^2)?

If so, how do you justify that proceedure before the reflection returns? I think the voltage across Rs is 50v until the reflection returns. I also think the current would be 1 amp, for power of 50w, until the reflection returns.

>
> My apologies for leaving out the "(t)" everywhere which would have
> made it clearer.
>
> > There would be no reflected power at the source until the reflection returns, making the following statements incorrect.
>
> I should have been more clear. The below applies after the reflected
> wave returns.
> And I should have included the "(t)" for greater clarity.
>
> > > The reflected power at the source is
> > > Pref.s = 18 + 18cos(2wt) watts
> >
> > > But the power dissipated in Rs after the reflection arrives is
> > > Prs.after = 68 + 68cos(2wt-61.9degrees) watts
> >
> > > Prs.after is not Prs.before + Pref, though the averages do sum.
> >
> > > And since the energy flows must be accounted for on a moment by
> > > moment basis (or we violate conservation of energy), it is the
> > > instantaneous energy flows that provide the most detail and
> > > allow us to conclude with certainty that Prs.after is not
> > > Prs.before + Pref.
> >
> > > The same inequality holds for all the examples except those
> > > with Pref equal to 0.
> >
> > > Thus these examples do not demonstrate that the reflected power
> > > is dissipated in the source resistor.
> >
> > > ...Keith
> >
> > Rs is shown as a resistance on only one side of the line. It would simplify and focus the discussion if Rs were broken into two resistors, each placed on one side of the source to make the circuit balanced.
>
> I am not sure how this would help. It would make the arithmetic
> somewhat more
> complex.
>
> ...Keith

Well, as drawn, the circuit is unbalanced. Reflections are about time and distance traveled during that time, so we really don't know where the far center point is located for finding instantaneous values. We are making an assumption that the length of the source and resistor rs is zero which is OK, but we need to be aware that we are making that assumption. By splitting the resistor into two parts, and then adding them together to make

the calculations, we can see that a balanced circuit is intended, but the source resistors are combined for ease of calculation.

--
73, Roger, W7WKB

2866. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 05:10:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <J0Lzj.8789$tW.5616@nlpi070.nbdc.sbc.com>
Source record: 27438

Cecil Moore wrote:
> K7ITM wrote:
>> Now, exactly what part of "linear system" do you fail to understand?
>
> Have you stopped beating your wife?

>> (I might also ask why you're going to so much trouble to be
>> disagreeable with something that agrees with what you were
>> posting...but I think I already know the answer to that one.)

Tom, we were getting along quite well before you asked
your leading question, obviously designed to elicit
anger, not just once but twice.
--
73, Cecil http://www.w5dxp.com

2867. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 05:17:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <y7Lzj.8790$tW.113@nlpi070.nbdc.sbc.com>
Source record: 27439

Keith Dysart wrote:
> So the energy flows that should add up, do add up.

How did you take care of the fact that the forward wave
and reflected wave are flowing in opposite directions
through the resistor?

How did you take care of the 90 degree phase difference
between the forward wave and the reflected wave through
the resistor?
--
73, Cecil http://www.w5dxp.com

2868. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 05:37:06 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <d52cf6af-eb8d-4b17-8276-0182109a34e6@59g2000hsb.googlegroups.com>
Source record: 27440

```
On Mar 6, 12:04 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Wed, 5 Mar 2008 06:06:04 -0800 (PST)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Mar 5, 8:12 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Tue, 4 Mar 2008 17:00:31 -0800 (PST)
>
> > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > On Mar 4, 3:36 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> > > > > After discovering the error on Roy's web page at:
>
> > > > >http://eznec.com/misc/Food_for_thought.pdf
>
> > > > > I have begun a series of articles that convey "The Rest
> > > > > of the Story" (Apologies to Paul Harvey). Part 1 of
> > > > > these articles can be found at:
>
> > > > >http://www.w5dxp.com/nointfr.htm
>
> > > > Looks good. And well presented. There is only one small problem
> > > > with the analysis.
>
> > > > When the instantaneous energy flows are examined it can be seen
> > > > that Prs is not equal to 50 W plus Pref.
>
> > > > Taking just the second example (12.5 ohm load) for illustrative
> > > > purposes...
>
> > > > The power dissipated in Rs before the reflection arrives is
> > > > Prs.before = 50 + 50cos(2wt) watts
>
> > > How do you justify this conclusion?  It seems to me that until the reflection
arrives, the source will have a load of Rs = 50 ohms plus line = 50 ohms for a total of 100
ohms.  Prs.before = 50 watts.
>
> > The voltage on Rs, before the reflection returns is
> > Vrs(t) = 70.7cos(wt)
> > Prs(t) = Vrs(t)**2/50
> >        = 50 + 50cos(2wt)
>
> > Prs.before.average = average(Prs(t))
> >                    = 50
> > since the average of cos is 0.
>
```

> For the equation Vrs(t) = 70.7cos(wt), are you finding the 70.7 from sqrt(50^2 + 50^2)?

No. Cecil's circuit has a 100 V RMS source. For this source

Vs(t) = 141.4 cos(wt)

Before the reflection returns, the line acts as 50 ohms. This, in
series with
the 50 source resistor means that Vs(t)/2 is across Rs and Vs(t)/2
appears
across the line.

Vrs(t) = Vf.g(t) = Vs(t)/2 = 70.7 cos(wt)

The power dissipated in the resistor is

Prs(t) = Vrs(t)**2 / 50
= ((70.7 * 70.7) / 50) * cos(wt) * cos(wt)
= 100 * 0.5 * (cos(wt+wt) + cos(wt-wt))
= 50 (cos(2wt) + 1)
= 50 cos(2wt) + 50

> If so, how do you justify that proceedure before the reflection returns? I think the voltage across Rs is 50v until the reflection returns. I also think the current would be 1 amp, for power of 50w, until the reflection returns.

That is the average power. But since the voltage is a sinusoid, the
instantaneous power as a function of time is
Prs(t) = 50 + 50 cos(2wt)
which does average to 50 W, thus agreeing with your calculations.

>
> > My apologies for leaving out the "(t)" everywhere which would have
> > made it clearer.
>
> > > There would be no reflected power at the source until the reflection returns, making the following statements incorrect.
>
> > I should have been more clear. The below applies after the reflected
> > wave returns.
> > And I should have included the "(t)" for greater clarity.
>
> > > > The reflected power at the source is
> > > > Pref.s = 18 + 18cos(2wt) watts
>
> > > > But the power dissipated in Rs after the reflection arrives is
> > > > Prs.after = 68 + 68cos(2wt-61.9degrees) watts
>
> > > > Prs.after is not Prs.before + Pref, though the averages do sum.
>
> > > > And since the energy flows must be accounted for on a moment by
> > > > moment basis (or we violate conservation of energy), it is the
> > > > instantaneous energy flows that provide the most detail and

> > > > allow us to conclude with certainty that Prs.after is not
> > > > Prs.before + Pref.
>
> > > > The same inequality holds for all the examples except those
> > > > with Pref equal to 0.
>
> > > > Thus these examples do not demonstrate that the reflected power
> > > > is dissipated in the source resistor.
>
> > > > ...Keith
>
> > > Rs is shown as a resistance on only one side of the line. It would simplify and focus the discussion if Rs were broken into two resistors, each placed on one side of the source to make the circuit balanced.
>
> > I am not sure how this would help. It would make the arithmetic
> > somewhat more
> > complex.
>
> > ...Keith
>
> Well, as drawn, the circuit is unbalanced. Reflections are about time and distance traveled during that time, so we really don't know where the far center point is located for finding instantaneous values. We are making an assumption that the length of the source and resistor rs is zero which is OK, but we need to be aware that we are making that assumption.

I find it valuable to understand how such an ideal circuit would
operate, then
extend the solution if necessary.

In practice, many circuits are small compared to the wavelength and
these assumptions
do not materially affect the answer.

Of course, it is important to know when they do, at which time more
complex analysis
becomes necessary.

> By splitting the resistor into two parts, and then adding them together to make the calculations, we can see that a balanced circuit is intended, but the source resistors are combined for ease of calculation.

...Keith

2869. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 06:17:28 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080305221728.3edbfbb0.rsparks@elltel.net>
Source record: 27441

On Wed, 5 Mar 2008 21:37:06 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 6, 12:04 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Wed, 5 Mar 2008 06:06:04 -0800 (PST)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Mar 5, 8:12 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > On Tue, 4 Mar 2008 17:00:31 -0800 (PST)
> >
> > > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > > On Mar 4, 3:36 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> > > > > > After discovering the error on Roy's web page at:
> >
> > > > > >http://eznec.com/misc/Food_for_thought.pdf
> >
> > > > > > I have begun a series of articles that convey "The Rest
> > > > > > of the Story" (Apologies to Paul Harvey). Part 1 of
> > > > > > these articles can be found at:
> >
> > > > > >http://www.w5dxp.com/nointfr.htm
> >
> > > > > > Looks good. And well presented. There is only one small problem
> > > > > > with the analysis.
>
Thanks Keith. I see what you are doing now, although I still don't understand your logic in faulting Cecil on the instantaneous values. I agree with you that the instantaneous values can be tracked, but don't see a fault in Cecil's presentation.

Roy and I went around a few times on whether the source reflects in a case like this. The source reflection controls whether the 50 ohm source resistor acts like 50 ohms to the reflected wave, or acts like a short circuit in parallel with the 50 ohm source resistor.

--
73, Roger, W7WKB

2870. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 12:07:13 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fqompj$n2k$1@aioe.org>
Source record: 27442

<nm5k@wt.net> wrote:
> I agree. I think it's quite possible that even a decoupled feedline
> will add enough radiation to make the antenna noticeably better
> than it really is. I'd prefer to see the source mounted *at* the
> antenna to make it a decent comparison.

Unless this antenna is itself balanced, most likely for best efficiency when operating in this configuration there would need to be a conductor running from the elevated tx chassis to a good r-f ground of some kind, either buried in the earth or in the form of a counterpoise. Radiation from that "ground" conductor could be many times greater than from what is considered to be the antenna -- even though no feedline is present..

This is a common configuration used for so-called Part 15 AM installations to get greater groundwave coverage from the 100 mW tx input power allowed under FCC Part 15.219, by ignoring the 3-meter limit on the length of the radiating structure given there.

RF

2871. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 13:24:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RfSzj.8808$tW.7292@nlpi070.nbdc.sbc.com>
Source record: 27443

Roger Sparks wrote:
> Thanks Keith. I see what you are doing now, although I still
> don't understand your logic in faulting Cecil on the instantaneous
> values. I agree with you that the instantaneous values can be
> tracked, but don't see a fault in Cecil's presentation.

I made no assertions about instantaneous power at all and
have added a note in my article to that effect. My assertions
about instantaneous power cannot possibly be wrong because
I didn't make any. :-) Nothing in my article applies to or
is concerned with instantaneous power.

For the power density/irradiance/interference equation to
be applicable, certain conditions must be met. One of those
conditions is that all component powers must be *average*
powers resembling power density/irradiance from optics.
Another condition is that the phase angle between the two
waves being superposed must be constant and therefore the
two associated waves must be coherent (phase-locked) with
each other.

> Roy and I went around a few times on whether the source reflects
> in a case like this. The source reflection controls whether the
> 50 ohm source resistor acts like 50 ohms to the reflected wave,
> or acts like a short circuit in parallel with the 50 ohm source
> resistor.

What Roy (and others) are missing is that there is more than
one mechanism in physics that can cause a redistribution of
reflected energy back toward the load. An ordinary reflection
is not the only cause. In a one-dimensional environment,
e.g. a transmission line, there is an additional mechanism
present that can redirect and redistribute the reflected
energy back toward the load.

1. Reflection - what happens when a *single wave* encounters
an impedance discontinuity. Some (or all) of the reflected
energy reverses direction.

2. Wave interaction - what happens when *two waves* superpose,
interact, AND effect a redistribution of their energy components
as described on the FSU web page at:

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

"... when two waves of equal amplitude and wavelength that
are 180-degrees ... out of phase with each other meet, they
are not actually annihilated, ... All of the photon energy
present in these waves must somehow be recovered or
redistributed in a new direction, according to the law of
energy conservation ... Instead, upon meeting, the photons
are redistributed to regions that permit constructive
interference, so the effect should be considered as a
redistribution of light waves and photon energy ..."

In the simple ideal voltage source described in my article,
there are no reflections because the source resistance equals
the characteristic impedance of the transmission line.

In Part 1 of the article, there is also no wave interaction
because the forward wave and reflected wave are 90 degrees
out of phase. So for that special case, none of the reflected
energy is redistributed back toward the load. Therefore, for
that special case, all of the reflected energy is dissipated
in the source resistor because all conditions for a redistribution
of the reflected energy have been eliminated.

In the special case described in Part 1, because of the 90
degree phase difference, the forward wave and reflected
wave are completely independent of each other almost as if
they were not coherent. The result in that special case is
that the power components can simply be added because in
that special case, (V1^2 + V2^2) = (V1 + V2)^2, something
that is obviously NOT true in the general case.

Part 2 of the article will describe what happens when
the forward wave and reflected wave interact at the source
resistor and effect a redistribution of reflected energy
back toward the load *even when there are no reflections*.
This is the key concept, understood for many decades in the
field of optical physics, that most RF people seem to be
missing.
--
73, Cecil http://www.w5dxp.com

2872. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 13:52:39 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fqosv7$102k$1@f04n12.cac.psu.edu>
Source record: 27444

nm5k@wt.net wrote:
> On Mar 5, 3:14 pm, dpl...@radagast.org (Dave Platt) wrote:
>> In article <13su12pinpnl...@corp.supernews.com>,
>> Roy Lewallen <w...@eznec.com> wrote:
>>
>>> I highly recommend that you decouple the feedline with a current balun
>>> (common mode choke). Better yet would be two, spaced about a quarter
>>> wavelength apart. Small antennas can be made to look a lot better than
>>> they really are if the feedline is allowed to become part of the
>>> radiating antenna system, so unless the feedline is decoupled well, any
>>> measurements you make will be subject to speculation as to whether the
>>> radiation was from the antenna or the feedline.
>> It would also be interesting to use a simple current probe to sweep
>> along the feedline, and see what sorts of currents might be flowing
>> along the outside of the feedline, both with and without a good
>> common-mode choke or two in the feedline.
>>
>
> I agree. I think it's quite possible that even a decoupled feedline
> will add enough radiation to make the antenna noticeably better
> than it really is.
> I'd prefer to see the source mounted *at* the antenna to make it
> a decent comparison.

But if the major radiation is from the feedline, that will mean the
antenna won't work as it is supposed to.

Since this is voodoo antennaland stuff, the antenna needs to be tested
as Art would suggest, not as we might like. And since most of the chaps
here are a lot smarter than me, I suspect everyone knows that his
antenna just might need that feedline radiation in order to work "properly".

Now after the initial tests in whatever manner Art dictates, *then* the
feedline should be isolated to determine where the major radiation is
coming from.

At that point, your source at the antenna method is the ticket. That
would remove feedline effects altogether.

Is this test going to be written up somewhere? What is the test protocol?

- 73 de Mike N3LI -

2873. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 13:53:57 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fqot1l$102k$2@f04n12.cac.psu.edu>
Source record: 27445

Denny wrote:
> Art did ship me one of his antennas a week or two back... I have it in
> my shop...
> I will indeed put this interesting antenna to an objective and
> thorough testing with a full report here... I am always excited to
> learn something new...

Hi Denny,

What is the test protocol that you are using?

- 73 de Mike N3LI -

2874. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 14:10:26 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <e0b7f891-3e88-4010-be5d-308475aa02e5@d62g2000hsf.googlegroups.com>
Source record: 27446

On Mar 6, 1:17 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Wed, 5 Mar 2008 21:37:06 -0800 (PST)
[snip]
> Thanks Keith. I see what you are doing now, although I still don't understand your logic in faulting Cecil on the instantaneous values. I agree with you that the instantaneous values can be tracked, but don't see a fault in Cecil's presentation.

For the special situation described in
http://www.w5dxp.com/nointfr.htm
Cecil is attempting to show that the reflected energy is dissipated in the source resistor.

The logic he employs is:
- before the reflection arrives back at the generator, the source resistor
is dissipating X watts.
- the reflected wave has an energy flow of Y watts.
- after the reflection arrives back at the generator, the source resistor
is dissipating Z watts.
- since Z is equal to X + Y, the energy in the reflected wave is being dissipated in the source resistor.

In other words, since the dissipation in the source resistor increases by the same amount as the power in the reflected wave, the energy in the reflected wave must be being dissipated in the source resistor.

Cecil analyzes the circuit for a number of load resistances and suggests
that the equality holds for any load resistance.

For example, with a load resistance of 12.5 ohms, the original dissipation
in the source resistor is 50 W which increases to 68 W when the 18 W reflected wave arrives back at the generator. That is, X = 50, Y = 18 and Z = 68, so Z is equal to X + Y.

Cecil does all of this analysis using average powers.

But we know that the power dissipation varies as a function of time and
that the power in the reflected wave is a function of time. It is my contention that if it is the energy in the reflected wave that is increasing the dissipation in the source resistor, the dissipation in source resistor should occur at the same time that the reflected wave delivers the energy.

In other words, not only should Z.average = X.average + Y.average,
but Z.instantaneous should equal X.instantaneous + Y.instantaneous
for if the dissipation in the source resistor is not tracking the
energy in the reflected wave, it can not be the energy in the
reflected wave that is heating the resistor.

So using the same 12.5 ohm example,
X.inst = 50 + 50 cos(2wt)
Y.inst = 18 + 18 cos(2wt)
X.inst + Y.inst = 68 + 68 cos(2wt)
but
Z.inst = 68 + 68 cos(2wt - 61.9degrees)

So Z.inst is not equal to Y.inst + X.inst.

This means that the dissipation in the resistor is not happening
at the same time as the energy is being delivered by the reflected
wave, which must mean that it is not the energy from the reflected
wave that is heating the source resistor.

So while analyzing average power dissipations suggests that the
energy from the reflected wave is dissipated in the source resistor,
analysis of the instantaneous power shows that it is not.

...Keith

2875. Antenna Analyzer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 14:13:40 UTC
From: Sbc News <Andy@Hardy.com>
Message-ID: <o_Szj.19828$0w.10971@newssvr27.news.prodigy.net>
Source record: 27447

I'm working on a project that requires measuring of impedance on a coax antenna feed: resistive, reactive components. Ideally I will need a plus/zero/minus voltage for reactive direction/magnitude.

The absolute value of the reactance is not of prime concern (will drive servo motors, but I need to know capacitive or inductive, and when it is at zero. I have serveral circuits to accomplish this, but they are quite involved. The object of this project is not to design a new Antenna Analyzer, but it is a component, that I would like to make as simple as possible, with accomplishing the stated goals.

I would appreciate any references/articles/links/ideas that you may know of.

Thanks,
Emil
w9nm at
sbcglobal dot
net

2876. Re: Amateur Radio License Exam Preparation Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 14:40:53 UTC
From: Rauole <Rauole@Bic.com>
Message-ID: <L_udnfVVcovon03anZ2dnUVZ_vKunZ2d@giganews.com>
Source record: 27448

Great!!! Idiots to dumb to lean properly... Teaching idiots to dumb to learn properly... Testing idiots to dumb to learn properly.

Object: Today's typical dumb-ass ham operator.

2877. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 15:42:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2iUzj.7988$Mh2.7418@nlpi069.nbdc.sbc.com>
Source record: 27449

Keith Dysart wrote:
> Cecil does all of this analysis using average powers.

That's because the power density/irradiance/interference equation only works for average powers. One condition for valid use of that equation is that the powers must have been averaged over one complete cycle and usually over many, many cycles. How many cycles does it take for a bright interference ring to register on the human retina?

My example is set up such that the average interference is zero over each complete cycle. I cannot think of a way to eliminate interference internal to a cycle. Both destructive and constructive interference occur during a cycle, which is what you are seeing, but interference averages out to zero over each complete cycle.

> In other words, not only should Z.average = X.average + Y.average,
> but Z.instantaneous should equal X.instantaneous + Y.instantaneous
> for if the dissipation in the source resistor is not tracking the
> energy in the reflected wave, it can not be the energy in the
> reflected wave that is heating the resistor.

Destructive interference from one part of the cycle is being delivered as constructive interference in another part of the cycle. That is completely normal.

The same thing happens with an ideal standing wave. The average power in a standing wave equals zero although some instantaneous power can be calculated as existing in the standing wave. You have discovered why Eugene Hecht says that instantaneous power is "of limited utility".

In fact, what we are dealing with in the example is a standing wave because the forward wave and reflected wave are flowing in opposite directions through the source resistor. I hope your math took that into account.

> This means that the dissipation in the resistor is not happening
> at the same time as the energy is being delivered by the reflected
> wave, which must mean that it is not the energy from the reflected
> wave that is heating the source resistor.

All it means is that there must be some localized interference during each cycle for which you have failed to account. In other words, you are superposing powers which is a

known invalid thing to do when interference is present.
--
73, Cecil http://www.w5dxp.com

2878. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 16:12:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_JUzj.25108$J41.24029@newssvr14.news.prodigy.net>
Source record: 27450

Keith Dysart wrote:
> So using the same 12.5 ohm example,
> X.inst = 50 + 50 cos(2wt)
> Y.inst = 18 + 18 cos(2wt)
> X.inst + Y.inst = 68 + 68 cos(2wt)

Where do you take into account that the forward wave
is 90 degrees out of phase with the reflected wave?

> Z.inst = 68 + 68 cos(2wt - 61.9degrees)

Where does the 61.9 degrees come from?
--
73, Cecil http://www.w5dxp.com

2879. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 16:41:11 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080306084111.4968757b.rsparks@elltel.net>
Source record: 27451

On Thu, 6 Mar 2008 06:10:26 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 6, 1:17 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Wed, 5 Mar 2008 21:37:06 -0800 (PST)
> [snip]
> > Thanks Keith. I see what you are doing now, although I still don't understand your logic in faulting Cecil on the instantaneous values. I agree with you that the instantaneous values can be tracked, but don't see a fault in Cecil's presentation.
>
> For the special situation described in
> http://www.w5dxp.com/nointfr.htm
> Cecil is attempting to show that the reflected energy is dissipated in
> the source resistor.
>
> The logic he employs is:
> - before the reflection arrives back at the generator, the source
> resistor
> is dissipating X watts.
> - the reflected wave has an energy flow of Y watts.
> - after the reflection arrives back at the generator, the source
> resistor
> is dissipating Z watts.
> - since Z is equal to X + Y, the energy in the reflected wave is being
> dissipated in the source resistor.
>
> In other words, since the dissipation in the source resistor increases
> by the same amount as the power in the reflected wave, the energy in
> the reflected wave must be being dissipated in the source resistor.

Your logic and conclusion seem correct to me.

>
> Cecil analyzes the circuit for a number of load resistances and
> suggests
> that the equality holds for any load resistance.
>
> For example, with a load resistance of 12.5 ohms, the original
> dissipation
> in the source resistor is 50 W which increases to 68 W when the 18 W
> reflected wave arrives back at the generator. That is, X = 50, Y = 18
> and Z = 68, so Z is equal to X + Y.
>
> Cecil does all of this analysis using average powers.
>

> But we know that the power dissipation varies as a function of time
> and
> that the power in the reflected wave is a function of time. It is my
> contention that if it is the energy in the reflected wave that is
> increasing the dissipation in the source resistor, the dissipation in
> source resistor should occur at the same time that the reflected wave
> delivers the energy.
>
> In other words, not only should Z.average = X.average + Y.average,
> but Z.instantaneous should equal X.instantaneous + Y.instantaneous
> for if the dissipation in the source resistor is not tracking the
> energy in the reflected wave, it can not be the energy in the
> reflected wave that is heating the resistor.

Hard to follow this long sentence/paragraph. The dissipation in the source resistor should be the sum of instantaneous energy flows from both source(forward) and reflected energy flows. We would not expect that the instantaneous energy flow would be equal from both source and reflection because of the sine wave nature of the energy flow.

>
> So using the same 12.5 ohm example,
> X.inst = 50 + 50 cos(2wt)
> Y.inst = 18 + 18 cos(2wt)
> X.inst + Y.inst = 68 + 68 cos(2wt)
> but
> Z.inst = 68 + 68 cos(2wt - 61.9degrees)
>
> So Z.inst is not equal to Y.inst + X.inst.

I think you are mixing average energy flow (the 50 and 18 watts) with instantaneous flow (50 cos(2wt) and 18 cos(2wt)).

I think Z.inst = x.inst + y.inst = 50 cos(2wt) + 18 cos(2wt). The two energy components arrive 90 degrees out of phase (in this example) so we should write z.inst = 50 cos(2wt) + 18 cos(2wt + 90).

>
> This means that the dissipation in the resistor is not happening
> at the same time as the energy is being delivered by the reflected
> wave, which must mean that it is not the energy from the reflected
> wave that is heating the source resistor.
>
> So while analyzing average power dissipations suggests that the
> energy from the reflected wave is dissipated in the source resistor,
> analysis of the instantaneous power shows that it is not.
>
> ...Keith

Either your math or mine is not correct. Which is incorrect?

--
73, Roger, W7WKB

2880. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 17:21:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <YKVzj.8000$Mh2.4547@nlpi069.nbdc.sbc.com>
Source record: 27452

Roger Sparks wrote:
> The dissipation in the source resistor should be the
> sum of instantaneous energy flows from both source
> (forward) and reflected energy flows. We would not
> expect that the instantaneous energy flow would be
> equal from both source and reflection because of the
> sine wave nature of the energy flow.

The key question: Is the square of the sum of the
two voltages equal to the sum of the squares of
the two voltages? If yes, there is no interference
and it is valid to add the powers directly as
Keith has done.

If no, interference exists and it is *INVALID* to
add the powers directly as Keith has done. Every
EE was warned about superposing powers at the
sophomore level if not before. This is why.

So what we need to know is:

Is [Vfor(t) + Vref(t)]^2 equal to
Vfor(t)^2 + Vref(t)^2 ???

Does [70.7v*cos(wt) + 42.4v*cos(wt+90)]^2 equal
[70.7v*cos(wt)]^2 + [42.4v*cos(wt+90)]^2 ???

Is 2[70.7v*cos(wt)*42.4v*cos(wt+90)] always zero???

The answer is obviously 'NO' so Keith's direct addition
of powers, i.e. superposition of powers, is invalid as
it always is when interference is present.

When the interference term is properly taken into
account, the instantaneous dissipation in the source
resistor will no doubt equal the dissipation from
the forward wave plus the dissipation from the
reflected wave plus the interference term which is
minus for destructive interference and plus for
constructive interference. The interference will
average out to zero over each single complete cycle.
--
73, Cecil http://www.w5dxp.com

2881. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 17:41:54 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <7dcb230f-a6f1-4942-8f79-caa4ed889f5a@34g2000hsz.googlegroups.com>
Source record: 27453

On Mar 6, 11:12 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > So using the same 12.5 ohm example,
> > X.inst = 50 + 50 cos(2wt)
> > Y.inst = 18 + 18 cos(2wt)
> > X.inst + Y.inst = 68 + 68 cos(2wt)
>
> Where do you take into account that the forward wave
> is 90 degrees out of phase with the reflected wave?
>
> > Z.inst = 68 + 68 cos(2wt - 61.9degrees)
>
> Where does the 61.9 degrees come from?

The computation of all of these can be seen in the spreadsheet at
http://keith.dysart.googlepages.com/generator%2Cline%2Cload%2Creflection

Recall that: cos(a)cos(b) = 0.5(cos(a+b) + cos(a-b))

The power in the resistor is computed by multiplying the voltage
Vrs(t) = 82.46 cos(wt -30.96 degrees)
by the current
Irs(t) = 1.649 cos(wt -30.96 degrees)
yielding
Prs(t) = 68 + 68 cos(2wt -61.92 degrees)

For reflected power at the generator
Vr.g(t) = 42.42 cos(wt +90 degrees)
Ir.g(t) = 0.8485 cos(wt -90 degrees)
Pr.g(t) = Vr.g(t) * Ir.g(t)
= -18 + 18 cos(2wt)

Note that I previously made a transcription error in the sign
of one of the terms.

So X.inst + Y.inst is actually 68 + 32 cos(2wt).

...Keith

2882. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 17:44:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <c4Wzj.19013$R84.6166@newssvr25.news.prodigy.net>
Source record: 27454

Cecil Moore wrote:
> Is 2[70.7v*cos(wt)*42.4v*cos(wt+90)] always zero???

This is a test to see if interference exists. It turns
out that constructive interference exists for the
first 90 degrees and third 90 degrees of the forward
wave cycle. Destructive interference exists for the
second and fourth 90 degrees of the cycle. The magnitude
of the destructive interference exactly equals the
magnitude of the constructive interference as expected
so the net interference is zero as expected.
--
73, Cecil http://www.w5dxp.com

2883. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 17:56:06 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <dc301ae5-4ee7-447c-91a3-65c3a56fcf38@x30g2000hsd.googlegroups.com>
Source record: 27455

On Mar 6, 11:41 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Thu, 6 Mar 2008 06:10:26 -0800 (PST)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Mar 6, 1:17 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Wed, 5 Mar 2008 21:37:06 -0800 (PST)
> > [snip]
> > > Thanks Keith. I see what you are doing now, although I still don't understand your logic in faulting Cecil on the instantaneous values. I agree with you that the instantaneous values can be tracked, but don't see a fault in Cecil's presentation.
>
> > For the special situation described in
> >http://www.w5dxp.com/nointfr.htm
> > Cecil is attempting to show that the reflected energy is dissipated in
> > the source resistor.
>
> > The logic he employs is:
> > - before the reflection arrives back at the generator, the source
> > resistor
> >   is dissipating X watts.
> > - the reflected wave has an energy flow of Y watts.
> > - after the reflection arrives back at the generator, the source
> > resistor
> >   is dissipating Z watts.
> > - since Z is equal to X + Y, the energy in the reflected wave is being
> >   dissipated in the source resistor.
>
> > In other words, since the dissipation in the source resistor increases
> > by the same amount as the power in the reflected wave, the energy in
> > the reflected wave must be being dissipated in the source resistor.
>
> Your logic and conclusion seem correct to me.
>
> > Cecil analyzes the circuit for a number of load resistances and
> > suggests
> > that the equality holds for any load resistance.
>
> > For example, with a load resistance of 12.5 ohms, the original
> > dissipation
> > in the source resistor is 50 W which increases to 68 W when the 18 W
> > reflected wave arrives back at the generator. That is, X = 50, Y = 18
> > and Z = 68, so Z is equal to X + Y.
>
> > Cecil does all of this analysis using average powers.

>
> > But we know that the power dissipation varies as a function of time
> > and
> > that the power in the reflected wave is a function of time. It is my
> > contention that if it is the energy in the reflected wave that is
> > increasing the dissipation in the source resistor, the dissipation in
> > source resistor should occur at the same time that the reflected wave
> > delivers the energy.
>
> > In other words, not only should Z.average = X.average + Y.average,
> > but Z.instantaneous should equal X.instantaneous + Y.instantaneous
> > for if the dissipation in the source resistor is not tracking the
> > energy in the reflected wave, it can not be the energy in the
> > reflected wave that is heating the resistor.
>
> Hard to follow this long sentence/paragraph. The dissipation in the source resistor should be the sum of instantaneous energy flows from both source(forward) and reflected energy flows.

Agreed. And that is what I was trying to say.

> We would not expect that the instantaneous energy flow would be equal from both source and reflection because of the sine wave nature of the energy flow.
>
> > So using the same 12.5 ohm example,
> > X.inst = 50 + 50 cos(2wt)
> > Y.inst = 18 + 18 cos(2wt)
> > X.inst + Y.inst = 68 + 68 cos(2wt)
> > but
> > Z.inst = 68 + 68 cos(2wt - 61.9degrees)
>
> > So Z.inst is not equal to Y.inst + X.inst.
>
> I think you are mixing average energy flow (the 50 and 18 watts) with instantaneous flow (50 cos(2wt) and 18 cos(2wt)).

I do not think so.

The instantaneous energy flow for the reflected wave is
Pr.g(t) = 18 - 18 cos(2wt) (see correction in previous post)
This means that at t=0, 0 energy is flowing.
When 2wt is 180 degrees, 36 joules per second are flowing.
The average over a full cycle is 18 W.

So I am summing the instantaneous flows for the two contributors of energy.

The correct sum, however, is 68 + 32cos(2wt).

The actual dissipation in the source resistor is
Vrs(t) = 82.46 cos(wt -30.96 degrees)
Irs(t) = 1.649 cos(wt -30.96 degrees)

Prs(t) = Vrs(t) * Irs(t)
= 68 + 68 cos(2wt -61.92 degrees)

Whenever cos(2wt-61.92degrees) is equal to 1, 132 joules per second
are being dissipated and whenever it is equal to -1, 0 joules are
being dissipated. This follows from the periodic nature of the energy
flow.

> I think Z.inst = x.inst + y.inst = 50 cos(2wt) + 18 cos(2wt). The two energy components arrive 90 degrees out of phase (in this example) so we should write z.inst = 50 cos(2wt) + 18 cos(2wt + 90).
>
> > This means that the dissipation in the resistor is not happening
> > at the same time as the energy is being delivered by the reflected
> > wave, which must mean that it is not the energy from the reflected
> > wave that is heating the source resistor.
>
> > So while analyzing average power dissipations suggests that the
> > energy from the reflected wave is dissipated in the source resistor,
> > analysis of the instantaneous power shows that it is not.
>
> > ...Keith
>
> Either your math or mine is not correct. Which is incorrect?

Both. But I think I have now corrected mine.

...Keith

2884. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 17:57:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fgWzj.61276$Pv2.35435@newssvr23.news.prodigy.net>
Source record: 27456

Keith Dysart wrote:
> The computation of all of these can be seen in the spreadsheet at
> http://keith.dysart.googlepages.com/generator%2Cline%2Cload%2Creflection

The error in your calculations has been diagnosed.
Since interference exists at the instantaneous level,
it is invalid to add the instantaneous powers directly
as you have done.

Hint: if (V1^2 + V2^2) is not equal to (V1 + V2)^2
then it is invalid to add powers directly. Everyone
should have learned that fact in EE201 when the
professor said: "Thou shalt not superpose powers".
--
73, Cecil http://www.w5dxp.com

2885. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 18:25:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8GWzj.19852$0w.1040@newssvr27.news.prodigy.net>
Source record: 27457

Keith Dysart wrote:
> So I am summing the instantaneous flows for the two contributors of
> energy.

An invalid thing to do when interference is present.
Reference EE-201 to find out when and why

[V1(t)^2 + V2(t)^2] is NOT equal to [V1(t) + V2(t)]^2.

The whole premise and assertion that the dissipation
in the source resistor is equal to 50w plus the
reflected power is based on the condition that

(V1^2 + V2^2) is equal to (V1 + V2)^2

Since you did NOT satisfy that condition, it
logically follows that the assertion would not
apply unless that necessary condition is met.

Please get back to us when you meet the above
condition. In attempting to do so, you will
realize why Eugene Hecht said that instantaneous
power is "of limited utility".
--
73, Cecil http://www.w5dxp.com

2886. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 18:45:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13t0eui2i42dv99@corp.supernews.com>
Source record: 27458

nm5k@wt.net wrote:
> On Mar 5, 3:14 pm, dpl...@radagast.org (Dave Platt) wrote:
>> In article <13su12pinpnl...@corp.supernews.com>,
>> Roy Lewallen <w...@eznec.com> wrote:
>>
>>> I highly recommend that you decouple the feedline with a current balun
>>> (common mode choke). Better yet would be two, spaced about a quarter
>>> wavelength apart. Small antennas can be made to look a lot better than
>>> they really are if the feedline is allowed to become part of the
>>> radiating antenna system, so unless the feedline is decoupled well, any
>>> measurements you make will be subject to speculation as to whether the
>>> radiation was from the antenna or the feedline.
>> It would also be interesting to use a simple current probe to sweep
>> along the feedline, and see what sorts of currents might be flowing
>> along the outside of the feedline, both with and without a good
>> common-mode choke or two in the feedline.
>>
>
> I agree. I think it's quite possible that even a decoupled feedline
> will add enough radiation to make the antenna noticeably better
> than it really is.
> I'd prefer to see the source mounted *at* the antenna to make it
> a decent comparison.
> . . .

Even that might not be adequate, depending on the design of the transmitter. Any power or other wires connected to the transmitter could easily become part of the radiator, so they'd have to be decoupled. A small, battery-powered transmitter with no connected wires would avoid this potential problem.

Roy Lewallen, W7EL

2887. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 18:47:32 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080306104732.bc848f30.rsparks@elltel.net>
Source record: 27459

On Thu, 06 Mar 2008 11:21:46 -0600
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > The dissipation in the source resistor should be the
> > sum of instantaneous energy flows from both source
> > (forward) and reflected energy flows. We would not
> > expect that the instantaneous energy flow would be
> > equal from both source and reflection because of the
> > sine wave nature of the energy flow.
>
> The key question: Is the square of the sum of the
> two voltages equal to the sum of the squares of
> the two voltages? If yes, there is no interference
> and it is valid to add the powers directly as
> Keith has done.
>
> If no, interference exists and it is *INVALID* to
> add the powers directly as Keith has done. Every
> EE was warned about superposing powers at the
> sophomore level if not before. This is why.
>
> So what we need to know is:
>
> Is [Vfor(t) + Vref(t)]^2 equal to
> Vfor(t)^2 + Vref(t)^2 ???

So the question is "When does (x + y)^2 = x^2 + y^2 ?".

(x + y)^2 = X^2 + 2xy + y^2

X^2 + 2xy + y^2 = x^2 + y^2 only when either x or y = zero.

>
> Does [70.7v*cos(wt) + 42.4v*cos(wt+90)]^2 equal
> [70.7v*cos(wt)]^2 + [42.4v*cos(wt+90)]^2 ???
>
> Is 2[70.7v*cos(wt)*42.4v*cos(wt+90)] always zero???
>
> The answer is obviously 'NO' so Keith's direct addition
> of powers, i.e. superposition of powers, is invalid as
> it always is when interference is present.
>
> When the interference term is properly taken into
> account, the instantaneous dissipation in the source
> resistor will no doubt equal the dissipation from

> the forward wave plus the dissipation from the
> reflected wave plus the interference term which is
> minus for destructive interference and plus for
> constructive interference. The interference will
> average out to zero over each single complete cycle.
> --
> 73, Cecil http://www.w5dxp.com

Thanks for creating part 1 of this series, Cecil.
--
73, Roger, W7WKB

2888. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 18:49:19 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <51129feb-0ade-40a7-948c-938b98b7305a@n77g2000hse.googlegroups.com>
Source record: 27460

On Mar 6, 6:10 am, Keith Dysart <Keith.Dys...@gmail.com> wrote:

> So while analyzing average power dissipations suggests that the
> energy from the reflected wave is dissipated in the source resistor,
> analysis of the instantaneous power shows that it is not.

Since it's a linear system, no matter where the "reflected" wave is coming from (that is, whether it's actually a reflection, or from some completely separate source which may or may not be on the same frequency), I believe until someone shows me differently and proves the multitude of analyses showing it to be so, that the reflection coefficient going from the line back into the linear source really does work, and it works at every instant in time.

The paragraph quoted above, then, begs the question: if not in the resistor, where? The answer should be perfectly clear.

Cheers,
Tom

2889. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 18:55:08 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13t0fgg5s3ed70f@corp.supernews.com>
Source record: 27461

Michael Coslo wrote:
>
> But if the major radiation is from the feedline, that will mean the
> antenna won't work as it is supposed to.
>
> Since this is voodoo antennaland stuff, the antenna needs to be tested
> as Art would suggest, not as we might like. And since most of the chaps
> here are a lot smarter than me, I suspect everyone knows that his
> antenna just might need that feedline radiation in order to work
> "properly".
>
> Now after the initial tests in whatever manner Art dictates, *then* the
> feedline should be isolated to determine where the major radiation is
> coming from.
>
> At that point, your source at the antenna method is the ticket. That
> would remove feedline effects altogether.
> . . .

Fair enough. But only the naive will be impressed by an antenna system that has to be electrically large (including the feedline) in order to be efficient, unless it also has some property that's significantly different than the radiating feedline alone. For example, it would be interesting if it's highly directional when fed with a vertical feedline, but not if it just looks like another vertical.

If the feedline is radiating, you can expect the antenna performance to be quite sensitive to the conductive path from the transmitter to the Earth, as well as the feedline length and orientation. Consequently, different people will likely get considerably different results, even with identical antennas and feedlines. So the entire path from the transmitter to the Earth will have to be specified and carefully duplicated in order to get meaningful and repeatable results if the feedline is a critical part of the system.

Roy Lewallen, W7EL

2890. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 20:29:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <EuYzj.11654$Mw.5304@nlpi068.nbdc.sbc.com>
Source record: 27462

Roger Sparks wrote:
> So the question is "When does (x + y)^2 = x^2 + y^2 ?".
>
> (x + y)^2 = X^2 + 2xy + y^2
>
> X^2 + 2xy + y^2 = x^2 + y^2 only when either x or y = zero.

That's some "Food for Thought", Roger, but unfortunately
phasor math is more complex :-) than that. The "Rest of
the Story" is if x and y are phasors that are 90 degrees
out of phase with each other, is there another solution
besides the one you offered?

Given two phasors, 1v at 0 degrees and 1v at 90 degrees,
what is the sum of the square of the voltages vs the
square of the sum of the voltages. Hint: the phasor sum
of the voltages is 1.414.
--
73, Cecil http://www.w5dxp.com

2891. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 20:35:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <IAYzj.11655$Mw.5298@nlpi068.nbdc.sbc.com>
Source record: 27463

K7ITM wrote:
> Since it's a linear system, no matter where the "reflected" wave is
> coming from (that is, whether it's actually a reflection, or from some
> completely separate source which may or may not be on the same
> frequency), I believe until someone shows me differently and proves
> the multitude of analyses showing it to be so, that the reflection
> coefficient going from the line back into the linear source really
> does work, and it works at every instant in time.

What you seem to be missing, Tom, is that if the two signals
are not coherent, interference is not possible. Since we are
discussing interference effects between obviously coherent
forward and reflected waves, your observation seems to be a
moot point.

For instance, if the forward and reflected traveling waves
in Roy's "Food for Thought" page are replaced by two sources
that differ by 30% in frequency, there is no way for that
entry in his chart to reach the 400 watts dissipated in the
source resistor.

BTW, I apologize for my outburst last night. I just get friggin'
tired of the "Have you stopped beating your wife?" questions.
--
73, Cecil http://www.w5dxp.com

2892. Sample point for scope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 21:51:53 UTC
From: No Spam <no@spam.com>
Message-ID: <Z8ednUkrTsDk-k3anZ2dnUVZ_hWdnZ2d@comcast.com>
Source record: 27464

Being from a broadcast background and new to ham radio, I'm trying to find sample ports to connect scopes and spectrum analyzers to radios and dummy loads. I'm not finding any and have been simply using UHF Ts and small loops of wire near finals and radio outputs as sample ports.

Am I missing something or is this normal?

What are other people doing to get a scope sample port on an antenna to make power calculations?

I'm Ting off between the xmitter and tuner to feed the scope to look for flat topping and power calculations as this point should be 50ohms but suspect this is not normal as the xmitter output is fully feeding the scope trhough a x10 probe.

2893. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 22:49:45 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <80b4d3cd-f875-4fa4-aba8-a77f19b13326@e10g2000prf.googlegroups.com>
Source record: 27465

On Mar 5, 3:23 am, n...@wt.net wrote
.
> Does this help clarify my stance on this small sized subject?
> I try to avoid any gray areas that might give the impression
> that I think this device even has a remote chance of it's
> claimed full sized success as a radiator of RF.
> But in case some still get confused by what I say, let me
> rephrase in a manner that most all will understand.
> What a load of horse manure says I...
> MK

Spoken like a true neanderthal, they also refused to embrace new ways
of doing things and look what happened to them.
You are living in the past, keep on digging.

Derek

2894. Re: Sample point for scope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 22:57:22 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A5A65248382Fnonenowhere@61.9.191.5>
Source record: 27466

No Spam <no@spam.com> wrote in
news:Z8ednUkrTsDk-k3anZ2dnUVZ_hWdnZ2d@comcast.com:

> Being from a broadcast background and new to ham radio, I'm trying to
> find sample ports to connect scopes and spectrum analyzers to radios
> and dummy loads. I'm not finding any and have been simply using UHF Ts
> and small loops of wire near finals and radio outputs as sample ports.
>
> Am I missing something or is this normal?
>
> What are other people doing to get a scope sample port on an antenna
> to make power calculations?
>
> I'm Ting off between the xmitter and tuner to feed the scope to look
> for flat topping and power calculations as this point should be 50ohms
> but suspect this is not normal as the xmitter output is fully feeding
> the scope trhough a x10 probe.
>
>

I assume you are talking about SSB telephony.

If you are just wanting to monitor the waveform for flat topping,
absolute calibration is not necessary and you could just use another
short antenna as a pickup.

I would argue that an inline directional wattmeter with PEP peak hold
amplifier is a more reliable way to measure power, and is a more
reliable indicator of occasional voice peaks which you may well not see
on a CRO.

Owen

2895. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 23:00:47 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080306150047.797ff42e.rsparks@elltel.net>
Source record: 27467

On Thu, 06 Mar 2008 14:29:25 -0600
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > So the question is "When does (x + y)^2 = x^2 + y^2 ?".
> >
> > (x + y)^2 = X^2 + 2xy + y^2
> >
> > X^2 + 2xy + y^2 = x^2 + y^2 only when either x or y = zero.
>
> That's some "Food for Thought", Roger, but unfortunately
> phasor math is more complex :-) than that. The "Rest of
> the Story" is if x and y are phasors that are 90 degrees
> out of phase with each other, is there another solution
> besides the one you offered?
>
> Given two phasors, 1v at 0 degrees and 1v at 90 degrees,
> what is the sum of the square of the voltages vs the
> square of the sum of the voltages. Hint: the phasor sum
> of the voltages is 1.414.
> --
> 73, Cecil http://www.w5dxp.com

OK, The vector sum is sqrt(1^2 + 1^2) = sqrt(2) = 1.414

I would think of the "square of the sum of the voltages" to be (1 + 1)^2 = 2^2 = 4

We must be very careful to not use scaler math when vectors are called for.

--
73, Roger, W7WKB

2896. Re: Antenna Analyzer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 23:08:34 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqpthi$c9e$1@news.jpl.nasa.gov>
Source record: 27474

Sbc News wrote:
> I'm working on a project that requires measuring of impedance on a coax
> antenna feed: resistive, reactive components. Ideally I will need a
> plus/zero/minus voltage for reactive direction/magnitude.

Take a look at the schematics for the LDG or SGC autotuners. They both
have some form of bridge circuit, and the SGC detects the sign of the
relative phase.

One can use, for instance, the phase frequency detector from a PLL (i.e.
a JK flipflop appropriately wired) to compare the relative phase of
forward and reflected powers from a bridge. (and, for your application,
you don't need a calibrated bridge..)

For HF purposes, there's a lot of digital circuits out there that are
fast enough, and for the usual antenna tuner kind of application, you've
got enough signal.

>
> The absolute value of the reactance is not of prime concern (will drive
> servo motors, but I need to know capacitive or inductive, and when it is at
> zero. I have serveral circuits to accomplish this, but they are quite
> involved. The object of this project is not to design a new Antenna
> Analyzer, but it is a component, that I would like to make as simple as
> possible, with accomplishing the stated goals.
>
> I would appreciate any references/articles/links/ideas that you may know of.
>
> Thanks,
> Emil
> w9nm at
> sbcglobal dot
> net
>
>
>
>

2897. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 23:11:41 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <b1dd3632-8a8c-491f-ac0a-356421ff1b76@s19g2000prg.googlegroups.com>
Source record: 27468

On Mar 5, 6:55 am, Roy Lewallen <w...@eznec.com> wrote:

>
> There are people who will happily believe most anything without any
> credible evidence. Examples abound - believers in homeopathy, astrology,
> and alien abductions to name just a very few. Believers in Art's antenna
> claims are in this category. I'm not.
>
> Roy Lewallen, W7EL

The difference is I believe there is more to be learned in the design
of anntena's, I have listened to what Art has to say and checked out
his theories for myself and find them compelling, unlike yourself who
gives the impression that you know it "all and there is nothing left
to learn that would be of any use to you, you have a knee jerk
reaction to reject any thing that Art put's forward regardless,
To you also keep digging

Derek

2898. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 23:20:40 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <21v0t3phk5bhnt336fhhl9lp0eirk4hujv@4ax.com>
Source record: 27469

On Thu, 6 Mar 2008 15:11:41 -0800 (PST), Derek
<blueyhi5s@yahoo.com.au> wrote:

> I have listened to what Art has to say and checked out
>his theories for myself

Give us an example of what you have done, not what you've read.

73's
Richard Clark, KB7QHC

2899. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 23:29:06 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <3daec590-f2ab-4245-983e-8000fa4475b7@s12g2000prg.googlegroups.com>
Source record: 27470

On Mar 7, 3:45 am, Roy Lewallen <w...@eznec.com> wrote:
> n...@wt.net wrote:
> > On Mar 5, 3:14 pm, dpl...@radagast.org (Dave Platt) wrote:
> >> In article <13su12pinpnl...@corp.supernews.com>,
> >> Roy Lewallen <w...@eznec.com> wrote:
>
> >>> I highly recommend that you decouple the feedline with a current balun
> >>> (common mode choke). Better yet would be two, spaced about a quarter
> >>> wavelength apart. Small antennas can be made to look a lot better than
> >>> they really are if the feedline is allowed to become part of the
> >>> radiating antenna system, so unless the feedline is decoupled well, any
> >>> measurements you make will be subject to speculation as to whether the
> >>> radiation was from the antenna or the feedline.
> >> It would also be interesting to use a simple current probe to sweep
> >> along the feedline, and see what sorts of currents might be flowing
> >> along the outside of the feedline, both with and without a good
> >> common-mode choke or two in the feedline.
>
> > I agree. I think it's quite possible that even a decoupled feedline
> > will add enough radiation to make the antenna noticeably better
> > than it really is.
> > I'd prefer to see the source mounted *at* the antenna to make it
> > a decent comparison.
>
> > . . .
>
> Even that might not be adequate, depending on the design of the
> transmitter. Any power or other wires connected to the transmitter could
> easily become part of the radiator, so they'd have to be decoupled. A
> small, battery-powered transmitter with no connected wires would avoid
> this potential problem.
>
> Roy Lewallen, W7EL

You still don't understand! you are talking bullshit you have no
idea of the design of Art's antenna or of how it works or it's needs
yet you put up your remedies for old style antenna's.

I am sure Denny is a competent and independant operator and will be
aware of all the pitfall's of testing a new antenna and does not need
you to tell him how to go about it.
As Art said in a previous post Denny is free to do as he wishes Art
will have no input in the testing of the antenna, and nor should you

Keep on digging the hole is getting bigger.

Derek

2900. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 23:30:50 UTC
From: Derek <blueyhi5s@yahoo.com.au>
Message-ID: <400f2d7c-8dd1-4642-bd90-f64174354f06@e6g2000prf.googlegroups.com>
Source record: 27471

On Mar 7, 8:20 am, Richard Clark <kb7...@comcast.net> wrote:
> On Thu, 6 Mar 2008 15:11:41 -0800 (PST), Derek
>
> <blueyh...@yahoo.com.au> wrote:
> > I have listened to what Art has to say and checked out
> >his theories for myself
>
> Give us an example of what you have done, not what you've read.
>
> 73's
> Richard Clark, KB7QHC

I will give you nothing. would you care to start digging?

Derek

2901. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 23:33:09 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <Wa%zj.8877$tW.478@nlpi070.nbdc.sbc.com>
Source record: 27472

Michael Coslo wrote:
> nm5k@wt.net wrote:
>> On Mar 5, 3:14 pm, dpl...@radagast.org (Dave Platt) wrote:
>>> In article <13su12pinpnl...@corp.supernews.com>,
>>> Roy Lewallen <w...@eznec.com> wrote:
>>>
>>>> I highly recommend that you decouple the feedline with a current balun
>>>> (common mode choke). Better yet would be two, spaced about a quarter
>>>> wavelength apart. Small antennas can be made to look a lot better than
>>>> they really are if the feedline is allowed to become part of the
>>>> radiating antenna system, so unless the feedline is decoupled well, any
>>>> measurements you make will be subject to speculation as to whether the
>>>> radiation was from the antenna or the feedline.
>>> It would also be interesting to use a simple current probe to sweep
>>> along the feedline, and see what sorts of currents might be flowing
>>> along the outside of the feedline, both with and without a good
>>> common-mode choke or two in the feedline.
>>>
>>
>> I agree. I think it's quite possible that even a decoupled feedline
>> will add enough radiation to make the antenna noticeably better
>> than it really is.
>> I'd prefer to see the source mounted *at* the antenna to make it
>> a decent comparison.
>
> But if the major radiation is from the feedline, that will mean the
> antenna won't work as it is supposed to.
>
> Since this is voodoo antennaland stuff, the antenna needs to be tested
> as Art would suggest, not as we might like. And since most of the chaps
> here are a lot smarter than me, I suspect everyone knows that his
> antenna just might need that feedline radiation in order to work
> "properly".
>
> Now after the initial tests in whatever manner Art dictates, *then* the
> feedline should be isolated to determine where the major radiation is
> coming from.
>
> At that point, your source at the antenna method is the ticket. That
> would remove feedline effects altogether.
>
> Is this test going to be written up somewhere? What is the test protocol?
>
> - 73 de Mike N3LI -

Easier said than done, Mike.
73,
Tom Donaly, KA6RUH

2902. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-06 23:45:58 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fqpvnt$1uj$1@aioe.org>
Source record: 27473

"Derek" wrote:
> You still don't understand! you are talking bullshit you have no
> idea of the design of Art's antenna or of how it works or it's needs
> yet you put up your remedies for old style antenna's.
>
> I am sure Denny is a competent and independant operator and will be
> aware of all the pitfall's of testing a new antenna and does not need
> you to tell him how to go about it.
>
> As Art said in a previous post Denny is free to do as he wishes Art
> will have no input in the testing of the antenna, and nor should you

---

Objectively, Derek, for what reasons are you are so willing to believe the claims that art makes for his "highly-efficient," shoe-box MW antenna, and for your confidence in Denny's ability to measure its radiation characteristics scientifically?

No BS, please. Facts count -- emotion does not.

RF

2903. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 00:05:25 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5911t3dua5ffq270o4mnimcsp1etqod1hc@4ax.com>
Source record: 27475

On Thu, 6 Mar 2008 15:30:50 -0800 (PST), Derek
<blueyhi5s@yahoo.com.au> wrote:

>> Give us an example of what you have done, not what you've read.

> I will give you nothing. would you care to start digging?

That was a start as any reasonable reader could see.

73's
Richard Clark, KB7QHC

2904. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 00:20:06 UTC
From: nm5k@wt.net
Message-ID: <89137bef-9564-437c-9e6e-05589d5fc60d@e25g2000prg.googlegroups.com>
Source record: 27476

On Mar 6, 4:49 pm, Derek <blueyh...@yahoo.com.au> wrote:

>
> Spoken like a true neanderthal, they also refused to embrace new ways
> of doing things and look what happened to them.
> You are living in the past, keep on digging.
>
> Derek

Well, where is the beef? Do you have any actual data to support
these magic claims? Hummm.. Thought not..
I'm using actual experience with antennas to support
my disbelief. If what he says is true, I'd likely already
be using one.. I'm not against a dinky 160m antenna
with full size performance. But until I actually see
one work... Well, you might get it, or you might not..

How can I live in the past? I can only remember the past.
And *nowhere* in the past have I ever seen such a
device actually work as claimed.
So put up the data, or you get to digging...
You kind of remind me of that "Bret" dude who calls himself
John Smith, or whatever... :/
I'd rather be a slopehead than believe in the tooth fairy,
free lunches, and antennas that don't follow the rules
of science.
I have no doubt his antenna may radiate some..
But then again, most dummy loads do also..
Tales of QSO's using light bulb dummy loads used to be
quite common back in the past, which I can still remember
going back to the time of swatting at colorful plastic butterflies
hanging above my head in my baby crib.
MK

2905. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 00:27:55 UTC
From: nm5k@wt.net
Message-ID: <b0241246-6c8c-42d3-bf80-c97758332143@s12g2000prg.googlegroups.com>
Source record: 27477

On Mar 6, 6:07 am, "Richard Fry" <r...@adams.net> wrote:
> <n...@wt.net> wrote:
> > I agree. I think it's quite possible that even a decoupled feedline
> > will add enough radiation to make the antenna noticeably better
> > than it really is. I'd prefer to see the source mounted *at* the
> > antenna to make it a decent comparison.
>
> __________
>
> Unless this antenna is itself balanced, most likely for best efficiency when
> operating in this configuration there would need to be a conductor running
> from the elevated tx chassis to a good r-f ground of some kind, either
> buried in the earth or in the form of a counterpoise. Radiation from that
> "ground" conductor could be many times greater than from what is considered
> to be the antenna -- even though no feedline is present..
>
> This is a common configuration used for so-called Part 15 AM installations
> to get greater groundwave coverage from the 100 mW tx input power allowed
> under FCC Part 15.219, by ignoring the 3-meter limit on the length of the
> radiating structure given there.
>
> RF

For some reason, I'd always got the impression that the antenna
was symmetrical and balanced.. But who ever knows for sure
with Art...
If this is the case, I wonder why he needs the garbage can lid, or
whatever metal he is using under it..
I had the impression in his various posts that he was trying to
avoid ground connections. But whoever knows for sure except
Art, and now maybe Denny... :/
MK

2906. Seeking New FAQ/Intro Maintainers for rec.radio.amateur.*

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 07:05:02 UTC
From: rram@panix.com
Message-ID: <radio/ham-radio/recruitment-1-1204873500@panix.com>
Source record: 27478
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.info

```
Posted-By: auto-faq 3.3.2 beta (PGPMoose V2.0, Perl 5.005)
Archive-name: radio/ham-radio/recruitment
Revision: 1.1 2007/09/29 18:42:47
Posting-Frequency: posted monthly
URL: http://www.faqs.org/faqs/radio/personal-intro/

Changes followed by "|".

The rec.radio.info newsgroup, first established in 1993, has been
recently revived by an active moderation team. We are currently seeking
suitable information, FAQ, and bulletin articles from the entire
rec.radio.* newsgroup hierarchy for simultaneous cross-posting to our
newsgroup.

We are seeking a replacement maintainer for the following information
bulletin formerly posted to rec.radio.amateur.* (and currently archived
at http://www.faqs.org/faqs/radio/personal-intro/ ):

radio/personal-intro
Subject: Guide to the rec.radio Newsgroups
Maintainer: jeffreyh@Hawaii.Edu (Jeffrey Herman)
Last Posted: 9 Nov 2001 06:18:17 GMT
Posting-Frequency: 15th of each month

We are willing to provide any technical support necessary to get this
article updated and automatically posted again at a regular interval.
This would include establishing contact with the original maintainer for
any necessary permissions. We would prefer to seek a new, dedicated
maintainer at this time, rather than start auto-posting the original
article ourselves.

For more information about our newsgroup, see:

http://www.panix.com/~rram/usenet/rri/index.html

Please direct any comments, questions, or criticisms to
rec-radio-info-request@panix.com.
```

2907. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 08:20:34 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <54d01caa-ce58-42ce-86d3-0a632892fa46@s8g2000prg.googlegroups.com>
Source record: 27479

On Mar 6, 12:35 pm, Cecil Moore <nos...@w5dxp.com> wrote:

> What you seem to be missing, Tom, is that if the two signals
> are not coherent, interference is not possible.

There is NO WAY I'm interested in moving to a one-dimensional world that requires me to special-case a particular type of wave to get the right answer and FORSAKE the multi-dimensional linear circuits world I'm in, that quite accurately describes what happens regardless of the content of forward and reverse. Your one-dimensional world apparently limits you to thinking about interference in a way that mine does not. I may post the results of a 'speriment I'm setting up in a day or two that may spark some interesting discussion. Till then, I'm outta here.

Cheers,
Tom

2908. Re: Sample point for scope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 11:23:54 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <ue-dnWYjBeHBuEzanZ2dneKdnZydnZ2d@pipex.net>
Source record: 27480

No Spam wrote:
> Being from a broadcast background and new to ham radio, I'm trying to
> find sample ports to connect scopes and spectrum analyzers to radios and
> dummy loads. I'm not finding any and have been simply using UHF Ts and
> small loops of wire near finals and radio outputs as sample ports.
>
> Am I missing something or is this normal?
>
> What are other people doing to get a scope sample port on an antenna to
> make power calculations?
>
> I'm Ting off between the xmitter and tuner to feed the scope to look for
> flat topping and power calculations as this point should be 50ohms but
> suspect this is not normal as the xmitter output is fully feeding the
> scope trhough a x10 probe.
>

2909. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 12:05:26 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <187067a7-7095-4633-8b20-600d91b57811@q78g2000hsh.googlegroups.com>
Source record: 27481

On Mar 6, 3:35 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> What you seem to be missing, Tom, is that if the two signals
> are not coherent, interference is not possible. Since we are
> discussing interference effects between obviously coherent
> forward and reflected waves, your observation seems to be a
> moot point.
>
> For instance, if the forward and reflected traveling waves
> in Roy's "Food for Thought" page are replaced by two sources
> that differ by 30% in frequency, there is no way for that
> entry in his chart to reach the 400 watts dissipated in the
> source resistor.

How coherent do the two signals have to be for interference to
occur?

You say that when the sources are coherent, interference occurs
but when the frequency differs by 30% it does not.

What happens if one of the sources has just a bit of phase noise,
or the frequency wanders just a bit, or is just offset a bit?

How much of a difference does there have to be for interference
to stop? What is the threshold? Phase noise? Wander? Offset?

And is it the mechanism that creates interference that stops working
once the threshold is crossed?
Or does the mechanism still work, but we just no longer call the
result interference? Why do we stop calling it interference once
the threshold is crossed?

What is the mechanism that creates the effect we call interference?

...Keith

2910. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 13:30:58 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080307053058.b86a7ba8.rsparks@elltel.net>
Source record: 27482

Hi Keith,

I must still not be "getting" something because while I now follow your numbers and trig identity, it looks to me like you used Cecil's premise "PRs = 50w + Pref " to show that '50 W plus Pref' = 68 + 68cos(2wt-61.9degrees) watts, which would be correct for the 12.5 ohm case.

So, rather than disproving Cecil's premise, you successfully demonstrated that it was correct in the instantaneous case.

What am I missing?

On Thu, 6 Mar 2008 09:56:06 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 6, 11:41 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Thu, 6 Mar 2008 06:10:26 -0800 (PST)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Mar 6, 1:17 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > On Wed, 5 Mar 2008 21:37:06 -0800 (PST)
> > > [snip]
> > > > Thanks Keith. I see what you are doing now, although I still don't understand your logic in faulting Cecil on the instantaneous values. I agree with you that the instantaneous values can be tracked, but don't see a fault in Cecil's presentation.
> >
> > > For the special situation described in
> > > >http://www.w5dxp.com/nointfr.htm
> > > Cecil is attempting to show that the reflected energy is dissipated in
> > > the source resistor.
> >
> > > The logic he employs is:
> > > - before the reflection arrives back at the generator, the source
> > > resistor
> > >   is dissipating X watts.
> > > - the reflected wave has an energy flow of Y watts.
> > > - after the reflection arrives back at the generator, the source
> > > resistor
> > >   is dissipating Z watts.
> > > - since Z is equal to X + Y, the energy in the reflected wave is being
> > >   dissipated in the source resistor.
> >
> > > In other words, since the dissipation in the source resistor increases
> > > by the same amount as the power in the reflected wave, the energy in
> > > the reflected wave must be being dissipated in the source resistor.
> >

> > Your logic and conclusion seem correct to me.
> >
> > > Cecil analyzes the circuit for a number of load resistances and
> > > suggests
> > > that the equality holds for any load resistance.
> >
> > > For example, with a load resistance of 12.5 ohms, the original
> > > dissipation
> > > in the source resistor is 50 W which increases to 68 W when the 18 W
> > > reflected wave arrives back at the generator. That is, X = 50, Y = 18
> > > and Z = 68, so Z is equal to X + Y.
> >
> > > Cecil does all of this analysis using average powers.
> >
> > > But we know that the power dissipation varies as a function of time
> > > and
> > > that the power in the reflected wave is a function of time. It is my
> > > contention that if it is the energy in the reflected wave that is
> > > increasing the dissipation in the source resistor, the dissipation in
> > > source resistor should occur at the same time that the reflected wave
> > > delivers the energy.
> >
> > > In other words, not only should Z.average = X.average + Y.average,
> > > but Z.instantaneous should equal X.instantaneous + Y.instantaneous
> > > for if the dissipation in the source resistor is not tracking the
> > > energy in the reflected wave, it can not be the energy in the
> > > reflected wave that is heating the resistor.
> >
> > Hard to follow this long sentence/paragraph. The dissipation in the source resistor should be the sum of instantaneous energy flows from both source(forward) and reflected energy flows.
>
> Agreed. And that is what I was trying to say.
>
> > We would not expect that the instantaneous energy flow would be equal from both source and reflection because of the sine wave nature of the energy flow.
> >
> > > So using the same 12.5 ohm example,
> > > X.inst = 50 + 50 cos(2wt)
> > > Y.inst = 18 + 18 cos(2wt)
> > > X.inst + Y.inst = 68 + 68 cos(2wt)
> > > but
> > > Z.inst = 68 + 68 cos(2wt - 61.9degrees)
> >
> > > So Z.inst is not equal to Y.inst + X.inst.
> >
> > I think you are mixing average energy flow (the 50 and 18 watts) with instantaneous flow (50 cos(2wt) and 18 cos(2wt)).
>
> I do not think so.

>
> The instantaneous energy flow for the reflected wave is
> Pr.g(t) = 18 - 18 cos(2wt) (see correction in previous post)
> This means that at t=0, 0 energy is flowing.
> When 2wt is 180 degrees, 36 joules per second are flowing.
> The average over a full cycle is 18 W.
>
> So I am summing the instantaneous flows for the two contributors of
> energy.
>
> The correct sum, however, is 68 + 32cos(2wt).
>
> The actual dissipation in the source resistor is
> Vrs(t) = 82.46 cos(wt -30.96 degrees)
> Irs(t) = 1.649 cos(wt -30.96 degrees)
> Prs(t) = Vrs(t) * Irs(t)
> = 68 + 68 cos(2wt -61.92 degrees)
>
> Whenever cos(2wt-61.92degrees) is equal to 1, 132 joules per second
> are being dissipated and whenever it is equal to -1, 0 joules are
> being dissipated. This follows from the periodic nature of the energy
> flow.
>
> > I think Z.inst = x.inst + y.inst = 50 cos(2wt) + 18 cos(2wt). The two energy components arrive 90 degrees out of phase (in this example) so we should write z.inst = 50 cos(2wt) + 18 cos(2wt + 90).
> >
> > > This means that the dissipation in the resistor is not happening
> > > at the same time as the energy is being delivered by the reflected
> > > wave, which must mean that it is not the energy from the reflected
> > > wave that is heating the source resistor.
> >
> > > So while analyzing average power dissipations suggests that the
> > > energy from the reflected wave is dissipated in the source resistor,
> > > analysis of the instantaneous power shows that it is not.
> >
> > > ...Keith
> >
> > Either your math or mine is not correct. Which is incorrect?
>
> Both. But I think I have now corrected mine.
>
> ...Keith

--
73, Roger, W7WKB

2911. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 13:57:19 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fqrhjv$1hg2$1@f04n12.cac.psu.edu>
Source record: 27483

Derek wrote:
> On Mar 5, 3:23 am, n...@wt.net wrote
> .
>> Does this help clarify my stance on this small sized subject?
>> I try to avoid any gray areas that might give the impression
>> that I think this device even has a remote chance of it's
>> claimed full sized success as a radiator of RF.
>> But in case some still get confused by what I say, let me
>> rephrase in a manner that most all will understand.
>> What a load of horse manure says I...
>> MK
>
>
> Spoken like a true neanderthal, they also refused to embrace new ways
> of doing things and look what happened to them.
> You are living in the past, keep on digging.

Are we required to suspend disbelief for every new idea that comes
along? That would be chaos.

- 73 de Mike N3LI -

2912. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 13:59:58 UTC
From: Dave <noone@nowhere.com>
Message-ID: <yTbAj.6158$oy2.267@trndny07>
Source record: 27484

"Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
news:187067a7-7095-4633-8b20-600d91b57811@q78g2000hsh.googlegroups.com...

>What is the mechanism that creates the effect we call interference?

superposition.

2913. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 14:02:15 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fqrht7$1hg2$2@f04n12.cac.psu.edu>
Source record: 27485

Tom Donaly wrote:

>> Is this test going to be written up somewhere? What is the test protocol?
>>
>> - 73 de Mike N3LI -
>
> Easier said than done, Mike.

Any way we look at it, Tom! ;^)

- 73 de Mike N3LI -

2914. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 14:24:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <PecAj.25238$J41.10499@newssvr14.news.prodigy.net>
Source record: 27486

K7ITM wrote:
> On Mar 6, 12:35 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>
>> What you seem to be missing, Tom, is that if the two signals
>> are not coherent, interference is not possible.
>
> There is NO WAY I'm interested in moving to a one-dimensional world
> that requires me to special-case a particular type of wave to get the
> right answer and FORSAKE the multi-dimensional linear circuits world
> I'm in, that quite accurately describes what happens regardless of the
> content of forward and reverse.

Coherency, non-coherency, and interference is covered well
in "Optics" by Hecht and other textbooks. Optical physicists
have been tracking the EM energy flow for centuries. This
information may be new to you but it is old hat in physics.

What I have proved in Part 1 is that average reflected energy
is not always reflected back toward the load. Equally false
is the flip side old wives tale that says: "Reflected energy
is always dissipated in the source."

It's takes only one case to prove an old wives' tale to
be false. That's why I chose the special case of zero
interference. One needs to understand the special case of
zero interference before one tries to understand the general
case involving interference which will be Part 2 and Part 3
of my articles.

If you choose to remain ignorant, "NO WAY I'm interested",
then that's your choice and that's OK. But understanding
interference is the easiest way I know of to track the
energy flow.

> Your one-dimensional world apparently
> limits you to thinking about interference in a way that mine does
> not. I may post the results of a 'speriment I'm setting up in a day
> or two that may spark some interesting discussion. Till then, I'm
> outta here.

If you come up with an easier analysis of average energy flow
and average power, that will be great.
--
73, Cecil http://www.w5dxp.com

2915. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 14:26:46 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <654b04c0-31ab-4710-a4ba-9871bd8d655f@b1g2000hsg.googlegroups.com>
Source record: 27487

On Mar 7, 8:30 am, Roger Sparks <rspa...@elltel.net> wrote:
> Hi Keith,
>
> I must still not be "getting" something because while I now follow your numbers and trig identity, it looks to me like you used Cecil's premise "PRs = 50w + Pref " to show that '50 W plus Pref' = 68 + 68cos(2wt-61.9degrees) watts, which would be correct for the 12.5 ohm case.
>
> So, rather than disproving Cecil's premise, you successfully demonstrated that it was correct in the instantaneous case.
>
> What am I missing?

The actual dissipation in the source resistor was computed using
circuit theory
to derive the voltage and current through the resistor and then
multiplying them
together to get the power dissipation:
Vrs(t) = 82.46 cos(wt -30.96 degrees)
Irs(t) = 1.649 cos(wt -30.96 degrees)
Prs.circuit(t) = Vrs(t) * Irs(t)
= 68 + 68 cos(2wt -61.92 degrees)

This was then shown not to be equal to the results using Cecil's
hypothesis
because
Prs.before(t) = 50 + 50 cos(2wt)
Pref(t) = 18 - 18 cos(2wt)
which would give, using Cecil's hypothesis
Prs.cecil(t) = 68 + 32 cos(2wt)

So I accept the circuit theory result of
Prs.circuit(t) = 68 + 68 cos(2wt -61.92 degrees)
and conclude that, since the results using Cecil's hypothesis are
different, Cecil's hypothesis must be incorrect.

That is, the power dissipated in the source resistor after the
reflection
returns is not the sum of the power dissipated in the resistor before
the
reflection returns plus the power in the reflected wave.

Now it does turn out that the average power dissipated in the source
resistor is the sum of the average power before the reflection returns
plus the average power in the reflected wave since
Prs.circuit.average = average(68 + 68 cos(2wt -61.92 degrees))

= 68
This does agree with Cecil's analysis using average powers. But energy
flows must balance on a moment by moment basis if energy is to be
conserved so when we do the instantaneous analysis we find that
Cecil's
hypothesis does not hold.

...Keith

PS: To compute Vrs(t) and Irs(t) using circuit theory:
The generator output voltage
Vg(t) = Vf.g(t) + Vr.g(t)
where Vf.g(t) is the line forward voltage at the generator
and Vr.g(t) is the line reflected voltage at the generator.

The generator output current
Ig(t) = If.g(t) + Ir.g(t)
where If.g(t) is the line forward current at the generator
and Ir.g(t) is the line reflected current at the generator.

Where Vs(t) is the source voltage
Vrs(t) = Vs(t) - Vg(t)
Irs(t) = Ig(t)
and the power is
Prs.circuit(t) = Vrs(t) * Irs(t)

2916. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 14:52:10 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fqrkqq$14o4$1@f04n12.cac.psu.edu>
Source record: 27488

Derek wrote:
> On Mar 7, 3:45 am, Roy Lewallen <w...@eznec.com> wrote:

<snippage>

>> Even that might not be adequate, depending on the design of the
>> transmitter. Any power or other wires connected to the transmitter could
>> easily become part of the radiator, so they'd have to be decoupled. A
>> small, battery-powered transmitter with no connected wires would avoid
>> this potential problem.
>>
>> Roy Lewallen, W7EL
>
>
> You still don't understand! you are talking bullshit you have no
> idea of the design of Art's antenna or of how it works or it's needs
> yet you put up your remedies for old style antenna's.

And yet, all we are given is "This is my design, it works, accept it!"

This whole thing smacks of alternative science, where everyone is
required to suspend disbelief, maximize credulousity (is that a word?
;^)). Everyone has to accept it as true, and if you don't you are
subject to attacks. Somehow it becomes the job of the establishment to
prove it correct, and if they don't, it is discounted as conspiracy,
professional jealousy, incompetence, or in some of the more amazing
examples, not enough people believing in it..

Copper bracelets, magnetic water and bedsheets, super duper gas mileage
enhancers that Detroit doesn't want you to have, pyramids, crystals,
thought amplifiers, cold fusion, and on and on and on.

http://www.quackwatch.org/01QuackeryRelatedTopics/signs.html

It's all there. Perhaps this is real, perhaps a new day is dawning in
antenna design. I would never dream of pronouncing the antenna a
non-starter with the paucity of information given. But a whole lot of
what is in that guide is here too.

Not the least impressive is that this revolution is starting in
rraa..... ;^)

Another possibility... since this whole 'tenna thing is working outside
of the mainstream, maybe they'll take it on over at "Mythbusters". You'd
have top admit that Kari would be a lot more pleasant to verify these
claims with than most of us here......

- 73 de Mike N3LI -

2917. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 14:58:16 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cKcAj.13198$5K1.955@newssvr12.news.prodigy.net>
Source record: 27489

Keith Dysart wrote:
> How coherent do the two signals have to be for interference to
> occur?

Instead of spending hours typing the answer, I will point
you to "Optics", by Hecht, 4th edition, Chapter 12, Basics
of Coherence Theory.

In my example, the one source is an ideal single frequency
source. Thus all signals existing within the system are
completely coherent, by definition. Your questions are
irrelevant to the example provided.

> You say that when the sources are coherent, interference occurs
> but when the frequency differs by 30% it does not.

In between "completely coherent" signals and "completely incoherent"
signals is a very large gray area. Please read the reference.

> What happens if one of the sources has just a bit of phase noise,
> or the frequency wanders just a bit, or is just offset a bit?

Please read the reference. In my example, the source is ideal
so that problem doesn't exist.

> How much of a difference does there have to be for interference
> to stop? What is the threshold? Phase noise? Wander? Offset?

Please read the reference. In my example, the source is ideal
so those problems don't exist.

> And is it the mechanism that creates interference that stops working
> once the threshold is crossed?
> Or does the mechanism still work, but we just no longer call the
> result interference? Why do we stop calling it interference once
> the threshold is crossed?

In "Optics", by Hecht, Chapter 7 is on superposition and
Chapter 9 is on interference.

Quoting "Optics", by Hecht, Chapter 12. "Thus far in our
discussion of phenomena involving the superposition of waves,
we've restricted the treatment to that of either completely
coherent or completely incoherent disturbances. ... There is
a middle ground between these antithetic poles, which is of
considerable contemporary concern - the domain of
partial coherence.

> What is the mechanism that creates the effect we call interference?

"Interference", in this context, is not defined in the IEEE
Dictionary. The closest I can come to a definition is from
"Optics", by Hecht: "... optical [EM] interference corresponds
to the interaction of two or more lightwaves yielding a resultant
irradiance [average power density] that deviates from the sum of
the component irradiances [average power densities]."
--
73, Cecil http://www.w5dxp.com

2918. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 15:15:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0_cAj.15279$Ej5.9863@newssvr29.news.prodigy.net>
Source record: 27490

Roger Sparks wrote:
> So, rather than disproving Cecil's premise, you successfully
> demonstrated that it was correct in the instantaneous case.

Roger, my premise has nothing to do with the instantaneous
case. I have made no assertions about instantaneous values.
My formula applies *only to average power*. Using that
formula on instantaneous values is an invalid thing to do,
a misuse of the tool.
--
73, Cecil http://www.w5dxp.com

2919. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 15:24:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <o7dAj.8115$Mh2.4114@nlpi069.nbdc.sbc.com>
Source record: 27491

Dave wrote:
> "Keith Dysart" <Keith.Dysart@gmail.com> wrote:
>> What is the mechanism that creates the effect we call interference?
>
> superposition.

Not disagreeing - just expanding:
Superposition is certainly necessary but superposition
alone is not sufficient. Superposition can occur with
or without interference.
--
73, Cecil http://www.w5dxp.com

2920. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 15:29:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <zbdAj.8116$Mh2.5365@nlpi069.nbdc.sbc.com>
Source record: 27492

Michael Coslo wrote:
> Everyone has to accept it as true, and if you don't you are
> subject to attacks.

Mike, exactly the same thing is true for a 3 ns delay
through a 75m bugcatcher loading coil perpetuated by
gurus on this newsgroup.
--
73, Cecil http://www.w5dxp.com

2921. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 15:39:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%kdAj.8117$Mh2.5018@nlpi069.nbdc.sbc.com>
Source record: 27493

Keith Dysart wrote:
> So I accept the circuit theory result of
> Prs.circuit(t) = 68 + 68 cos(2wt -61.92 degrees)
> and conclude that, since the results using Cecil's hypothesis are
> different, Cecil's hypothesis must be incorrect.

Keith, please stop using innuendo to try to discredit
me. My hypothesis does NOT apply to instantaneous values,
never has applied to instantaneous values, and never will
apply to instantaneous values. Please cease and desist
with your unethical innuendos.

If you have to stoop to lying about what I have said,
you will only discredit yourself.

My hypothesis is correct for average values of powers
and *applies only to average values of powers* just as
the irradiance equation from optical physics applies
only to average power densities. To the best of my
knowledge, there is no such thing as instantaneous
irradiance.
--
73, Cecil http://www.w5dxp.com

2922. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 16:09:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <WMdAj.19176$R84.11399@newssvr25.news.prodigy.net>
Source record: 27495

Cecil Moore wrote:
> To the best of my
> knowledge, there is no such thing as instantaneous
> irradiance.

The definition of irradiance is the "average energy per unit area per unit time". Any deviation away from "average energy per unit area per unit time" when discussing what I have said is a straw man diversion, not in the spirit of a good will discussion.
--
73, Cecil http://www.w5dxp.com

2923. Re: Sample point for scope

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 16:11:01 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <pOdAj.11$yD3.4@trnddc05>
Source record: 27494

"No Spam" <no@spam.com> wrote in message
news:Z8ednUkrTsDk-k3anZ2dnUVZ_hWdnZ2d@comcast.com...
> Being from a broadcast background and new to ham radio, I'm trying to
> find sample ports to connect scopes and spectrum analyzers to radios and
> dummy loads. I'm not finding any and have been simply using UHF Ts and
> small loops of wire near finals and radio outputs as sample ports.
>
> Am I missing something or is this normal?
>
> What are other people doing to get a scope sample port on an antenna to
> make power calculations?
>
> I'm Ting off between the xmitter and tuner to feed the scope to look for
> flat topping and power calculations as this point should be 50ohms but
> suspect this is not normal as the xmitter output is fully feeding the
> scope trhough a x10 probe.

I use a directional coupler. It is a sampling device.

John

2924. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 16:17:44 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <IUdAj.720908$kj1.263993@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27496

Cecil Moore wrote:

> Coherency, non-coherency, and interference is covered well
> in "Optics" by Hecht and other textbooks. Optical physicists
> have been tracking the EM energy flow for centuries. This
> information may be new to you but it is old hat in physics.

Cecil,

You may or may not already know this, but a lot of detailed optical analysis these days is done with full 3-D electromagnetic simulation, starting from Maxwell equations and boundary conditions. Interference, coherence, energy flow, and all of the other stuff you like to discuss can be *output* from that analysis, but those items are not part of the input. The "centuries old" optics simply does not get the job done. The "centuries old" stuff may work in the (impossible) cases where everything is completely lossless and ideal, but it doesn't give the right answers in the real world.

73,
Gene
W4SZ

2925. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 16:19:58 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <RWdAj.3266$gl5.3186@bignews6.bellsouth.net>
Source record: 27497

"Michael Coslo" <mjc5@psu.edu> wrote in message
news:fqrkqq$14o4$1@f04n12.cac.psu.edu...

> (snip) You'd have top admit that Kari would be a lot more pleasant to
> verify these claims with than most of us here......
>
>
> - 73 de Mike N3LI -

If we could only get Kari Byron to do the show wearing a thong bikini. In fact, all of the shows could be improved in a similar manner.

I would think that lots of new approaches in science began as "alternative science/pseudo science" ideas. No, I can't name one instance off the top of my head. Those instances are missing along with most of my hair, a good portion of my previous superior cognitive abilities and short term memories.

Some of the younger folks' minds have been prepared for the acceptance of dimensional additions to our present paradym of physical reality. I agree (or hope) that soon, other quantifiable aspects of additional dimensions will pop into our reality. It would be interesting to play with the effects of hyperdimensional physics in regard to our antennas. But, at the moment, at least for we old fogies, we are stuck with playing within the current four dimensions.

Ed, NM2K

2926. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 16:27:15 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <D1eAj.720944$kj1.675046@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27498

Cecil Moore wrote:

>
> Quoting "Optics", by Hecht, Chapter 12. "Thus far in our
> discussion of phenomena involving the superposition of waves,
> we've restricted the treatment to that of either completely
> coherent or completely incoherent disturbances. ... There is
> a middle ground between these antithetic poles, which is of
> considerable contemporary concern - the domain of
> *partial coherence*.

"Contemporary" is an interesting word choice. Partial coherence has been recognized for a long time. There is a very widely referenced paper by H. H. Hopkins on partial coherence in optical imaging systems that was published in 1950. He did not invent the concept, but he did popularize the standard formulation still used today. The math is a bit messy, with 4 dimensional integrals and other complications, but numerical solutions are widely done.

I would be quite surprised if the radar and other RF experts don't use the same type of analysis.

Oh, by the way, even a completely monochromatic wave can be partially coherent if the source is extended. Indeed, that is one of the more common configurations.

73,
Gene
W4SZ

2927. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 16:42:04 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <wfeAj.287458$MJ6.245316@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27499

Cecil Moore wrote:
> Cecil Moore wrote:
>> To the best of my
>> knowledge, there is no such thing as instantaneous
>> irradiance.
>
> The definition of irradiance is the "average energy
> per unit area per unit time". Any deviation away
> from "average energy per unit area per unit time"
> when discussing what I have said is a straw man
> diversion, not in the spirit of a good will
> discussion.

The definition of irradiance, according to NIST, is power per unit area.
The standard units are W/m2 or lumen/m2.

You can add average, peak, instantaneous, or whatever you like to
further define your quantity of interest. Such additions, however, are
not part of the standard definition of irradiance.

73,
Gene
W4SZ

2928. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 16:58:47 UTC
From: ArthurUnwin@gmail.com
Message-ID: <1e555a2b-5b34-4f65-a875-1edbc5044bc2@y77g2000hsy.googlegroups.com>
Source record: 27500

On Mar 5, 6:11 am, Denny <k...@mailblocks.com> wrote:
> Art did ship me one of his antennas a week or two back... I have it in
> my shop...
> I will indeed put this interesting antenna to an objective and
> thorough testing with a full report here... I am always excited to
> learn something new...
>
> It is 19F outside this morning and blowing hard, with wind and snow
> forecast through the week and into the weekend, and I am unlikely to
> climb the big tower in this...
> I will attempt within a week to put it on a small <50'> tower I have
> attached to my shop and get some baseline impedence and field strength
> measurements... Then as soon as the weather allows I will move it to
> the big tower for a good test against my full size antennas...
>
> I am sorry to have to put this off a bit, but given the weather and
> that my family is hurting at the moment my free time is limited...
>
> denny / k8do

Denny, Don,t rush things, you have all the time in the world.Listened
to
my present antenna yesterday and listened for a while on 20 M where
hawaii was working all Europe where all were nbig signals.
So I have got back to another antenna that will be all frequency as
well as all band
and hopefully in a day or so we can put it on the tower. Shame I
didn't put the finishing
touches to the antenna that I sent but then your interest is 160 M so
you are covered.
If you need anything drop me a line and I will get right on it.
Now have a new server so all old mail is lost and is not being
forwarded!
Best regards
Art Unwin KB9MZ

2929. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 17:00:31 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080307090031.9ba54327.rsparks@elltel.net>
Source record: 27351

On Fri, 07 Mar 2008 15:15:08 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > So, rather than disproving Cecil's premise, you successfully
> > demonstrated that it was correct in the instantaneous case.
>
> Roger, my premise has nothing to do with the instantaneous
> case. I have made no assertions about instantaneous values.
> My formula applies *only to average power*. Using that
> formula on instantaneous values is an invalid thing to do,
> a misuse of the tool.
> --
> 73, Cecil http://www.w5dxp.com

I find myself surprised at your insistance that the instantaneous case must be seperated from the average case in our example of waves on a transmission line. Our ability to measure within the confines of the sine wave is much greater than what is possible at optic frequencies so we are led to expect much more than averages.

It is informative to look at each problem from many angles. Keith's method is one way. Another way is to observe that when we begin considering what is happening with the source resistor, we are really bringing the source resistor into the circuit, i.e., bringing the source resistor outside of the 'black box'. Once we do that, we can see that the source prereflection load is not the same as the post reflection load. From this perspective, the equation "PRs = 50w + Pref" becomes a target to which we adjust the source voltage to acheive. We would accomplish that by using your equation but Keith's method.

It seems to me like Keith is using interference, both constructive and destructive, to calculate what the source load would be on the instantaneous basis. To me it seems like a validation of your premise.

Did I misunderstand your premise, and you were really trying to say that the inclusion of a 50 ohm source resistor would prevent the source from ever 'seeing' anything but a 100 ohm load? I don't think that was your intent.
--
73, Roger, W7WKB

2930. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 17:01:08 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fqrsck$14uu$1@f04n12.cac.psu.edu>
Source record: 27352

Ed Cregger wrote:
> "Michael Coslo" <mjc5@psu.edu> wrote in message
> news:fqrkqq$14o4$1@f04n12.cac.psu.edu...
>
>> (snip) You'd have top admit that Kari would be a lot more pleasant to
>> verify these claims with than most of us here......
>>
>>
>> - 73 de Mike N3LI -
>
>
> -----------------
>
>
> If we could only get Kari Byron to do the show wearing a thong bikini. In
> fact, all of the shows could be improved in a similar manner.

No you have me all distracted, Ed. She's so darn cute in jeans and a
T-shirt (and no make up to boot) that the idea of.... never mind...
let's get back to the subject at hand.

> I would think that lots of new approaches in science began as "alternative
> science/pseudo science" ideas. No, I can't name one instance off the top of
> my head. Those instances are missing along with most of my hair, a good
> portion of my previous superior cognitive abilities and short term memories.
>
> Some of the younger folks' minds have been prepared for the acceptance of
> dimensional additions to our present paradym of physical reality. I agree
> (or hope) that soon, other quantifiable aspects of additional dimensions
> will pop into our reality. It would be interesting to play with the effects
> of hyperdimensional physics in regard to our antennas. But, at the moment,
> at least for we old fogies, we are stuck with playing within the current
> four dimensions.

I think that we would be stupid indeed to believe that "Its all known".
I personally believe that we'll be bending space and zipping off to the
galaxies(will that get us away from reality tv?) at superluminal "speed"
in the future. Who knows, we may even become immortal some day.

The skeptics have been wrong in the past. History is littered with them.

But, and this is very important, to pop that old chestnut in the
campfire as some sort of invalidation of the skeptics is not only a
non-sequitar, but really bad logic.

It does not follow that Art's antenna works because the Catholic church persecuted Galileo, and was proven wrong.

His works have to stand on their own merit, not Galileo's.

I have great difficulty following what he writes. It is possible that I am hopelessly dull, but I don't have that trouble with very many people.

Attempts at getting clarity have usually been met with his belief that if you don't get it right away, you have to "go back to school, or remarks similar.

What I have been able to garner of his theory of operation seems to be that electrons, or particles or something, is jumping off the antenna into the "aether", or something like that (zero point energy? quantum matter pops? dark matter? cosmic Vicks Vap-O-Rub?) I dunno for sure - as I is a dull boy sometimes...

- 73 de Mike N3LI -

2931. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 17:08:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cEeAj.19944$0w.7030@newssvr27.news.prodigy.net>
Source record: 27353

Gene Fuller wrote:
> You may or may not already know this, but a lot of detailed optical
> analysis these days is done with full 3-D electromagnetic simulation,
> starting from Maxwell equations and boundary conditions. Interference,
> coherence, energy flow, and all of the other stuff you like to discuss
> can be *output* from that analysis, but those items are not part of the
> input. The "centuries old" optics simply does not get the job done. The
> "centuries old" stuff may work in the (impossible) cases where
> everything is completely lossless and ideal, but it doesn't give the
> right answers in the real world.

Ideal examples are time-honored ways of discussing concepts
and getting away from the vagaries of the real world. If one
understands the ideal examples, one is in a position to then
proceed to understanding the real world. If one fails to
understand the conceptual principles underlying the ideal
examples, one cannot possibly understand the real world.

Your posting seems to reflect your usual sour grapes attitude.
I will expect you to object to every example that uses lossless
transmission lines from now on including ones by Ramo & Whinnery,
Walter Johnson, Walter Maxwell, J. C. Slater and Robert Chipman.
--
73, Cecil http://www.w5dxp.com

2932. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 17:21:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AQeAj.19945$0w.12727@newssvr27.news.prodigy.net>
Source record: 27354

Gene Fuller wrote:
> The definition of irradiance, according to NIST, is power per unit area.
> The standard units are W/m2 or lumen/m2.

Exactly how much power can exist in a zero unit of
time?

You previously objected to things that don't match
the real world. Instantaneous irradiance would rely
on an infinitesimally small amount of time, something
that doesn't match reality very well. One would think
you would therefore object to the concept of instantaneous
irradiance since it cannot be measured in reality and
exists only in the math model in the human mind.
--
73, Cecil http://www.w5dxp.com

2933. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 17:22:50 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080307092250.9af50728.rsparks@elltel.net>
Source record: 27355

Hi Keith,

Thanks for the additional explaination. I am wondering if I misunderstood Cecil's original premise.

On Fri, 7 Mar 2008 06:26:46 -0800 (PST)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 7, 8:30 am, Roger Sparks <rspa...@elltel.net> wrote:
> > Hi Keith,
> >
> > I must still not be "getting" something because while I now follow your numbers and trig identity, it looks to me like you used Cecil's premise "PRs = 50w + Pref " to show that '50 W plus Pref' = 68 + 68cos(2wt-61.9degrees) watts, which would be correct for the 12.5 ohm case.
> >
> > So, rather than disproving Cecil's premise, you successfully demonstrated that it was correct in the instantaneous case.
> >
> > What am I missing?
>
> The actual dissipation in the source resistor was computed using
> circuit theory
> to derive the voltage and current through the resistor and then
> multiplying them
> together to get the power dissipation:
> Vrs(t) = 82.46 cos(wt -30.96 degrees)
> Irs(t) = 1.649 cos(wt -30.96 degrees)
> Prs.circuit(t) = Vrs(t) * Irs(t)
> = 68 + 68 cos(2wt -61.92 degrees)
>
> This was then shown not to be equal to the results using Cecil's
> hypothesis
> because
> Prs.before(t) = 50 + 50 cos(2wt)
> Pref(t) = 18 - 18 cos(2wt)
> which would give, using Cecil's hypothesis
> Prs.cecil(t) = 68 + 32 cos(2wt)
>
> So I accept the circuit theory result of
> Prs.circuit(t) = 68 + 68 cos(2wt -61.92 degrees)
> and conclude that, since the results using Cecil's hypothesis are
> different, Cecil's hypothesis must be incorrect.
>
> That is, the power dissipated in the source resistor after the

> reflection
> returns is not the sum of the power dissipated in the resistor before
> the
> reflection returns plus the power in the reflected wave.
>
> Now it does turn out that the average power dissipated in the source
> resistor is the sum of the average power before the reflection returns
> plus the average power in the reflected wave since
> Prs.circuit.average = average(68 + 68 cos(2wt -61.92 degrees))
> = 68
> This does agree with Cecil's analysis using average powers. But energy
> flows must balance on a moment by moment basis if energy is to be
> conserved so when we do the instantaneous analysis we find that
> Cecil's
> hypothesis does not hold.
>
> ...Keith
>
> PS: To compute Vrs(t) and Irs(t) using circuit theory:
> The generator output voltage
> Vg(t) = Vf.g(t) + Vr.g(t)
> where Vf.g(t) is the line forward voltage at the generator
> and Vr.g(t) is the line reflected voltage at the generator.
>
> The generator output current
> Ig(t) = If.g(t) + Ir.g(t)
> where If.g(t) is the line forward current at the generator
> and Ir.g(t) is the line reflected current at the generator.
>
> Where Vs(t) is the source voltage
> Vrs(t) = Vs(t) - Vg(t)
> Irs(t) = Ig(t)
> and the power is
> Prs.circuit(t) = Vrs(t) * Irs(t)

--
73, Roger, W7WKB

2934. Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 17:28:24 UTC
From: ArthurUnwin@gmail.com
Message-ID: <da74dfff-40ce-48e8-8c57-81a6d3d38d37@2g2000hsn.googlegroups.com>
Source record: 27356

I have searched quite a bit for evidence that states that performance
of antennas can be rated by it's size. Formulas do not refere to
radiator size or volume
and aparture is referenced to gain. I understand that sort of thinking
based on Yagi design
but the idea that all small radiators are inefficient is rather
ludicrouse. My work, based on
the sciences of the masters, show that a efficient radiator can be any
size,shape and
configuration as long as it
is in equilibrium . Period
No where can I find reference to "size" in what the masters state
Regards
Art

2935. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 17:35:50 UTC
From: richardharrison@webtv.net
Message-ID: <8773-47D17CF6-28@storefull-3255.bay.webtv.net>
Source record: 27357

Cecil Moore wrote:
"The definition of irradiance is "the average energy per unit time. Any deviation away---."

As energy per unit time is power, Cecil`s definition agrees with what my dictionary says:
"Irradiance-The incident radiated power per unit area of a surface; the radiometric counterpart of illumination, usually expressed in watts/cm, squared."

This is different from Poynting which uses instantaneous values.

Best regards, Richard Harrison. KB5WZI

2936. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 17:46:19 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqrv1bqgo1@news.jpl.nasa.gov>
Source record: 27359

ArthurUnwin@gmail.com wrote:
> I have searched quite a bit for evidence that states that performance
> of antennas can be rated by it's size. Formulas do not refere to
> radiator size or volume
> and aparture is referenced to gain. I understand that sort of thinking
> based on Yagi design
> but the idea that all small radiators are inefficient is rather
> ludicrouse. My work, based on
> the sciences of the masters, show that a efficient radiator can be any
> size,shape and
> configuration as long as it
> is in equilibrium . Period
> No where can I find reference to "size" in what the masters state
> Regards
> Art

The work by Chu (Journal of Applied Physics, p1163, v19, Dec 1948) and subsequently by Harrington (IEEE Trans Ant & Prop, V18#6, Nov 1965, p896) , Thiele (IEEE Trans on Ant and Prop, v51, #6, June 2003, p1263) and later others, discusses fundamental limits on performance. Watch out, though, for the assumptions in the constraints (e.g. whether the device attached to the feedpoint is reciprocal), and, of course, where the boundary of the system is.

Watch out also for the definition of "Q", which in this context is the ratio of stored to disspated/radiated energy, not the ratio of center frequency/bandwidth.

In short, there is a tradeoff between Q, directivity, and size. And, because high Q implies high stored energy, for physically realizable antennas with loss, efficiency is in the mix too.

Googling "chu harrington limit" often turns up useful stuff.

2937. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 17:53:04 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <7ifAj.2343$bO.513@bignews7.bellsouth.net>
Source record: 27358

"Michael Coslo" <mjc5@psu.edu> wrote in message
news:fqrsck$14uu$1@f04n12.cac.psu.edu...
> Ed Cregger wrote:
>> "Michael Coslo" <mjc5@psu.edu> wrote in message
>> news:fqrkqq$14o4$1@f04n12.cac.psu.edu...
>>
>>> (snip) You'd have top admit that Kari would be a lot more pleasant to
>>> verify these claims with than most of us here......
>>>
>>>
>>> - 73 de Mike N3LI -
>>
>>
>> -----------------
>>
>>
>> If we could only get Kari Byron to do the show wearing a thong bikini. In
>> fact, all of the shows could be improved in a similar manner.
>
> No you have me all distracted, Ed. She's so darn cute in jeans and a
> T-shirt (and no make up to boot) that the idea of.... never mind... let's
> get back to the subject at hand.
>
>
>> I would think that lots of new approaches in science began as
>> "alternative science/pseudo science" ideas. No, I can't name one instance
>> off the top of my head. Those instances are missing along with most of my
>> hair, a good portion of my previous superior cognitive abilities and
>> short term memories.
>>
>> Some of the younger folks' minds have been prepared for the acceptance of
>> dimensional additions to our present paradym of physical reality. I agree
>> (or hope) that soon, other quantifiable aspects of additional dimensions
>> will pop into our reality. It would be interesting to play with the
>> effects of hyperdimensional physics in regard to our antennas. But, at
>> the moment, at least for we old fogies, we are stuck with playing within
>> the current four dimensions.
>
>
> I think that we would be stupid indeed to believe that "Its all known". I
> personally believe that we'll be bending space and zipping off to the
> galaxies(will that get us away from reality tv?) at superluminal "speed"
> in the future. Who knows, we may even become immortal some day.
>

> The skeptics have been wrong in the past. History is littered with them.
>
> But, and this is very important, to pop that old chestnut in the campfire
> as some sort of invalidation of the skeptics is not only a non-sequitar,
> but really bad logic.
>
> It does not follow that Art's antenna works because the Catholic church
> persecuted Galileo, and was proven wrong.
>
> His works have to stand on their own merit, not Galileo's.
>
> I have great difficulty following what he writes. It is possible that I am
> hopelessly dull, but I don't have that trouble with very many people.
>
> Attempts at getting clarity have usually been met with his belief that if
> you don't get it right away, you have to "go back to school, or remarks
> similar.
>
> What I have been able to garner of his theory of operation seems to be
> that electrons, or particles or something, is jumping off the antenna into
> the "aether", or something like that (zero point energy? quantum matter
> pops? dark matter? cosmic Vicks Vap-O-Rub?) I dunno for sure - as I is a
> dull boy sometimes...
>
> - 73 de Mike N3LI -

I cannot argue with your point of view, Mike. We must stick with real science and what has been proven when it comes to performing professionally.

However, being somewhat of a conjurer/writer of fiction, I like to permit myself to venture from the accepted path from time to time. I suspect that many scientific breakthroughs have been seeded and brought to fruition over the centuries in much the same way.

I am not defending the OP's position. That is his job, not mine.

Ed, NM2K

2938. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 18:13:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tBfAj.6009$pl4.5660@newssvr22.news.prodigy.net>
Source record: 27360

Roger Sparks wrote:
> On Fri, 07 Mar 2008 15:15:08 GMT
> Cecil Moore <nospam@w5dxp.com> wrote:
>> My formula applies *only to average power*.
>
> I find myself surprised at your insistance that the instantaneous
> case must be seperated from the average case in our example of waves
> on a transmission line.

You have misunderstood what I am objecting to - which is:
Please don't say or imply that I have said or implied
anything about instantaneous values. I have NOT done so!
The formulas and concepts being used in the discussion
of instantaneous values are NOT mine! My objection is
to the false statements being made about what I have
posted.

Please go ahead and have your instantaneous discussion with
Keith but please don't say or imply that anything associated
with that discussion is about anything I have posted. Saying
or implying such a thing is simply false.

> It is informative to look at each problem from many angles.

I agree - just stop saying that it is based on my assertions.
You or Keith may be right or wrong but either way, it is not
associated with anything I have posted. Please leave my name
out of any discussion concerning instantaneous values.

> Did I misunderstand your premise, and you were really trying to say that
> the inclusion of a 50 ohm source resistor would prevent the source from
> ever 'seeing' anything but a 100 ohm load? I don't think that was your
> intent.

Please add a dimension to your thinking. No matter what the
value of the load resistor, the source delivers 100 watts.
There are an infinite number of loads that the source could
"see" besides 100+j0 ohms that will make that condition true.

When the load is 0 ohms, the source "sees" 50+j50 ohms.
When the load is 12.5 ohms, the source "sees" 73.5+j44.1 ohms.
When the load is 25 ohms, the source "sees" 90+j30 ohms.
Only when the load is 50 ohms, does the source "see" 100+j0 ohms.
--
73, Cecil http://www.w5dxp.com

2939. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 18:16:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tEfAj.6013$pl4.168@newssvr22.news.prodigy.net>
Source record: 27361

Roger Sparks wrote:
> Thanks for the additional explaination. I am wondering if I misunderstood Cecil's original premise.

Roger, if you thought it involved any instantaneous values then, yes, you misunderstood my premise.
--
73, Cecil http://www.w5dxp.com

2940. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 18:26:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <zNfAj.14936$0o7.5353@newssvr13.news.prodigy.net>
Source record: 27362

Richard Harrison wrote:
> Cecil Moore wrote:
> "The definition of irradiance is "the average energy per unit time. Any
> deviation away---."

Richard, your newsreader dropped part of what I
wrote which was:

The definition of irradiance is the "average energy
per unit area per unit time".
--
73, Cecil http://www.w5dxp.com

2941. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 19:26:02 UTC
From: dplatt@radagast.org
Message-ID: <afh8a5-or7.ln1@radagast.org>
Source record: 27363

In article <RWdAj.3266$gl5.3186@bignews6.bellsouth.net>,
Ed Cregger <ecregger@bellsouff.net> wrote:

>I would think that lots of new approaches in science began as "alternative
>science/pseudo science" ideas. No, I can't name one instance off the top of
>my head. Those instances are missing along with most of my hair, a good
>portion of my previous superior cognitive abilities and short term memories.

One good example, I think, is the theory of continental drift -
originally viewed by the mainstream as being pseudoscience (or at
least unproven), now adopted as "plate tectonics" and acknowledged as
a critically important process in the evolution of our planet.

In order for any "alternative science" theory to achieve mainstream
acceptance, I believe that it has to demonstrate the sort of
characteristics that other (mainstream) scientific theories do.
Specifically:

- It has to be falsifiable. The proponents of it have to be able to
say "OK, if it's wrong, here's how we could tell".

- It has to make testable predictions.

- It has to do a better job with those predictions, than the theories
against which it is competing. It must either (accurately) predict
things that other theories cannot predict, or (in some cases) it
must predict the same things as other theories predict, but do so
in a more "elegant" way.

Testability and falsifiability are the key issues, I believe.

Art has been talking about nontraditional antenna design ideas for
years. To the best of my knowledge, this is the first time he's ever
actually provided a sample for an independent party to test.

I think it's only fair for the parties doing the testing, to be
allowed to perform whatever sorts of tests they feel are appropriate,
and report accurately on the test conditions and the results.

If Art or his proponents feel that some of these tests are invalid
(due perhaps to new, nontraditional theories about how the antennas
are supposed to function), then it's up to them to express these new
theories in some testable, falsifiable form, so that the theories can
be fairly evaluated by others.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior

I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2942. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 19:32:25 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <bb35a995-e4f8-4b42-8ebe-c813156a00c2@59g2000hsb.googlegroups.com>
Source record: 27364

On Mar 7, 8:17 am, Gene Fuller <W4SZzzz...@att.net> wrote:
> Cecil Moore wrote:
>
> > Coherency, non-coherency, and interference is covered well
> > in "Optics" by Hecht and other textbooks. Optical physicists
> > have been tracking the EM energy flow for centuries. This
> > information may be new to you but it is old hat in physics.
>
> Cecil,
>
> You may or may not already know this, but a lot of detailed optical
> analysis these days is done with full 3-D electromagnetic simulation,
> starting from Maxwell equations and boundary conditions. Interference,
> coherence, energy flow, and all of the other stuff you like to discuss
> can be *output* from that analysis, but those items are not part of the
> input. The "centuries old" optics simply does not get the job done. The
> "centuries old" stuff may work in the (impossible) cases where
> everything is completely lossless and ideal, but it doesn't give the
> right answers in the real world.
>
> 73,
> Gene
> W4SZ

You can sure say that again...in fact, Maxwell doesn't really do it
either when you get to quantum mechanical effects. But that's a story
for another day.

Certainly, those who design and build FTIR spectrometers know
perfectly well that interference does not depend on a narrow-band
coherent source. Blackbody radiation works just fine, thank you. But
it doesn't take much beyond belief in linear systems to understand
that. I recall explaining to a company VP how it worked in terms of a
linear system, and it was very gratifying to see the virtual light
bulb lighting up in his head...he really got it.

Cheers,
Tom

2943. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 19:46:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <bYgAj.13243$5K1.5971@newssvr12.news.prodigy.net>
Source record: 27365

Dave Platt wrote:
> One good example, I think, is the theory of continental drift -

Another is that global warming is caused by the
sun, not by Al Gore's species.

Show me a guru who thinks he knows everything
and I will show you a very ignorant person.
--
73, Cecil http://www.w5dxp.com

2944. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 19:52:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <S1hAj.11839$Mw.5581@nlpi068.nbdc.sbc.com>
Source record: 27366

K7ITM wrote:
> Certainly, those who design and build FTIR spectrometers know
> perfectly well that interference does not depend on a narrow-band
> coherent source.

How narrow-band? How coherent? In the irradiance (power
density) equation, Ptot = P1 + P2 + 2*sqrt(P1*P2)cos(A),
if the angle 'A' is varying rapidly, what value do you
use for cos(A)?

A constant average sustained level of destructive
interference cannot be maintained between two waves
unless they are coherent. If they are not coherent
the interference will average out to zero.
--
73, Cecil http://www.w5dxp.com

2945. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 20:08:03 UTC
From: richardharrison@webtv.net
Message-ID: <26942-47D1A0A3-30@storefull-3253.bay.webtv.net>
Source record: 27368

Art wrote:
"No where can I find reference to "size" in what the masters state"

More diligence!

Terman never failed to have an answer for me. On page 864 of his 1955 0pus he writes:
"The simplest wire radiator or antenna is the elementary doublet shown in Fig. 23-1a. This consists of a conductor of length small-delta l that is short compared with the wavelength lambda, and which is assumed to have such large capacitance areas associated with each end that current flowing throughout the length of the doublet everywhere has the same value I. The strength E of the field radiated from such an elementary antenna in volts per unit length by a current I cos (omega t + 90 degrees) is given by the formula
E = 60 pi/d l/lambda Icos theta cos omega (t-d/c)
Eqn. (23-1)
Here d is the distance from the doublet to a distant receiving point P, and theta is the direction of P with respect a plane perpendicular to the axis of the doublet while c is the velocity of light. The strength of the radiated field is distributed in space in accordance with the doughnut pattern with a figure-of-eight cross section shown in Fig. 23-1b."

The above is only the beginning of Terman`s chapter on antennas. Fig. 23-2 shows how contributions from multiple doublets in a larger antenna combine to produce the pattern of the larger antenna. Point to be noted is that length over lambda is a multiplier in Eqn.(23-1). Obviously size (length) does make a difference.

Best regards, Richard Harrison, KB5WZI

2946. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 20:14:37 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NmhAj.11843$Mw.6833@nlpi068.nbdc.sbc.com>
Source record: 27367

K7ITM wrote:
> ... interference does not depend on a narrow-band coherent source.

OK Tom, here's a challenge for you. Given a system with
a constant steady-state destructive interference magnitude.
Exactly how can that constant steady-state destructive
interference magnitude be maintained if the two interfering
signals are not coherent?
--
73, Cecil http://www.w5dxp.com

2947. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 20:29:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qAhAj.13218$xq2.9109@newssvr21.news.prodigy.net>
Source record: 27369

K7ITM wrote:
> And exactly which part of "linear system" do you fail to understand?

I understand the meaning of your question now and
here is one for you:

Exactly which part of a constant, average, steady-state
condition of destructive interference do you fail to
understand?

Given two coherent signals interfering whose results are
10 watts of constant, average, steady-state destructive
interference, how do you propose to accomplish that
outcome when the signals are not coherent?
--
73, Cecil http://www.w5dxp.com

2948. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 20:34:59 UTC
From: W4NNG <mh@soalex.us>
Message-ID: <UFhAj.20559$yk5.18269@newsfe18.lga>
Source record: 27370

Hello everyone

Like Mike, I also have the MFJ-1800. And boy was I surprised when none of my shack full of type N to SMA adapters didn't work. I can't believe they reversed the polarity of the center pins for WIFI SMA connectors. Urrrrgh !!!

The router discussion is interesting I need to keep it simple. Of my various goals one of them is to passively receive signals. At least at my level of knowledge it will be best if the computer links directly to the adapter.

Haven't had the chance to look around but I do like the Ethernet cable up the tower suggestion. Is there a particularly good adapter for doing this?

"amdx" <amdx@knology.net> wrote in message
news:c3074$47cd63fa$450139ad$26070@KNOLOGY.NET...

" W4NNG" <mh@soalex.us> wrote in message
news:8Z%yj.7939$XO4.2669@newsfe19.lga...
> Hello fellow HRO's
>
> I've got a 50ft tower w/ rotor. Been thinking mounting a 2.4 Ghz WiFi
> antenna on the rotor to see what it picks up in way of WAP / WLAN's
>
> To get around cable loss problem was going to put a USB adapter at antenna
> then run USB cable up tower. Have tested USB at ~ 5X it's spec'd range
> but
> suspect the 60 - 70' run will be way too long.
>
> Anyone know of a way to 'remodulate' so to speak to 802.11 wirelessly link
> the output from the antenna mounted adapter back to computer?
>
> Thanks for any thoughts
>
> Bob
>
> W4NNG
>

Hi Bob,
I have done something similar to what you want to do. I picked up MFJs yagi antenna MFJ-1800
http://www.mfjenterprises.com/man/pdf/MFJ-1800.pdf
and a $13.00 wireless USB adapter. I adapted an N connector to the wireless USB adapter.

(a little troublesome, large connector, small adapter) I then connected the N connector/adapter assy
to the yagi. I mounted the whole thing in a 4" pvc pipe. I purchased two 15 ft USB male to female cords.
I found I had intermitent performance, The problem was 30 ft of USB cords, I cut back to one 15ft cord
and the ass'y works wonderfully. I can see over 20 wifi signals from where I'm at, only 3 to 4 are strong
signals (over 50%, whatever that means). While trying to solve the intermitent performance I did find
there are cords available with amplifiers built inline to extend the usable USB cable length. I did not try
these I just moved my yagi. The others are way ahead of my knowledge regarding the wireless router and
it's operation on top of your tower.
Mike

2949. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 20:50:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <dUhAj.61561$Pv2.19035@newssvr23.news.prodigy.net>
Source record: 27371

W4NNG wrote:
> I surprised when none of
> my shack full of type N to SMA adapters didn't work.

None of your adapters didn't work? Isn't that a
good thing? :-)
--
73, Cecil http://www.w5dxp.com

2950. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 21:18:45 UTC
From: dplatt@radagast.org
Message-ID: <l2o8a5-33q.ln1@radagast.org>
Source record: 27372

>Hello everyone
>
>Like Mike, I also have the MFJ-1800. And boy was I surprised when none of
>my shack full of type N to SMA adapters didn't work. I can't believe they
>reversed the polarity of the center pins for WIFI SMA connectors. Urrrrgh
>!!!

The FCC requires that Part 15 WiFi devices, having detachable antennas, *must* use connectors which are not the common, generic, off-the-shelf standard types.

This was done in order to (try to) (help) enforce the rule that Part 15 radios, and their antennas, must be certificated as a complete system (radio + antenna), by the manufacturer or by an organization which does the installation.

Manufacturers of such devices can perform the testing certification with several different types of antennas, and using such antennas with that particular device is legal (since they've been certificated as a system).

Plugging an arbitrarily-chosen antenna into a WiFi radio (access point or client) will void the Part 15 certification of the device, and it becomes technically illegal to operate it. That's why a whole bunch of nonstandard (reverse-polarity, reverse-thread, or otherwise altered and perverted) connectors are used... the manufacturers are *trying* to deter people from "one from column A, one from column B" interplugging, because that's what the FCC has instructed them to do.

The rule gets about as much respect as laws against jaywalking, littering, or cussing in South Pasadena during the first week of March, but it's on the books ne'ertheless.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2951. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 21:25:17 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fqsbrt$u1e$1@f04n12.cac.psu.edu>
Source record: 27373

Cecil Moore wrote:
> Dave Platt wrote:
>> One good example, I think, is the theory of continental drift -
>
> Another is that global warming is caused by the
> sun, not by Al Gore's species.

Global warming - or cooling, due to solar flux and independent of internal mechanisms (like us) has been the mainstream knowledge for a long, long time.

Interesting that you chose this one, Cecil.

Mention Al Gore's name, and you can bet that the more neoconservative among us will start the ridicule bandwagon going. They say it is a political thing. It is for them.

Heat retention by the group of gases collectively know as "greenhouse gases" is a fact. Proven time and again in experiments that a high school kid can do.

There is a direct correlation between human activities that release CO2 into the atmosphere, and the percentage of CO2 in the atmosphere. This increase should have an effect on the heat retained by the atmosphere.

Doesn't matter what the CO2 source was. Global warming is just as much a fact as evolution, and opposed by many of the same folks as that one.

Now it is time for those who would debunk it to come up with solid scientific reasons why the effect is not happening, not political ones.

Here are some possibilities:

Humans really aren't putting CO2 in the atmosphere.

That CO2 is different.

The earth wants to maintain a constant temperature, so it somehow ignores that CO2.

Temperature measurements are actually wrong.

That kind of stuff. Give how's and whys. Not political verbiage.

> Show me a guru who thinks he knows everything
> and I will show you a very ignorant person.

- 73 de Mike N3LI -

2952. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 21:39:33 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <15b60308-3b1c-44b7-91a9-4a0ec02e525a@h25g2000hsf.googlegroups.com>
Source record: 27374

On Mar 7, 1:16 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > Thanks for the additional explaination. I am wondering if I misunderstood Cecil's original premise.
>
> Roger, if you thought it involved any instantaneous
> values then, yes, you misunderstood my premise.

My understanding of your claim was that for the special case of a 45 degree line supplied from a matched source, the energy in the reflected wave is dissipated in the source resistor.

This sentence fragment from your document suggests this:
"reflected energy from the load is flowing through the source resistor, RS, and is being dissipated there".

As "proof" of this, you computed average powers and showed that the dissipation in the source resistor increased by the same amount as the computed average power in the reflected wave.

But when an attempt it made to validate your claim using instantaneous energy flows, the claim is proved false because the dissipation in the source resistor does not occur at the correct time to be absorbing the energy from the reflected wave.

To prove your claim, I can see two paths:
- find some element in the circuit that stores the energy from the reflected wave and releases it into the source resistor at the correct time
- allow the violation of the principle of conservation of energy

On the other hand, if you want to modify your claim to simply be that the numerical value of the dissipation in the source resistor has the same value as the pre-reflection dissipation plus the numerical value of the energy in the reflected wave, then the discrepancy is resolved. But then you can not claim that the energy in the reflected wave is dissipated in the source resistor.

...Keith

2953. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 21:39:58 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fqscne$2ts$1@news.jpl.nasa.gov>
Source record: 27377

W4NNG wrote:
> Hello everyone
>
> Like Mike, I also have the MFJ-1800. And boy was I surprised when none of
> my shack full of type N to SMA adapters didn't work. I can't believe they
> reversed the polarity of the center pins for WIFI SMA connectors. Urrrrgh
> !!!

Required by Part 15..Has to be a connector with is "not commonly
available". Reverse Polarity SMA and TNC connectors are pretty standard
for this application, to the point where you can get adapters and jumper
cables pretty easily.

>

2954. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 21:47:19 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4f8d5954-081d-4fbd-96bb-8d846bfa03d5@60g2000hsy.googlegroups.com>
Source record: 27375

On Mar 7, 10:24 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Dave wrote:
> > "Keith Dysart" <Keith.Dys...@gmail.com> wrote:
> >> What is the mechanism that creates the effect we call interference?
>
> > superposition.
>
> Not disagreeing - just expanding:
> Superposition is certainly necessary but superposition
> alone is not sufficient. Superposition can occur with
> or without interference.
> --
> 73, Cecil http://www.w5dxp.com

So superposition is the underlying mechanism that can be used to
explain all.
Interference is a phenomon that is observed for certain particular
conditions of superposition.

Works for me.

...Keith

2955. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 21:54:19 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com>
Source record: 27376

On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison) wrote:
> Art wrote:
>
> "No where can I find reference to "size" in what the masters state"
>
> More diligence!
>
> Terman never failed to have an answer for me. On page 864 of his 19550pus he writes:
>
> "The simplest wire radiator or antenna is the elementary doublet shown
> in Fig. 23-1a. This consists of a conductor of length small-delta l that
> is short compared with the wavelength lambda, and which is assumed to
> have such large capacitance areas associated with each end that current
> flowing throughout the length of the doublet everywhere has the same
> value I. The strength E of the field radiated from such an elementary
> antenna in volts per unit length by a current I cos (omega t + 90
> degrees) is given by the formula
> E = 60 pi/d l/lambda Icos theta cos omega (t-d/c)
> Eqn. (23-1)
> Here d is the distance from the doublet to a distant receiving point P,
> and theta is the direction of P with respect a plane perpendicular to
> the axis of the doublet while c is the velocity of light. The strength
> of the radiated field is distributed in space in accordance with the
> doughnut pattern with a figure-of-eight cross section shown in Fig.
> 23-1b."
>
> The above is only the beginning of Terman`s chapter on antennas. Fig.
> 23-2 shows how contributions from multiple doublets in a larger antenna
> combine to produce the pattern of the larger antenna. Point to be noted
> is that length over lambda is a multiplier in Eqn.(23-1). Obviously size
> (length) does make a difference.
>
> Best regards, Richard Harrison, KB5WZI

I disagree. Laws written are all based on the assumption of
equilibrium and that includes
Maxwell's laws. These laws hav e zero refernce to size as such though
many would seek
for the word volume. Pertinent factors are wave length of frequency in
use and root LC.
For equilibrium there is zero reference to size or volume. I ofcourse
fall back to the term equilibrium
which is a basic for Gauss's law of statics to which a variable time
can be added. Thus it can be seen that

a law can be stated that a radiator can be any size, shape or
configuration as long as it is in equilibrium.
The problem here is that amateur radio is wellded to the yagi design
which is not one of equilibrium
and the fact that amateurs and many of the higher educated have pushed
the term of equilibrium
outside the box. This shows up when the uneducated refer to small
antennas as being inefficient
based purely on the connection to a specific design without regard to
whether equilibrium exists
so that all the laws of the masters can be applied. Again, it is
implicite that all laws apply when
there is equilibrium, if there is not then the laws do not apply as
is.
With respect to the term
"length", this is not synonimous to "size" because it has only one
degree of freedom.
There is no reason why a radiator can be rolled up into any shape as
long as the laws of Maxwell
are adhered to and such a sample has been assigned for testing and I
have to be satisfied with the results
as they arrive.I will be soon using one on the radio for QSO's and I
apologise if its use offends anybody
Seems like the group is in quite a tizzy that a person would have a
small radiator that defies
that which has taken them years to memorize. I gave all pertinent
details how to make them
I also gave the mathematics and a sample where established computor
programs confirm the above
and now to upset all again I have given a sample for testing to a
independent reviewer.
There is no need for anybody to worry, Yagi designs still exist for
those who abore change,worry
about transmission line radiation or even radiators melting. When you
all understand the relevence of
equilibrium you can then procede to review the math, until then you
are all in left field.
Best regards
Art
There is nothing in Maxwells laws that prohibit a "wavelength" from
being condensed into the
size of a pinhead or smaller and still be "efficient" with respect to
stated paramitors.

2956. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:04:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <UZiAj.4821$fX7.4056@nlpi061.nbdc.sbc.com>
Source record: 27378

Michael Coslo wrote:
> Give how's and whys. Not political verbiage.

OK, how about this? Global warming has always run in
cycles of 100K+/- years. Man obviously had no effect
on the previous cycles. The temperature 130,000 ago
averaged 4 degrees higher than any temperature during the
present cycle. The maximum temperature during the present
cycle occurred 8000 years ago when man obviously had no
effect. We are now 8000 years into the next ice age. Any
global warming effect provided by man's greenhouse gases
will tend to delay the plunging temperatures associated
with the presently approaching ice age and save tens of
millions of people from starving to death due to the
farmlands being overrun by glaciers.

http://en.wikipedia.org/wiki/Image:Ice_Age_Temperature.png

Mars undergoes global warming at the same time as the
earth does. Are the Martians emitting greenhouse gases?

http://www.foxnews.com/story/0,2933,320431,00.html
http://www.washingtontimes.com/apps/pbcs.dll/article?AID=/20071219/COMMENTARY/10575140
--
73, Cecil http://www.w5dxp.com

2957. will it hold up to an amplifier?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:07:36 UTC
From: commander_coder@hotmail.com
Message-ID: <00fa3f78-b9b0-452d-825c-2e3fa5ca46d9@e60g2000hsh.googlegroups.com>
Source record: 27379

Hello,

I have a quite common setup: a 100 watt rig with an antenna tuner feeding into ladder line that runs to a 200 foot dipole up as high as I could get it-- maybe 40 feet.

I've had fun with it, but I'm thinking about stepping up to a linear amplifier. I'm thinking about perhaps 800-ish watts. I can't go to a tower or yagi, as I need to be at least a little secretive.

The wire is 14 guage (stranded) in both the ladder line and in the dipole. Can someone tell me if that will hold up to the increased power? Any tips or other information would be great.

Thanks,
Jim

2958. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:22:52 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <0fjAj.722280$kj1.53767@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27380

Cecil Moore wrote:
> Gene Fuller wrote:
>> You may or may not already know this, but a lot of detailed optical
>> analysis these days is done with full 3-D electromagnetic simulation,
>> starting from Maxwell equations and boundary conditions. Interference,
>> coherence, energy flow, and all of the other stuff you like to discuss
>> can be *output* from that analysis, but those items are not part of
>> the input. The "centuries old" optics simply does not get the job
>> done. The "centuries old" stuff may work in the (impossible) cases
>> where everything is completely lossless and ideal, but it doesn't give
>> the right answers in the real world.
>
> Ideal examples are time-honored ways of discussing concepts
> and getting away from the vagaries of the real world. If one
> understands the ideal examples, one is in a position to then
> proceed to understanding the real world. If one fails to
> understand the conceptual principles underlying the ideal
> examples, one cannot possibly understand the real world.
>
> Your posting seems to reflect your usual sour grapes attitude.
> I will expect you to object to every example that uses lossless
> transmission lines from now on including ones by Ramo & Whinnery,
> Walter Johnson, Walter Maxwell, J. C. Slater and Robert Chipman.

I don't know why you would choose to accuse me of "sour grapes". That is
a characteristic of someone who has lost an argument. 8-)

You keep referring to the optical masters of old as being a huge
resource that is largely unknown to the RF crowd. I am merely
introducing the 21st century into the discussion.

73,
Gene
W4SZ

2959. Re: will it hold up to an amplifier?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:23:51 UTC
From: Rick <ricknj10@hotmail.com>
Message-ID: <47d1c077$0$25062$607ed4bc@cv.net>
Source record: 27381

> The wire is 14 guage (stranded) in both the ladder line and in the
> dipole. Can someone tell me if that will hold up to the increased
> power?

It will hold up just fine. Nothing to worry about.

2960. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:25:08 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <8hjAj.722289$kj1.604969@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27382

Cecil Moore wrote:
> Gene Fuller wrote:
>> The definition of irradiance, according to NIST, is power per unit
>> area. The standard units are W/m2 or lumen/m2.
>
> Exactly how much power can exist in a zero unit of
> time?
>
> You previously objected to things that don't match
> the real world. Instantaneous irradiance would rely
> on an infinitesimally small amount of time, something
> that doesn't match reality very well. One would think
> you would therefore object to the concept of instantaneous
> irradiance since it cannot be measured in reality and
> exists only in the math model in the human mind.

Still spinning the words, huh? Do you really think that "time-averaged"
and "zero" time are the only possible choices?

Do you disagree with NIST?

73,
Gene
W4SZ

2961. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:31:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hnjAj.13232$xq2.635@newssvr21.news.prodigy.net>
Source record: 27383

Keith Dysart wrote:
> My understanding of your claim was that for the special case of
> a 45 degree line supplied from a matched source, the energy
> in the reflected wave is dissipated in the source resistor.

I have told you time and again that your understanding is
wrong. My claim is that for the special case of a 45 degree
phase difference between the forward wave and reflected wave,
the *average* power in the reflected wave is dissipated in the
source resistor. Irradiance is an *average* power density as
defined by Hecht, in "Optics". I have told you previously (many
times) that when I use the word "power", I am talking about
average power. I agree with Hecht that instantaneous power
is "of limited utility" and is therefore mostly irrelevant.

For the record - for the umteenth time: When I say "power", I
am talking about "*average* power". If I ever talk about
instantaneous power, I will say "instantaneous power". If
you still don't understand, you need professional help.

> This sentence fragment from your document suggests this:
> "reflected energy from the load is flowing through the source
> resistor, RS, and is being dissipated there".

I left no doubt as to what I meant in my document. Here is
a quote from the second paragraph in my document:
"Please note that any power referred to in this paper
is an *average power*. Nothing is being asserted or implied about
instantaneous powers. In fact, instantaneous powers are completely
irrelevant to the following discussion."

I simply don't know how to say it any plainer than that.

I really resent your lack of ethics in this matter.
If you are forced to create a Big Lie about what I have
said in order to try to win, is it really worth it?
--
73, Cecil http://www.w5dxp.com

2962. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:33:51 UTC
From: dplatt@radagast.org
Message-ID: <ffs8a5-lv5.ln1@radagast.org>
Source record: 27389

>Cecil Moore wrote:
>> Dave Platt wrote:
>>> One good example, I think, is the theory of continental drift -
>>
>> Another is that global warming is caused by the
>> sun, not by Al Gore's species.
>
> Global warming - or cooling, due to solar flux and independent of
>internal mechanisms (like us) has been the mainstream knowledge for a
>long, long time.

Correct.

I believe that Cecil (like a very great many other people) is falling victim to a classic logical error, commonly referred to as "the fallacy of the excluded middle" or "false dilemma".

In this instance, Cecil's statement carries with it an implied assumption: that global warming (assuming that it exists) is due *either* entirely to the effects of the sun, *or* entirely to the effects of mankind. Cecil's statement implicitly denies the possibility that *both* of these factors (as well as others) may in fact be contributing to whatever warming, cooling, or other climate change is occurring.

Taking such an exclusionist position can certainly be convenient. If you can define the terms of the debate in this way, then all you have to do is prove *some* truth to your own side of the argument (e.g. demonstrate that solar changes do have effects on Earth's temperature), and by exclusion you have "proved" the falsity of all of your opponent's arguments and evidence. I've seen this tactic used by those arguing both sides of the global-warming debate.

I don't believe that the real world is as simple as this. Measurable effects can have many contributing causes. My own conclusion is that global climate change has both external (e.g. solar and earth-orbital) and internal (greenhouse-gas) origins, and that at least some of the latter are heavily influenced by human activities.

As to the relative contributions of these internal and external forcing functions to the final climate on this planet... we have to depend on theory, modelling, and experience to figure that out.

To me, the really scary possibility is that the combined effect of internal and external stimuli will push the system out of one mostly-stable state, and into another, through a difficult-to-reverse

toggle point. Warming and drying up the Amazon far enough to make it
flip over from rainforest to savanna might be one such toggle.
Warming up the deep ocean enough to start melting a large quantity of
methane hydrates would be another.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2963. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:34:56 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <kqjAj.288160$MJ6.55471@bgtnsc05-news.ops.worldnet.att.net>
Source record: 27384

Cecil Moore wrote:
> K7ITM wrote:
>> Certainly, those who design and build FTIR spectrometers know
>> perfectly well that interference does not depend on a narrow-band
>> coherent source.
>
> How narrow-band? How coherent? In the irradiance (power
> density) equation, Ptot = P1 + P2 + 2*sqrt(P1*P2)cos(A),
> if the angle 'A' is varying rapidly, what value do you
> use for cos(A)?
>
> A constant average sustained level of destructive
> interference cannot be maintained between two waves
> unless they are coherent. If they are not coherent
> the interference will average out to zero.

Gee, I wonder if the experts may have moved beyond the elementary optics textbook descriptions?

Are you suggesting that FTIR cannot work unless one has your nice 1-D configurations with perfectly monochromatic waves? Does everything need to be collinear and coherent?

73,
Gene
W4SZ

2964. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:45:05 UTC
From: Dave <noone@nowhere.com>
Message-ID: <RzjAj.24$Zo3.23@trndny05>
Source record: 27385

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
> On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison) wrote:
> I disagree. Laws written are all based on the assumption of
> equilibrium and that includes
> Maxwell's laws. These laws hav e zero refernce to size as such though
> many would seek

because contrary to what those male enhancement product adds tell you, size
doesn't matter.

> for the word volume. Pertinent factors are wave length of frequency in

> The problem here is that amateur radio is wellded to the yagi design
> which is not one of equilibrium

WAIT JUST ONE GOSH DARN MINUTE! you have said in the past that the simple
half wave dipole WAS a prefect example of equilibrium! NOW it isn't???
have you had a new revelation while i had your old email address plonked??

2965. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 22:48:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <iDjAj.13236$xq2.11851@newssvr21.news.prodigy.net>
Source record: 27386

Keith Dysart wrote:
> So superposition is the underlying mechanism that can be used to
> explain all.
> Interference is a phenomon that is observed for certain particular
> conditions of superposition.

And permanent redistribution of energy is a phenomena that is
observed for certain particular conditions of interference.

Seems like a no-brainer to me.
--
73, Cecil http://www.w5dxp.com

2966. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 23:02:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6QjAj.4825$fX7.4234@nlpi061.nbdc.sbc.com>
Source record: 27387

Gene Fuller wrote:
> Do you disagree with NIST?

Could be that NIST didn't consider the fact that someone
could stupid enough to believe in a non-zero irradiance
averaged over an instantaneous time period of zero. :-)

Official Notice: For the purposes of my postings, I am using
Hecht's definition of "irradiance", i.e. "the average energy
per unit area per unit time".
--
73, Cecil http://www.w5dxp.com

2967. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 23:07:52 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <cVjAj.13242$xq2.10017@newssvr21.news.prodigy.net>
Source record: 27388

Gene Fuller wrote:
> Are you suggesting that FTIR cannot work unless one has your nice 1-D
> configurations with perfectly monochromatic waves?

Have you stopped beating your wife? Please cease and
desist with your diversions in the form of innuendo.

It is not my fault that a transmission line is essentially
one-dimensional but I am willing to take technical advantage
of that fact of physics. It is not my fault that CW transmitters
emit essentially monochromatic waves but I am willing to take
technical advantage of that fact of physics.
--
73, Cecil http://www.w5dxp.com

2968. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 23:09:55 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <2985c272-6d62-4667-ac14-e575c97ce339@2g2000hsn.googlegroups.com>
Source record: 27390

On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>
> > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison) wrote:
> > I disagree. Laws written are all based on the assumption of
> > equilibrium and that includes
> > Maxwell's laws. These laws hav e zero refernce to size as such though
> > many would seek
>
> because contrary to what those male enhancement product adds tell you, size
> doesn't matter.
>
> > for the word volume. Pertinent factors are wave length of frequency in
> > The problem here is that amateur radio is wellded to the yagi design
> > which is not one of equilibrium
>
> WAIT JUST ONE GOSH DARN MINUTE! you have said in the past that the simple
> half wave dipole WAS a prefect example of equilibrium! NOW it isn't???
> have you had a new revelation while i had your old email address plonked??

David,
You admit to not understanding the term "equilibrium" so what do you
care what I say and in what content.
If you consider a half wave dipole as being in equilibrium you have to
consider the electrical circuit
consisting of a capacitance from the antenna to ground or the route
thru the center of of the radiator, both of thes circuits
can be considered as being in equilibrium. However, on this newsgroup
a fractional wavelength radiator is considered as an open circuit for
some reason and thus under those circumstances the half wave dipole is
not in equilibrium.
Now your views on radiation is all over the place so it is very hard
for me to determine the context of what you say.
Art

2969. Re: will it hold up to an amplifier?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 23:24:18 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13t3jl2iqtcc462@corp.supernews.com>
Source record: 27391

<commander_coder@hotmail.com> wrote in message
news:00fa3f78-b9b0-452d-825c-2e3fa5ca46d9@e60g2000hsh.googlegroups.com...
> Hello,
>
> I have a quite common setup: a 100 watt rig with an antenna tuner
> feeding into ladder line that runs to a 200 foot dipole up as high as
> I could get it-- maybe 40 feet.
>
> I've had fun with it, but I'm thinking about stepping up to a linear
> amplifier. I'm thinking about perhaps 800-ish watts. I can't go to a
> tower or yagi, as I need to be at least a little secretive.
>
> The wire is 14 guage (stranded) in both the ladder line and in the
> dipole. Can someone tell me if that will hold up to the increased
> power? Any tips or other information would be great.
>
> Thanks,
> Jim

YOu are good for the maximum legal power plus some. A dipole made out of
almost any size wire and especially # 20 and larger will handle a KW without
any problems.

2970. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 23:38:34 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <ZpkAj.61588$Pv2.1319@newssvr23.news.prodigy.net>
Source record: 27392

Cecil Moore wrote:
> Dave Platt wrote:
>> One good example, I think, is the theory of continental drift -
>
> Another is that global warming is caused by the
> sun, not by Al Gore's species.
>
> Show me a guru who thinks he knows everything
> and I will show you a very ignorant person.

Cecil;

Those that think they know everything annoy those of us who do.

Dave N

2971. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-07 23:54:43 UTC
From: richardharrison@webtv.net
Message-ID: <13173-47D1D5C3-367@storefull-3251.bay.webtv.net>
Source record: 27393

Art wrote:
"I sisagree."

Most correspondents here know from experience that radiation efficacy falls in too-short antennas.Terman refers to E.A. Laport`s "Radio Antenna Engineering". Laport has charted Degree-amperes versus Field Strength or radiation resistance to which Field Strength is proportional.

Laport gives an example on page 23:
"A straight vertical radiator of height 30 degrees or less has a radiation resistance Rr following the equation
Rr = Go squared.
where Go is the electrical height in radians (One radian is 57.3 degrees.)

Best regards, Richard Harrison, KB5WZI

2972. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 00:02:07 UTC
From: Dave <noone@nowhere.com>
Message-ID: <3IkAj.396$e52.66@trndny01>
Source record: 27394

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:2985c272-6d62-4667-ac14-e575c97ce339@2g2000hsn.googlegroups.com...
> On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
>> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>>
>> news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>>
>> > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison) wrote:
>> > I disagree. Laws written are all based on the assumption of
>> > equilibrium and that includes
>> > Maxwell's laws. These laws hav e zero refernce to size as such though
>> > many would seek
>>
>> because contrary to what those male enhancement product adds tell you,
>> size
>> doesn't matter.
>>
>> > for the word volume. Pertinent factors are wave length of frequency in
>> > The problem here is that amateur radio is wellded to the yagi design
>> > which is not one of equilibrium
>>
>> WAIT JUST ONE GOSH DARN MINUTE! you have said in the past that the
>> simple
>> half wave dipole WAS a prefect example of equilibrium! NOW it isn't???
>> have you had a new revelation while i had your old email address
>> plonked??
>
> David,
> You admit to not understanding the term "equilibrium" so what do you
> care what I say and in what content.
> If you consider a half wave dipole as being in equilibrium you have to

no, it wasn't me that said that, you said that a half wave dipole was an
example of your equilibrium gaussian antenna. don't put words in my mouth,
i don't think any antenna is in 'equilibrium' if it is working right, there
is always a flow of power either in or out... equilibrium means not going
anywhere, i want my antennas to radiate and receive, not just sit there and
look pretty!

2973. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 00:11:07 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <f35d4eca-fa72-4fd6-8cae-69396312be80@2g2000hsn.googlegroups.com>
Source record: 27395

On Mar 7, 6:02 pm, "Dave" <no...@nowhere.com> wrote:
> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> news:2985c272-6d62-4667-ac14-e575c97ce339@2g2000hsn.googlegroups.com...
>
>
>
> > On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
> >> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> >>news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>
> >> > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison) wrote:
> >> > I disagree. Laws written are all based on the assumption of
> >> > equilibrium and that includes
> >> > Maxwell's laws. These laws hav e zero refernce to size as such though
> >> > many would seek
>
> >> because contrary to what those male enhancement product adds tell you,
> >> size
> >> doesn't matter.
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> >> > for the word volume. Pertinent factors are wave length of frequency in
> >> > The problem here is that amateur radio is wellded to the yagi design
> >> > which is not one of equilibrium
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> >> simple
> >> half wave dipole WAS a prefect example of equilibrium! NOW it isn't???
> >> have you had a new revelation while i had your old email address
> >> plonked??
>
> > David,
> > You admit to not understanding the term "equilibrium" so what do you
> > care what I say and in what content.
> > If you consider a half wave dipole as being in equilibrium you have to
>
> no, it wasn't me that said that, you said that a half wave dipole was an
> example of your equilibrium gaussian antenna. don't put words in my mouth,
> i don't think any antenna is in 'equilibrium' if it is working right, there
> is always a flow of power either in or out... equilibrium means not going
> anywhere, i want my antennas to radiate and receive, not just sit there and
> look pretty!

David, please plonk me again under my new server.
Thanks
Art

2974. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 00:13:43 UTC
From: Brian Kelly <kelly@dvol.com>
Message-ID: <806f258b-30b9-42ac-a3a6-cbad30154079@b64g2000hsa.googlegroups.com>
Source record: 27396

On Mar 7, 6:09 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
>
>
>
>
>
>
>
> > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> >news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>
> > > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison) wrote:
> > > I disagree. Laws written are all based on the assumption of
> > > equilibrium and that includes
> > > Maxwell's laws. These laws hav e zero refernce to size as such though
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> > > The problem here is that amateur radio is wellded to the yagi design
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> > have you had a new revelation while i had your old email address plonked??
>
> David,
> You admit to not understanding the term "equilibrium" so what do you
> care what I say and in what content.
> If you consider a half wave dipole as being in equilibrium you have to
> consider the electrical circuit
> consisting of a capacitance from the antenna to ground or the route
> thru the center of of the radiator, both of thes circuits
> can be considered as being in equilibrium. However, on this newsgroup
> a fractional wavelength radiator is considered as an open circuit for
> some reason and thus under those circumstances the half wave dipole is
> not in equilibrium.
> Now your views on radiation is all over the place so it is very hard
> for me to determine the context of what you say.
> Art

Long before we rode our dinosaurs to club meetings the bright lights had completely agreed that the strength of radio signals at far off places was a function of the integral of i·dl where dl is the bigness of the aerial. Maybe it's in Sears and Zemansky. I dunno . . nor do I really care.

w3rv

2975. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 00:50:08 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <ab297823-18e7-4ef6-8873-c0ab347cb8e5@b1g2000hsg.googlegroups.com>
Source record: 27397

On Mar 7, 6:13 pm, Brian Kelly <ke...@dvol.com> wrote:
> On Mar 7, 6:09 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>
>
> > On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
>
> > > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> > >news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>
> > > > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison) wrote:
> > > > I disagree. Laws written are all based on the assumption of
> > > > equilibrium and that includes
> > > > Maxwell's laws. These laws hav e zero refernce to size as such though
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> > > because contrary to what those male enhancement product adds tell you, size
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> > > > The problem here is that amateur radio is wellded to the yagi design
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> > David,
> > You admit to not understanding the term "equilibrium" so what do you
> > care what I say and in what content.
> > If you consider a half wave dipole as being in equilibrium you have to
> > consider the electrical circuit
> > consisting of a capacitance from the antenna to ground or the route
> > thru the center of of the radiator, both of thes circuits
> > can be considered as being in equilibrium. However, on this newsgroup
> > a fractional wavelength radiator is considered as an open circuit for
> > some reason and thus under those circumstances the half wave dipole is
> > not in equilibrium.
> > Now your views on radiation is all over the place so it is very hard
> > for me to determine the context of what you say.
> > Art
>
> Long before we rode our dinosaurs to club meetings the bright lights

> had completely agreed that the strength of radio signals at far off
> places was a function of the integral of i·dl where dl is the bigness
> of the aerial. Maybe it's in Sears and Zemansky. I dunno . . nor do I
> really care.
>
> w3rv

Nothing wrong with that with respect to yagis it just doesn't refer to
all antennas

2976. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 01:12:59 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <vKlAj.16255$Ch6.1938@newssvr11.news.prodigy.net>
Source record: 27398

Gene Fuller wrote:
> Cecil Moore wrote:
>> Gene Fuller wrote:
>>> The definition of irradiance, according to NIST, is power per unit
>>> area. The standard units are W/m2 or lumen/m2.
>>
>> Exactly how much power can exist in a zero unit of
>> time?
>>
>> You previously objected to things that don't match
>> the real world. Instantaneous irradiance would rely
>> on an infinitesimally small amount of time, something
>> that doesn't match reality very well. One would think
>> you would therefore object to the concept of instantaneous
>> irradiance since it cannot be measured in reality and
>> exists only in the math model in the human mind.
>
> Still spinning the words, huh? Do you really think that "time-averaged"
> and "zero" time are the only possible choices?
>
> Do you disagree with NIST?
>
> 73,
> Gene
> W4SZ

Cecil must have flunked calculus. Also, differential calculus is
the life-blood of classical electromagnetic theory. The ancients used
it liberally. Cecil probably doesn't believe in speed, because speed is
also an instantaneous quantity. Maybe he can use his argument on the
next ham-fisted Texas trooper who stops him for speeding on his motorcycle.
73,
Tom Donaly, KA6RUH

2977. "F" Connectors ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 01:16:55 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <apKdnRxrY7-bdEzanZ2dnUVZ_gadnZ2d@comcast.com>
Source record: 27399

Hi,

Thanks for all the previous help.
Realize they are all pretty basic questions, and appreciate the help very much.

Am in my 70's now, and keeping up with a lot of this stuff is getting to be a bit more difficult. Greatr hobby, though.

For a receive-only run to a scanner. I'm assuming that I am interested in up to one GHz, absolute max.

Expect to go with F connectors on the coax as they are so readily available already made up, and relatively inexpensive.

Anyone feel strtongly that it is worth going the BNC or the N route, or can I probably be happy with the F's ?
About a 50 foot run. In practice, would I even see any difference ?

I plan on RG6U, Quad Shield, probably

Saw it at Lowe's of all places. Brand was Philips.
Looked pretty good (I think); gold plated F's, and quad shielding.

Thoughts on ?

Just as a sidelight, I also have a sw set, and have all N and BNC on my PAR antenna to the sw set run, though.
LMR 400 coax used. About 125 ft run here.

Thanks,
Bob

2978. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 01:29:51 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <27501011-fff6-4a8e-a645-587f6b64fac3@b64g2000hsa.googlegroups.com>
Source record: 27400

On Mar 7, 11:46 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> ArthurUn...@gmail.com wrote:
> > I have searched quite a bit for evidence that states that performance
> > of antennas can be rated by it's size. Formulas do not refere to
> > radiator size or volume
> > and aparture is referenced to gain. I understand that sort of thinking
> > based on Yagi design
> > but the idea that all small radiators are inefficient is rather
> > ludicrouse. My work, based on
> > the sciences of the masters, show that a efficient radiator can be any
> > size,shape and
> > configuration as long as it
> > is in equilibrium . Period
> > No where can I find reference to "size" in what the masters state
> > Regards
> > Art
>
> The work by Chu (Journal of Applied Physics, p1163, v19, Dec 1948) and
> subsequently by Harrington (IEEE Trans Ant & Prop, V18#6, Nov 1965,
> p896) , Thiele (IEEE Trans on Ant and Prop, v51, #6, June 2003, p1263)
> and later others, discusses fundamental limits on performance. Watch
> out, though, for the assumptions in the constraints (e.g. whether the
> device attached to the feedpoint is reciprocal), and, of course, where
> the boundary of the system is.
>
> Watch out also for the definition of "Q", which in this context is the
> ratio of stored to disspated/radiated energy, not the ratio of center
> frequency/bandwidth.
>
> In short, there is a tradeoff between Q, directivity, and size. And,
> because high Q implies high stored energy, for physically realizable
> antennas with loss, efficiency is in the mix too.
>
> Googling "chu harrington limit" often turns up useful stuff.

Googled Chu harrington and find that his work is basically empirical
around known arrangements.
When he brought the question of Q into the picture he made the
statement that small antennas
are usually of a low impedance which is correct empirically with
respect to existing designs but it is not exclusive
when dealing with all radiators that can be made that comply with
Maxwells laws. As I have said before it is implicite in Maxwells laws
that a efficient radiator can be any size shape or configuration as

long as it complies with Maxwells law.
In my case my small antenna can have any impedance value for equilibrium and it is quite easy to have a resistive impedance in the hundreds of ohms as well as minuit impedances. I conform to 50 ohms purely because of component availability. As another aside my small antennas
have a much wider bandwidth than any other available! As far as gain or energy transmitted that all depends on what frequencies get thru the bandpass filter and in no way directs out of pass energy to be be redirected to band pass status and augment energy transmitted. Stored energy has no relationship to Q in my mind since it goes around or circulates as with a tank circuit energy that lies within the pass bandof the tank circuit filter.
To summate, my antenna design is considered small yet complies with Maxwells laws and yet does not have a narrow bandwidth or low impedance thus Chu's comments cannot be inclusive of all radiators.
Best regards
Art

2979. Re: "F" Connectors ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 01:30:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13t3r0qk8cdebd0@corp.supernews.com>
Source record: 27301

F connectors are just fine for that application. You wouldn't see any
difference -- except to your pocketbook -- if you went BNC or N instead.

Roy Lewallen, W7EL

Robert11 wrote:
> Hi,
>
> Thanks for all the previous help.
> Realize they are all pretty basic questions, and appreciate the help very
> much.
>
> Am in my 70's now, and keeping up with a lot of this stuff is getting to be
> a bit more difficult. Greatr hobby, though.
>
> For a receive-only run to a scanner. I'm assuming that I am interested in
> up to one GHz, absolute max.
>
> Expect to go with F connectors on the coax as they are so readily available
> already made up, and relatively inexpensive.
>
> Anyone feel strtongly that it is worth going the BNC or the N route, or can
> I probably be happy with the F's ?
> About a 50 foot run. In practice, would I even see any difference ?
>
> I plan on RG6U, Quad Shield, probably
>
> Saw it at Lowe's of all places. Brand was Philips.
> Looked pretty good (I think); gold plated F's, and quad shielding.
>
> Thoughts on ?
>
> Just as a sidelight, I also have a sw set, and have all N and BNC on my PAR
> antenna to the sw set run, though.
> LMR 400 coax used. About 125 ft run here.
>
> Thanks,
> Bob
>
>

2980. Re: "F" Connectors ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 01:39:15 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13t3ri4bvdrs2c4@corp.supernews.com>
Source record: 27302

"Robert11" <rgsros@notme.com> wrote in message
news:apKdnRxrY7-bdEzanZ2dnUVZ_gadnZ2d@comcast.com...
> Hi,
>
> Thanks for all the previous help.
> Realize they are all pretty basic questions, and appreciate the help very
> much.
>
> Am in my 70's now, and keeping up with a lot of this stuff is getting to
> be a bit more difficult. Greatr hobby, though.
>
> For a receive-only run to a scanner. I'm assuming that I am interested in
> up to one GHz, absolute max.
>
> Expect to go with F connectors on the coax as they are so readily
> available already made up, and relatively inexpensive.
>
> Anyone feel strtongly that it is worth going the BNC or the N route, or
> can I probably be happy with the F's ?
> About a 50 foot run. In practice, would I even see any difference ?
>
> I plan on RG6U, Quad Shield, probably
>

For receive only I doubt you would see any differance if you just stuck the
center wire in the connector of the receiver and touched the shield to the
connector.

2981. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 01:39:25 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <151e86d8-19bd-45c1-b0ff-dc5f94d2923d@13g2000hsb.googlegroups.com>
Source record: 27303

On Mar 7, 5:54 pm, richardharri...@webtv.net (Richard Harrison) wrote:
> Art wrote:
>
> "I sisagree."
>
> Most correspondents here know from experience that radiation efficacy
> falls in too-short antennas.Terman refers to E.A. Laport`s "Radio
> Antenna Engineering". Laport has charted Degree-amperes versus Field
> Strength or radiation resistance to which Field Strength is
> proportional.
>
> Laport gives an example on page 23:
> "A straight vertical radiator of height 30 degrees or less has a
> radiation resistance Rr following the equation
> Rr = Go squared.
> where Go is the electrical height in radians (One radian is 57.3
> degrees.)
>
> Best regards, Richard Harrison, KB5WZI

Note. that applies to a particular straight antenna and not to all
radiators as a whole.
Maxwell does not state that a radiator must be straight or any
particular shape for his law
to be applicable.
Art

2982. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 01:52:44 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <bebf00b0-e168-4c3c-b9d5-739a35996dd8@n77g2000hse.googlegroups.com>
Source record: 27304

On Mar 7, 5:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > My understanding of your claim was that for the special case of
> > a 45 degree line supplied from a matched source, the energy
> > in the reflected wave is dissipated in the source resistor.
>
> I have told you time and again that your understanding is
> wrong. My claim is that for the special case of a 45 degree
> phase difference between the forward wave and reflected wave,
> the *average* power in the reflected wave is dissipated in the
> source resistor. Irradiance is an *average* power density as
> defined by Hecht, in "Optics". I have told you previously (many
> times) that when I use the word "power", I am talking about
> *average* power. I agree with Hecht that instantaneous power
> is "of limited utility" and is therefore mostly irrelevant.
>
> For the record - for the umteenth time: When I say "power", I
> am talking about "*average* power". If I ever talk about
> instantaneous power, I will say "instantaneous power". If
> you still don't understand, you need professional help.
>
> > This sentence fragment from your document suggests this:
> > "reflected energy from the load is flowing through the source
> > resistor, RS, and is being dissipated there".
>
> I left no doubt as to what I meant in my document. Here is
> a quote from the second paragraph in my document:
> "Please note that any power referred to in this paper
> is an *average power*. Nothing is being asserted or implied about
> instantaneous powers. In fact, instantaneous powers are completely
> irrelevant to the following discussion."
>
> I simply don't know how to say it any plainer than that.
>
> I really resent your lack of ethics in this matter.
> If you are forced to create a Big Lie about what I have
> said in order to try to win, is it really worth it?

OK. I think I've got it now.

You are *not* claiming that the *energy* from the reflected wave
is dissipated in the source resistor, because for the *energy*
in the reflected wave to be dissipated in the source resistor,
the *energy* would have to dissipate at the same time that the
reflected wave delivered the *energy*, and the analysis of

instantaneous *energy* flows shows that this is not the case.

Rather, you are saying that the average reflected power is numerically equal to the increase in the average dissipation in the source resistor.

I can accept that as correct.

You might consider rewriting the sentence "reflected energy from the load is flowing through the source resistor, RS, and is being dissipated there" since it refers to the energy in the reflected wave and may mislead others in the same way it mislead me.

...Keith

2983. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 02:23:30 UTC
From: nm5k@wt.net
Message-ID: <0b6fb486-a4bb-4224-a088-a41ba0345c97@e6g2000prf.googlegroups.com>
Source record: 27305

On Mar 7, 7:29 pm, Art Unwin <ArthurUn...@gmail.com> wrote:

> When he brought the question of Q into the picture he made the
> statement that small antennas
> are usually of a low impedance which is correct empirically with
> respect to existing designs but it is not exclusive
> when dealing with all radiators that can be made that comply with
> Maxwells laws.

I take it your version is gifted and suffers not from a low Q... :/

>As I have said before it is implicite in Maxwells laws
> that a efficient radiator can be any size shape or configuration as
> long as it complies with Maxwells law.

Sure it can. Common knowledge. It's also common knowledge
that the trick with building a small efficient antenna is not really
the size of the radiator itself, it's actually getting power to that
small radiator.

> In my case my small antenna can have any impedance value for
> equilibrium and it is quite easy to have a resistive impedance in the
> hundreds of ohms as well as minuit impedances. I conform to 50 ohms
> purely because of component availability. As another aside my small
> antennas
> have a much wider bandwidth than any other available!

As previously noted, you have reinvented the air cooled dummy
load. Your performance specs sure seem to mimic one anyway.. :/

>As far as gain
> or energy transmitted that all depends on what frequencies get thru
> the bandpass filter and in no way directs out of pass energy to be be
> redirected to band pass status and augment energy transmitted. Stored
> energy has no relationship to Q in my mind since it goes around or
> circulates as with a tank circuit energy that lies within the pass
> bandof the tank circuit filter.
> To summate, my antenna design is considered small yet complies with
> Maxwells laws and yet does not have a narrow bandwidth or low
> impedance thus Chu's comments cannot be inclusive of all radiators.
> Best regards
> Art

As far as the rest, my cat has mittens.. :/
BTW, you need to define "equilibrium".
After several months you still are lagging at this task.
MK

2984. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 02:32:55 UTC
From: nm5k@wt.net
Message-ID: <27d6f824-f406-433a-ac83-4b9a2ab78041@d21g2000prf.googlegroups.com>
Source record: 27306

On Mar 7, 5:09 pm, Art Unwin <ArthurUn...@gmail.com> wrote:

>
> David,
> You admit to not understanding the term "equilibrium" so what do you
> care what I say and in what content.

I don't think anyone here really knows how you define that word
as it pertains to your antenna design.
Once I saw where you said it meant the antenna was resonant,
"eham?" but that seems to change with the direction of the wind
and the amount of snowfall on the ground.
MK

2985. Re: 'SMALL' ANTENNA CRITERIA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 02:45:44 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <fsKdnQcOfPRFYEzanZ2dnUVZ_hninZ2d@comcast.com>
Source record: 27307

On Fri, 07 Mar 2008 16:04:36 -0600, Cecil Moore wrote:

> Michael Coslo wrote:
>> Give how's and whys. Not political verbiage.
>
> OK, how about this? Global warming has always run in cycles of 100K+/-
> years. Man obviously had no effect on the previous cycles.

Obviously. The 4004 BC crowd has some issues with even that! 8^)

> The
> temperature 130,000 ago averaged 4 degrees higher than any temperature
> during the present cycle. The maximum temperature during the present
> cycle occurred 8000 years ago when man obviously had no effect.

Cyclic variation is not the issue. Many things can cause average global temperature to vary. Insolation, the amount of greenhouse gases emitted by other sources, volcanism, possible methane clathrate releases are all modifiers.

During earlier days in our solar system, the sun was a good deal dimmer, like 30 percent, 4 billion years ago. And yet, during much of the time, average global temperatures were higher than today. While creation science argues otherwise:

http://www.creationscience.com/onlinebook/AstroPhysicalSciences10.html

http://www.answersingenesis.org/tj/v15/i2/faintsun.asp

it is quite likely that CO2 from volcanism could take care of that issue.

> We are
> now 8000 years into the next ice age.

And a fascinating ice age it is! 8^) Looking at the timelines of recent ice ages, it is beyond my ability to tell just where we are. If we are in a glaciation period, the interglacial was the shortest one known. By your statement, the interglacial was around 2000 years. But your data and mine are radically different.

> Any global warming effect provided
> by man's greenhouse gases will tend to delay the plunging temperatures
> associated with the presently approaching ice age and save tens of
> millions of people from starving to death due to the farmlands being
> overrun by glaciers.

What I see here is the old either/or problem. You can't have it both ways. Because there are natural fluctuations in global average

temperature does not mean that adding our own contribution is negligent.
IOW, it isn't a choice between the two.

Wherever we are in the cycle of global average temperature, and for
whatever reasons we are there, what we are doing is either having an
effect because of physics, or it isn't because of mitigating physics that
we don't understand yet.

--
-73 de Mike N3LI -

2986. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 03:36:37 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <cab6732e-fce0-46ba-a69a-79b27df36427@60g2000hsy.googlegroups.com>
Source record: 27308

On Mar 7, 8:32 pm, n...@wt.net wrote:
> On Mar 7, 5:09 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>
>
> > David,
> > You admit to not understanding the term "equilibrium" so what do you
> > care what I say and in what content.
>
> I don't think anyone here really knows how you define that word
> as it pertains to your antenna design.
> Once I saw where you said it meant the antenna was resonant,
> "eham?" but that seems to change with the direction of the wind
> and the amount of snowfall on the ground.
> MK

What is your real p;roblem? You have not seen my antenna and obviously
dont understand the mathematics
and you are not an engineer, Yet you have made so many comments and
opinions that berate the design and seem un willing to wait until the
independent review comes in. On top of that you want help with the
word equilibrium!.
Give me a break.You should have pursued an education instead of
bragging how often you quit going to school
then you would not appear so ignorant about antennas. Treat it as a
hobby and forget about the being an expert side of things, for you it
is to late. And yes the antenna is resonant but rezonance does not
always equate to equilibrium.
With respect to feeding a small antenna it is not that difficult
especially if you choose a resonance of 50 ohm
resistive. With respect to your world beating antenna that is so easy
when you get rid of those loading antics
that you use. I know you can work all you can hear but what about all
that your inefficient antenna is n0lt hearing?
Art

2987. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 04:02:21 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9j34t3lb2f1rcor7lkikggsnd1cgpgqu7i@4ax.com>
Source record: 27309

On Fri, 7 Mar 2008 13:18:45 -0800, dplatt@radagast.org (Dave Platt) wrote:

>Plugging an arbitrarily-chosen antenna into a WiFi radio (access point >or client) will void the Part 15 certification of the device, and it >becomes technically illegal to operate it.

Hi Dave,

At the risk of becoming a stockade-lawyer, I've perused the band plans (I presume that the 13cM band has not been confiscated in the past few years), and I think I am reasonably adept at the law in this regard. As WiFi shares our allocation; it is noteworthy that we as amateurs are the ONLY service that does NOT require FCC type acceptance to operate. To my mind, the only issue is one of knowingly interfering with a service (that doesn't seem to be an issue, however).

73's
Richard Clark, KB7QHC

2988. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 05:09:29 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080307210929.b0763ee6.rsparks@elltel.net>
Source record: 27310

OK Cecil. I understand that none of your discussion applies to instantaneous values, only average values.

I am examining Keith's spread sheet carefully. I found that Open Calc will open the spreadsheet so I can read Keith's cell directions. (Thanks for making the spread sheet available Keith.) I want to make sure that I fully understand what is happening here, to the best of my ability and time available.

On Fri, 07 Mar 2008 12:13:45 -0600
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > On Fri, 07 Mar 2008 15:15:08 GMT
> > Cecil Moore <nospam@w5dxp.com> wrote:
> >> My formula applies *only to average power*.
> >
> > I find myself surprised at your insistance that the instantaneous
> > case must be seperated from the average case in our example of waves
> > on a transmission line.
>
> You have misunderstood what I am objecting to - which is:
> Please don't say or imply that I have said or implied
> anything about instantaneous values. I have NOT done so!
> The formulas and concepts being used in the discussion
> of instantaneous values are NOT mine! My objection is
> to the false statements being made about what I have
> posted.
>
> Please go ahead and have your instantaneous discussion with
> Keith but please don't say or imply that anything associated
> with that discussion is about anything I have posted. Saying
> or implying such a thing is simply false.
>
> > It is informative to look at each problem from many angles.
>
> I agree - just stop saying that it is based on my assertions.
> You or Keith may be right or wrong but either way, it is not
> associated with anything I have posted. Please leave my name
> out of any discussion concerning instantaneous values.
>
> > Did I misunderstand your premise, and you were really trying to say that
> > the inclusion of a 50 ohm source resistor would prevent the source from
> > ever 'seeing' anything but a 100 ohm load? I don't think that was your
> > intent.
>

> Please add a dimension to your thinking. No matter what the
> value of the load resistor, the source delivers 100 watts.
> There are an infinite number of loads that the source could
> "see" besides 100+j0 ohms that will make that condition true.
>
> When the load is 0 ohms, the source "sees" 50+j50 ohms.
> When the load is 12.5 ohms, the source "sees" 73.5+j44.1 ohms.
> When the load is 25 ohms, the source "sees" 90+j30 ohms.
> Only when the load is 50 ohms, does the source "see" 100+j0 ohms.
> --
> 73, Cecil http://www.w5dxp.com

--
73, Roger, W7WKB

2989. مقطع رهيب فأر يتقزز على صدر ربة المنزل

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 05:14:46 UTC
From: manora <SAHAR1398@gmail.com>
Message-ID: <c7b1ca27-2b45-43dc-95ba-32f22a8bdb63@x41g2000hsb.googlegroups.com>
Source record: 27311

مقطع رهيب فأر يتقزز على صدر ربة المنزل
http://www.antya7la.com/vb/showthread.php?p=16001#post16001
لورا خليل تسب شباب الكويت على الهواء
http://www.antya7la.com/vb/showthread.php?p=15983#post15983

الكاميرا الخفية والنجم ابراهيم نصر والصعيدى
http://www.antya7la.com/vb/showthread.php?p=15992#post15992

اي ظريف الطول لمثلك ون باي ... قصيدة للحبيبة
http://www.antya7la.com/vb/showthread.php?p=15995#post15995

قرد بيلعب كاراتيه
http://www.antya7la.com/vb/showthread.php?p=15996#post15996

فيل هائج بشوارع هاواي ... ومقتل العشرات
http://www.antya7la.com/vb/showthread.php?p=15997#post15997

مقطع للطاطو " ادج ردان - ادج كحمضو "
http://www.antya7la.com/vb/showthread.php?p=15998#post15998

الجوع كافر مقطع معبر
http://www.antya7la.com/vb/showthread.php?p=15999#post15999

مجن الكوميديا ابراهيم نصر فى حلقة روعة من حلقات غباشى الكاميرا الخفية
http://www.antya7la.com/vb/showthread.php?p=16000#post16000

انه لخدا جديد وهام لكل كلاصيل
http://groups.google.com/group/dededvd

2990. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 05:19:39 UTC
From: richardharrison@webtv.net
Message-ID: <18532-47D221EB-59@storefull-3258.bay.webtv.net>
Source record: 27312

Art wrote:
"No where can I find reference to "size" in what the masters state."

It`s there if you look. Kraus is a certified master. In the newest edition, the 3rd, of "Antennas" is found on page 12:
"The basic equation of radiation may be expressed simply as
IL=QV, where
I=time changing current
L=length of current element
Q=charge,C
V=time change of velocity or acceleration
Thus, time changing current radiates and accelerated charge radiates. For steady-state harmonic radiation, we usually focus on current. For transients or pulses, we focus on charge."

The above is the beginning of the chapter on "Antenna Basics". Everyone interested in antennas needs ready access to this important book.

Best regards, Richard Harrison, KB5WZI

2991. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 05:25:20 UTC
From: John KD5YI <groups1.jocjo@xoxy.net>
Message-ID: <4rpAj.1021$z13.151@trnddc06>
Source record: 27313

"Brian Kelly" <kelly@dvol.com> wrote in message
news:806f258b-30b9-42ac-a3a6-cbad30154079@b64g2000hsa.googlegroups.com...
On Mar 7, 6:09 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
>
>
>
>
>
>
>
>
> > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> >news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>
> > > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison) wrote:
> > > I disagree. Laws written are all based on the assumption of
> > > equilibrium and that includes
> > > Maxwell's laws. These laws hav e zero refernce to size as such though
> > > many would seek
>
> > because contrary to what those male enhancement product adds tell you,
> > size
> > doesn't matter.
>
> > > for the word volume. Pertinent factors are wave length of frequency in
> > > The problem here is that amateur radio is wellded to the yagi design
> > > which is not one of equilibrium
>
> > WAIT JUST ONE GOSH DARN MINUTE! you have said in the past that the
> > simple
> > half wave dipole WAS a prefect example of equilibrium! NOW it isn't???
> > have you had a new revelation while i had your old email address
> > plonked??
>
> David,
> You admit to not understanding the term "equilibrium" so what do you
> care what I say and in what content.
> If you consider a half wave dipole as being in equilibrium you have to
> consider the electrical circuit
> consisting of a capacitance from the antenna to ground or the route
> thru the center of of the radiator, both of thes circuits
> can be considered as being in equilibrium. However, on this newsgroup
> a fractional wavelength radiator is considered as an open circuit for

> some reason and thus under those circumstances the half wave dipole is
> not in equilibrium.
> Now your views on radiation is all over the place so it is very hard
> for me to determine the context of what you say.
> Art

Long before we rode our dinosaurs to club meetings the bright lights had completely agreed that the strength of radio signals at far off places was a function of the integral of i•dl where dl is the bigness of the aerial. Maybe it's in Sears and Zemansky. I dunno . . nor do I really care.

w3rv

Antennas for All Applications, 3rd Edition, Kraus & Marhefka, McGraw-Hill, page 12.

<Begin quote>

Regardless of antenna type, all involve the same basic principle that radiation is produced by accelerated (or decelerated) charge. The basic equation of radiation may be expressed simply as

IL = Qv (A m / s)

where

I = time-changing current, A/s
L = length of current element, m
Q = charge, C
v = time change of velocity which equals the acceleration of the charge, m/s

Thus, time-changing current radiates and accelerated charge radiates. For steady-state harmonic variation, we usually focus on current. For transients or pulses, we focus on charge. The radiation is perpendicular to the acceleration, and the radiated power is proportional to the square of IL or Qv.

<end quote>

Cheers,
John

2992. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 07:32:38 UTC
From: nm5k@wt.net
Message-ID: <cc03c9c4-3215-4fb1-b79b-e1791dd620e0@u10g2000prn.googlegroups.com>
Source record: 27314

On Mar 7, 9:36 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Mar 7, 8:32 pm, n...@wt.net wrote:
>
> > On Mar 7, 5:09 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
> > > David,
> > > You admit to not understanding the term "equilibrium" so what do you
> > > care what I say and in what content.
>
> > I don't think anyone here really knows how you define that word
> > as it pertains to your antenna design.
> > Once I saw where you said it meant the antenna was resonant,
> > "eham?" but that seems to change with the direction of the wind
> > and the amount of snowfall on the ground.
> > MK
>
> What is your real p;roblem? You have not seen my antenna and obviously
> dont understand the mathematics
> and you are not an engineer, Yet you have made so many comments and
> opinions that berate the design and seem un willing to wait until the
> independent review comes in. On top of that you want help with the
> word equilibrium!.
> Give me a break.You should have pursued an education instead of
> bragging how often you quit going to school
> then you would not appear so ignorant about antennas. Treat it as a
> hobby and forget about the being an expert side of things, for you it
> is to late. And yes the antenna is resonant but rezonance does not
> always equate to equilibrium.
> With respect to feeding a small antenna it is not that difficult
> especially if you choose a resonance of 50 ohm
> resistive. With respect to your world beating antenna that is so easy
> when you get rid of those loading antics
> that you use. I know you can work all you can hear but what about all
> that your inefficient antenna is n0lt hearing?
> Art

Tell you what... Instead of tweaking you further, I'll just sit back
and
watch the show. Take all the time you want.
I have enough confidence in known "living in the past" theory to see
that what you are trying to achieve, "full size performance and
efficiency
from a very small radiator" is not going to pan out how you expect it
to.

Good luck in the contest.
But when you are ready to divulge the reports of the comparision and
tests, don't be overly offended when people ask pertinent questions
about possible feedline radiation and other sorts of RF augmentation,
intentional, or not. Evasion of these questions will invoke my
tweaking
reflex, which could get ugly to passersby. :/
MK

2993. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 07:59:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <chg4t3dll7jqjbioier6av2jbtgdcbe4mo@4ax.com>
Source record: 27315

On Fri, 7 Mar 2008 23:19:39 -0600, richardharrison@webtv.net (Richard Harrison) wrote:

>It`s there if you look. Kraus is a certified master. In the newest
>edition, the 3rd, of "Antennas" is found on page 12:

Hi Richard,

It takes Laport only 3 pages to name three references for the math (Stratton, Skilling, and Kraus); provide the equation; and directly state at the bottom of page 3:
"directly proportional to the current and to the
continuing on top of page 4:
"length of the doublet..."

No requirement for resonance, no mention of Q, the only resistance is that of free space, nothing about equilibrium, just a straight answer. The math has been confirmed by experiment, and it is duplicated in models that are fully consistent with all scientific enquiry for the past three centuries which exhibit every quality of the math and the quotation above. The text has been made FREELY available here. No need to purchase.

There are no pages with pictures to color, so reading that far can be tough to master for one finding it difficult to search this out:
>>I have searched quite a bit for evidence that states that performance
>>of antennas can be rated by it's size.
"Quite a bit" sets the standard for the whimpering of whipped dog denial. If just a teensy-weensy bit more effort were made, it is obvious the complete investment in antennas the size of a cracker-jacks box would collapse like the home-loan industry.

73's
Richard Clark, KB7QHC

2994. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 12:57:02 UTC
From: Dave <noone@nowhere.com>
Message-ID: <y2wAj.1763$y83.87@trndny06>
Source record: 27316

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:f35d4eca-fa72-4fd6-8cae-69396312be80@2g2000hsn.googlegroups.com...
> On Mar 7, 6:02 pm, "Dave" <no...@nowhere.com> wrote:
>> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>>
>> news:2985c272-6d62-4667-ac14-e575c97ce339@2g2000hsn.googlegroups.com...
>>
>>
>>
>> > On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
>> >> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>>
>> >>news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>>
>> >> > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison)
>> >> > wrote:
>> >> > I disagree. Laws written are all based on the assumption of
>> >> > equilibrium and that includes
>> >> > Maxwell's laws. These laws hav e zero refernce to size as such
>> >> > though
>> >> > many would seek
>>
>> >> because contrary to what those male enhancement product adds tell you,
>> >> size
>> >> doesn't matter.
>>
>> >> > for the word volume. Pertinent factors are wave length of frequency
>> >> > in
>> >> > The problem here is that amateur radio is wellded to the yagi design
>> >> > which is not one of equilibrium
>>
>> >> WAIT JUST ONE GOSH DARN MINUTE! you have said in the past that the
>> >> simple
>> >> half wave dipole WAS a prefect example of equilibrium! NOW it
>> >> isn't???
>> >> have you had a new revelation while i had your old email address
>> >> plonked??
>>
>> > David,
>> > You admit to not understanding the term "equilibrium" so what do you
>> > care what I say and in what content.
>> > If you consider a half wave dipole as being in equilibrium you have to
>>
>> no, it wasn't me that said that, you said that a half wave dipole was an

>> example of your equilibrium gaussian antenna. don't put words in my
>> mouth,
>> i don't think any antenna is in 'equilibrium' if it is working right,
>> there
>> is always a flow of power either in or out... equilibrium means not going
>> anywhere, i want my antennas to radiate and receive, not just sit there
>> and
>> look pretty!
>
> David, please plonk me again under my new server.
> Thanks
> Art

why, you don't like someone to point out inconsistencies in your rantings?
i'll probably keep you un-plonked for a bit, wx is bad this weekend, no big
contests, and tx5c hasn't landed yet to listen to that zoo, so i could use
some entertainment.

2995. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 13:44:12 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <6ba16bd6-1e9a-4ae0-bb8f-ac33eadb43d8@o77g2000hsf.googlegroups.com>
Source record: 27317

On Mar 7, 11:19 pm, richardharri...@webtv.net (Richard Harrison)
wrote:
> Art wrote:
>
> "No where can I find reference to "size" in what the masters state."
>
> It`s there if you look. Kraus is a certified master. In the newest
> edition, the 3rd, of "Antennas" is found on page 12:
> "The basic equation of radiation may be expressed simply as
> IL=QV, where
> I=time changing current
> L=length of current element
> Q=charge,C
> V=time change of velocity or acceleration
> Thus, time changing current radiates and accelerated charge radiates.
> For steady-state harmonic radiation, we usually focus on current. For
> transients or pulses, we focus on charge."
>
> The above is the beginning of the chapter on "Antenna Basics". Everyone
> interested in antennas needs ready access to this important book.
>
> Best regards, Richard Harrison, KB5WZI

But you arer forgettfull Richard, my antenna is a full wavelength
which meets
Maxwells requirements, it is just that the volume is small despite the
wavelength.
It is also not in conflict with "antenna basics" alluded to above. I
don't
understandwhat the beef is. Why are so many hams alarmed at the idea?
Regards
Art

2996. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 13:56:03 UTC
From: Dave <noone@nowhere.com>
Message-ID: <TVwAj.1003$ox3.690@trndny04>
Source record: 27318

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:6ba16bd6-1e9a-4ae0-bb8f-ac33eadb43d8@o77g2000hsf.googlegroups.com...
> On Mar 7, 11:19 pm, richardharri...@webtv.net (Richard Harrison)
> wrote:
>> Art wrote:
>>
>> "No where can I find reference to "size" in what the masters state."
>>
>> It`s there if you look. Kraus is a certified master. In the newest
>> edition, the 3rd, of "Antennas" is found on page 12:
>> "The basic equation of radiation may be expressed simply as
>> IL=QV, where
>> I=time changing current
>> L=length of current element
>> Q=charge,C
>> V=time change of velocity or acceleration
>> Thus, time changing current radiates and accelerated charge radiates.
>> For steady-state harmonic radiation, we usually focus on current. For
>> transients or pulses, we focus on charge."
>>
>> The above is the beginning of the chapter on "Antenna Basics". Everyone
>> interested in antennas needs ready access to this important book.
>>
>> Best regards, Richard Harrison, KB5WZI
>
> But you arer forgettfull Richard, my antenna is a full wavelength
> which meets
> Maxwells requirements, it is just that the volume is small despite the
> wavelength.
> It is also not in conflict with "antenna basics" alluded to above. I
> don't
> understandwhat the beef is. Why are so many hams alarmed at the idea?
> Regards
> Art

its called 'experience' by most and 'knowledge' by those in the know.

2997. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 16:21:07 UTC
From: richardharrison@webtv.net
Message-ID: <25528-47D2BCF3-433@storefull-3257.bay.webtv.net>
Source record: 27319

Art wrote:
"---my antenna is a full wavelength which meets Maxwell`s requirements, it is just that the volume is small despite the wavelength."

In 1949, I worked at the KPRC-KXYZ broadcast plant. Another operator there, J.L. Davis, W5LIT had a new 1949 Ford in which he installed a surplus ART-13 and a PE-103 dynamotor. For an antenna he wound wire turn by turn on a bamboo pole until it was resonant on a slice of the 75-meter band.

When J.L. modulated, Q in the coil produced a tip corona on the first good peak and modulation became loud without a receiver.

The 20th edition of the ARRL Antenna Book on page 16-13 says this about continuously loaded antennas: "The general approach has been to use a coil made from heavy wire (#14 or larger), with length-to-diameter ratios as high as 21. British experimeters have reported good results with 8-foot overall length on the 1.8- and 3.5 MHz bands. The idea of making the entire antenna out of one section of coil has been tried with some success."

Art`s antenna containing a "full wavelength" of wire would likely feature a greater loss than J.L.`s 1/4-wave resonant coil from simply a greater length of wire while both have peactances balanced to zero. Art`s lower Q would probably kill the corona, increase the bandwidth, while losing the gain that a fullwave straight conductor enjoys.

Cecil can probably report on results of continuously loaded mobile antennas versus a bug catcher loaded whip in the California shoot-outs.

Best regards, Richard Harrison, KB5WZI

2998. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 17:49:10 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <cb104d52-c585-4750-95ca-044a2bfa0e12@i29g2000prf.googlegroups.com>
Source record: 27320

On Mar 7, 12:14 pm, Cecil Moore <nos...@w5dxp.com> wrote:
...
> OK Tom, here's a challenge for you.

The only thing more foolish than the "challenge" that followed that would be the person who accepted it. Since I don't suppose you think me a fool, I'll just ignore it.

2999. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 18:12:04 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <122d897f-ff11-4191-82db-4470f9a4d11a@s37g2000prg.googlegroups.com>
Source record: 27321

On Mar 7, 2:34 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
> Cecil Moore wrote:
> > K7ITM wrote:
> >> Certainly, those who design and build FTIR spectrometers know
> >> perfectly well that interference does not depend on a narrow-band
> >> coherent source.
>
> > How narrow-band? How coherent? In the irradiance (power
> > density) equation, Ptot = P1 + P2 + 2*sqrt(P1*P2)cos(A),
> > if the angle 'A' is varying rapidly, what value do you
> > use for cos(A)?
>
> > A constant average sustained level of destructive
> > interference cannot be maintained between two waves
> > unless they are coherent. If they are not coherent
> > the interference will average out to zero.
>
> Gee, I wonder if the experts may have moved beyond the elementary optics
> textbook descriptions?
>
> Are you suggesting that FTIR cannot work unless one has your nice 1-D
> configurations with perfectly monochromatic waves? Does everything need
> to be collinear and coherent?
>
> 73,
> Gene
> W4SZ

So--I have a classic Michelson interferometer, and I see the classic ring pattern on the screen at the "output" port. I also have a sensitive microchannel plate detector system that I propose to put in place of the screen, so that I can reduce the light amplitude to where it makes sense to be observing it with the very sensitive detector. In fact, I propose to reduce the light level to the point that the short wavelength light I'm using is only putting a few photons per second into the interferometer. I'll count a significant fraction of those photons and identify where they landed on the microchannel plate. Do you suppose, Gene, that I'll still see the same interference pattern that I saw with the much higher intensity light? Is there any limit to how low a light level I can use and still see the pattern?

If I do still see the pattern, there must be yet another "dimension" I need to add to my understanding of the situation -- not rooted in classical Maxwell e&m.

And of course a dimension that is removed if you think only of average quantities is time; one who thinks only in terms of averages removes the possibility of the deeper understanding that resolution as a function of time allows.

Cheers,
Tom

3000. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 18:37:23 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <fb40a610-9439-495f-a982-b76cd387e88c@v3g2000hsc.googlegroups.com>
Source record: 27322

On Mar 8, 10:21 am, richardharri...@webtv.net (Richard Harrison)
wrote:
> Art wrote:
>
> "---my antenna is a full wavelength which meets Maxwell`s requirements,
> it is just that the volume is small despite the wavelength."
>
> In 1949, I worked at the KPRC-KXYZ broadcast plant. Another operator
> there, J.L. Davis, W5LIT had a new 1949 Ford in which he installed a
> surplus ART-13 and a PE-103 dynamotor. For an antenna he wound wire turn
> by turn on a bamboo pole until it was resonant on a slice of the
> 75-meter band.
>
> When J.L. modulated, Q in the coil produced a tip corona on the first
> good peak and modulation became loud without a receiver.
>
> The 20th edition of the ARRL Antenna Book on page 16-13 says this about
> continuously loaded antennas: "The general approach has been to use a
> coil made from heavy wire (#14 or larger), with length-to-diameter
> ratios as high as 21. British experimeters have reported good results
> with 8-foot overall length on the 1.8- and 3.5 MHz bands. The idea of
> making the entire antenna out of one section of coil has been tried with
> some success."
>
> Art`s antenna containing a "full wavelength" of wire would likely
> feature a greater loss than J.L.`s 1/4-wave resonant coil from simply a
> greater length of wire while both have peactances balanced to zero.
> Art`s lower Q would probably kill the corona, increase the bandwidth,
> while losing the gain that a fullwave straight conductor enjoys.
>
> Cecil can probably report on results of continuously loaded mobile
> antennas versus a bug catcher loaded whip in the California shoot-outs.
>
> Best regards, Richard Harrison, KB5WZI

There are no loads on my antenna so your statements are irrelavent
Art

3001. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 18:44:45 UTC
From: Dave <noone@nowhere.com>
Message-ID: <x8BAj.1011$ox3.701@trndny04>
Source record: 27323

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:fb40a610-9439-495f-a982-b76cd387e88c@v3g2000hsc.googlegroups.com...
> On Mar 8, 10:21 am, richardharri...@webtv.net (Richard Harrison)
> wrote:
>> Art wrote:
>>
>> "---my antenna is a full wavelength which meets Maxwell`s requirements,
>> it is just that the volume is small despite the wavelength."
>>
>> In 1949, I worked at the KPRC-KXYZ broadcast plant. Another operator
>> there, J.L. Davis, W5LIT had a new 1949 Ford in which he installed a
>> surplus ART-13 and a PE-103 dynamotor. For an antenna he wound wire turn
>> by turn on a bamboo pole until it was resonant on a slice of the
>> 75-meter band.
>>
>> When J.L. modulated, Q in the coil produced a tip corona on the first
>> good peak and modulation became loud without a receiver.
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>> The 20th edition of the ARRL Antenna Book on page 16-13 says this about
>> continuously loaded antennas: "The general approach has been to use a
>> coil made from heavy wire (#14 or larger), with length-to-diameter
>> ratios as high as 21. British experimeters have reported good results
>> with 8-foot overall length on the 1.8- and 3.5 MHz bands. The idea of
>> making the entire antenna out of one section of coil has been tried with
>> some success."
>>
>> Art`s antenna containing a "full wavelength" of wire would likely
>> feature a greater loss than J.L.`s 1/4-wave resonant coil from simply a
>> greater length of wire while both have peactances balanced to zero.
>> Art`s lower Q would probably kill the corona, increase the bandwidth,
>> while losing the gain that a fullwave straight conductor enjoys.
>>
>> Cecil can probably report on results of continuously loaded mobile
>> antennas versus a bug catcher loaded whip in the California shoot-outs.
>>
>> Best regards, Richard Harrison, KB5WZI
>
> There are no loads on my antenna so your statements are irrelavent
> Art

the whole antenna is a load.

3002. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 19:04:32 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-8FCDF9.10045208032008@netnews.worldnet.att.net>
Source record: 27324

In article <9j34t3lb2f1rcor7lkikggsnd1cgpgqu7i@4ax.com>,
Richard Clark <kb7qhc@comcast.net> wrote:

> On Fri, 7 Mar 2008 13:18:45 -0800, dplatt@radagast.org (Dave Platt)
> wrote:
>
> >Plugging an arbitrarily-chosen antenna into a WiFi radio (access point
> >or client) will void the Part 15 certification of the device, and it
> >becomes technically illegal to operate it.
>
> Hi Dave,
>
> At the risk of becoming a stockade-lawyer, I've perused the band plans
> (I presume that the 13cM band has not been confiscated in the past few
> years), and I think I am reasonably adept at the law in this regard.
> As WiFi shares our allocation; it is noteworthy that we as amateurs
> are the ONLY service that does NOT require FCC type acceptance to
> operate. To my mind, the only issue is one of knowingly interfering
> with a service (that doesn't seem to be an issue, however).
>
> 73's
> Richard Clark, KB7QHC

True Richard, HOWEVER, if your passing Internet Traffic, over your
none-Type Accepted, Amateur Licensed WiFi Link, you MUST abide by
ALL the rules of Part 97, not just the ERP Rules, including Non-
Commercial Content, and Identification.

--
Bruce in alaska
add <path> after <fast> to reply

3003. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 19:30:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nPBAj.20039$0w.3141@newssvr27.news.prodigy.net>
Source record: 27325

Keith Dysart wrote:
> You are *not* claiming that the *energy* from the reflected wave
> is dissipated in the source resistor, because for the *energy*
> in the reflected wave to be dissipated in the source resistor,
> the *energy* would have to dissipate at the same time that the
> reflected wave delivered the *energy*, and the analysis of
> instantaneous *energy* flows shows that this is not the case.

I clearly stated that my claim is based on a special case zero interference condition - it's even in the title of the article. The instantaneous energy that you (not I) introduced, does not meet the zero interference precondition. Therefore, anything that does not meet the zero interference precondition that I enumerated is an irrelevant diversion. You introduced that irrelevant straw man and tried to make hay out it. :-)

> you are saying that the average reflected power is
> numerically equal to the increase in the average dissipation
> in the source resistor.
>
> I can accept that as correct.

Finally, after a million words. :-)

> You might consider rewriting the sentence "reflected energy
> from the load is flowing through the source resistor, RS, and
> is being dissipated there" since it refers to the energy in
> the reflected wave and may mislead others in the same way it
> mislead me.

Since "average reflected power" is dependent upon the "reflected energy", I don't see any problem. Would "average reflected energy" work for you? It should be obvious that, associated with interference during each cycle, destructive interference energy is stored during part of the cycle and delivered back as constructive interference energy during another part of the cycle. The intra-cycle interference averages out to zero.

Many have objected to the term "reflected power" saying it is not power that is reflected but instead is "reflected energy". So I stopped talking about "reflected power" and started talking about "reflected energy". Now you object to the use of the term "reflected energy". Would you and the rest of the guru attack gang please get together on what term you would like for me to use?

--
73, Cecil http://www.w5dxp.com

3004. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 19:33:56 UTC
From: Dave <noone@nowhere.com>
Message-ID: <ESBAj.3388$FG2.1744@trndny08>
Source record: 27326

"Bruce in alaska" <fast@btpost.net> wrote in message
news:fast-8FCDF9.10045208032008@netnews.worldnet.att.net...
> In article <9j34t3lb2f1rcor7lkikggsnd1cgpgqu7i@4ax.com>,
> Richard Clark <kb7qhc@comcast.net> wrote:
>
>> On Fri, 7 Mar 2008 13:18:45 -0800, dplatt@radagast.org (Dave Platt)
>> wrote:
>>
>> >Plugging an arbitrarily-chosen antenna into a WiFi radio (access point
>> >or client) will void the Part 15 certification of the device, and it
>> >becomes technically illegal to operate it.
>>
>> Hi Dave,
>>
>> At the risk of becoming a stockade-lawyer, I've perused the band plans
>> (I presume that the 13cM band has not been confiscated in the past few
>> years), and I think I am reasonably adept at the law in this regard.
>> As WiFi shares our allocation; it is noteworthy that we as amateurs
>> are the ONLY service that does NOT require FCC type acceptance to
>> operate. To my mind, the only issue is one of knowingly interfering
>> with a service (that doesn't seem to be an issue, however).
>>
>> 73's
>> Richard Clark, KB7QHC
>
> True Richard, HOWEVER, if your passing Internet Traffic, over your
> none-Type Accepted, Amateur Licensed WiFi Link, you MUST abide by
> ALL the rules of Part 97, not just the ERP Rules, including Non-
> Commercial Content, and Identification.
>
> --
> Bruce in alaska
> add <path> after <fast> to reply

most, but not all, of the channels used for wifi fall in the amateur
allocation. so if you really want to be technical be sure you set the
access point on the good channels, as well as adding your call for
identification, filtering content, etc.

3005. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 19:46:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <d2CAj.9052$tW.5884@nlpi070.nbdc.sbc.com>
Source record: 27327

Roger Sparks wrote:
> OK Cecil. I understand that none of your discussion applies
> to instantaneous values, only average values.

Indeed, instantaneous values are a diversion away from
my discussion/article/example using average values.

> I am examining Keith's spread sheet carefully. I found that
> Open Calc will open the spreadsheet so I can read Keith's cell
> directions. (Thanks for making the spread sheet available
> Keith.) I want to make sure that I fully understand what is
> happening here, to the best of my ability and time available.

Given the superposition of two voltages, when the two
voltages have the same sign, constructive interference
is present. When the two voltages have opposite signs,
destructive interference is present. The destructive
interference during each cycle exactly equals (and
supplies) the constructive interference during the
same cycle so the average interference is zero.
--
73, Cecil http://www.w5dxp.com

3006. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 19:49:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <W4CAj.9058$tW.6794@nlpi070.nbdc.sbc.com>
Source record: 27328

K7ITM wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> OK Tom, here's a challenge for you.
>
> The only thing more foolish than the "challenge" that followed that
> would be the person who accepted it. Since I don't suppose you think
> me a fool, I'll just ignore it.

Tom, you are the one who implied that coherency or
incoherency doesn't matter. The challenge would have
proved it doesn't matter. Since you refused the
challenge, can we assume that it does matter?
--
73, Cecil http://www.w5dxp.com

3007. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 19:57:48 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <0dCAj.727163$kj1.272834@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27329

K7ITM wrote:
> On Mar 7, 2:34 pm, Gene Fuller <W4SZzzz...@att.net> wrote:
>> Cecil Moore wrote:
>>> K7ITM wrote:
>>>> Certainly, those who design and build FTIR spectrometers know
>>>> perfectly well that interference does not depend on a narrow-band
>>>> coherent source.
>>> How narrow-band? How coherent? In the irradiance (power
>>> density) equation, Ptot = P1 + P2 + 2*sqrt(P1*P2)cos(A),
>>> if the angle 'A' is varying rapidly, what value do you
>>> use for cos(A)?
>>> A constant average sustained level of destructive
>>> interference cannot be maintained between two waves
>>> unless they are coherent. If they are not coherent
>>> the interference will average out to zero.
>> Gee, I wonder if the experts may have moved beyond the elementary optics
>> textbook descriptions?
>>
>> Are you suggesting that FTIR cannot work unless one has your nice 1-D
>> configurations with perfectly monochromatic waves? Does everything need
>> to be collinear and coherent?
>>
>> 73,
>> Gene
>> W4SZ
>
> So--I have a classic Michelson interferometer, and I see the classic
> ring pattern on the screen at the "output" port. I also have a
> sensitive microchannel plate detector system that I propose to put in
> place of the screen, so that I can reduce the light amplitude to where
> it makes sense to be observing it with the very sensitive detector.
> In fact, I propose to reduce the light level to the point that the
> short wavelength light I'm using is only putting a few photons per
> second into the interferometer. I'll count a significant fraction of
> those photons and identify where they landed on the microchannel
> plate. Do you suppose, Gene, that I'll still see the same
> interference pattern that I saw with the much higher intensity light?
> Is there any limit to how low a light level I can use and still see
> the pattern?
>
> If I do still see the pattern, there must be yet another "dimension" I
> need to add to my understanding of the situation -- not rooted in
> classical Maxwell e&m.
>

> And of course a dimension that is removed if you think only of average
> quantities is time; one who thinks only in terms of averages removes
> the possibility of the deeper understanding that resolution as a
> function of time allows.
>
> Cheers,
> Tom

Tom,

One step at a time. Cecil has not yet accepted the real world in the classical state. The quantum state will need to wait.

8-)

73,
Gene
W4SZ

3008. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 20:27:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <dFCAj.9060$tW.7111@nlpi070.nbdc.sbc.com>
Source record: 27330

Gene Fuller wrote:
> Cecil has not yet accepted the real world in the
> classical state.

I know there is no such thing as a lossless transmission line, Gene. That doesn't prohibit me from using lossless transmission lines in an example, does it? Every textbook on transmission lines that I have ever seen does the same thing.
--
73, Cecil http://www.w5dxp.com

3009. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-08 22:21:59 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <c646t3hmaporojk96hreqbbieh915hunpk@4ax.com>
Source record: 27331

On Sat, 8 Mar 2008 10:12:04 -0800 (PST), K7ITM <k7itm@msn.com> wrote:

>Is there any limit to how low a light level I can use and still see
>the pattern?

Hi Tom,

The Quantum Efficiency of the eye is between 40% and 50%. The time to convert one photon in a visual receptor is roughly 14 femtoseconds.

I have seen no component that can match the bandwidth, dynamic range, AND sensitivity of the eye.

73's
Richard Clark, KB7QHC

3010. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 01:12:01 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <w-CdnSTEa-n8pE7anZ2dnUVZ_sbinZ2d@comcast.com>
Source record: 27332

On Sat, 08 Mar 2008 14:21:59 -0800, Richard Clark wrote:

> On Sat, 8 Mar 2008 10:12:04 -0800 (PST), K7ITM <k7itm@msn.com> wrote:
>
>>Is there any limit to how low a light level I can use and still see the
>>pattern?
>
> Hi Tom,
>
> The Quantum Efficiency of the eye is between 40% and 50%. The time to
> convert one photon in a visual receptor is roughly 14 femtoseconds.
>
> I have seen no component that can match the bandwidth, dynamic range,
> AND sensitivity of the eye.

Side note:

Back in the day, when I did a lot of color processing and printing, I would spend log hours in the darkroom in total darkness.

The only light shedding items were the old Gra-Lab timers, and luminescent tape on the dangerous corners. After several hours, the light output from them was just about nil.

My eyes were totally adapted, full visual purple. At this time, the luminescent tape and dials seemed to scintillate discretely, not the typical overall glow.

I always wondered if I was possibly seeing individual photon effects.

- 73 de Mike N3LI -

3011. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 01:56:19 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5pg6t3li3b7getqofbt4fcjr7ancn8iegk@4ax.com>
Source record: 27333

On Sat, 08 Mar 2008 19:12:01 -0600, Mike Coslo <mcoslo@comcast.net>
wrote:

>I always wondered if I was possibly seeing individual photon effects.

At the risk of over-extending the discussion: one in two events, with
the photoreceptors doing what we would call pulse-stretching as the
mind is wholly incapable of discerning a visual event of less than,
roughly, 10mS duration.

73's
Richard Clark, KB7QHC

3012. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 02:30:51 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <dc47b9f1-1816-4e5b-bac7-5648a11cba30@b1g2000hsg.googlegroups.com>
Source record: 27334

On Mar 8, 2:30 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > You are *not* claiming that the *energy* from the reflected wave
> > is dissipated in the source resistor, because for the *energy*
> > in the reflected wave to be dissipated in the source resistor,
> > the *energy* would have to dissipate at the same time that the
> > reflected wave delivered the *energy*, and the analysis of
> > instantaneous *energy* flows shows that this is not the case.
>
> I clearly stated that my claim is based on a special case
> zero interference condition - it's even in the title of the
> article. The instantaneous energy that you (not I) introduced,
> does not meet the zero interference precondition. Therefore,
> anything that does not meet the zero interference precondition
> that I enumerated is an irrelevant diversion. You introduced
> that irrelevant straw man and tried to make hay out it. :-)
>
> > you are saying that the average reflected power is
> > numerically equal to the increase in the average dissipation
> > in the source resistor.
>
> > I can accept that as correct.
>
> Finally, after a million words. :-)
>
> > You might consider rewriting the sentence "reflected energy
> > from the load is flowing through the source resistor, RS, and
> > is being dissipated there" since it refers to the energy in
> > the reflected wave and may mislead others in the same way it
> > mislead me.
>
> Since "average reflected power" is dependent upon the
> "reflected energy", I don't see any problem. Would
> "average reflected energy" work for you? It should be
> obvious that, associated with interference during each
> cycle, destructive interference energy is stored during
> part of the cycle and delivered back as constructive
> interference energy during another part of the cycle.
> The intra-cycle interference averages out to zero.

Now you have me quite confused. One moment you agree that
your claim is mere numerical eqivalency and the next you
seem to again be claiming that the energy in the reflected
wave is dissipated in the source resistor.

Can you clarify which is really your claim?

> Many have objected to the term "reflected power" saying
> it is not power that is reflected but instead is "reflected
> energy". So I stopped talking about "reflected power" and
> started talking about "reflected energy". Now you object
> to the use of the term "reflected energy". Would you and
> the rest of the guru attack gang please get together on
> what term you would like for me to use?

I have never been particularly fussy about the terminology. "Energy flow", "power flow": The latter is often used when, strictly, the former is meant, but there is seldom confusion, except for those excessive pedantics who choose to be confused.

My issue was that you seemed, in that sentence, to be saying that the reflected energy was dissipated in the source resistor. But earlier you had stated that was not your claim. See my request for clarification above.

...Keith

3013. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 04:04:54 UTC
From: W4NNG <mh@soalex.us>
Message-ID: <EIJAj.24461$y05.9513@newsfe22.lga>
Source record: 27335

Thanks Dave -- this sure sheds a lot of light on all the odd connectors

"Dave Platt" <dplatt@radagast.org> wrote in message
news:l2o8a5-33q.ln1@radagast.org...
>Hello everyone
>
>Like Mike, I also have the MFJ-1800. And boy was I surprised when none of
>my shack full of type N to SMA adapters didn't work. I can't believe they
>reversed the polarity of the center pins for WIFI SMA connectors.
>Urrrrgh
>!!!

The FCC requires that Part 15 WiFi devices, having detachable
antennas, *must* use connectors which are not the common, generic,
off-the-shelf standard types.

This was done in order to (try to) (help) enforce the rule that Part
15 radios, and their antennas, must be certificated as a complete
system (radio + antenna), by the manufacturer or by an organization
which does the installation.

Manufacturers of such devices can perform the testing certification
with several different types of antennas, and using such antennas with
that particular device is legal (since they've been certificated as a
system).

Plugging an arbitrarily-chosen antenna into a WiFi radio (access point
or client) will void the Part 15 certification of the device, and it
becomes technically illegal to operate it. That's why a whole bunch
of nonstandard (reverse-polarity, reverse-thread, or otherwise altered
and perverted) connectors are used... the manufacturers are *trying*
to deter people from "one from column A, one from column B"
interplugging, because that's what the FCC has instructed them to do.

The rule gets about as much respect as laws against jaywalking,
littering, or cussing in South Pasadena during the first week of
March, but it's on the books ne'ertheless.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3014. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 05:58:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <20LAj.9122$tW.2050@nlpi070.nbdc.sbc.com>
Source record: 27336

Keith Dysart wrote:
> Now you have me quite confused. One moment you agree that
> your claim is mere numerical eqivalency and the next you
> seem to again be claiming that the energy in the reflected
> wave is dissipated in the source resistor.

I have never used the words "mere numerical equivalency"
so I have never claimed any such thing. The energy in
the reflected wave is dissipated in the source resistor
but you are confused about the timing of that dissipation.
It doesn't happen when you are saying it happens. Some
magnitude of energy is stored and dissipated later in
the same cycle.

Your analysis so far has completely ignored
one additional source of instantaneous energy, namely
the reactive component in the network, i.e. the reactance
of the transmission line. When you account for the temporary
storing of the intra-cycle destructive interference energy
in the transmission line followed by its later release as
constructive interference, you will find that all of the
energy in the reflected wave is dissipated in the source
resistor.

During part of a cycle, energy is lost from the source
resistor into the transmission line. During the following
part of the same cycle, that same energy is recovered
from the transmission line back to the source resistor.

instantaneous power dissipated in the source resistor =
1. instantaneous forward power plus
2. instantaneous reflected power plus
3. instantaneous interference (can be plus or minus)

Your calculations so far have completely ignored that
third term which is a source (or sink) of energy depending
upon what part of the cycle exists.
--
73, Cecil http://www.w5dxp.com

3015. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 11:44:34 UTC
From: Dave <noone@nowhere.com>
Message-ID: <C4QAj.2148$ox3.1388@trndny04>
Source record: 27337

"Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
news:dc47b9f1-1816-4e5b-bac7-5648a11cba30@b1g2000hsg.googlegroups.com...
> On Mar 8, 2:30 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> Keith Dysart wrote:
>> > You are *not* claiming that the *energy* from the reflected wave
>> > is dissipated in the source resistor, because for the *energy*
>> > in the reflected wave to be dissipated in the source resistor,
>> > the *energy* would have to dissipate at the same time that the
>> > reflected wave delivered the *energy*, and the analysis of
>> > instantaneous *energy* flows shows that this is not the case.
>>
>> I clearly stated that my claim is based on a special case
>> zero interference condition - it's even in the title of the
>> article. The instantaneous energy that you (not I) introduced,
>> does not meet the zero interference precondition. Therefore,
>> anything that does not meet the zero interference precondition
>> that I enumerated is an irrelevant diversion. You introduced
>> that irrelevant straw man and tried to make hay out it. :-)
>>
>> > you are saying that the average reflected power is
>> > numerically equal to the increase in the average dissipation
>> > in the source resistor.
>>
>> > I can accept that as correct.
>>
>> Finally, after a million words. :-)
>>
>> > You might consider rewriting the sentence "reflected energy
>> > from the load is flowing through the source resistor, RS, and
>> > is being dissipated there" since it refers to the energy in
>> > the reflected wave and may mislead others in the same way it
>> > mislead me.
>>
>> Since "average reflected power" is dependent upon the
>> "reflected energy", I don't see any problem. Would
>> "average reflected energy" work for you? It should be
>> obvious that, associated with interference during each
>> cycle, destructive interference energy is stored during
>> part of the cycle and delivered back as constructive
>> interference energy during another part of the cycle.
>> The intra-cycle interference averages out to zero.
>
> Now you have me quite confused. One moment you agree that
> your claim is mere numerical eqivalency and the next you

> seem to again be claiming that the energy in the reflected
> wave is dissipated in the source resistor.
>
> Can you clarify which is really your claim?
>
>> Many have objected to the term "reflected power" saying
>> it is not power that is reflected but instead is "reflected
>> energy". So I stopped talking about "reflected power" and
>> started talking about "reflected energy". Now you object
>> to the use of the term "reflected energy". Would you and
>> the rest of the guru attack gang please get together on
>> what term you would like for me to use?
>
NEITHER! they are both confusing. use the most fundamental things that you
can measure, either voltage or current. either one is completely defined in
the basic maxwell equations, and either one is completely sufficient to
describe ALL effect on a cable or in any circuit.

3016. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 12:16:32 UTC
From: ltdoc@yahoo.com
Message-ID: <b0290c19-528f-427f-b8f5-0245bb809999@n77g2000hse.googlegroups.com>
Source record: 27338

Art,
"Why are so many hams alarmed at the idea?"
Because of the way you describe things, words used for a distinction between things that just don't make sense. At least that's why I 'wonder' at times. After seeing your 'methods' of doing/saying things, you just don't 'alarm' me much. You DO make me 'wonder' though...
- 'Doc

3017. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 13:35:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kIRAj.5459$fX7.3896@nlpi061.nbdc.sbc.com>
Source record: 27339

Dave wrote:
> "Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
>> Cecil Moore <nos...@w5dxp.com> wrote:
>>> So I stopped talking about "reflected power" and
>>> started talking about "reflected energy". Now you object
>>> to the use of the term "reflected energy". Would you and
>>> the rest of the guru attack gang please get together on
>>> what term you would like for me to use?

> NEITHER! they are both confusing. use the most fundamental things that you
> can measure, either voltage or current. either one is completely defined in
> the basic maxwell equations, and either one is completely sufficient to
> describe ALL effect on a cable or in any circuit.

If Maxwell's equations could be used to answer the
questions that we are asking, why haven't they been
answered a long time ago?

How can Maxwell's equations be used to track the path
and fate of the energy in a reflected wave?
--
73, Cecil http://www.w5dxp.com

3018. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 13:53:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <bZRAj.5460$fX7.3453@nlpi061.nbdc.sbc.com>
Source record: 27340

K7ITM wrote:
> On Mar 5, 1:27 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> The rules change between non-coherent,
>> non-interfering sources and coherent, interfering sources.
>
> And exactly which part of "linear system" do you fail to understand?

Tom, I am ready to eat crow and apologize to you on this one. My false statement above was a rash assumption based on my aversion to instantaneous values.

Last night, while puppy siting my girlfriend's dog in a Walmart parking lot, I realized that the power density (irradiance) equation as presented by Hecht and others does work at the instantaneous level. Mea Culpa.

The difference between coherent and incoherent signals is not in the rules but in the timing. Keith and I were making essentially the same mistake. Thanks for making me think this one through.
--
73, Cecil http://www.w5dxp.com

3019. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 14:23:12 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <b6d884a4-bcc1-4629-aa30-3c45b479a5d6@m3g2000hsc.googlegroups.com>
Source record: 27341

On Mar 9, 7:16 am, lt...@yahoo.com wrote:
> Art,
> "Why are so many hams alarmed at the idea?"
> Because of the way you describe things, words used for a distinction
> between things that just don't make sense. At least that's why I
> 'wonder' at times. After seeing your 'methods' of doing/saying
> things, you just don't 'alarm' me much. You DO make me 'wonder'
> though...
> - 'Doc

You may be right We will just have to wait and see how things turn
out.
If it works then I am smart and if it is useless then I fit what
everybody
thinks of me. No damage done either way.

3020. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 14:35:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NASAj.13378$xq2.244@newssvr21.news.prodigy.net>
Source record: 27342

Keith Dysart wrote:
> My issue was that you seemed, in that sentence, to be saying
> that the reflected energy was dissipated in the source
> resistor. But earlier you had stated that was not your claim.

My earlier claim was that the average power in a reflected
wave is dissipated in the source resistor when the forward
wave is 90 degrees out of phase with the reflected wave at
the source resistor. In that earlier claim, I didn't care
to discuss instantaneous power and thus excluded instantaneous
power from that claim.

For instantaneous values, it will be helpful to change the
example while leaving the conditions at the source resistor
unchanged. Here's the earlier example:

```
Rs Vg Vl
+----/\/\/-----+----------------------+
| 50 ohm |
| 1/8 WL |
Vs 45 degrees 12.5 ohm
100v RMS 50 ohm line Load
| |
| |
+--------------+----------------------+
gnd
```

Here's the present example:

```
Rs Vg Vl
+----/\/\/-----+----------------------+
| 50 ohm |
| 1 WL |
Vs 360 degrees 23.5+j44.1
100v RMS 50 ohm line ohm Load
| |
| |
+--------------+----------------------+
gnd
```

If I haven't made some stupid mistake, the conditions at
the source resistor are identical in both examples. But
in the second example, it is obvious that energy can
be stored in the transmission line during part of a cycle
(thus avoiding dissipation at that instant in time) and be
delivered back to the source resistor during another part

of the cycle (to be dissipated at a later instant in time).
That is the nature of interference energy and is exactly
equal to the difference between the two powers that you
calculated. You neglected to take into account the ability
of the network reactance to temporarily store energy and
dissipate it later in time.

All of the reflected energy is dissipated in the source
resistor, just not at the time you thought it should be.

While performing this analysis, you will discover the ability
of superposing waves to redistribute energy (even in the
complete absence of ordinary reflections). Not possible in
the above special case examples, but under other conditions,
the redistribution of energy can attain perpetual steady-state
status (even in the complete absence of ordinary reflections).

There are two mechanisms involved in the re-routing of
steady-state reflected energy back toward the load.

1. Ordinary reflection of single EM waves governed by the
rules of the wave reflection model.

2. A redistribution of reflected energy back toward the
load as a result of superposition of waves accompanied
by an average level of steady-state interference.
--
73, Cecil http://www.w5dxp.com

3021. Unused Antenna Port ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 17:44:49 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <8e-dndQ4kMuTv0nanZ2dnUVZ_oGjnZ2d@comcast.com>
Source record: 27343

Hello,

I will be using a single antenna going to an A/B switch so I can feed the antenna to either one of two Scanners (receive only).

Apparently the switch does Not ground the unused port.

Was wondering if having the scanners antenna input jack just "floating" while the unit is off has the potential for damaging the radio ?

I guess I should also ask the corollary: If the unused scanner is turned On accidentally, and the port is floating as before, any potential liklihood of damage for this case ?

Guess I am worried about static buildups, etc.

Thanks,
Bob

3022. Re: Unused Antenna Port ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 17:59:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <6898t3lcsndr3im7j1un9p8pku4co39t74@4ax.com>
Source record: 27344

On Sun, 9 Mar 2008 13:44:49 -0400, "Robert11" <rgsros@notme.com>
wrote:

>Guess I am worried about static buildups, etc.

Hi Bob,

It is no worse than connected to an antenna (when you come to think of
it, is kind of an open in its own right).

73's
Richard Clark, KB7QHC

3023. Re: Unused Antenna Port ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 18:24:25 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A5C740AB617CHuckleberrybigvalley@198.186.192.196>
Source record: 27345

"Robert11" <rgsros@notme.com> wrote in
news:8e-dndQ4kMuTv0nanZ2dnUVZ_oGjnZ2d@comcast.com:

> Hello,
>
> I will be using a single antenna going to an A/B switch so I can feed
> the antenna to either one of two Scanners (receive only).
>
> Apparently the switch does Not ground the unused port.
>
> Was wondering if having the scanners antenna input jack just
> "floating" while the unit is off has the potential for damaging the
> radio ?
>
> I guess I should also ask the corollary: If the unused scanner is
> turned On accidentally, and the port is floating as before, any
> potential liklihood of damage for this case ?
>

Like Richard says, most antennas are rather like an "open" circuit,
too, in this regard. If you're concerned about static buildup on those
Receive only antenna inputs, you might consider putting a 1M ohm
resistor across the antenna inputs to chassis ground.

Ed K7AAT

3024. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 18:58:41 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080309115841.92873adb.rsparks@elltel.net>
Source record: 27346

On Sun, 09 Mar 2008 14:35:25 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Keith Dysart wrote:
> > My issue was that you seemed, in that sentence, to be saying
> > that the reflected energy was dissipated in the source
> > resistor. But earlier you had stated that was not your claim.
>
> My earlier claim was that the average power in a reflected
> wave is dissipated in the source resistor when the forward
> wave is 90 degrees out of phase with the reflected wave at
> the source resistor. In that earlier claim, I didn't care
> to discuss instantaneous power and thus excluded instantaneous
> power from that claim.
>
> For instantaneous values, it will be helpful to change the
> example while leaving the conditions at the source resistor
> unchanged. Here's the earlier example:
>
> Rs Vg Vl
> +----/\/\/-----+----------------------+
> | 50 ohm |
> | 1/8 WL |
> Vs 45 degrees 12.5 ohm
> 100v RMS 50 ohm line Load
> | |
> | |
> +--------------+----------------------+
> gnd
>
> Here's the present example:
>
> Rs Vg Vl
> +----/\/\/-----+----------------------+
> | 50 ohm |
> | 1 WL |
> Vs 360 degrees 23.5+j44.1
> 100v RMS 50 ohm line ohm Load
> | |
> | |
> +--------------+----------------------+
> gnd
>
> If I haven't made some stupid mistake, the conditions at

> the source resistor are identical in both examples. But
> in the second example, it is obvious that energy can
> be stored in the transmission line during part of a cycle
> (thus avoiding dissipation at that instant in time) and be
> delivered back to the source resistor during another part
> of the cycle (to be dissipated at a later instant in time).
> That is the nature of interference energy and is exactly
> equal to the difference between the two powers that you
> calculated. You neglected to take into account the ability
> of the network reactance to temporarily store energy and
> dissipate it later in time.
>
> All of the reflected energy is dissipated in the source
> resistor, just not at the time you thought it should be.

I think we can all agree to what would happen in the turn off situation following a long period of stable power flow. When the source voltage steps from 100v to 0v, the power on the transmission line reflects to the 50 ohm source resistor and is all absorbed.

On the other hand, in the case of steady power flow, the source is presented with a reactive load of 73.5 + J44.1 ohms. The reactive part of this load results from returning power from the transmission line.

For the resistor Rs, it will have power applied from two sources, the source and the reflected power from the transmission line, i.e., the source power and reflected power are in series when considered in relationship with the resistor Rs. The problem is that 'what looks like two sources to resistor Rs, is really only one source, Vs'.

I think you are looking for solutions that show how power to Rs peaks at a different time from when power into the transmission line peaks, which is yet a different time from when power from Vs peaks. You are looking for the instantaneous timing of 3 peaks.

>
> While performing this analysis, you will discover the ability
> of superposing waves to redistribute energy (even in the
> complete absence of ordinary reflections). Not possible in
> the above special case examples, but under other conditions,
> the redistribution of energy can attain perpetual steady-state
> status (even in the complete absence of ordinary reflections).
>
> There are two mechanisms involved in the re-routing of
> steady-state reflected energy back toward the load.
>
> 1. Ordinary reflection of single EM waves governed by the
> rules of the wave reflection model.
>
> 2. A redistribution of reflected energy back toward the
> load as a result of superposition of waves accompanied
> by an average level of steady-state interference.
> --
> 73, Cecil http://www.w5dxp.com

--
73, Roger, W7WKB

3025. WA5VJB "Cheap Yagi"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 18:59:06 UTC
From: Rick <kc9lv@yahoo.com>
Message-ID: <d743f891-ac6d-4d99-93eb-7f0333f28a5c@n75g2000hsh.googlegroups.com>
Source record: 27347

I'm thinking about building one of WA5VJB's yagis for 2M. Has anyone
built one and how did it perform...any tips?
Tnx Rick

3026. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-09 22:07:26 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <66a9de52-31c7-409f-a648-5f919a9c8604@i7g2000prf.googlegroups.com>
Source record: 27348

On Mar 8, 12:49 pm, Cecil Moore <nos...@w5dxp.com> wrote:
...
> Tom, you are the one who implied that coherency or
> incoherency doesn't matter.

No, you're the one who inferred that from what I actually did say, which is (in assorted different wordings) that we're dealing with a linear system, and as such we can fully analyze it and indeed get MORE insight into what's going on by using instantaneous voltages and currents than we can in looking only at averaged powers. Indeed, in setting up the analysis, it matters not a whit what relationship the reverse wave has to the forward wave. There is neither a need nor an advantage to special-case something like coherency; it all falls out of the much more general analysis. There may be interesting things to observe in the outcome of the analysis; that's a different issue.

Note that, as far as I've been able to determine, Michelson did not have a coherent light source to shine into his interferometer, but still he saw interference patterns. Perhaps he had invented lasers but failed to tell the world about them, but I rather doubt it. Carried to something more of an extreme, FTIRs tell you about the spectral content of relatively broadband light, a few octaves, by analyzing the interference pattern produced by a Michelson interferometer. But the instruments and models I can reasonably apply to our slow-as-molasses radio-frequency waves let me get even more insights into what's going on.

As far as I can see, this is all in agreement with what Gene, Roger and Keith, and perhaps some others I haven't been following, have been saying in this thread, and what many others have said for years in this group. If you get the idea that people aren't listening to you, maybe it's because they've heard your story and see no advantage in it over the more general analysis that's readily available.

3027. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 01:33:41 UTC
From: Chuck <nospam@nospam.at.all>
Message-ID: <0r39t3l9g9bbbtgkbt1k85dntstlgokckh@4ax.com>
Source record: 27349

On Sun, 9 Mar 2008 15:07:26 -0700 (PDT), K7ITM <k7itm@msn.com> wrote:

snip

>
>Note that, as far as I've been able to determine, Michelson did not
>have a coherent light source to shine into his interferometer, but
>still he saw interference patterns. Perhaps he had invented lasers

snip

It is said he used sodium vapor gas light (~589 nm). Coherent enough.

Chuck

-----== Posted via Newsfeeds.Com - Unlimited-Unrestricted-Secure Usenet News==----
http://www.newsfeeds.com The #1 Newsgroup Service in the World! 120,000+ Newsgroups
----= East and West-Coast Server Farms - Total Privacy via Encryption =----

3028. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 02:13:54 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A5CE298928BFmcoslocomcastnet@216.196.97.136>
Source record: 27350

Chuck <nospam@nospam.at.all> wrote in
news:0r39t3l9g9bbbtgkbt1k85dntstlgokckh@4ax.com:

> On Sun, 9 Mar 2008 15:07:26 -0700 (PDT), K7ITM <k7itm@msn.com> wrote:
>
> snip
>
>>
>>Note that, as far as I've been able to determine, Michelson did not
>>have a coherent light source to shine into his interferometer, but
>>still he saw interference patterns. Perhaps he had invented lasers
>
> snip
>
>
> It is said he used sodium vapor gas light (~589 nm). Coherent enough.

I have a wonderful old book, named "A Treatise on Optics", written sometime in the late 1800's. I have to look it up here, Perhaps Cecil would be interested in a pdf copy if I locate it again.

Those old boys could do an awful lot that we do today, and I was amazed at the precise measurements that they could do with almost entirely mechanical devices. Coherent light is not the half of it!

We are both more and less advanced than we might think.

- 73 de Mike -

3029. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 02:35:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Q71Bj.15160$0o7.9966@newssvr13.news.prodigy.net>
Source record: 27251

K7ITM wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> Tom, you are the one who implied that coherency or
>> incoherency doesn't matter.
>
> No, you're the one who inferred that from what I actually did say,
> which is (in assorted different wordings) that we're dealing with a
> linear system, and as such we can fully analyze it and indeed get MORE
> insight into what's going on by using instantaneous voltages and
> currents than we can in looking only at averaged powers.

Tom, I have apologized, eaten crow, and said Mea Culpa.
What more do you want from me?
--
73, Cecil http://www.w5dxp.com

3030. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 02:38:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ha1Bj.15162$0o7.8723@newssvr13.news.prodigy.net>
Source record: 27252

Roger Sparks wrote:
> For the resistor Rs, it will have power applied from two sources, the source and the reflected power from the transmission line, i.e., the source power and reflected power are in series when considered in relationship with the resistor Rs. The problem is that 'what looks like two sources to resistor Rs, is really only one source, Vs'.

Actually, it will have energy applied from three sources, the
source, the reflected energy, and the reactive energy stored
in the transmission line. The energy that Keith is missing
comes from the reactance in the transmission line.
--
73, Cecil http://www.w5dxp.com

3031. The Rust of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 04:33:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <htd9t3t1hj17kbodjjpfh9vqd4uafm32l1@4ax.com>
Source record: 27253

On Sun, 09 Mar 2008 21:13:54 -0500, Mike Coslo
<mcoslo@youknow.comcast.net> wrote:

> Coherent light is not the half of it!
>
>We are both more and less advanced than we might think.

Hi Mike,

Coherence has become a shallow rhyming proof rendered as "SoThereIt's!" (a mumbled qed). It is a convenience of a special solution which requires artificial constraints that over the course of "debate" have become necessary correlatives to a general "law" of optics. In fact, few have examined what "coherence" actually means, but instead it has been Xeroxed by Cecil into the argument.

Both Mike and Tom have been able to disconnect this term as one of necessity for monochromaticity (not required) and instantaneity (also not required). This lack of requirement (that requirement having been artificially injected into the discussion) is historically exhibited in work going beyond 100 years old. The first work was with sun/starlight that is neither pulsed nor monochromatic, and yet and all, interference was clearly found which led us to this discussion.

Even though the classic hologram, developed 60 years ago, or so, was originally monochromatic; it didn't take much more effort to accomplish the same photography with white light (1968). Wide band sources can demonstrate interference as readily there as with the original Michelson-Morely interferometer. In fact, most here need only open their wallet to examine a credit card or driver's license to prove this to themselves under a common table lamp.

Coherence (cross-correlating) is a statistical term for comparing (0.00 to 1.00) complex waves. You can have temporal coherence, spacial coherence, spectral coherence and on and on; none of which are actually named here, but whose various definitions have been notoriously cross-connected into a hodge-podge argument of no particular merit.

If we delve into the merits of sun/starlight, we eventually narrow on into the distinction of these terms of spatial and temporal coherence and the coherent area/length/volume (where incoherent sunlight is found to be coherent within 0.02mm) and then into what has already been identified by Gene with partial coherence (a topic that Wolf pursued, and at which Born hesitated).

73's
Richard Clark, KB7QHC

3032. Re: The Rust of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 13:19:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9zaBj.6320$pl4.6198@newssvr22.news.prodigy.net>
Source record: 27254

Richard Clark wrote:
> Coherence (cross-correlating) is a statistical term for comparing
> (0.00 to 1.00) complex waves. You can have temporal coherence,
> spacial coherence, spectral coherence and on and on; none of which are
> actually named here, but whose various definitions have been
> notoriously cross-connected into a hodge-podge argument of no
> particular merit.

Fortunately, we amateur radio operators are not concerned
with anything that complex. We are concerned with
essentially single frequency, phase-locked signals in a
single-source, single transmission line, single-load
configuration. Many levels and dimensions of complexity
simply are negligible concerns within the amateur radio
environment. Introducing irrelevant issues is just a
diversion away from ideal examples which are relatively
easy to understand. Isn't it better to clear the waters
rather than muddy them?
--
73, Cecil http://www.w5dxp.com

3033. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 13:24:01 UTC
From: Jon Kåre Hellan <dev@null.com>
Message-ID: <1m8x0qiufi.fsf@persaunet.uninett.no>
Source record: 27255

Jim Lux <james.p.lux@jpl.nasa.gov> writes:

> W4NNG wrote:
>> Hello everyone
>>
>> Like Mike, I also have the MFJ-1800. And boy was I surprised when
>> none of my shack full of type N to SMA adapters didn't work. I
>> can't believe they reversed the polarity of the center pins for
>> WIFI SMA connectors. Urrrrgh !!!
>
> Required by Part 15..Has to be a connector with is "not commonly
> available". Reverse Polarity SMA and TNC connectors are pretty
> standard for this application, to the point where you can get adapters
> and jumper cables pretty easily.

And soon, we're going to get radios which use reverse polarity
connectors, because they're more easily available :-)

LA4RT Jon

3034. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 13:38:53 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <9e1d180a-6a03-4e01-a52a-0908416cd605@n58g2000hsf.googlegroups.com>
Source record: 27256

On Mar 9, 9:23 am, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Mar 9, 7:16 am, lt...@yahoo.com wrote:
>
> > Art,
> > "Why are so many hams alarmed at the idea?"
> > Because of the way you describe things, words used for a distinction
> > between things that just don't make sense. At least that's why I
> > 'wonder' at times. After seeing your 'methods' of doing/saying
> > things, you just don't 'alarm' me much. You DO make me 'wonder'
> > though...
> > - 'Doc
>
> You may be right We will just have to wait and see how things turn
> out.
> If it works then I am smart and if it is useless then I fit what
> everybody
> thinks of me. No damage done either way.

My replacement antenna for the one I sent away is comming along just
fine
and I will probably be active on the air in a few weeks.
The new one is about two shoe box size and will be connected to a tilt/
scan
mechanism so that I can fully determine all the characteristics in
real life circumstances.
The frequency spread is down to the top of the broadcast band and it
will be controlled by my
Icom where I will disconect the inbuilt tuner motors and reconnect to
my antenna.
This should then ensure that the antenna is always in equilibrium
screw driver style
when I am on the air regardless of the band in use.Hoping to change
polarity in QSO's
to investigate the differences. Hopefully this summer the pan tilt
will also be made
automatic for best polarity reception which will then allow for the
addition of a dish reflector.
Bought myself a new thin Mac laptop which is exciting to use. There is
a free NEC 2
program available(cocoanec) so it is getting difficult to determine
what to work on.
Spring is coming and life is good despite the naysayers.
Have a happy day
Regards

Art

3035. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 13:47:25 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080310064725.06bd4635.rsparks@elltel.net>
Source record: 27257

On Mon, 10 Mar 2008 02:38:05 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > For the resistor Rs, it will have power applied from two sources, the source and the reflected power from the transmission line, i.e., the source power and reflected power are in series when considered in relationship with the resistor Rs. The problem is that 'what looks like two sources to resistor Rs, is really only one source, Vs'.
>
> Actually, it will have energy applied from three sources, the
> source, the reflected energy, and the reactive energy stored
> in the transmission line. The energy that Keith is missing
> comes from the reactance in the transmission line.
> --
> 73, Cecil http://www.w5dxp.com

Here is a link to a discussion of AC power. http://en.wikipedia.org/wiki/AC_power

How do you propose to seperate reactive power from reflected power?

--
73, Roger, W7WKB

3036. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 15:06:46 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fr3iq6mui1@f04n12.cac.psu.edu>
Source record: 27259

```
Cecil Moore wrote:
> K7ITM wrote:
>> Cecil Moore <nos...@w5dxp.com> wrote:
>>> Tom, you are the one who implied that coherency or
>>> incoherency doesn't matter.
>>
>> No, you're the one who inferred that from what I actually did say,
>> which is (in assorted different wordings) that we're dealing with a
>> linear system, and as such we can fully analyze it and indeed get MORE
>> insight into what's going on by using instantaneous voltages and
>> currents than we can in looking only at averaged powers.
>
> Tom, I have apologized, eaten crow, and said Mea Culpa.
> What more do you want from me?

Rending of hair and wearing of sackcloth? 8^)

- 73 de Mike N3LI -
```

3037. Re: The Rust of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 15:58:03 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <pplat31s0m9i9kk67gkpa0r2a78ccp4ini@4ax.com>
Source record: 27258

On Mon, 10 Mar 2008 08:19:02 -0500, Cecil Moore <nospam@w5dxp.com>
wrote:

> Isn't it better to clear the waters rather than muddy them?

I agree, you don't know the difference well enough to differentiate
silt from mud from glacial flour - and yet you offer your fortified
kool-ade. Your food coloring, sugar, and added special ingredients
doesn't bring clarity (and as any nutritionist would say: sugar is
empty calories).

3038. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 16:19:31 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fr3n2jpeg1@news.jpl.nasa.gov>
Source record: 27260

Art Unwin wrote:
> On Mar 7, 11:46 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
>>ArthurUn...@gmail.com wrote:
>>
>>>I have searched quite a bit for evidence that states that performance
>>>of antennas can be rated by it's size. Formulas do not refere to
>>>radiator size or volume
>>>and aparture is referenced to gain. I understand that sort of thinking
>>>based on Yagi design
>>>but the idea that all small radiators are inefficient is rather
>>>ludicrouse. My work, based on
>>>the sciences of the masters, show that a efficient radiator can be any
>>>size,shape and
>>>configuration as long as it
>>>is in equilibrium . Period
>>> No where can I find reference to "size" in what the masters state
>>>Regards
>>>Art
>>
>>The work by Chu (Journal of Applied Physics, p1163, v19, Dec 1948) and
>>subsequently by Harrington (IEEE Trans Ant & Prop, V18#6, Nov 1965,
>>p896) , Thiele (IEEE Trans on Ant and Prop, v51, #6, June 2003, p1263)
>>and later others, discusses fundamental limits on performance. Watch
>>out, though, for the assumptions in the constraints (e.g. whether the
>>device attached to the feedpoint is reciprocal), and, of course, where
>>the boundary of the system is.
>>
>>Watch out also for the definition of "Q", which in this context is the
>>ratio of stored to disspated/radiated energy, not the ratio of center
>>frequency/bandwidth.
>>
>>In short, there is a tradeoff between Q, directivity, and size. And,
>>because high Q implies high stored energy, for physically realizable
>>antennas with loss, efficiency is in the mix too.
>>
>>Googling "chu harrington limit" often turns up useful stuff.
>
>
> Googled Chu harrington and find that his work is basically empirical
> around known arrangements.
> When he brought the question of Q into the picture he made the
> statement that small antennas
> are usually of a low impedance which is correct empirically with

> respect to existing designs but it is not exclusive

> To summate, my antenna design is considered small yet complies with
> Maxwells laws and yet does not have a narrow bandwidth or low
> impedance thus Chu's comments cannot be inclusive of all radiators.
> Best regards
> Art

which is why I mentioned:
"Watch out, though, for the assumptions in the constraints"

However, I believe it is incorrect to characterize his analysis as empiricism (i.e. getting experimental data and fitting curves). His analysis (and that of Harrington and Thiele) is entirely theoretical, and actually doesn't deal with loss in the antenna, per se. Indeed, Chu's analysis is based on a simple case (a dipole), but that's more because it's a good first example (and he could use the previous work of Schelkunoff as a starting point). I believe the analysis is generally valid, regardless of what the actual antenna is.

3039. Re: WiFi Link from top of tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 16:24:08 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fr3nb8peg2@news.jpl.nasa.gov>
Source record: 27261

Richard Clark wrote:
> On Fri, 7 Mar 2008 13:18:45 -0800, dplatt@radagast.org (Dave Platt)
> wrote:
>
>
>>Plugging an arbitrarily-chosen antenna into a WiFi radio (access point
>>or client) will void the Part 15 certification of the device, and it
>>becomes technically illegal to operate it.
>
>
> Hi Dave,
>
> At the risk of becoming a stockade-lawyer, I've perused the band plans
> (I presume that the 13cM band has not been confiscated in the past few
> years), and I think I am reasonably adept at the law in this regard.
> As WiFi shares our allocation; it is noteworthy that we as amateurs
> are the ONLY service that does NOT require FCC type acceptance to
> operate. To my mind, the only issue is one of knowingly interfering
> with a service (that doesn't seem to be an issue, however).

One does, of course, need to operate at a frequency in the ham bands
(some of the 802.11 channels are not in the ham bands...)

Some of the fancier WLAN gear is perfectly ok for Part 15 (with
appropriate antenna) but cannot work as amateur gear (because it
radiates out of the ham band).

3040. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 17:31:50 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <e68d652b-9bad-43e7-9d24-d097899ac427@n36g2000hse.googlegroups.com>
Source record: 27262

On Mar 10, 11:19 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Art Unwin wrote:
> > On Mar 7, 11:46 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
> >>ArthurUn...@gmail.com wrote:
>
> >>>I have searched quite a bit for evidence that states that performance
> >>>of antennas can be rated by it's size. Formulas do not refere to
> >>>radiator size or volume
> >>>and aparture is referenced to gain. I understand that sort of thinking
> >>>based on Yagi design
> >>>but the idea that all small radiators are inefficient is rather
> >>>ludicrouse. My work, based on
> >>>the sciences of the masters, show that a efficient radiator can be any
> >>>size,shape and
> >>>configuration as long as it
> >>>is in equilibrium . Period
> >>> No where can I find reference to "size" in what the masters state
> >>>Regards
> >>>Art
>
> >>The work by Chu (Journal of Applied Physics, p1163, v19, Dec 1948) and
> >>subsequently by Harrington (IEEE Trans Ant & Prop, V18#6, Nov 1965,
> >>p896) , Thiele (IEEE Trans on Ant and Prop, v51, #6, June 2003, p1263)
> >>and later others, discusses fundamental limits on performance. Watch
> >>out, though, for the assumptions in the constraints (e.g. whether the
> >>device attached to the feedpoint is reciprocal), and, of course, where
> >>the boundary of the system is.
>
> >>Watch out also for the definition of "Q", which in this context is the
> >>ratio of stored to disspated/radiated energy, not the ratio of center
> >>frequency/bandwidth.
>
> >>In short, there is a tradeoff between Q, directivity, and size. And,
> >>because high Q implies high stored energy, for physically realizable
> >>antennas with loss, efficiency is in the mix too.
>
> >>Googling "chu harrington limit" often turns up useful stuff.
>
> > Googled Chu harrington and find that his work is basically empirical
> > around known arrangements.
> > When he brought the question of Q into the picture he made the
> > statement that small antennas
> > are usually of a low impedance which is correct empirically with

> > respect to existing designs but it is not exclusive
> > To summate, my antenna design is considered small yet complies with
> > Maxwells laws and yet does not have a narrow bandwidth or low
> > impedance thus Chu's comments cannot be inclusive of all radiators.
> > Best regards
> > Art
>
> which is why I mentioned:
> "Watch out, though, for the assumptions in the constraints"
>
> However, I believe it is incorrect to characterize his analysis as
> empiricism (i.e. getting experimental data and fitting curves). His
> analysis (and that of Harrington and Thiele) is entirely theoretical,
> and actually doesn't deal with loss in the antenna, per se. Indeed,
> Chu's analysis is based on a simple case (a dipole), but that's more
> because it's a good first example (and he could use the previous work of
> Schelkunoff as a starting point). I believe the analysis is generally
> valid, regardless of what the actual antenna is.

You may well be correct. I cannot enter the IEEE papers that you
allude to
to study it furthur. The fact that my impedences are high and the
bandwith is large
is really putting me in a unknown area and I have a lot to learn about
it
Regards
Art

3041. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 17:32:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <dheBj.13700$5K1.7950@newssvr12.news.prodigy.net>
Source record: 27263

Roger Sparks wrote:
> How do you propose to seperate reactive power from reflected power?

For average power, it's easy using phasors.
real power = V*I*cos(theta)
reactive power = V*I*sin(theta)

I know very little about instantaneous power having
avoided thinking about it for most of my life.
--
73, Cecil http://www.w5dxp.com

3042. Re: The Rust of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 17:35:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9jeBj.13701$5K1.6053@newssvr12.news.prodigy.net>
Source record: 27264

Richard Clark wrote:
> Cecil Moore <nospam@w5dxp.com> wrote:
>
>> Isn't it better to clear the waters rather than muddy them?
>
> I agree, you don't know the difference well enough to differentiate
> silt from mud from glacial flour - and yet you offer your fortified
> kool-ade.

Actually, I am using ohm's law instead of string theory.
--
73, Cecil http://www.w5dxp.com

3043. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 18:56:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tb13fh630v264@corp.supernews.com>
Source record: 27265

You can pretty much sum up the characteristics of small antennas as:

Small - Broadband - Efficient: Pick any two.

Roy Lewallen, W7EL

3044. Re: The Rust of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 19:07:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fGfBj.510$LV5.44@newssvr19.news.prodigy.net>
Source record: 27267

Richard Clark wrote:
> Cecil Moore <nospam@w5dxp.com> wrote:
>> Actually, I am using ohm's law instead of string theory.
>
> To respond to the topic of Coherence.... Neither shocking nor a
> surprise as it's as though I were reading the last pages of "Flowers
> for Algernon."

If Mr. Ohm introduced his law today, he would be belittled
because it is not a theory of everything.
--
73, Cecil http://www.w5dxp.com

3045. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 19:36:24 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47d58dad$0$17353$4c368faf@roadrunner.com>
Source record: 27268

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13tb13fh630v264@corp.supernews.com...
> You can pretty much sum up the characteristics of small antennas as:
>
> Small - Broadband - Efficient: Pick any two.
>
> Roy Lewallen, W7EL

Don't you mean, You can pretty much sum up the characteristics of antennas
as:

Small - Broadband - Efficient: Pick any two.

Jimmie

3046. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 19:39:09 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <496f42e3-4cab-452f-94c3-fd51d5eccafd@n58g2000hsf.googlegroups.com>
Source record: 27269

On Mar 10, 1:56 pm, Roy Lewallen <w...@eznec.com> wrote:
> You can pretty much sum up the characteristics of small antennas as:
>
> Small - Broadband - Efficient: Pick any two.
>
> Roy Lewallen, W7EL

Who knows what "efficiency" represents in the electrical world?
It is the word "small" that confuses everybody when the word
should be" fractional wavelength".
Small and large are meaningles in the antenna world.
No I diddn't overlook the sniping.

3047. Re: The Rust of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 19:53:35 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <b2ddde84-870f-4d21-a7dd-0ab465309d20@e60g2000hsh.googlegroups.com>
Source record: 27270

On Mar 10, 2:07 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Richard Clark wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
> >> Actually, I am using ohm's law instead of string theory.
>
> > To respond to the topic of Coherence.... Neither shocking nor a
> > surprise as it's as though I were reading the last pages of "Flowers
> > for Algernon."
>
> If Mr. Ohm introduced his law today, he would be belittled
> because it is not a theory of everything.
> --
> 73, Cecil http://www.w5dxp.com

To belittle is to inform others of one's own characteristics.
Those who belittle do others a service by showing what they are.

3048. Re: The Rust of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 19:59:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tm3bt3pfdvaki1nf9doh4dsqidgsiuo4g1@4ax.com>
Source record: 27266

On Mon, 10 Mar 2008 17:35:01 GMT, Cecil Moore <nospam@w5dxp.com>
wrote:

>Actually, I am using ohm's law instead of string theory.

To respond to the topic of Coherence.... Neither shocking nor a
surprise as it's as though I were reading the last pages of "Flowers
for Algernon."

May as well leave it as that.

3049. OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 20:12:40 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fr44ns$rd7$1@aioe.org>
Source record: 27271

John Kansius is that very interesting individual who discovered a way to "excite" salt water with HF RF and cause saltwater to burn. This URL contains an embedded video on him and his discovery:

http://bobmccarty.com/2007/09/11/researcher-discovers-way-to-burn-salt-water/

Well, he is back in the news!; and, he is now attempting to exploit his discovery as a cure for cancer:

http://www.goerie.com/apps/pbcs.dll/article?AID=/20080310/NEWS02/803100360

Since this is a new field of discovery, amateurs can possibly contribute or even profit from efforts in this field ... the above states he is now working on the equipment to accommodate humans for human trials. Certainly brings to mind an "antenna" to couple the RF field to the body ... who can say where this will all end up?

Regards,
JS

3050. Shape

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 21:49:56 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <EvmdnY2-qbWqMUjanZ2dnUVZ_vqpnZ2d@comcast.com>
Source record: 27272

Can anyone tell me if you change the shape of a given antenna, will it change the chararistics?

I.E.:

I have a 3 element 50 Mhz yagi on a 6 foot boom.

I want to mount the antenna in the back of my pickup-truck and if I bend the elements down the antenna will fit within the confines of the truck (in other words not stick out into the other traffic lanes). Therefore I can still mount the antenna about 8ft off the bed of the trk and to keep it from falling off I can guy it to the trk.

73's

3051. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 22:19:09 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fr4c4t$bk9$1@news.jpl.nasa.gov>
Source record: 27279

Jimmie D wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13tb13fh630v264@corp.supernews.com...
>
>>You can pretty much sum up the characteristics of small antennas as:
>>
>> Small - Broadband - Efficient: Pick any two.
>>
>>Roy Lewallen, W7EL
>
>
> Don't you mean, You can pretty much sum up the characteristics of antennas
> as:
>
> Small - Broadband - Efficient: Pick any two.
>
> Jimmie

And what Chu, Harrington, etc., tell you is a mathematical basis for
that statement.

You can also add "directivity" into the mix.

>
>

3052. Re: Shape

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 22:23:56 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fr4cdsfae1@news.jpl.nasa.gov>
Source record: 27278

Howard W3CQH wrote:
> Can anyone tell me if you change the shape of a given antenna, will it
> change the chararistics?
>
> I.E.:
>
> I have a 3 element 50 Mhz yagi on a 6 foot boom.
>
> I want to mount the antenna in the back of my pickup-truck and if I bend the
> elements down the antenna will fit within the confines of the truck (in
> other words not stick out into the other traffic lanes). Therefore I can
> still mount the antenna about 8ft off the bed of the trk and to keep it from
> falling off I can guy it to the trk.

yes, it will change the characteristics (potentially a lot)

You can model it in EZNEC, NEC, etc. and get a feel for how much.

However, gut feel... the elements are about 3 meters long, right? (1/2
of 6 meters. that's about 10 feet? And you want to make the antenna
have elements that are, say, 7-8 feet long?

Assuming you can load the elements appropriately so that electrical
properties work out, the performance of the 3 element yagi with 8 foot
elements in a truck bed will be pretty comparable to the 3 element yagi
with 10 foot elements in a truck bed. If it were 3 dB different, I'd be
surprised. If it were 0.5 dB different, I wouldn't.

either way, the truck body is going to significantly interact, and
that's going to be a big factor.

>
> 73's
>
>

3053. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 22:24:40 UTC
From: JOHN PASSANEAU <w3jxp@arrl.org>
Message-ID: <Xns9A5DBB49FCC40JXP16PSUEDU@216.196.97.136>
Source record: 27273

John Smith <assemblywizard@gmail.com> wrote in
news:fr44ns$rd7$1@aioe.org:

> John Kansius is that very interesting individual who discovered a way
> to "excite" salt water with HF RF and cause saltwater to burn. This
> URL contains an embedded video on him and his discovery:
>
> http://bobmccarty.com/2007/09/11/researcher-discovers-way-to-burn-salt-
> water/
>
> Well, he is back in the news!; and, he is now attempting to exploit
> his discovery as a cure for cancer:
>
> http://www.goerie.com/apps/pbcs.dll/article?AID=/20080310/NEWS02/803100
> 360
>
> Since this is a new field of discovery, amateurs can possibly
> contribute or even profit from efforts in this field ... the above
> states he is now working on the equipment to accommodate humans for
> human trials. Certainly brings to mind an "antenna" to couple the RF
> field to the body ... who can say where this will all end up?
>
> Regards,
> JS

The main result will be someone losing a lot of money, and possibly their
life because of this foolishness that someone will take seriously.

John Passaneau

3054. Re: Shape

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 22:31:41 UTC
From: Dave <noone@nowhere.com>
Message-ID: <hFiBj.2393$Zo3.1708@trndny05>
Source record: 27275

yes, it will. how much is hard to guess, but i would say probably not as much as mounting it a few feet off a metal truck bed with a cab in front of it.

"Howard W3CQH" <hsgorden@comcast.net> wrote in message news:EvmdnY2-qbWqMUjanZ2dnUVZ_vqpnZ2d@comcast.com...
> Can anyone tell me if you change the shape of a given antenna, will it
> change the chararistics?
>
> I.E.:
>
> I have a 3 element 50 Mhz yagi on a 6 foot boom.
>
> I want to mount the antenna in the back of my pickup-truck and if I bend
> the elements down the antenna will fit within the confines of the truck
> (in other words not stick out into the other traffic lanes). Therefore I
> can still mount the antenna about 8ft off the bed of the trk and to keep
> it from falling off I can guy it to the trk.
>
> 73's
>
>

3055. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 22:36:07 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fr4d4nmen1@news.jpl.nasa.gov>
Source record: 27280

Art Unwin wrote:
> On Mar 10, 1:56 pm, Roy Lewallen <w...@eznec.com> wrote:
>
>>You can pretty much sum up the characteristics of small antennas as:
>>
>> Small - Broadband - Efficient: Pick any two.
>>
>>Roy Lewallen, W7EL
>
>
> Who knows what "efficiency" represents in the electrical world?

I think the conventional meaning would be power radiated vs power into the system.

If you define "power radiated" to mean "power radiated in a particular direction" then you're adding directivity into the mix.

If you define "power into the system" to be 120V Wall power that's different than RF power at the feedpoint of the antenna which is different than RF power out at the output of the transmitter.

So, you have to define the appropriate reference plane. The antenna literature tends to draw the boundary at the feedpoint of the antenna, because the rest is "circuit theory".

The ham world tends to draw the boundary at the output of the transmitter (so we include loss in feedlines and matching networks), because the FCC power limit is usually measured at that point. (although nothing in the rules says you can't measure after the matching network)

In the commercial broadcast world, there's a sort of hybrid, because there's an RF power limit AND a requirement to have a particular field strength in the far field at a particular distance.

> It is the word "small" that confuses everybody when the word
> should be" fractional wavelength".

Nope.. small in an absolute sense. An antenna that is 10 times bigger will have more directivity or other figure of merit. Applies pretty much whether you're comparing an antenna that is 0.01 wavelength to 0.1 or comparing one that is 10 wavelengths to one that is 100 wavelengths.

What you can't say is that the amount of change from 0.01 to 0.1 is the same as from 10 to 100.

> Small and large are meaningles in the antenna world.

They have meaning as far as relative. large is better than small.
And, "directive" antennas that are small relative to a wavelength tend
to have high Q (in the stored vs radiated energy sense, which may or may
not imply narrow bandwidth)

It's probably worth finding a library that can get you copies of the
papers, rather than relying on interpretations and summaries. The most
common misinterpretation is to conceptually equate antenna Q to antenna
bandwidth.

> No I diddn't overlook the sniping.

3056. Re: The Rust of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 23:27:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9mgbt3d9c5ed4gdh4c87qho0a3uckipj8h@4ax.com>
Source record: 27274

On Mon, 10 Mar 2008 14:07:56 -0500, Cecil Moore <nospam@w5dxp.com>
wrote:

>Richard Clark wrote:
>> Cecil Moore <nospam@w5dxp.com> wrote:
>>> Actually, I am using ohm's law instead of string theory.
>>
>> To respond to the topic of Coherence.... Neither shocking nor a
>> surprise as it's as though I were reading the last pages of "Flowers
>> for Algernon."
>
>If Mr. Ohm introduced his law today, he would be belittled
>because it is not a theory of everything.

Your response is worthy of Charly.

Ohm's Law doesn't work at all scales anyway - but Ohm would have been
resilient enough to have taken it where it needs to go in this day and
age.

3057. Re: The Rust of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 23:39:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <e1hbt3d7juvbfsblgbeglg7nhiiehlvkgj@4ax.com>
Source record: 27276

On Mon, 10 Mar 2008 12:53:35 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

Hi Arthur,

Let's see if you can follow the inference of what you claimed to have sought in a reference for the signal strength of an antenna correlated to radiator length. It is a very, very simple example, two wires, no loads, very small:

It takes Laport only 3 pages to name three references for the math (Stratton, Skilling, and Kraus); provide the equation; and directly state at the bottom of page 3:
"directly proportional to the current and to the
continuing on top of page 4:
"length of the doublet..."

No requirement for resonance, no mention of Q, the only resistance is that of free space, nothing about equilibrium, just a straight answer. The math has been confirmed by experiment, and it is duplicated in models that are fully consistent with all scientific enquiry for the past three centuries which exhibit every quality of the math and the quotation above. The text has been made FREELY available here. No need to purchase.

There are no pages with pictures to color, so reading that far can be tough to master for one finding it difficult to search this out:
>>I have searched quite a bit for evidence that states that performance
>>of antennas can be rated by it's size.
"Quite a bit" sets the standard for the whimpering of whipped dog denial. If just a teensy-weensy bit more effort were made, it is obvious the complete investment in antennas the size of a cracker-jacks box would collapse like the home-loan industry.

The question carried with this is:
if an amateur were given the choice between your design, and this simple two wires. then how much would he radiate or perceive any greater signal with your design?

No doubt a very difficult question that will fail to obtain any metrics, and probably not even the grace of a direct answer. It is suitable for troll bait however, and the volume of response will weigh that accordingly. If providing the grist of measurement is so difficult to respond to, why are you here?

>Those who belittle do others a service by showing what they are.
which may already answer my question with your burning bridges at

every post.

73's
Richard Clark, KB7QHC

73's
Richard Clark, KB7QHC

3058. Re: Shape

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-10 23:41:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <onhbt3h6vvd3iomksauo8nb11eu2qq514u@4ax.com>
Source record: 27277

On Mon, 10 Mar 2008 17:49:56 -0400, "Howard W3CQH"
<hsgorden@comcast.net> wrote:

>I have a 3 element 50 Mhz yagi on a 6 foot boom.

Hi Howard,

Model it with the free version of EZNEC.

(The easy answer is "of course it will affect it.")

73's
Richard Clark, KB7QHC

3059. Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 00:21:26 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <ofqdndkDfc4dTUjanZ2dnUVZ_qqgnZ2d@comcast.com>
Source record: 27281

Hello,

Would you expect to see, in a practical sense, and meaningful difference
between RG6 with a copper plated steel center conductor vs an all copper
one, going from the antenna to a receiving scanner (50 foot run; 1 GHz max).

Tried to find some attenuation tables for this in Google, but had no luck:
Plenty for the coax cables themselves, but might you know of any chart links
that show attenuation for the different types of connectors ?

Thanks,
B.

3060. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 00:38:25 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fr4ka1$tu6$1@news.jpl.nasa.gov>
Source record: 27282

Robert11 wrote:
> Hello,
>
> Would you expect to see, in a practical sense, and meaningful difference
> between RG6 with a copper plated steel center conductor vs an all copper
> one, going from the antenna to a receiving scanner (50 foot run; 1 GHz max).
>
> Tried to find some attenuation tables for this in Google, but had no luck:
> Plenty for the coax cables themselves, but might you know of any chart links
> that show attenuation for the different types of connectors ?

No.

Connector loss is negligible (<0.1dB) for all reasonable connectors.
The ohmic losses would be a tiny fraction of the ohmic loss in the cable
itself (i.e. the connector interface is a few mm long, compared to
meters of cable).

Skin depth at 1 GHz in copper is 2 microns (0.08 mil). 6.5 microns (.26
mil) at 100 MHz. Your copper clad steel is probably just as good as
solid copper (check the data sheet and see what the clad thickness is..
if it's 4-5 times the skin depth, it's the same as solid.

Also check the shield material (there's more of it, but if it's
aluminum, it's lower conductivity)

At higher frequencies, dielectric loss will be a goodly fraction of the
total cable loss. Again, the connector is very short, so its dielectric
loss is a tiny fraction of the overall cable loss.

3061. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 01:02:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tbmhd23j9i76e@corp.supernews.com>
Source record: 27283

Robert11 wrote:
> Hello,
>
> Would you expect to see, in a practical sense, and meaningful difference
> between RG6 with a copper plated steel center conductor vs an all copper
> one, going from the antenna to a receiving scanner (50 foot run; 1 GHz max).
>
> Tried to find some attenuation tables for this in Google, but had no luck:
> Plenty for the coax cables themselves, but might you know of any chart links
> that show attenuation for the different types of connectors ?
>
> Thanks,
> B.

There will be no measurable electrical difference between copper clad steel and pure copper center conductor.

There's no mechanism within any common type of RF connector which causes any significant amount of loss. Various types can cause some impedance mismatch, but not enough to cause a noticeable reduction of signal to the receiver.

Roy Lewallen, W7EL

3062. Re: Shape

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 01:32:21 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <0qmbt3lccahpb9l9ujddn00ekpoggdvphd@4ax.com>
Source record: 27284

On Mon, 10 Mar 2008 17:49:56 -0400, "Howard W3CQH"
<hsgorden@comcast.net> wrote:

>Can anyone tell me if you change the shape of a given antenna, will it
>change the chararistics?
>
>I.E.:
>
>I have a 3 element 50 Mhz yagi on a 6 foot boom.
>
>I want to mount the antenna in the back of my pickup-truck and if I bend the
>elements down the antenna will fit within the confines of the truck (in
>other words not stick out into the other traffic lanes). Therefore I can
>still mount the antenna about 8ft off the bed of the trk and to keep it from
>falling off I can guy it to the trk.
>
>73's
>

http://www.moxonantennaproject.com/

http://www.cebik.com/fdim/fdim7.html

This doesn't answer your question, but it may give you some
alternative ideas. I think the top link, the Moxon antenna, may
relate somewhat to what you are looking for. The lower link may give
you some "shortened beam" ideas.

I hope you find a solution.
Buck
N4PGW
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3063. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 01:45:59 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <rvlBj.739394$kj1.66179@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27285

Cecil Moore wrote:
> Dave wrote:
>> "Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
>>> Cecil Moore <nos...@w5dxp.com> wrote:
>>>> So I stopped talking about "reflected power" and
>>>> started talking about "reflected energy". Now you object
>>>> to the use of the term "reflected energy". Would you and
>>>> the rest of the guru attack gang please get together on
>>>> what term you would like for me to use?
>
>> NEITHER! they are both confusing. use the most fundamental things
>> that you can measure, either voltage or current. either one is
>> completely defined in the basic maxwell equations, and either one is
>> completely sufficient to describe ALL effect on a cable or in any
>> circuit.
>
> If Maxwell's equations could be used to answer the
> questions that we are asking, why haven't they been
> answered a long time ago?
>
> How can Maxwell's equations be used to track the path
> and fate of the energy in a reflected wave?

Cecil,

There may be some terminology confusion here.

Maxwell's equations are really the only relevant physical equations
there are to work with, at least in the classical regime. The discussion
about constructive, destructive, superposition, linearity, etc.
represents merely mathematical manipulation of the basic physical
entities embodied in Maxwell's equations.

All of this *math* is of course very important and very useful. However,
it is not a replacement for the *physical* laws known as the Maxwell
equations.

(And we all know that these endless threads are closely parallel to the
blind men describing an elephant puzzle.)

73,
Gene
W4SZ

3064. Re: Amateur Radio License Exam Preparation Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 01:57:27 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47d5e708$0$1110$8046368a@newsreader.iphouse.net>
Source record: 27286

Webmaster wrote:
> Amateur Radio License Exam Preparation Software
> Getting your Amateur Radio License has never been easier. Effective
> February 23, 2007 the FCC removed the Morse Code requirements for all
> Amateur Radio License Classes . Since that date, applicants for a
> Technician, General or Extra Class Amateur Radio License no longer have
> to demonstrate proficiency in Morse Code. You just have to pass the
> applicable written examination.
>
> That's where we come in. Our amateur radio license exam preparation
> software serves as a training aid to help amateurs and prospective
> amateurs pass the Volunteer Examiner Coordinator's (VEC's) administered
> exam. When you can consistently pass the exams given by our exam
> preparation software, you will almost certainly pass an actual Volunteer
> Examiner Coordinator's (VEC's) administered exam.
>
> Our amateur radio license exam preparation software uses the latest
> officially released Volunteer Examiner Coordinator's (VEC's) approved
> question pools. The program breaks the test into different sub-element.
> Integrated into the software are illustrations and Part 97 rules
> pertaining to the current question. The program tracks the progress of
> the tests taken. Once you have mastered each sub-element you are ready
> for the officially administered exam.
>
> Visit our web site at http://www.oaklanesoftware.com

This one is great, and FREE. It will do all the tests, and uses a
random selection of the pool each time.

And in case I forgot to mention, it's FREE.

FREE is good. You'd think all the online tests would be FREE, since the
question pool is public property.

tom
K0TAR

3065. Re: Amateur Radio License Exam Preparation Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 02:02:25 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47d5e831$0$1110$8046368a@newsreader.iphouse.net>
Source record: 27287

Rauole wrote:
> Great!!! Idiots to dumb to lean properly... Teaching idiots to dumb to learn properly...
Testing idiots to dumb to learn properly.
>
> Object: Today's typical dumb-ass ham operator.
>
>

Properly spelled, that would be "Idiots TOO dumb to LEARN". too is not
the same as to.

tom
K0TAR

3066. Re: Amateur Radio License Exam Preparation Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 02:14:54 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <47d5eb1f$0$93275$8046368a@newsreader.iphouse.net>
Source record: 27288

Tom Ring wrote:
> Webmaster wrote:
>> Amateur Radio License Exam Preparation Software
>> Getting your Amateur Radio License has never been easier. Effective
>> February 23, 2007 the FCC removed the Morse Code requirements for all
>> Amateur Radio License Classes . Since that date, applicants for a
>> Technician, General or Extra Class Amateur Radio License no longer
>> have to demonstrate proficiency in Morse Code. You just have to pass
>> the applicable written examination.
>>
>> That's where we come in. Our amateur radio license exam preparation
>> software serves as a training aid to help amateurs and prospective
>> amateurs pass the Volunteer Examiner Coordinator's (VEC's)
>> administered exam. When you can consistently pass the exams given by
>> our exam preparation software, you will almost certainly pass an
>> actual Volunteer Examiner Coordinator's (VEC's) administered exam.
>>
>> Our amateur radio license exam preparation software uses the latest
>> officially released Volunteer Examiner Coordinator's (VEC's) approved
>> question pools. The program breaks the test into different
>> sub-element. Integrated into the software are illustrations and Part
>> 97 rules pertaining to the current question. The program tracks the
>> progress of the tests taken. Once you have mastered each sub-element
>> you are ready for the officially administered exam.
>>
>> Visit our web site at http://www.oaklanesoftware.com
>
> This one is great, and FREE. It will do all the tests, and uses a
> random selection of the pool each time.
>
> And in case I forgot to mention, it's FREE.
>
> FREE is good. You'd think all the online tests would be FREE, since the
> question pool is public property.
>
> tom
> K0TAR

Sorry, forgot to post the link.

http://www.aa9pw.com/radio/

tom
K0TAR

3067. Re: Antenna suggestions for Vertex FTL-2011 mounted on Metal and fiberglass railroad equipment.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 02:18:46 UTC
From: DVoeltz <dvoeltz@pie.midco.net>
Message-ID: <22ad315e-22fb-4a37-92a0-6524317cf02c@u69g2000hse.googlegroups.com>
Source record: 27289

On Feb 28, 4:31 pm, "pdr...@coinet.com" <co_far...@yahoo.com> wrote:
> On Feb 28, 9:18 am,DVoeltz<dvoe...@pie.midco.net> wrote:
>
>
>
>
>
> > I'm new to this and need your help in selecting which antennas to use
> > on my railroad motorcars.
>
> > The radio will be moved between two pieces of equipment. One cab has
> > a flat metal roof and the other has a fiberglass cab. I would like an
> >antennathat I can unscrew from the cab when traveling the equipment
> > down the road on a trailer. The radio will be using the NARCOA
> > licensed frequency of 151.625 MHz. I understand that this frequency is
> > in what is known as the VHF-High Land Mobile Radio (LMR) Service band,
> > and uses a modulation known as narrow band (5 kHz deviation) FM. I
> > will be using a Vertex FLT 2011 40 Watt radio.
>
> > Based on the little I know about this, I understand a specialantenna
> > will be needed for the fiberglass cab since there is no ground plane.
> > Bothantennawill be mounted directly to the roof through a hole. The
> > radio will be mount within 2 feet of where this hole will be drilled
> > so I only need a short wire to connect from theantennato the back of
> > the radio.
>
> > If you can offer me suggestions as to which antennas to use, I would
> > be most appreciative. Please excuse me if I misused some of the
> > language of the hobby.
>
> > Thanks in advance.
>
> > Dave in Pierre, SD
>
> > To see pictures of what this equipment is, go to:
>
> >www.narcoa.org
>
> Hi, Dave.
> Sure looks like fun! Someone here in Redmond, Oregon has one of the
> cars. Seen it parked on a truck and then on the ground in front of his
> garage.
>

> Theantennayou want to use will in a large part depend on what
> distance and over what terrain you need to communicate. If only a few
> miles, then a simple ground planeantennawill work. Theantennawill
> add less than 18 inches to the height of the roof, so you may not need
> to remove it for transport.
>
> I am not familiar with the class of license you are operating under,
> so will not comment onantennabrands or installation. This seems to
> be a commercial type installation, rather than an amateur radio
> installation, so a licensed installer may be needed. If so, they will
> have theantennainformation you need.
>
> Best regards,
> Paul, KD7HB- Hide quoted text -
>
> - Show quoted text -

Paul:

Finally responding after a few weeks of being gone.

To answer some questions, the radios are usually operated from 1/2 to 5 miles apart from car to car. It can be flat wide open plains like here in South Dakota or in the mountains with tunnels. I realize results will vary with these differing conditions.

Here is the documentation concerning the NARCOA frequency:
==========
NARCOA has a license and we are authorized to operate under it. NARCOA is licensed for the frequency of 151.625 MHz. The NARCOA call sign is WPHT745. This frequency is in what is known as the VHF-High Land Mobile Radio (LMR) Service band, and uses a modulation known as narrow band (5 kHz deviation) FM. This band is reserved for commercial activity; educational and philanthropic activity; clergyman and ecclesiastical institutions; and for hospitals, clinics and medical institutions. NARCOA's activities are considered to be educational and philanthropic, and fall under Title 47, Part 90.75 of the FCC Rules and Regulations.

151.625 MHz is specifically assigned for itinerant use. That is, stations licensed to this frequency are not restricted to a certain geographical area and the license does not call out specific coordinates for base stations, but mobiles can move about within the United States, depending on the needs of the licensee. This makes the itinerant frequency especially suitable for NARCOA activities. (Note that we are not licensed to use this frequency in Canada or Mexico.) Power is restricted to 110 watts.

It is important to note that NARCOA is not the only licensed user of this frequency. There are many licensees for the itinerant channel ranging from truckers to hunters. FCC rules require that users of this frequency be considerate of other users and to not interfere with

their communications. Each user is responsible for knowing and observing the FCC regulations regarding radio usage on the LMR bands. Each club should keep a current copy of the FCC Code of Federal Regulations, Part 47 available for its membership. This can be obtained from the US Government Printing Office.
==========

Hopefully that will answer the type of license used. I would like an antenna that can be removed while pulling the car down the road. If taller means better reception, that is OK with me. The antennas would be permanently mounted on each car. It wowuld make sense to mount the antenna on the roof of the metal topped car but could be side mounted on the fiberglass car.

Can I purchase the needed antennas from a store and if so, can you recommend one?

Thanks

Dave in Pierre, SD

3068. Re: Antenna suggestions for Vertex FTL-2011 mounted on Metal and fiberglass railroad equipment.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 02:23:55 UTC
From: DVoeltz <dvoeltz@pie.midco.net>
Message-ID: <d8dcce7f-2be3-4275-abb0-ff7dab1eccff@x41g2000hsb.googlegroups.com>
Source record: 27290

On Feb 28, 8:58 pm, Mike Coslo <mco...@comcast.net> wrote:
> On Thu, 28 Feb 2008 09:18:53 -0800,DVoeltzwrote:
> > I'm new to this and need your help in selecting which antennas to use on
> > my railroad motorcars.
>
> How doggone cool! I saw a group of cars going through the bald eagle
> valley in central PA last fall. I didn't know there was a big organized
> group.
>
> > The radio will be moved between two pieces of equipment. One cab has a
> > flat metal roof and the other has a fiberglass cab. I would like an
> >antennathat I can unscrew from the cab when traveling the equipment
> > down the road on a trailer. The radio will be using the NARCOA licensed
> > frequency of 151.625 MHz. I understand that this frequency is in what is
> > known as the VHF-High Land Mobile Radio (LMR) Service band, and uses a
> > modulation known as narrow band (5 kHz deviation) FM. I will be using a
> > Vertex FLT 2011 40 Watt radio.
>
> > Based on the little I know about this, I understand a specialantenna
> > will be needed for the fiberglass cab since there is no ground plane.
> > Bothantennawill be mounted directly to the roof through a hole. The
> > radio will be mount within 2 feet of where this hole will be drilled so
> > I only need a short wire to connect from theantennato the back of the
> > radio.
>
> Ideally there would be a ground plane for both, but it seems that mostantennamounts of
the mag mount variety are getting their ground from the
> electrical system, then the body of the car. If the whole body is
> fiberglass, you could run some wires to use as ground plane under or on
> top of the roof. They won't be very long.
>
> You might want to get anantennathat has a removeable mast so that you
> can just unscrew theantennaand leave the coax cable in place. If the
> whole thing has to go with the car, you'll probably want a clamp on.
>
> re you averse to building your ownantenna? a 1/4 wave ground plane would
> work very well, is easy to construct if you have some soldering skills,
> and is very inexpensive. Rough details are that it would take around
> 18.and a half inch wire for the vertical section, and 4 wires of that
> length for the radials.
>
> If you are interested in that route, let me know and we can fill you in
> on the details.

>
> > To see pictures of what this equipment is, go to:
>
> >www.narcoa.org
>
> where does one get hild of one of those cars?
>
> --
> -73 de Mike N3LI -

Mike, I would like more details on building the antennas. I have the skill to do so.

These speeders are getting hard to find but if you look under the for sale link on www.narcoa.com you will see where some are for sale from time to time. They could be purchased for $300 20 years ago, now the same car costs $3,000. Wished I would have bought a 100 of them :-)

Thanks!

Dave in Pierre, SD

3069. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 02:39:28 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <ed7cafc2-e27e-4c96-abde-5674138120ce@d62g2000hsf.googlegroups.com>
Source record: 27291

On Mar 10, 3:12 pm, John Smith <assemblywiz...@gmail.com> wrote:
> John Kansius is that very interesting individual who discovered a way to
> "excite" salt water with HF RF and cause saltwater to burn. This URL
> contains an embedded video on him and his discovery:
>
> http://bobmccarty.com/2007/09/11/researcher-discovers-way-to-burn-sal...
>
> Well, he is back in the news!; and, he is now attempting to exploit his
> discovery as a cure for cancer:
>
> http://www.goerie.com/apps/pbcs.dll/article?AID=/20080310/NEWS02/8031...
>
> Since this is a new field of discovery, amateurs can possibly contribute
> or even profit from efforts in this field ... the above states he is now
> working on the equipment to accommodate humans for human trials.
> Certainly brings to mind an "antenna" to couple the RF field to the body
> ... who can say where this will all end up?
>
> Regards,
> JS

John consider this. Water is diamagnetic thus it needs to oxidise for
galaxy particles to settle upon it.so it can radiate. Ofcourse it
cannot oxidise on its own.
So we must look at the salt content. To clean of the junk below the
water line
of a boat one can place current into the water and a electrolysis
action comes about
that cleans the hull of the boat. A electrolytic action can be used to
crack air or water
into its component parts and if the circuit resistance is high then
combustion occurs.
Regards
Art

3070. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 02:58:22 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <84469dea-7df4-4000-80eb-dac33dff6ada@n77g2000hse.googlegroups.com>
Source record: 27292

On Mar 10, 5:36 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Art Unwin wrote:
> > On Mar 10, 1:56 pm, Roy Lewallen <w...@eznec.com> wrote:
>
> >>You can pretty much sum up the characteristics of small antennas as:
>
> >> Small - Broadband - Efficient: Pick any two.
>
> >>Roy Lewallen, W7EL
>
> > Who knows what "efficiency" represents in the electrical world?
>
> I think the conventional meaning would be power radiated vs power into
> the system.
>
> If you define "power radiated" to mean "power radiated in a particular
> direction" then you're adding directivity into the mix.
>
> If you define "power into the system" to be 120V Wall power that's
> different than RF power at the feedpoint of the antenna which is
> different than RF power out at the output of the transmitter.
>
> So, you have to define the appropriate reference plane. The antenna
> literature tends to draw the boundary at the feedpoint of the antenna,
> because the rest is "circuit theory".
>
> The ham world tends to draw the boundary at the output of the
> transmitter (so we include loss in feedlines and matching networks),
> because the FCC power limit is usually measured at that point. (although
> nothing in the rules says you can't measure after the matching network)
>
> In the commercial broadcast world, there's a sort of hybrid, because
> there's an RF power limit AND a requirement to have a particular field
> strength in the far field at a particular distance.
>
> > It is the word "small" that confuses everybody when the word
> > should be" fractional wavelength".
>
> Nope.. small in an absolute sense. An antenna that is 10 times bigger
> will have more directivity or other figure of merit. Applies pretty
> much whether you're comparing an antenna that is 0.01 wavelength to 0.1
> or comparing one that is 10 wavelengths to one that is 100 wavelengths.
>
> What you can't say is that the amount of change from 0.01 to 0.1 is the

> same as from 10 to 100.
>
> > Small and large are meaningles in the antenna world.
>
> They have meaning as far as relative. large is better than small.
> And, "directive" antennas that are small relative to a wavelength tend
> to have high Q (in the stored vs radiated energy sense, which may or may
> not imply narrow bandwidth)
>
> It's probably worth finding a library that can get you copies of the
> papers, rather than relying on interpretations and summaries. The most
> common misinterpretation is to conceptually equate antenna Q to antenna
> bandwidth.
>
> > No I diddn't overlook the sniping.

This brings up a problem. If a 1/2 wave antenna was in equilibrium one
should
be able to equate the efficiency
with that of a full wave antenna which is not the same.
If the sequence of actions for a given timeis the same and repeatable
it would be true
but actually you are now comparing apples and oranges in that one is a
closed circuit
and some on this group suggest it is an open circuit and others call
it a series circuit
which is totally different from a tanks circuirt
The underpinnings of Maxwell formula's is that there must be a state
of equilibrium
so the datum must be the efficiency of a tank circuit which is as near
to 100%
efficiency as perpetual motion if without resistance.!
One cannot break down the efficiency of a 2 or 4 stroke engine by
examining the heat /energy
exchange for the total engine by examining what happens during one
revolution alone.
Regards
Art

3071. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 03:24:38 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A5E927317973nonenowhere@61.9.191.5>
Source record: 27293

"Robert11" <rgsros@notme.com> wrote in
news:ofqdndkDfc4dTUjanZ2dnUVZ_qqgnZ2d@comcast.com:

> Hello,
>
> Would you expect to see, in a practical sense, and meaningful
> difference between RG6 with a copper plated steel center conductor vs
> an all copper one, going from the antenna to a receiving scanner (50
> foot run; 1 GHz max).

The difference will negligible above about 10Mhz, and even down to 1MHz is not sufficient to be a problem in your receiving application (since it attenuates both band noise and signal, and your reception is probably limited by band noise and/or IMD noise in the scanner).

>
> Tried to find some attenuation tables for this in Google, but had no
> luck: Plenty for the coax cables themselves, but might you know of any
> chart links that show attenuation for the different types of
> connectors ?

Did you mean conductors? If so, see above.

If you did mean conductors, some hams flap their jaws about 0.5dB per connector... but their assertions are not bourn out when connectors (that are not defective) are measured.

Owen

3072. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 04:40:55 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <d898248a-13e7-4b2a-bd70-897f5917c281@m3g2000hsc.googlegroups.com>
Source record: 27294

On Mar 8, 12:25 am, "John KD5YI" <groups1.jo...@xoxy.net> wrote:
> "Brian Kelly" <ke...@dvol.com> wrote in message
>
> news:806f258b-30b9-42ac-a3a6-cbad30154079@b64g2000hsa.googlegroups.com...
> On Mar 7, 6:09 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>
>
> > On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
>
> > > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> > >news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>
> > > > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison) wrote:
> > > > > I disagree. Laws written are all based on the assumption of
> > > > > equilibrium and that includes
> > > > > Maxwell's laws. These laws hav e zero refernce to size as such though
> > > > > many would seek
>
> > > > because contrary to what those male enhancement product adds tell you,
> > > > size
> > > > doesn't matter.
>
> > > > > for the word volume. Pertinent factors are wave length of frequency in
> > > > > The problem here is that amateur radio is wellded to the yagi design
> > > > > which is not one of equilibrium
>
> > > > WAIT JUST ONE GOSH DARN MINUTE! you have said in the past that the
> > > > simple
> > > > half wave dipole WAS a prefect example of equilibrium! NOW it isn't???
> > > > have you had a new revelation while i had your old email address
> > > > plonked??
>
> > > David,
> > > You admit to not understanding the term "equilibrium" so what do you
> > > care what I say and in what content.
> > > If you consider a half wave dipole as being in equilibrium you have to
> > > consider the electrical circuit
> > > consisting of a capacitance from the antenna to ground or the route
> > > thru the center of of the radiator, both of thes circuits
> > > can be considered as being in equilibrium. However, on this newsgroup
> > > a fractional wavelength radiator is considered as an open circuit for
> > > some reason and thus under those circumstances the half wave dipole is

> > not in equilibrium.
> > Now your views on radiation is all over the place so it is very hard
> > for me to determine the context of what you say.
> > Art
>
> Long before we rode our dinosaurs to club meetings the bright lights
> had completely agreed that the strength of radio signals at far off
> places was a function of the integral of i·dl where dl is the bigness
> of the aerial. Maybe it's in Sears and Zemansky. I dunno . . nor do I
> really care.
>
> w3rv
>
> Antennas for All Applications, 3rd Edition, Kraus & Marhefka, McGraw-Hill,
> page 12.
>
> <Begin quote>
>
> Regardless of antenna type, all involve the same basic principle that
> radiation is produced by accelerated (or decelerated) charge. The basic
> equation of radiation may be expressed simply as
>
> IL = Qv (A m / s)
>
> where
>
> I = time-changing current, A/s
> L = length of current element, m
> Q = charge, C
> v = time change of velocity which equals the acceleration of the charge, m/s
>
> Thus, time-changing current radiates and accelerated charge radiates. For
> steady-state harmonic variation, we usually focus on current. For transients
> or pulses, we focus on charge. The radiation is perpendicular to the
> acceleration, and the radiated power is proportional to the square of IL or
> Qv.
>
> <end quote>
>
> Cheers,
> John

John
If Kraus said "The radiation is perpendicular to the accelleration"
then the book is worthless.
Review the scalar quantities of a radiator. It is impossible for the
resultant to be at 90
degrees to the antenna axis. I suspect the roots of this untruth was
the invention of the
planar antenna. For maximum horizontal radiation a radiator will be

around 10 degrees
out of parallel to the earth surface, not parallel.
The king is dead, long live the king. Old books just cannot keep up to
date
Regards
Art
ie the yagi

3073. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 08:40:49 UTC
From: Jeff <jeff@local.host>
Message-ID: <47d645ca$0$1349$834e42db@reader.greatnowhere.com>
Source record: 27295

"> There's no mechanism within any common type of RF connector which causes
> any significant amount of loss. Various types can cause some impedance
> mismatch, but not enough to cause a noticeable reduction of signal to the
> receiver.

Since the OP was asking about frequencies up to 1GHz, I would be more
cautious about losses in connectors. Poorly assembled connectors can show
significant losses at 1GHz. Also I have come across connectors and adaptors
(SMA) that show loss for no apparent reason at a Gig or so., now whether
this is due to dielectric losses or some other factor I am not sure but
mechanically they appeared to be prefect. One particular SMA barrel had a
stable and repeatable loss of over 2dB, but was clean and gauged OK.

Some of the cheap PL259 connectors also use very poor dielectric which show
significant loss at even VHF.

Regards
Jeff

3074. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 10:13:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tcmqc7el0bt41@corp.supernews.com>
Source record: 27296

Jeff wrote:
> "> There's no mechanism within any common type of RF connector which causes
>> any significant amount of loss. Various types can cause some impedance
>> mismatch, but not enough to cause a noticeable reduction of signal to the
>> receiver.
>
>
> Since the OP was asking about frequencies up to 1GHz, I would be more
> cautious about losses in connectors. Poorly assembled connectors can show
> significant losses at 1GHz. Also I have come across connectors and adaptors
> (SMA) that show loss for no apparent reason at a Gig or so., now whether
> this is due to dielectric losses or some other factor I am not sure but
> mechanically they appeared to be prefect. One particular SMA barrel had a
> stable and repeatable loss of over 2dB, but was clean and gauged OK.
>
> Some of the cheap PL259 connectors also use very poor dielectric which show
> significant loss at even VHF.
>
> Regards
> Jeff

I'm surprised at these reports, but not too much except for the 2 dB connector. It must have had some internal corrosion, or perhaps something like a helical internal contact causing an impedance mismatch that would look like loss in a matched measurement system. (Some el crappo UHF barrel adapters have found to be constructed that way.) I've seen some awfully shoddy BNC connectors at ham conventions and wouldn't use them for anything at all critical. But the OP asked if there was a place he could find the losses of various kinds of connectors. I don't believe there's any place you can go to find the losses of shoddily made or improperly assembled connectors or adapters. Decently made and properly assembled connectors of standard types show no appreciable loss at 1 GHz. If loss is a concern, my advice is to buy name brand connectors, and especially avoid the cheap stuff you see at places like flea markets.

Roy Lewallen, W7EL

3075. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 11:33:23 UTC
From: Denny <k8do@mailblocks.com>
Message-ID: <7f455711-7f8e-424c-b496-dc965fa4526b@n77g2000hse.googlegroups.com>
Source record: 27297

I only skimmed a medical journal article about Kansius new endeavour, but I think I got the basics...
It is actually not a just simple use of passing low frequency RF through the body - we all do that when putting power into a dipole strung over the house...
First, they will prepare nanotubules of carbon - very small, the size of viruses and smaller... The size and shape of these tubules is actually very cutting edge technology - and fascinating to an old cellular biologist like me...
Then they will attach the tubules to prepared proteins - i.e. antibodies - that will bind only to the tumor cell proteins and not to the other proteins in the body...
Then this preparation is introduced into the body and allowed to circulate... After a sufficient time period two things will have happened... Some of the prepared nanotube-antibody-particles (NAP) will have entered the malignant cells and been bound in place by antigen-antibody reaction, and the remaining NAP will have been safely cleared from the body fluids via urine, stool, respiration, and sweat - and what remains in circulation will be too dilute to cause problems during the heating phase...
Now, it is show time... An RF field is swept across the body causing the NAP to physically heat up, cauterizing the proteins of the malignant cell resulting in its death...
The real step forward here is making viron sized nanotubules that will respond to a low frequency RF field by heating up... Normally it would take gigacycle frequencies to heat such a small particle, but these frequencies do not penetrate body tissues-water to any significant depth, making them useless in treating deep tumors...
But here, the low frequency will penetrate the entire body mass without causing heating of the non malignant body tissues-water on its own while the tubules inside of the malignant cell respond to the low frequency and heat up...

I don't know who found that they could get the tubules to heat in low frequency RF, Kansius or the team he worked with -but it is the major step forward... I expect a Nobel prize in the future for the team...

Now, as to his making water 'burn'... It was and is nothing but an illusion, a parlour trick, of using RF to electrolyze water into "Brown's gas" and then ignite the hyrdrogen-oxygen causing sodium vapor to glow in the flame - you can do the same using a bunson burner with a lot less effort... However this new use of nanotubules is a major step forward...

denny - k8do

3076. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 11:44:23 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <q$w48FPXCn1HFw5z@g3ohx.demon.co.uk>
Source record: 27298

In message <13tcmqc7el0bt41@corp.supernews.com>, Roy Lewallen
<w7el@eznec.com> writes
>Jeff wrote:
>> "> There's no mechanism within any common type of RF connector which causes
>>> any significant amount of loss. Various types can cause some
>>>impedance mismatch, but not enough to cause a noticeable reduction
>>>of signal to the receiver.
>> Since the OP was asking about frequencies up to 1GHz, I would be
>>more cautious about losses in connectors. Poorly assembled connectors
>>can show significant losses at 1GHz. Also I have come across
>>connectors and adaptors (SMA) that show loss for no apparent reason
>>at a Gig or so., now whether this is due to dielectric losses or some
>>other factor I am not sure but mechanically they appeared to be
>>prefect. One particular SMA barrel had a stable and repeatable loss
>>of over 2dB, but was clean and gauged OK.
>> Some of the cheap PL259 connectors also use very poor dielectric
>>which show significant loss at even VHF.
>> Regards
>> Jeff
>
>I'm surprised at these reports, but not too much except for the 2 dB
>connector. It must have had some internal corrosion, or perhaps
>something like a helical internal contact causing an impedance mismatch
>that would look like loss in a matched measurement system. (Some el
>crappo UHF barrel adapters have found to be constructed that way.) I've
>seen some awfully shoddy BNC connectors at ham conventions and wouldn't
>use them for anything at all critical. But the OP asked if there was a
>place he could find the losses of various kinds of connectors. I don't
>believe there's any place you can go to find the losses of shoddily
>made or improperly assembled connectors or adapters. Decently made and
>properly assembled connectors of standard types show no appreciable
>loss at 1 GHz. If loss is a concern, my advice is to buy name brand
>connectors, and especially avoid the cheap stuff you see at places like
>flea markets.
>
>Roy Lewallen, W7EL
>
>
Even at 1GHz, I don't believe that you would get as much as 2dB of loss
even if you joined two pieces of coax by stripping the ends with a
knife, twisting the conductors together, and wrapping them in scotch
tape.
--
Ian

3077. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 12:17:21 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <Q_WdnU5rEbbQ5UvanZ2dnUVZ_vCknZ2d@comcast.com>
Source record: 27299

Hello,

First, let me say thanks to everyone for the replies and help.
New at this, and it seems these very basic questions of mine keep coming up
the more I look into it.
Great hobby, and really do appreciate the help, very much.
Super newsgroup for folks like me. Sure is a lot to learn re antennas;
reading the ARRL book on it now.

Would like to modify my question somewhat.
Was really surprised to learn about the copper on steel, vs all copper
center conductors on coax.
I thought the difference were only in types of shielding; not center
conductor construction, and that RG6, e.g., was RG6, at least concerning
attenuation and perhaps "quality". Guess not ?

I understand, and am aware of now, the skin effect depth
Will read up on it some more.

Question: any meaningful difference for the sw frequencies; say from 0.5 to
30 MHz ?
I have a sw receiving set also, and frankly, when i strung my coax for it, I
never considered the center conductor coax's construction.

Should I have, possibly ?

Thanks again,
Bob

"Robert11" <rgsros@notme.com> wrote in message
news:ofqdndkDfc4dTUjanZ2dnUVZ_qqgnZ2d@comcast.com...
> Hello,
>
> Would you expect to see, in a practical sense, and meaningful difference
> between RG6 with a copper plated steel center conductor vs an all copper
> one, going from the antenna to a receiving scanner (50 foot run; 1 GHz
> max).
>
> Tried to find some attenuation tables for this in Google, but had no luck:
> Plenty for the coax cables themselves, but might you know of any chart
> links that show attenuation for the different types of connectors ?
>
> Thanks,
> B.
>

>

3078. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 12:52:36 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A5E5ABE478B4jxp16psuedu@128.118.141.40>
Source record: 27300

Denny <k8do@mailblocks.com> wrote in news:7f455711-7f8e-424c-b496-dc965fa4526b@n77g2000hse.googlegroups.com:

Sniped>
> denny - k8do
>
Hi guys:

I&#65533;ve worked as an engineer in University Physics departments for more than 35 years. At lest 30 years ago I helped a medical researcher at Michigan State University investigate if cancers could be treated by injecting metallic salts into a tumor and heating it with RF (this is were I came in, I had a 50Kw induction heater). Out side of cooking the mouse it didn&#65533;t work well. I work with some of the leaders in nano research and carbon nano devices here at Penn State University and from what I see here this it the dream of someone who almost knows something. I don't think it will work and most likely will do harm.

John Passaneau

3079. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 13:42:01 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <J_vBj.4403$Qy3.2886@trnddc03>
Source record: 27101

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:d898248a-13e7-4b2a-bd70-897f5917c281@m3g2000hsc.googlegroups.com...
On Mar 8, 12:25 am, "John KD5YI" <groups1.jo...@xoxy.net> wrote:
> "Brian Kelly" <ke...@dvol.com> wrote in message
>
> news:806f258b-30b9-42ac-a3a6-cbad30154079@b64g2000hsa.googlegroups.com...
> On Mar 7, 6:09 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>
>
> > On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
>
> > > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> > >news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>
> > > > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison)
> > > > wrote:
> > > > I disagree. Laws written are all based on the assumption of
> > > > equilibrium and that includes
> > > > Maxwell's laws. These laws hav e zero refernce to size as such
> > > > though
> > > > many would seek
>
> > > because contrary to what those male enhancement product adds tell you,
> > > size
> > > doesn't matter.
>
> > > > for the word volume. Pertinent factors are wave length of frequency
> > > > in
> > > > The problem here is that amateur radio is wellded to the yagi design
> > > > which is not one of equilibrium
>
> > > WAIT JUST ONE GOSH DARN MINUTE! you have said in the past that the
> > > simple
> > > half wave dipole WAS a prefect example of equilibrium! NOW it
> > > isn't???
> > > have you had a new revelation while i had your old email address
> > > plonked??
>
> > David,
> > You admit to not understanding the term "equilibrium" so what do you
> > care what I say and in what content.
> > If you consider a half wave dipole as being in equilibrium you have to

> > consider the electrical circuit
> > consisting of a capacitance from the antenna to ground or the route
> > thru the center of of the radiator, both of thes circuits
> > can be considered as being in equilibrium. However, on this newsgroup
> > a fractional wavelength radiator is considered as an open circuit for
> > some reason and thus under those circumstances the half wave dipole is
> > not in equilibrium.
> > Now your views on radiation is all over the place so it is very hard
> > for me to determine the context of what you say.
> > Art
>
> Long before we rode our dinosaurs to club meetings the bright lights
> had completely agreed that the strength of radio signals at far off
> places was a function of the integral of ii¿½dl where dl is the bigness
> of the aerial. Maybe it's in Sears and Zemansky. I dunno . . nor do I
> really care.
>
> w3rv
>
> Antennas for All Applications, 3rd Edition, Kraus & Marhefka, McGraw-Hill,
> page 12.
>
> <Begin quote>
>
> Regardless of antenna type, all involve the same basic principle that
> radiation is produced by accelerated (or decelerated) charge. The basic
> equation of radiation may be expressed simply as
>
> IL = Qv (A m / s)
>
> where
>
> I = time-changing current, A/s
> L = length of current element, m
> Q = charge, C
> v = time change of velocity which equals the acceleration of the charge,
> m/s
>
> Thus, time-changing current radiates and accelerated charge radiates. For
> steady-state harmonic variation, we usually focus on current. For
> transients
> or pulses, we focus on charge. The radiation is perpendicular to the
> acceleration, and the radiated power is proportional to the square of IL
> or
> Qv.
>
> <end quote>
>
> Cheers,
> John

John
If Kraus said "The radiation is perpendicular to the accelleration"
then the book is worthless.
Review the scalar quantities of a radiator. It is impossible for the
resultant to be at 90
degrees to the antenna axis. I suspect the roots of this untruth was
the invention of the
planar antenna. For maximum horizontal radiation a radiator will be
around 10 degrees
out of parallel to the earth surface, not parallel.
The king is dead, long live the king. Old books just cannot keep up to
date
Regards
Art
ie the yagi

Art -

I was actually replying to W3RV. However, since you piped up...

Have you had any books on the subject published? How about research papers? Anything published at all? Do you have any presentations with equations prepared to support your claim? To which companies have you sold your expertise in this field? Have your taught any classes?

It is laughable to think anybody would consider you an authority on the subject, much less a greater authority than Kraus or any other contributor to this group. You really should get some psychiatric help to quell those delusions of grandeur you have.

Cheers,
John

3080. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 14:36:24 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fr65d7$14ta$1@f04n12.cac.psu.edu>
Source record: 27102

Denny wrote:

<snip>

> I don't know who found that they could get the tubules to heat in low
> frequency RF, Kansius or the team he worked with -but it is the major
> step forward... I expect a Nobel prize in the future for the team...
>
> Now, as to his making water 'burn'... It was and is nothing but an
> illusion, a parlour trick, of using RF to electrolyze water into
> "Brown's gas" and then ignite the hyrdrogen-oxygen causing sodium
> vapor to glow in the flame - you can do the same using a bunson burner
> with a lot less effort... However this new use of nanotubules is a
> major step forward...

Well, I hope it will work - but don't hold your breath. Preferential heating of tumors has been around for quite a while using other methods, some a lot less nasty than subjecting a person to major RF intrusion.

- 73 de Mike N3LI -

3081. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 14:46:26 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <2f331294-80b4-4f56-9c1c-365c261daf82@f63g2000hsf.googlegroups.com>
Source record: 27103

On Mar 11, 8:42 am, "John KD5YI" <groups1_dot_jo...@xoxy.net> wrote:
> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> news:d898248a-13e7-4b2a-bd70-897f5917c281@m3g2000hsc.googlegroups.com...
> On Mar 8, 12:25 am, "John KD5YI" <groups1.jo...@xoxy.net> wrote:
>
>
>
> > "Brian Kelly" <ke...@dvol.com> wrote in message
>
> >news:806f258b-30b9-42ac-a3a6-cbad30154079@b64g2000hsa.googlegroups.com...
> > On Mar 7, 6:09 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
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> > > On Mar 7, 4:45 pm, "Dave" <no...@nowhere.com> wrote:
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> > > > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
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> > > >news:a0b4a425-5987-40e5-a42d-e7dacb65121f@59g2000hsb.googlegroups.com...
>
> > > > > On Mar 7, 2:08 pm, richardharri...@webtv.net (Richard Harrison)
> > > > > wrote:
> > > > > I disagree. Laws written are all based on the assumption of
> > > > > equilibrium and that includes
> > > > > Maxwell's laws. These laws hav e zero refernce to size as such
> > > > > though
> > > > > many would seek
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> > > > > because contrary to what those male enhancement product adds tell you,
> > > > > size
> > > > > doesn't matter.
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> > > > > for the word volume. Pertinent factors are wave length of frequency
> > > > > in
> > > > > The problem here is that amateur radio is wellded to the yagi design
> > > > > which is not one of equilibrium
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> > > > WAIT JUST ONE GOSH DARN MINUTE! you have said in the past that the
> > > > simple
> > > > half wave dipole WAS a prefect example of equilibrium! NOW it
> > > > isn't???
> > > > have you had a new revelation while i had your old email address
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> > > David,

> > > You admit to not understanding the term "equilibrium" so what do you
> > > care what I say and in what content.
> > > If you consider a half wave dipole as being in equilibrium you have to
> > > consider the electrical circuit
> > > consisting of a capacitance from the antenna to ground or the route
> > > thru the center of of the radiator, both of thes circuits
> > > can be considered as being in equilibrium. However, on this newsgroup
> > > a fractional wavelength radiator is considered as an open circuit for
> > > some reason and thus under those circumstances the half wave dipole is
> > > not in equilibrium.
> > > Now your views on radiation is all over the place so it is very hard
> > > for me to determine the context of what you say.
> > > Art
>
> > Long before we rode our dinosaurs to club meetings the bright lights
> > had completely agreed that the strength of radio signals at far off
> > places was a function of the integral of i·dl where dl is the bigness
> > of the aerial. Maybe it's in Sears and Zemansky. I dunno . . nor do I
> > really care.
>
> > w3rv
>
> > Antennas for All Applications, 3rd Edition, Kraus & Marhefka, McGraw-Hill,
> > page 12.
>
> > <Begin quote>
>
> > Regardless of antenna type, all involve the same basic principle that
> > radiation is produced by accelerated (or decelerated) charge. The basic
> > equation of radiation may be expressed simply as
>
> > IL = Qv (A m / s)
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> > where
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> > I = time-changing current, A/s
> > L = length of current element, m
> > Q = charge, C
> > v = time change of velocity which equals the acceleration of the charge,
> > m/s
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> > Thus, time-changing current radiates and accelerated charge radiates. For
> > steady-state harmonic variation, we usually focus on current. For
> > transients
> > or pulses, we focus on charge. The radiation is perpendicular to the
> > acceleration, and the radiated power is proportional to the square of IL
> > or
> > Qv.
>
> > <end quote>

>
> > Cheers,
> > John
>
> John
> If Kraus said "The radiation is perpendicular to the accelleration"
> then the book is worthless.
> Review the scalar quantities of a radiator. It is impossible for the
> resultant to be at 90
> degrees to the antenna axis. I suspect the roots of this untruth was
> the invention of the
> planar antenna. For maximum horizontal radiation a radiator will be
> around 10 degrees
> out of parallel to the earth surface, not parallel.
> The king is dead, long live the king. Old books just cannot keep up to
> date
> Regards
> Art
> ie the yagi
>
> Art -
>
> I was actually replying to W3RV. However, since you piped up...
>
> Have you had any books on the subject published? How about research papers?
> Anything published at all? Do you have any presentations with equations
> prepared to support your claim? To which companies have you sold your
> expertise in this field? Have your taught any classes?
>
> It is laughable to think anybody would consider you an authority on the
> subject, much less a greater authority than Kraus or any other contributor
> to this group. You really should get some psychiatric help to quell those
> delusions of grandeur you have.
>
> Cheers,
> John

Let's keep to the subject and put the other comments aside.
Do you have any antenna computor programs that you have confidence in?
What are they so I can give you thr figures to prove it to yourself
Art

3082. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 14:54:42 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <7be63a43-3af3-4bc7-a03d-faa0b7374205@m3g2000hsc.googlegroups.com>
Source record: 27104

On Mar 11, 9:46 am, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Mar 11, 8:42 am, "John KD5YI" <groups1_dot_jo...@xoxy.net> wrote:
>
>
>
> > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
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> >news:d898248a-13e7-4b2a-bd70-897f5917c281@m3g2000hsc.googlegroups.com...
> > > On Mar 8, 12:25 am, "John KD5YI" <groups1.jo...@xoxy.net> wrote:
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> > > > "Brian Kelly" <ke...@dvol.com> wrote in message
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> > > >news:806f258b-30b9-42ac-a3a6-cbad30154079@b64g2000hsa.googlegroups.com...
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>
> > > <end quote>
>
> > > Cheers,
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> > John
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> > Review the scalar quantities of a radiator. It is impossible for the
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> > degrees to the antenna axis. I suspect the roots of this untruth was
> > the invention of the
> > planar antenna. For maximum horizontal radiation a radiator will be
> > around 10 degrees
> > out of parallel to the earth surface, not parallel.
> > The king is dead, long live the king. Old books just cannot keep up to
> > date
> > Regards
> > Art
> > ie the yagi
>
> > Art -
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> > I was actually replying to W3RV. However, since you piped up...
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> > Have you had any books on the subject published? How about research papers?
> > Anything published at all? Do you have any presentations with equations
> > prepared to support your claim? To which companies have you sold your
> > expertise in this field? Have your taught any classes?
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> > It is laughable to think anybody would consider you an authority on the
> > subject, much less a greater authority than Kraus or any other contributor
> > to this group. You really should get some psychiatric help to quell those
> > delusions of grandeur you have.
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> > Cheers,
> > John
>
> Let's keep to the subject and put the other comments aside.
> Do you have any antenna computor programs that you have confidence in?
> What are they so I can give you thr figures to prove it to yourself
> Art

By the way John, read the book and determine why he points to a pitch
angle for best results
Thus pitch angle is not at right angles so perhaps you can explain
that. You can't learn just by belittling facts
Art

3083. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 15:20:59 UTC
From: Jeff <jeff@local.host>
Message-ID: <47d6a6bd$0$1342$834e42db@reader.greatnowhere.com>
Source record: 27106

>>I'm surprised at these reports, but not too much except for the 2 dB
>>connector. It must have had some internal corrosion, or perhaps something
>>like a helical internal contact causing an impedance mismatch that would
>>look like loss in a matched measurement system. (Some el crappo UHF barrel
>>adapters have found to be constructed that way.) I've seen some awfully
>>shoddy BNC connectors at ham conventions and wouldn't use them for
>>anything at all critical. But the OP asked if there was a place he could
>>find the losses of various kinds of connectors. I don't believe there's
>>any place you can go to find the losses of shoddily made or improperly
>>assembled connectors or adapters. Decently made and properly assembled
>>connectors of standard types show no appreciable loss at 1 GHz. If loss is
>>a concern, my advice is to buy name brand connectors, and especially avoid
>>the cheap stuff you see at places like flea markets.
>>
>>Roy Lewallen, W7EL
>>
>>
> Even at 1GHz, I don't believe that you would get as much as 2dB of loss
> even if you joined two pieces of coax by stripping the ends with a knife,
> twisting the conductors together, and wrapping them in scotch tape.
> --
> Ian

The items in question were SMA barrel adaptors and as I said showed no signs of damage, corrosion or spreading of the contacts and interface dimensions were in spec

It is surprisingly easy to get significant loss at 1GHz and above, 2dB would be very easy to achieve even when using what appears to be a 'good' connection.

regards
Jeff

3084. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 15:29:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <azxBj.122$qS5.28@nlpi069.nbdc.sbc.com>
Source record: 27105

Art Unwin wrote:
> If Kraus said "The radiation is perpendicular to the accelleration"
> then the book is worthless.

Balanis says, speaking of an infinitesimal dipole:
"Integrating the complex Poynting vector over a closed
sphere, ... results in the power (real and imaginary)
directed in the radial direction. Any transverse
components of power density, ... will not be captured by
the integration even though they are part of the overall
power."

Apparently, Kraus' assertion is a result of the integration
math and does not necessarily correspond to reality.
--
73, Cecil http://www.w5dxp.com

3085. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 15:41:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <JKxBj.124$qS5.74@nlpi069.nbdc.sbc.com>
Source record: 27107

John KD5YI wrote:
> It is laughable to think anybody would consider you an authority on the
> subject, much less a greater authority than Kraus or any other
> contributor to this group. You really should get some psychiatric help
> to quell those delusions of grandeur you have.

John, to be fair, in another posting, I quoted Balanis
as saying: "Any transverse components of power density
will not be captured by the [Poynting] integration even
though they are part of the overall power." Balanis seems
to imply that it is possible for transverse radiation
components to exist but get lost inside the math model.
--
73, Cecil http://www.w5dxp.com

3086. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 15:46:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <IPxBj.16938$Ch6.758@newssvr11.news.prodigy.net>
Source record: 27108

Michael Coslo wrote:
> Well, I hope it will work - but don't hold your breath. Preferential
> heating of tumors has been around for quite a while using other methods,
> some a lot less nasty than subjecting a person to major RF intrusion.

There's one here in Tyler, TX that destroys tumors by
continuously changing the source location and direction
of an EM beam while maintaining a stationary intersection
point at the tumor location. Seems to be getting good
reviews - don't know the frequency.

Do you remember diathermy machines on 11m?
--
73, Cecil http://www.w5dxp.com

3087. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 15:50:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <gTxBj.16939$Ch6.684@newssvr11.news.prodigy.net>
Source record: 27109

Art Unwin wrote:
> By the way John, read the book and determine why he points to a pitch
> angle for best results
> Thus pitch angle is not at right angles so perhaps you can explain
> that.

Art, don't know if you have Balanis or not, but on page 134
of "Antenna Theory", 2nd edition, his example of a radiation
vector from an infinitesimal dipole is not perpendicular to
the dipole direction.
--
73, Cecil http://www.w5dxp.com

3088. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 16:00:11 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <DxnSPgCLyq1HFwsi@g3ohx.demon.co.uk>
Source record: 27110

In message <47d6a6bd$0$1342$834e42db@reader.greatnowhere.com>, Jeff
<jeff@local.host> writes
>>>I'm surprised at these reports, but not too much except for the 2 dB
>>>connector. It must have had some internal corrosion, or perhaps something
>>>like a helical internal contact causing an impedance mismatch that would
>>>look like loss in a matched measurement system. (Some el crappo UHF barrel
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>>>find the losses of various kinds of connectors. I don't believe there's
>>>any place you can go to find the losses of shoddily made or improperly
>>>assembled connectors or adapters. Decently made and properly assembled
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>>>Roy Lewallen, W7EL
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>> twisting the conductors together, and wrapping them in scotch tape.
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>
>The items in question were SMA barrel adaptors and as I said showed no signs
>of damage, corrosion or spreading of the contacts and interface dimensions
>were in spec
>
>It is surprisingly easy to get significant loss at 1GHz and above, 2dB would
>be very easy to achieve even when using what appears to be a 'good'
>connection.
>
>regards
>Jeff
>
I have to admit that I've routinely worked to 870MHz, and recently even
to 1003MHz, but rarely ventured higher. However, I've never found any
excessive loss in a connector which could not be accounted for by a
straightforward 'bad connection', ie usually a total or partial open or
short circuit, whether in the making off of the cable, or in the
construction of the connector itself. Honest!
--
Ian.

3089. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 16:40:19 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <SByBj.1369$cQ1.16@bgtnsc04-news.ops.worldnet.att.net>
Source record: 27111

Cecil Moore wrote:
> Michael Coslo wrote:
>> Well, I hope it will work - but don't hold your breath. Preferential
>> heating of tumors has been around for quite a while using other
>> methods, some a lot less nasty than subjecting a person to major RF
>> intrusion.
>
> There's one here in Tyler, TX that destroys tumors by
> continuously changing the source location and direction
> of an EM beam while maintaining a stationary intersection
> point at the tumor location. Seems to be getting good
> reviews - don't know the frequency.
>
> Do you remember diathermy machines on 11m?

This has been a standard technique for decades, typically using x-rays or electron beams. It often works effectively for well-defined isolated tumors. However, the standard technique cannot be used for more diffuse cancer. The seek and destroy principle has been the holy grail for a long time, but I have not seen any reports of systematic success. (I have not looked closely.)

The "Tyler" technique has undergone a lot of improvements over the past few years as a result of much better computer control. The problem with the "decades old" approach was that, while the targeting is quite straightforward, and the mechanical motion necessary is achievable, the dose control as a function of beam position was beyond available capability. As the radiation source rotates around the body it is necessary to constantly adjust the energy and dose to get the best result, since in general the tumor is not exactly in the center of a spherical body.

(Eons ago, when I was a grad student, a couple of my office mates worked in this area.)

73,
Gene
W4SZ

3090. MA5V vs. MA5VA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 17:01:43 UTC
From: Javier <javier@invalid.invalid>
Message-ID: <fr6dtnstp1@stationair.kjsl.com>
Source record: 27112

Greetings,

Would anyone care to comment on the differences between the Cushcraft MA5V and MA5VA? At first glance, the "A" version has eight radials instead of eight, and the feedline choke is wound on a ferrite toroid, rather than on a PVC form.

Real world performance differences would be nice to know about...

73

3091. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 17:12:23 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fr6ehnmpa1@f04n12.cac.psu.edu>
Source record: 27113

Cecil Moore wrote:
> Michael Coslo wrote:
>> Well, I hope it will work - but don't hold your breath. Preferential
>> heating of tumors has been around for quite a while using other
>> methods, some a lot less nasty than subjecting a person to major RF
>> intrusion.
>
> There's one here in Tyler, TX that destroys tumors by
> continuously changing the source location and direction
> of an EM beam while maintaining a stationary intersection
> point at the tumor location. Seems to be getting good
> reviews - don't know the frequency.
>
> Do you remember diathermy machines on 11m?

I don't have any personal experience, but a lot of folks have told me
about the noisy things.

- 73 d eMike N3LI -

3092. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 17:13:11 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <84191921-2218-408b-8391-2bf0ff8d3f35@p25g2000hsf.googlegroups.com>
Source record: 27114

On Mar 11, 10:50 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Art Unwin wrote:
> > By the way John, read the book and determine why he points to a pitch
> > angle for best results
> > Thus pitch angle is not at right angles so perhaps you can explain
> > that.
>
> Art, don't know if you have Balanis or not, but on page 134
> of "Antenna Theory", 2nd edition, his example of a radiation
> vector from an infinitesimal dipole is not perpendicular to
> the dipole direction.
> --
> 73, Cecil http://www.w5dxp.com

I haven't got that book but it doesn,t matter. The group will chose to
believe the
books that put it at parallel to the radiator axis. It is easier to
belittle the truth rather than put a radiator at say 12 degrees
to the earth surface and compute for max horizontal radiation. Repeat
but make the radiator parallel.
If the program agrees with you then buy it for future proof. I said
this before Cecil
but this group were frightened to explore for themselves and chose to
belittle instead.
Many were educated by remembering,few checked things out for
themselves.
Same goes for small antennas, they confuse small antennas with
electrically small antennas
big difference. Academia referrs to small electrical antennas when
discussing the subject,
My antenna is NOT electrically small. Period.
Regards
Art

3093. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 17:37:40 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fr6g14$1jos$1@f04n12.cac.psu.edu>
Source record: 27115

I listen to the "little guy against the establishment, and I would be willing to grant that some "establishment types" can be a little stodgy, and sometimes "illiberal".

Bot only if those on the other side will quit pulling out the "noble and plucky inventor", who works to advance science against establishment ridicule.

A wiser man than myself who was himself ridiculed by some in the "establishment" once said.....

But the fact that some geniuses were laughed at does not imply that all who are laughed at are geniuses. They laughed at Columbus, they laughed at Fulton, they laughed at the Wright brothers. But they also laughed at Bozo the Clown.
- Carl Sagan -

- 73 de Mike N3LI -

Delaying any judgment on the antenna at hand, but starting to think that it is looking like a tuned circuit on the end of some coax.......

In the absence of any real info, we are left guessing.

3094. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 17:52:04 UTC
From: Jim Higgins <invalid@invalid.invalid>
Message-ID: <q6gdt3l35g3v4b7hc1almknqqvvv36jbha@4ax.com>
Source record: 27116

On Mon, 10 Mar 2008 13:12:40 -0700, John Smith
<assemblywizard@gmail.com> wrote:

>John Kansius is that very interesting individual who discovered a way to
>"excite" salt water with HF RF and cause saltwater to burn. This URL
>contains an embedded video on him and his discovery:
>
>http://bobmccarty.com/2007/09/11/researcher-discovers-way-to-burn-salt-water/

What Kanzius (note proper spelling if you plan to Google him) has
RE-discovered is the principle behind what's commonly called
"induction (or inductively) coupled plasma" - ICP for short. The
water is being vaporized and the vapor heated to a high temperature by
the radio waves. In the course of this some water vapor may
disassociate into hydrogen and oxygen and immediately recombine, but
most if not all of what you see is yellow light emitted by highly
excited sodium atoms. If that's what they call "burning water" then I
guess the water is burning, but the water isn't combining with
atmospheric oxygen to burn as gasoline does - for a net release of
energy - which is the implication when they talk about this as a
possible energy source - which is just nonsense. It isn't a source of
energy because whatever energy you get out of this process you have to
put that much into it in the form of radio waves plus much more to
cover some rather large losses... the least of which is the efficiency
of the RF generator. The laws of conservation of mass and energy
always prevail. Power out cannot exceed power in and in the case of
disassociating water it's more like 100% in and 40% out.

Typical ICP plasma temperatures are 6000 degrees and much higher, but
with Kanzius using water as the source of his plasma material (rather
than a gas or a vapor), and using a wick (that's the paper towel) to
increase evaporation, much of the energy in his plasma goes into
evaporating more water and raising the temperature of the resulting
steam. Watch the video again and listen for Kanzius to describe the
bubbles boiling at the top of the water.

See http://en.wikipedia.org/wiki/Inductively_coupled_plasma

Info on Kanzius http://en.wikipedia.org/wiki/John_Kanzius

ICP was around in and before the 60s...
http://tinyurl.com/2foagg

>Well, he is back in the news!; and, he is now attempting to exploit his
>discovery as a cure for cancer:
>

>http://www.goerie.com/apps/pbcs.dll/article?AID=/20080310/NEWS02/803100360
>
>Since this is a new field of discovery, amateurs can possibly contribute
>or even profit from efforts in this field ... the above states he is now
>working on the equipment to accommodate humans for human trials.
>Certainly brings to mind an "antenna" to couple the RF field to the body
>... who can say where this will all end up?

It says human trials are several years off and that's probably optimistic - unless we're talking just parts of humans like hands and feet. If the FDA approves whole body trials that will be about the fastest they've ever moved. Kanzius does seem to be onto something though. The important part - injected nanoparticles that absorb the RF radiation - is mentioned only in passing in the URL immediately above. It strikes me that is the key, not just general exposure to RF.

I'm not taking any position on whether this cancer cure has merit, just commenting.

3095. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 18:06:11 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <nSzBj.11121$wM2.2964@trnddc07>
Source record: 27117

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:JKxBj.124$qS5.74@nlpi069.nbdc.sbc.com...
> John KD5YI wrote:
>> It is laughable to think anybody would consider you an authority on the
>> subject, much less a greater authority than Kraus or any other
>> contributor to this group. You really should get some psychiatric help to
>> quell those delusions of grandeur you have.
>
> John, to be fair, in another posting, I quoted Balanis
> as saying: "Any transverse components of power density
> will not be captured by the [Poynting] integration even
> though they are part of the overall power." Balanis seems
> to imply that it is possible for transverse radiation
> components to exist but get lost inside the math model.
> --
> 73, Cecil http://www.w5dxp.com

Cecil,

I did nothing more than supply a quotation from a respected authority on the subject. I did not support the authority. Art dismissed the quotation without so much as a single reference to any other authority. He did not provide any supporting math or technical papers. Isn't this like saying "It is so (or not so) because I said so. Take my word for it."

And he did not answer a single question I asked. Hmmmmmm.

At least you supplied another viewpoint from an authority, although you go on to reduce my confidence in the quote with "seems to imply" and "it is possible" (but not certain).

73,
John

3096. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 18:18:08 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <b9ccdbca-13cd-4275-bfbc-0810ec1872cc@d21g2000prf.googlegroups.com>
Source record: 27118

On Mar 11, 12:37 pm, Michael Coslo <m...@psu.edu> wrote:
> I listen to the "little guy against the establishment, and I would be
> willing to grant that some "establishment types" can be a little stodgy,
> and sometimes "illiberal".
>
> Bot only if those on the other side will quit pulling out the "noble and
> plucky inventor", who works to advance science against establishment
> ridicule.
>
> A wiser man than myself who was himself ridiculed by some in the
> "establishment" once said.....
>
> But the fact that some geniuses were laughed at does not imply that all
> who are laughed at are geniuses. They laughed at Columbus, they laughed
> at Fulton, they laughed at the Wright brothers. But they also laughed at
> Bozo the Clown.
> - Carl Sagan -
>
> - 73 de Mike N3LI -
>
> Delaying any judgment on the antenna at hand, but starting to think that
> it is looking like a tuned circuit on the end of some coax.......
>
> In the absence of any real info, we are left guessing.

15 years ago I stated that radiation is in the form of pulses,all
laughed
Since then I have itemised the steps to make the small antenna, all
laughed.
The info is in the archives many many times but to my knoweledge
nobody
has tried it for themselves preferring to memorise what the books say.
Yes it does look like a tuned circuit on the end of a coax but what if
it is?
Can you comment on the tilt angle of a radiator to ground to achieve
max
horizontal polarisation? Are you equipped to ascertain the answer for
yourself?
If so then do it and explain it to all, real proof you say. Hams can't
handle theb truth
When the results come out it will prove nothing to this group as they
then will
revert to attack the method of testing or the tester himself. I
already have read

one comment that has attacked the volunteer tester and that is with
just about
zero knoweledge about antennas. How many have come forward to explain
to
others what Gauss meant by equilibrium? How many have asked what
equilibrium means?
If anybody read the instructions on how to make it in the archives and
followed them
then you wouldn't be left guessing
Art

3097. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 18:24:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <a7ABj.13787$5K1.6362@newssvr12.news.prodigy.net>
Source record: 27119

Gene Fuller wrote:
> The "Tyler" technique has undergone a lot of improvements over the past
> few years as a result of much better computer control.

The one advertised on TV here in Tyler is promoted
as the latest and greatest state of the art and
the only one of its kind in East Texas.
--
73, Cecil http://www.w5dxp.com

3098. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 18:46:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <IrABj.16898$0o7.11092@newssvr13.news.prodigy.net>
Source record: 27120

John KD5YI wrote:
> At least you supplied another viewpoint from an authority, although you go
> on to reduce my confidence in the quote with "seems to imply" and "it is
> possible" (but not certain).

Those are my guarded words, not Balanis'. :-)
--
73, Cecil http://www.w5dxp.com

3099. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 19:17:51 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A5E9C0F35F75jxp16psuedu@128.118.141.40>
Source record: 27121

Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
news:DxnSPgCLyq1HFwsi@g3ohx.demon.co.uk:

> In message <47d6a6bd$0$1342$834e42db@reader.greatnowhere.com>, Jeff
> <jeff@local.host> writes
>>>>I'm surprised at these reports, but not too much except for the 2 dB
>>>>connector. It must have had some internal corrosion, or perhaps
>>>>something like a helical internal contact causing an impedance
>>>>mismatch that would look like loss in a matched measurement system.
>>>>(Some el crappo UHF barrel adapters have found to be constructed
>>>>that way.) I've seen some awfully shoddy BNC connectors at ham
>>>>conventions and wouldn't use them for anything at all critical. But
>>>>the OP asked if there was a place he could find the losses of
>>>>various kinds of connectors. I don't believe there's any place you
>>>>can go to find the losses of shoddily made or improperly assembled
>>>>connectors or adapters. Decently made and properly assembled
>>>>connectors of standard types show no appreciable loss at 1 GHz. If
>>>>loss is a concern, my advice is to buy name brand connectors, and
>>>>especially avoid the cheap stuff you see at places like flea
>>>>markets.
>>>>
>>>>Roy Lewallen, W7EL
>>>>
snip>>
> I have to admit that I've routinely worked to 870MHz, and recently
> even to 1003MHz, but rarely ventured higher. However, I've never found
> any excessive loss in a connector which could not be accounted for by
> a straightforward 'bad connection', ie usually a total or partial open
> or short circuit, whether in the making off of the cable, or in the
> construction of the connector itself. Honest!

One thing, SMA connectors are rated for 500 connection cycles, I don't know what happens after that, but on test equipment 500 connections might happen fairly fast. I know from experience that SMA is a connector that's easy to put on badly.

John Passaneau

3100. Several-octave balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 19:44:26 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <42d7e9e9-f39b-4610-b6ad-30841334fb5c@d21g2000prf.googlegroups.com>
Source record: 27122

Hi all. I'm pondering how to make a 1:1 current-mode balun that will cover a little over 8 octaves. Thankfully, I can guarantee pretty close to a 50 ohm load over that range...20MHz to 6GHz. I have some nice tiny coax to use in making it. To get to the low end, something like 250nH or perhaps even a little less should do OK, but I need to avoid resonances that will mess up the high end. An air-core solenoid coil of about 250nH will have a self-resonance below 1GHz, so that's probably out. Ferrite beads or binocular cores, perhaps? Anyone have practical experience with how they behave in the GHz region? Comments?

Cheers,
Tom

3101. Re: Several-octave balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 20:00:39 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A5F472C87BB9nonenowhere@61.9.191.5>
Source record: 27123

K7ITM <k7itm@msn.com> wrote in news:42d7e9e9-f39b-4610-b6ad-30841334fb5c@d21g2000prf.googlegroups.com:

> Hi all. I'm pondering how to make a 1:1 current-mode balun that will
> cover a little over 8 octaves. Thankfully, I can guarantee pretty
> close to a 50 ohm load over that range...20MHz to 6GHz. I have some

Tom,

We from time to time come across applications where an RF choke is required to be effective over such a wide range. For example, an injector to supply DC on a coax line to an LNB. Perhaps some of the techniques for cascading chokes to extend the frequency range might offer a solution.

I have been playing around with some 1:1 choke balun designs for HF, and one that I tried used a pair of suppression sleeves to synthesise a binocular, see http://www.vk1od.net/balun/G1-1-LF1260/index.htm . The thing that I discovered is that self capacitance is an issue, though I could fit four turns on the cores, the self resonance was quite low (well below 10MHz IIRC). In the case of 3 turns, self resonance around 12MHz isn't a problem.

If I were to try to extend the upper range of this balun, I would try passing the coax exiting the pair of cores through another core (1t), possibly of a lower μ material, possibly a cascade of cores of successively lower μ material.

Owen

3102. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 20:19:31 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <a6408469-9077-45a8-8ef3-a9516ec5ee4c@e23g2000prf.googlegroups.com>
Source record: 27124

On Mar 11, 1:06 pm, "John KD5YI" <groups1_dot_jo...@xoxy.net> wrote:
> "Cecil Moore" <nos...@w5dxp.com> wrote in message
>
> news:JKxBj.124$qS5.74@nlpi069.nbdc.sbc.com...
>
> > John KD5YI wrote:
> >> It is laughable to think anybody would consider you an authority on the
> >> subject, much less a greater authority than Kraus or any other
> >> contributor to this group. You really should get some psychiatric help to
> >> quell those delusions of grandeur you have.
>
> > John, to be fair, in another posting, I quoted Balanis
> > as saying: "Any transverse components of power density
> > will not be captured by the [Poynting] integration even
> > though they are part of the overall power." Balanis seems
> > to imply that it is possible for transverse radiation
> > components to exist but get lost inside the math model.
> > --
> > 73, Cecil http://www.w5dxp.com
>
> Cecil,
>
> I did nothing more than supply a quotation from a respected authority on the
> subject. I did not support the authority. Art dismissed the quotation
> without so much as a single reference to any other authority. He did not
> provide any supporting math or technical papers. Isn't this like saying "It
> is so (or not so) because I said so. Take my word for it."
>
> And he did not answer a single question I asked. Hmmmmmm.
>
> At least you supplied another viewpoint from an authority, although you go
> on to reduce my confidence in the quote with "seems to imply" and "it is
> possible" (but not certain).
>
> 73,
> John

John, Roy's program is very old and basic, but it is free to use.
This radiation question is also very basic. So for once do something
for yourself
review your results and tell all what is correct or what not is
correct and that includes
Roy's program i.e. is it reliable if it does not concurr with the
books.?

This question can be resolved very easily and very quickly tho Roy has never talked about it.
People on this group consistently avoid testing this out for themselves possibly
because they also distrust NEC programs. If that is the case view the following:
You have two vec tors that represent electrical field and magnetic fields each at 90
degrees to each other which provides a resultant vector at 45 degrees. Now we must consider
the remainig vector that is named "curl". Now something you can guess at.
At what angle must the "curl" vector with reference to the axis of the radiator be placed to verify
the statement of 90 degree radiation as stated in books? Do the books confirm that resultant angle
via mathematics? Note this also inplies that the magnitude of the resultant vector for the
fields is equal to the magn itude of the "curl " vector. Do the books point this out also?
Do the work yourself and learn by it
Art

3103. Re: Several-octave balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 20:41:11 UTC
From: Wimpie <wimtel@tetech.nl>
Message-ID: <4b2822f4-4a7b-46f4-a7e1-87bd6d95ef10@s8g2000prg.googlegroups.com>
Source record: 27125

On 11 mar, 20:44, K7ITM <k7...@msn.com> wrote:
> Hi all. I'm pondering how to make a 1:1 current-mode balun that will
> cover a little over 8 octaves. Thankfully, I can guarantee pretty
> close to a 50 ohm load over that range...20MHz to 6GHz. I have some
> nice tiny coax to use in making it. To get to the low end, something
> like 250nH or perhaps even a little less should do OK, but I need to
> avoid resonances that will mess up the high end. An air-core solenoid
> coil of about 250nH will have a self-resonance below 1GHz, so that's
> probably out. Ferrite beads or binocular cores, perhaps? Anyone have
> practical experience with how they behave in the GHz region?
> Comments?
>
> Cheers,
> Tom

Hi Tom,

Up to about 1-2 GHz you can use a series of common mode chokes with different turns and different ferrite material and shape of ferrite material. Saying this is easy, but doing requires lots of measurements. The reason is that above the useful frequency range of the ferrite your coil becomes capacitive (with not very low Q factor). That capacitive part may resonate with the inductive part of the higher frequency section (or transmission line effects) and reduce common mode impedance significantly. Some manufacturers claim to have materials that work up to 2 GHz (for example Steward ferrites, now Laird).

When you have some space available, you might cover the upper part (above 1 GHz), with a gradually changing coax to parallel strip construction of about 12 inch or so. The lower part can be done as described above.

I do have some experience with reducing spurious resonance with filling the open spaces with carbon filled foam. It did have effect above about 1.5 GHz (I hoped effect at lower frequency, but that was insignificant).

Good luck with the design,

Wim
PA3DJS
www.tetech.nl

3104. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 21:39:12 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <fa67f195-cec6-4e86-89ad-324a455bbaab@d4g2000prg.googlegroups.com>
Source record: 27126

On Mar 9, 10:35 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > My issue was that you seemed, in that sentence, to be saying
> > that the reflected energy was dissipated in the source
> > resistor. But earlier you had stated that was not your claim.
>
> My earlier claim was that the average power in a reflected
> wave is dissipated in the source resistor when the forward
> wave is 90 degrees out of phase with the reflected wave at
> the source resistor. In that earlier claim, I didn't care
> to discuss instantaneous power and thus excluded instantaneous
> power from that claim.
>
> For instantaneous values, it will be helpful to change the
> example while leaving the conditions at the source resistor
> unchanged. Here's the earlier example:
>
> Rs Vg Vl
> +----/\/\/-----+----------------------+
> | 50 ohm |
> | 1/8 WL |
> Vs 45 degrees 12.5 ohm
> 100v RMS 50 ohm line Load
> | |
> | |
> +--------------+----------------------+
> gnd
>
> Here's the present example:
>
> Rs Vg Vl
> +----/\/\/-----+----------------------+
> | 50 ohm |
> | 1 WL |
> Vs 360 degrees 23.5+j44.1
> 100v RMS 50 ohm line ohm Load
> | |
> | |
> +--------------+----------------------+
> gnd
>
> If I haven't made some stupid mistake, the conditions at
> the source resistor are identical in both examples.

No silly mistakes. This number is computed by the spreadsheet at
http://keith.dysart.googlepages.com/generator,line,load,reflection
as 23.529411764706+44.1176470588235j, so you are pretty close.

> But
> in the second example, it is obvious that energy can
> be stored in the transmission line during part of a cycle
> (thus avoiding dissipation at that instant in time) and be
> delivered back to the source resistor during another part
> of the cycle (to be dissipated at a later instant in time).
> That is the nature of interference energy and is exactly
> equal to the difference between the two powers that you
> calculated. You neglected to take into account the ability
> of the network reactance to temporarily store energy and
> dissipate it later in time.

I don't think I did.

The power delivered by the generator to the line is
Pg(t) = 32 + 68 cos(2wt)
The average power delivered to the line is 32W while
the peak power is 100W towards the load and 36W from
the line to the generator.
The exact same function describes the power delivered
to the line for 12.5 ohm load 45 degree line example,
and the 23.5+44.1j ohm load 360 degree line example.

And if the load was connected directly to the generator,
the same power would be delived directly to the load.

In all cases the power dissipated in the source resistor
is
Prs(t) = 68 + 68 cos(2wt-61.92751306degrees)
This power varies between 0.0W and 136W.

This is true even when the load is connected directly to
the generator without a line to created reflected power.

The power provided by the source is
Ps(t) = 100 + 116.6190379 cos(2wt-30.96375653degrees)
= Prs(t) + Pg(t)
so all of the energy delivered by source is nicely
accounted for. All of the energy dissipated in the
source resistor and delivered to the line originates
in the voltage source.

Looking at the line where it connects to the generator,
we find that the forward power is
Pf.g(t) = 50 + 50cos(2wt)
and the reflected power is
Pr.g(t) = -18 + 18cos(2wt)

Pf.g(t) + Pr.g(t) = 32 + 68cos(2wt)
= Pg(t)

As expected, the sum of the forward and reflected power
at the generator terminals is exactly the power delivered
by the generator to the line.

So you are correct, energy is stored in and returned from
the line on each cycle, but this is the net energy, not
the forward or reflected power since these are both
computed into non-reactive impedances, their respective
voltage and current are always in phase, so their powers
always flow in only one direction.

> All of the reflected energy is dissipated in the source
> resistor, just not at the time you thought it should be.

So as yet, there is no mechanism to explain storage of
reflected power so it can be dissipated at a different
time in the source resistor.

I stand by my contention that the reflected power is not
being dissipated in the source resistor because the
dissipation does not occur at the correct time.

You could convince me to change my contention by locating
the entity that is storing the energy, and showing some
analysis that explains why the amount of the energy
time shift is a function of the magnitude of the
reflected power.

...Keith

3105. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 22:10:50 UTC
From: richardharrison@webtv.net
Message-ID: <25530-47D7036A-101@storefull-3257.bay.webtv.net>
Source record: 27127

Art wrote:
"Can you comment on the tilt angle of the radiator to the ground to achieve max horizontal polarization?"

Vertical radiators over the earth are optimally exactly vertical. Were it not so, broadcasters would use tillted towers.

An excercise I`ve performed countless times is microwave path establishment and optimization. I`ve bolted the tiny dipole feed into the dish selecting horizontal polarization over vertical polarization in most cases.

To establish a path, I set the azimuth using a transit and Coast and Geodetic Survey maps to aim the dish on path. To aim for the horizon as needed for a long path, I simply use a bubble level on the feed horn.

As soon as the signal appears, optimizarion begins by refining azimuth, elevation, and polarization for maximum limiter current in the receiver. Never have I seen any adjustment other than azimuth make any change in the signal received. Parallel antennas at both ends of the path are optimum. The same is true with vertical polarization for what is essentially free-space propagation except for the grazing near the middle of the path.

Tilt as Art implies it is a myth.

Best regards, Richard Harrison, KB5WZI

3106. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 23:18:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xrEBj.25765$J41.24968@newssvr14.news.prodigy.net>
Source record: 27128

Keith Dysart wrote:
> So as yet, there is no mechanism to explain storage of
> reflected power so it can be dissipated at a different
> time in the source resistor.

Of course there is, Keith. That's what reactances do.
A reactance stores energy during part of the cycle
and gives it back during a different part of the cycle.
The energy stored during part of the cycle is the
destructive interference energy that you are missing
from you equation. It is delivered back during the
next part of the cycle and dissipated 90 degrees
later.

When the signs of the two superposed voltages are opposite,
there is "excess" energy available which is stored in the
transmission line. 90 degrees later, when the voltages
have the same sign thus requiring constructive interference
energy, that "excess" energy is delivered back to the source
resistor to be dissipated.

Since we already know that the interference energy averages
out to zero, the energy imbalance that you discovered is
obviously energy being displaced in time by the reactance
whether it is from a coil or from the transmission line.
--
73, Cecil http://www.w5dxp.com

3107. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-11 23:54:11 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <1ce3aa21-5048-48d3-8321-f1b78289dcfe@m3g2000hsc.googlegroups.com>
Source record: 27129

On Mar 11, 5:10 pm, richardharri...@webtv.net (Richard Harrison)
wrote:
> Art wrote:
>
> "Can you comment on the tilt angle of the radiator to the ground to
> achieve max horizontal polarization?"
>
> Vertical radiators over the earth are optimally exactly vertical. Were
> it not so, broadcasters would use tillted towers.
>
> An excercise I`ve performed countless times is microwave path
> establishment and optimization. I`ve bolted the tiny dipole feed into
> the dish selecting horizontal polarization over vertical polarization in
> most cases.
>
> To establish a path, I set the azimuth using a transit and Coast and
> Geodetic Survey maps to aim the dish on path. To aim for the horizon as
> needed for a long path, I simply use a bubble level on the feed horn.
>
> As soon as the signal appears, optimizarion begins by refining azimuth,
> elevation, and polarization for maximum limiter current in the receiver.
> Never have I seen any adjustment other than azimuth make any change in
> the signal received. Parallel antennas at both ends of the path are
> optimum. The same is true with vertical polarization for what is
> essentially free-space propagation except for the grazing near the
> middle of the path.
>
> Tilt as Art implies it is a myth.
>
> Best regards, Richard Harrison, KB5WZI

Richard, You are living in the past. Learn how to use a computor
then use it to learn for yourself so that you can be a worthwhile
contributor instead of a book parrot. First proove it for your self
then share findings that you obtain for yourself.Ofcourse that isn't
going to happen
since you don't want to learn how to use a computor because you hate
change.
If Roy is a friend of yours ask him to check it out on his computor
program or
ask anybody who has a computor to check it for you before mounting
your podium.
with silly statements. Why can't you do that vector trial have you
forgotten

that ol;d electrical stuff? Does old age give you enough license to
live a continual senior moment
for days at a time?

3108. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 00:50:11 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <966bf733-a5d3-4354-a354-659c8857876f@x41g2000hsb.googlegroups.com>
Source record: 27131

On Mar 11, 7:18 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > So as yet, there is no mechanism to explain storage of
> > reflected power so it can be dissipated at a different
> > time in the source resistor.
>
> Of course there is, Keith. That's what reactances do.
> A reactance stores energy during part of the cycle
> and gives it back during a different part of the cycle.
> The energy stored during part of the cycle is the
> destructive interference energy that you are missing
> from you equation. It is delivered back during the
> next part of the cycle and dissipated 90 degrees
> later.
>
> When the signs of the two superposed voltages are opposite,
> there is "excess" energy available which is stored in the
> transmission line. 90 degrees later, when the voltages
> have the same sign thus requiring constructive interference
> energy, that "excess" energy is delivered back to the source
> resistor to be dissipated.
>
> Since we already know that the interference energy averages
> out to zero, the energy imbalance that you discovered is
> obviously energy being displaced in time by the reactance
> whether it is from a coil or from the transmission line.

I can see that words describe a somewhat plausable conjecture,
but to be convincing, a mathematical exposition is needed.

When is the energy stored where? Energy stored in a capacitor,
for example, should correlate with the voltage on the
capacitor. Similarly for current in an inductor.

To be convincing, the various functions of time need to
align appropriately.

So far, the only convincing expressions I have seen
are:
Ps(t) = Prs(t) + Pg(t)
and
Pg(t) = Pf.g(t) + Pr.g(t)
and, of course, all the corresponding voltage and
current functions line up as expected.

To show that the reflected power is dissipated in
the resistor will require the derivation of some
X(t) such that
Prs(t) = 50cos(2wt) + Pr.g(t) + X(t)
and X(t) needs to be in terms of some known
physical quantities of the circuit.

...Keith

3109. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 01:26:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jsbet357l9q2fmpr4urfm04g9kjipu2pub@4ax.com>
Source record: 27130

On Tue, 11 Mar 2008 16:00:11 +0000, Ian Jackson
<ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote:

>>> Even at 1GHz, I don't believe that you would get as much as 2dB of loss
>>> even if you joined two pieces of coax by stripping the ends with a knife,
>>> twisting the conductors together, and wrapping them in scotch tape.
>>> --
>>> Ian

>>It is surprisingly easy to get significant loss at 1GHz and above, 2dB would
>>be very easy to achieve even when using what appears to be a 'good'
>>connection.
>>
>>regards
>>Jeff
>>
>I have to admit that I've routinely worked to 870MHz, and recently even
>to 1003MHz, but rarely ventured higher. However, I've never found any
>excessive loss in a connector which could not be accounted for by a
>straightforward 'bad connection', ie usually a total or partial open or
>short circuit, whether in the making off of the cable, or in the
>construction of the connector itself. Honest!

Hi All,

Anyone can do it wrong (come up with 2dB loss), but we would have a
great more deal traffic here if doing it wrong was that common.

I have measured attenuation of near everything from DC to 12GHz at the
standards bench and RG58 with BNCs for a short run (2 to 3 meters)
never presented any problems being wildly imagined here. At the
worst, the connectors (note plural) "might" show 0.2dB mismatch loss -
trivial.

On the other hand, if Jeff is so sure of this 2dB figure, it should
reveal itself in blisters to the fingers for even mild power (100W).
Since this unequivocal evidence is so obviously missing from the
records (or the testimony, as the case may be); then it is very
apparently one of those "someone heard from someone else about their
brother's friend's boss who had a customer who made this claim."

73's
Richard Clark, KB7QHC

3110. china wholesale 2008 nfl pro bowl jersey 's nhl jersey football jersey cheap mlb jersey 's nba jersey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 01:35:25 UTC
From: nflstore98@yahoo.com.cn
Message-ID: <b5432ee0-deec-40c4-887a-d28406c04b46@h11g2000prf.googlegroups.com>
Source record: 27132

cheap wholesale Reebok super bowl NFL Jersey
wholesale NFL pro bowl jersey,NBA,MLB,NHL,Soccer,Soccer Jerseys Nike
brand,MLB Jerseys china supplier,MLB Jerseys china
wholesaler.wholesale MLB Jerseys.NFLshop,,NFL
NBA MLB NHL jerser wholesale,NFL NBA MLB NHL Jersey supplier,NFL NBA
MLB NHL Jersey korea supplier,nlf NBA Jersey
stock,alibaba,wholesale NFL NBA MLB NHL Jerseys.Soccer Jersey china
supplier,Soccer Jerseys china wholesale.wholesale
Soccer Jersey,supply Soccer Jerseys,NFL NBA MLB NHL copy Jersey,copy
Jerseys from china,NFL Jerseys from china.NBA shop at www.jerseynflstore.com
wholesale,jersey,supply,NFL,MLB,NBA,NHL,Soccer,Mitchell and Ness,Pro
Browl NFL Jersey
wholesale womens NBA Jersey ,NBA Jersey sale ,cheap authentic NBA
Jersey ,07 Jersey NBA star ,NBA Jersey numbers ,NBA vintage
Jersey ,NBA throw back Jersey ,NBA Jersey dress for woman ,Reebok NBA
Jersey ,NBA Jersey for toddler ,old NBA
Jersey ,youth NBA swingman Jersey ,NBA authentic basketball
Jersey ,basketball Jersey NBA new nwt ,NBA all star game
Jersey ,NBA new Jersey ,adidas NBA Jersey ,NBA Jersey for
dog ,official NBA Jersey ,classics hardwood Jersey NBA ,old
school NBA Jersey ,NBA Jersey for woman ,classic NBA Jersey at
jerseynflstore.com NFL Jersey korea supplier, mitchell and ness NBA
Jersey ,2007 game Jersey NBA star ,alternate Jersey
NBA ,best selling NBA Jersey ,NBA Jersey card
,authenic NBA Jersey ,discount NBA Jersey ,classic customized Jersey
NBA ,Nike NBA swingman Jersey ,custom NBA
basketball Jersey ,retired NBA Jersey ,adidas Jersey NBA
swingman ,infant NBA Jersey ,adidas authentic Jersey NBA ,NBA

new Jersey net ,NBA practice Jersey ,NBA rewind Jersey ,big kid NBA
Jersey ,youth NBA basketball Jersey ,womens NBA
Jersey dress ,2006 Jersey NBA star ,spalding NBA player Jersey
basketball ,5f1.blogspot.com Jersey NBA ,NBA Jersey size
,NBA soul Jersey ,black Jersey NBA ,buy NBA Jersey ,NBA pro cut
Jersey ,NBA and NFL Jersey ,adidas alternate Jersey man
NBA swingman ,NBA Reebok basketball Jersey ,half and half NBA
Jersey ,NBA player Jersey ,2003 NBA all star Jersey ,NBA
century Jersey ,lakers NBA Jersey ,baby NBA Jersey ,david Jersey lee
NBA ,NBA high school Jersey ,iverson NBA Jersey
wade NBA Jersey ,2006 Jersey NBA selling top ,gilbert arena NBA
Jersey ,cheap NBA throwback Jersey at www.jerseynflstore.com NBA
Jersey design your own ,Jersey jj NBA ,2k7
code Jersey NBA ,customize NBA Jersey ,free NBA

jersey ,NBA nuggets Jersey 102 autographed NFL Jersey ,NFL europe
Jersey ,NFL Jersey china supplier NFL Jersey shop
,54 Jersey NFL ,adult small NFL Jersey ,NFL authenic Jersey ,youth NFL
replica Jersey ,authentic item Jersey NFL other
,discounted Jersey NFL ,Jersey NFL pink Reebok ribbon
womens ,customize NFL Jersey ,stitched NFL Jersey ,NFL vintage
Jersey ,50 NFL Jersey ,NFL probowl Jersey ,NFL Jersey by Reebok ,free
NFL Jersey ,NFL man replica Jersey ,signed NFL
Jersey ,best selling NFL Jersey ,youth authentic NFL Jersey ,boy NFL
Jersey ,colt Jersey NFL womens ,Jersey man NFL
,clearance NFL Jersey ,eqt Jersey NFL ,Jerseys,Soccer Jerseys adidas
brand NFL Jersey for peyton manning ,buy NFL
Jersey ,cheap NFL replica Jersey ,NFL sports Jersey ,blank NFL
Jersey ,Jersey NFL sales ,darrent Jersey NFL williams
,NFL patriot Jersey ,adult Jersey NFL xl ,custom NFL football
Jersey ,NFL game used Jersey ,best best Jersey NFL source
,female NFL Jersey , frank gore Jersey NFL ,NFL alternate Jersey ,girl
NFL Jersey ,Jersey ,NFL Jersey ,new Jersey
lottery ,honda Jersey city new Jersey ,new Jersey real estate ,ford
monmouth new Jersey ,Jersey boy ,Jersey city
,hockey Jersey at www.jerseynflstore.com toyota Jersey city new
Jersey ,chevrolet monmouth new Jersey ,toyota monmouth
new Jersey sed car Jersey city new Jersey ,ford Jersey city new
Jersey , state of new Jersey at www.jerseynflstore.com
dodge monmouth new Jersey ,throwback Jersey NFL NBA MLB NHL Jerseys
wholesale,c hevrolet Jersey city new Jersey ,acura
Jersey city new Jersey ,lexus monmouth new Jersey ,newark nj ,jeep
monmouth new Jersey ,ford trenton new Jersey
,basketball Jersey ,Jersey girl , authentic Reebok NFL Jersey ,NFL
Jersey card ,NFL throw back Jersey ,top selling NFL
Jersey ,NFL Jersey numbers ,2007 bowl Jersey NFL pro ,NFL Jersey
store ,NFL Jersey chargers ,eagle NFL Jersey ,lady NFL
Jersey ,baby NFL Jersey698359 NFL ,NFL ticket ,2007 NFL mock
draft ,NFL football ticket ,2007 NFL draft ,NFL playoffs
,NFL draft ,2007 draft mock NFL updated ,NFL playoff schedule ,NFL
mock draft ,NFL Jersey ,NFL football ,NFL shop ,NFL
schedule ,NFL cheerleader at www.jerseynflstore.com NFL playoffs
2007 ,
NFL rumor ,NFL score ,NFL network , NFL playoff
bracket ,2007 agent free NFL NBA Jerseys wholesale 2007 draft NFL
order ,NFL apparel ,NFL odds ,07 draft mock NFL ,NFL
line ,NFL pick ,2007 NFL schedule ,NFL playoff ,2007 NFL playoff
schedule at jerseynflstore.com NFL super bowl ,NFL
playoff picture ,NFL draft 2007 prospect ,espn NFL ,2007 bracket NFL
playoff ,NFL logo ,NFL team , 104 bush Jersey NFL
reggiecolts Jersey ,NBA Jersey ,new Jersey basketball ,bear
Jersey ,new Jersey dmv craigslist new Jersey ,new Jersey
net ,mitsubishi Jersey city new Jersey ,city Jersey Jersey lexus
new ,Jersey journal ,mercedes benz trenton new Jersey
,cape may nj ,mazda monmouth new Jersey ,new Jersey mortgage ,peyton

manning Jersey ,mitsubishi monmouth new Jersey
miss new Jersey ,used car trenton new Jersey ,baseball Jersey ,honda
trenton new Jersey , nissan trenton new Jersey
,new Jersey hotel ,pontiac monmouth new Jersey ,new Jersey department
of correction ,new Jersey car insurance ,
chrysler monmouth new Jersey ,camden nj ,jeep Jersey city new
Jersey ,custom football Jersey ,Jersey mikes ,NHL Jersey
,dodge Jersey city new Jersey ,Reebok NFL Jersey made in
korea,infiniti Jersey city new Jersey ,chevrolet trenton new
Jersey ,ford atlantic new Jersey ,volkswagen Jersey city new
Jersey ,audi trenton new Jersey ,Jersey shore ,honda
atlantic new Jersey ,used car atlantic new Jersey7179 NFL game at
www.jerseynflstore.com 2007 NFL playoffs schedule

3111. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 01:59:51 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <rOGBj.5571$Qy3.957@trnddc03>
Source record: 27133

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:IrABj.16898$0o7.11092@newssvr13.news.prodigy.net...
> John KD5YI wrote:
>> At least you supplied another viewpoint from an authority, although you
>> go
>> on to reduce my confidence in the quote with "seems to imply" and "it is
>> possible" (but not certain).
>
> Those are my guarded words, not Balanis'. :-)
> --
> 73, Cecil http://www.w5dxp.com

Oh, crap, Cecil! I know they were not Balanis' words.

The point was that you did not need to supply your own interpretation of
Balanis' quote ("seems to imply" and "it is possible"). You could have
simply supplied the quote and left it at that just as I did in my original
post in this thread. The apparent intention of your "guarded words" was to
support your own viewpoint with Balanis' quote.

Cheers,
John

3112. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 02:54:38 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <_pCdnce3O_xz2EranZ2dnUVZ_rrinZ2d@comcast.com>
Source record: 27134

On Tue, 11 Mar 2008 11:18:08 -0700, Art Unwin wrote:

> 15 years ago I stated that radiation is in the form of pulses,all
> laughed Since then I have itemised the steps to make the small antenna,
> all laughed.

In refutation, the proof.

> The info is in the archives many many times but to my knoweledge nobody
> has tried it for themselves preferring to memorise what the books say.
> Yes it does look like a tuned circuit on the end of a coax but what if
> it is?

Actually, if that is what it is, then fine! antennas such as that are perfectly legit. It will almost certainly use the feedline as a large part of the radiator. This antenna bears some resemblance to the Isotron line of antennas. Not for everyone, for sure, but I'm not going to get into a definition war on what comprises a "good" antenna, at least in this case..

But unless there is something new going on - and I don't buy claims of newfangled physics without proofs - especially physics that need to include apparent ability of comprehension on my part, it is another radiating feed line antenna, and not much more.

-73 de Mike N3LI -

3113. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 03:07:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <sNHBj.214$qT6.41@nlpi070.nbdc.sbc.com>
Source record: 27135

Keith Dysart wrote:
> To be convincing, the various functions of time need to
> align appropriately.

And one can tell that they indeed do "align appropriately"
just by looking at the graphs of the two voltages. We know
that the average power in the reflected wave is dissipated
in the source resistor. All that is left to understand is
how long the destructive interference energy is stored in
the transmission line before being dissipated in the source
resistor as constructive interference.

Graphing in ASCII is pretty difficult. Let's see if we
can do it with words. Take a piece of transparent film
and draw the forward voltage to scale. Take another piece
of transparent film and draw the reflected voltage to
scale. Now we have graphs of two voltages that can be
varied by phase. In ASCII, the best I can do is:

```
------ ----
/ \ /
/ \ forward voltage /
/_____________\_____________________/_________
\ /
\ /
\ /
------

----------
/ \ reflected voltage
__________/_________________\_____________________
/ \ /
/ \ /
----- ----------
```

For the first 90 degrees of the above graph, the forward voltage
is positive and the reflected voltage is negative. That is
destructive interference so there's an excess of energy that
is stored in the transmission line. For the second 90 degrees,
the forward voltage is positive and the reflected voltage is
positive. That is constructive interference so the excess energy
from the first 90 degrees is sucked back out of the transmission
line and dissipated in the source resistor. Given that the average
reflected energy is dissipated in the source resistor and assuming
we honor the conservation of energy principle, nothing else is
possible.

--
73, Cecil http://www.w5dxp.com

3114. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 03:09:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3QHBj.217$qT6.193@nlpi070.nbdc.sbc.com>
Source record: 27136

John KD5YI wrote:
> The apparent intention of your "guarded
> words" was to support your own viewpoint with Balanis' quote.

Nope, I don't have a dog in this fight.
--
73, Cecil http://www.w5dxp.com

3115. My naughty Profile

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 03:25:47 UTC
From: siwk5pbxo7jtaidne8mr@gmail.com
Message-ID: <d1778cc7-f99c-4c9c-bcd6-6f9273336bf9@k13g2000hse.googlegroups.com>
Source record: 27137

See my naughty profile http://2xrl.com/668

3116. My naughty Profile

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 03:49:55 UTC
From: sqxdau4oecyakkuo1yju@gmail.com
Message-ID: <0a6406a6-1bf6-4a37-a8ce-cfe3865fca43@e60g2000hsh.googlegroups.com>
Source record: 27138

See my naughty profile http://2xrl.com/668

3117. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 04:12:00 UTC
From: richardharrison@webtv.net
Message-ID: <7293-47D75810-778@storefull-3252.bay.webtv.net>
Source record: 27139

Art wrote:
"Why can`t you do that vector trial have you forgotten that old
electrical stuff?

Not completely but it serves little purpose in this arena. I admit that being retired for decades requires me at times to search my memory for awhile to retrieve something stored there but that is where the books come in as reminders.

Richard Clark noted that "size counts" appears on page 3 of Ed Laport`s "Radio Antenna Engineering". Richard was right:

"---concerns the field around a very short doublet in free space composed of a straight conductor of length l in which a sinusoidal alternating current of frequency f is flowing. The current is assumed to be uniform throughout the length of this doublet."

The above exerpt is sufficient to show the field around a very short (elementary) doublet in free space is a function of length l as previously reported from page 864 of Terman`s 1955 opus. The old masters agree. So call me a parrot already. I don`t care.

I gave you examples of my experience with microwaves. These showed antennas with the same polarizatiions have the least path loss. Polarization diversity in addition to space and frequency diversity has been used to improve reception and reliability on mivrowave paths. When one polarization, position, or frequency falters, a switch is automatically made to the other alternative. Reliability is greatly improved. Surely other readers have had similar experiences with antenna alignment to receive the best signal. It requires that the antennas be parallel. Crossed antenna polarization on line-of-sight paths causes huge (30 dB?) loss.

FM broadcasting began with horizontally polarized antennas. Automobiles using vertically polarized antennas required FM broadcasters to add vertical polarization to serve a mobile audience.

Best regards, Richard Harrison, KB5WZI

3118. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 04:30:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13ten3qc2sj7e40@corp.supernews.com>
Source record: 27140

Robert11 wrote:
> Hello,
>
> First, let me say thanks to everyone for the replies and help.
> New at this, and it seems these very basic questions of mine keep coming up
> the more I look into it.
> Great hobby, and really do appreciate the help, very much.
> Super newsgroup for folks like me. Sure is a lot to learn re antennas;
> reading the ARRL book on it now.
>
> Would like to modify my question somewhat.
> Was really surprised to learn about the copper on steel, vs all copper
> center conductors on coax.
> I thought the difference were only in types of shielding; not center
> conductor construction, and that RG6, e.g., was RG6, at least concerning
> attenuation and perhaps "quality". Guess not ?
>
> I understand, and am aware of now, the skin effect depth
> Will read up on it some more.
>
> Question: any meaningful difference for the sw frequencies; say from 0.5 to
> 30 MHz ?
> I have a sw receiving set also, and frankly, when i strung my coax for it, I
> never considered the center conductor coax's construction.
>
> Should I have, possibly ?
>
> Thanks again,
> Bob

Any quality coax will have a sufficiently thick copper coating on the center conductor to insure that the current is, for practical purposes, always in the copper rather than the steel down to quite a low frequency. If the plating were unusually thin, the current would penetrate into the steel at lower frequencies and the loss would be much greater. However, loss in a transmission line used for receiving only becomes very much less important at HF and below (that is, below about 30 MHz). So the bottom line is that it's not normally anything you need to worry about.

A copper plated steel conductor is used to increase the physical strength of the cable, particularly cables of smaller diameter and higher impedance, where the diameter of the center conductor becomes small. When done properly (as it usually is), it works just the same electrically as a solid copper conductor.

The _ARRL Antenna Book_ is a very good place to start in learning about antennas.

Roy Lewallen, W7EL

3119. From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 05:47:57 UTC
From: mcclements@gmail.com
Message-ID: <d63b0a7e-77c5-46d7-a11d-6a58a3935ad8@n77g2000hse.googlegroups.com>
Source record: 27141

Hi,

So I've spent months, rather years, carefully designing a new 5 band cubical quad for myself. I've always known that I would use #12 solid copper wire (not stranded), so that is what I used when running NEC2 to optimize this touchy antenna design (over millions of iterations).

Well, real world things are starting to happen. For wire, I've decided what I would like to use is an enameled coated copperweld wire. I'll buy the plain copperweld wire and coat it myself.

So my question is, what is the most accurate way to make sure when I build the quad that I account for the velocity factor (unknown) of the wire I use? Should I grid dip the elements and make sure they agree with my NEC2 model? Can I build a simple loop on a higher frequency with the wire and then somehow use that information to rescale my wire lengths? What is the "right" way to do this? I wonder how consistent velocity factor will be if I do my own coating on the wire....maybe hand coating is a bad idea for this reason....

I spent a lot of time designing a Yagi with NEC2. I used Leeson's correction for taper elements and to calculate the effect of the element to boom mounts. All that attention paid off - I thought my Yagi lived up to the NEC2 predictions very well.

-Scott, WU2X

3120. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 06:54:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tevhctjjf9kb5@corp.supernews.com>
Source record: 27143

I'm a little concerned about the authoritative quotes I've seen lately which state that the field from a conductor is directly proportional to the current in the conductor. While true, it's seemingly being used to support the conclusion that a longer conductor inherently produces a greater field, and by extension, that a larger antenna fundamentally radiates more than a smaller one. Those conclusions are false, and I'll explain why.

It's useful to start with the law of conservation of energy. If an antenna is lossless, then all the power fed to it must be radiated. This has to be true regardless of the antenna's size. So how can this be, if the field is proportional to the conductor length? Are longer conductors less lossy than short ones?

No, the principle of field being proportional to current and conductor length assumes zero loss, so it has to apply to small and large antennas alike. But so does the law of conservation of energy.

The answer to this apparent dilemma is that if you put a fixed *power* into dipoles, say, of various lengths, the current will increase as the antenna gets shorter. This keeps the product of length X current essentially constant, resulting in a nearly constant radiated field for a fixed power input. Another way of expressing the same thing which might be more familiar is that the radiation resistance decreases as the antenna gets shorter. Consequently, the current increases for a given power input. To look at it yet another way, consider that if all the power is to be radiated by both a short and long antenna, the current must be much higher to get the same radiation from a short conductor as a long one.

This increase in current becomes dramatic when the antenna gets very small (in terms of wavelength), and that's where one of the problems lies with short antennas. The I^2 * R conductor loss can become not only significant but large even with very good conductors, when the antenna is small. And that's why small antennas are often less efficient than larger ones. It turns out to be due to the fact that the field is proportional to the current and conductor length but not for the simplistic reasons being implied. But the poor efficiency of a small antenna is a practical matter which can be mitigated, often to a very great extent, by using large and good conductors for example. It's not due to any fundamental rule of radiation.

Another reason that looking only at the current - length rule for field strength can be misleading is that the radiated field is the sum of many incremental fields from the various parts of the antenna. Some antennas, such as small loops or a W8JK beam, create fields which fully or

partially cancel in all directions. So the fields generated by the individual parts of the antennas are greater than they'd otherwise need to be in order to generate the resulting total radiation field. This further reduces the efficiency of these antenna types, since higher currents are being required to generate the larger fields. Still, though, the law of conservation of energy applies -- except for power lost to heating, all the power applied ends up in the radiated field, even if it takes a much larger local (near) field in order to produce it.

There are other consequences of making an antenna small. One is that if you do succeed in making it efficient by keeping loss very low, the bandwidth will be very narrow. Another is that the very small radiation resistance is accompanied by a very high feedpoint reactance. Any practical network used to match this to the common 50 + j0 ohms required by most transmitters and receivers will also be likely to be quite lossy due to very high currents and/or voltages within the network. And, like the antenna, most reasonably efficient matching networks will tend to be very narrowbanded when being required to effect such an extreme impedance transformation.

The considerations above are why small antennas are invariably narrowbanded, inefficient, or both, and if the matching network loss is included in the efficiency calculation, virtually never very efficient. Claims to the contrary are heard all the time. But under scrutiny and controlled test conditions, they don't fare any better than water dowsing.

Roy Lewallen, W7EL

3121. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 07:35:35 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ub1ft3p7jihacvmn4jccdgl4gar56fhkh6@4ax.com>
Source record: 27142

On Tue, 11 Mar 2008 22:47:57 -0700 (PDT), mcclements@gmail.com wrote:

>So my question is, what is the most accurate way to make sure when I
>build the quad that I account for the velocity factor (unknown) of the
>wire I use? Should I grid dip the elements and make sure they agree
>with my NEC2 model?

Hi Scott,

This sounds like a good solution, but you don't state the limits of accuracy you've painfully sought to achieve. I'm not sure about the reference to a million iterations (which would certainly suggest the erosion of accuracy through accumulating rounding errors).

However, GDOs don't suggest precision to me. Yes, you can measure the frequency to a jillion places, but can you find the null to the same resolution? Meters are not all that resolving unless you've got them in a bridge.

>Can I build a simple loop on a higher frequency
>with the wire and then somehow use that information to rescale my wire
>lengths?

Sure, but you seem to inform yourself about the difficulty with the prescient questions that follow:

>What is the "right" way to do this? I wonder how consistent
>velocity factor will be if I do my own coating on the wire....maybe
>hand coating is a bad idea for this reason....

I would first ask why you are coating them at all?.

If I might anticipate because the copper oxidizes and presents a high resistance to current, I would point out that enamel is even more resistive and the current isn't going to travel through it either (the current will travel through the proverbial path of least resistance - under the coating of resistive layer covering no matter what it is composed of).

73's
Richard Clark, KB7QHC

3122. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 08:36:12 UTC
From: Jeff <jeff@local.host>
Message-ID: <47d79667$0$1347$834e42db@reader.greatnowhere.com>
Source record: 27144

> Anyone can do it wrong (come up with 2dB loss), but we would have a
> great more deal traffic here if doing it wrong was that common.
>
> I have measured attenuation of near everything from DC to 12GHz at the
> standards bench and RG58 with BNCs for a short run (2 to 3 meters)
> never presented any problems being wildly imagined here. At the
> worst, the connectors (note plural) "might" show 0.2dB mismatch loss -
> trivial.
>
> On the other hand, if Jeff is so sure of this 2dB figure, it should
> reveal itself in blisters to the fingers for even mild power (100W).
> Since this unequivocal evidence is so obviously missing from the
> records (or the testimony, as the case may be); then it is very
> apparently one of those "someone heard from someone else about their
> brother's friend's boss who had a customer who made this claim."
>
> 73's
> Richard Clark, KB7QHC

Well let me put you right Richard, there was no high power, so burnt fingers, this was noticed in a test set-up on a network analyser, and subsequently the adaptors in question were tested in isolation. 'Good' adaptors were also substituted and their loss was measured and was very low indeed.

The problem was first noticed by a very senior consultant in the lab in question and then checked by several other people because they could not believe it either. The connector interfaces were checked and were Ok. No further time was spent investigating why the problem occurred, just 2 SMA adaptors in the bin and the rest of the adaptors in the lab checked.

So please don't denigrate other people's comment without asking about the facts.

My comments were not about properly made connectors, that will have very low loss, but were a caution that at high UHF and above care has to be taken and it is very easy to introduce loss. This is particularly the case when launching from connectors onto pc boards with microstrip or joining on to coax cable.

Having been involved professionally for over 10 years in the design of microwave equipment I can assure you that there is an endless list of the ways that loss can creep into a system at high frequencies.

73
Jeff

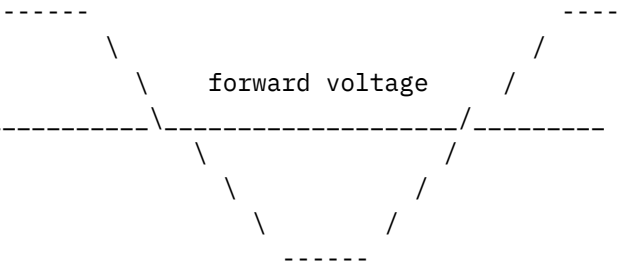
3123. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 11:18:37 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <20285050-1d45-4f02-936f-31d626fdae6e@t54g2000hsg.googlegroups.com>
Source record: 27145

On Mar 11, 11:07 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > To be convincing, the various functions of time need to
> > align appropriately.
>
> And one can tell that they indeed do "align appropriately"
> just by looking at the graphs of the two voltages. We know
> that the average power in the reflected wave is dissipated
> in the source resistor.

Actually, we have shown that that is not the case. If the
instantaneous power is not dissipated in the source resistor,
then neither is the average of the instantaneous power. And
we have shown that the instantaneous power is not dissipated
in the source resistor.

You might like to visit
http://keith.dysart.googlepages.com/radio6
for a graph that shows the actual power dissipated in the
source resistor along with the power in the reflected
wave. It can be visually seen that the power dissipated in
the source resistor has no relationship to the sum of the
reflected power and the power that would be dissipated in
the source resistor if there was no reflection.

> All that is left to understand is
> how long the destructive interference energy is stored in
> the transmission line before being dissipated in the source
> resistor as constructive interference.
>
> Graphing in ASCII is pretty difficult. Let's see if we
> can do it with words. Take a piece of transparent film
> and draw the forward voltage to scale. Take another piece
> of transparent film and draw the reflected voltage to
> scale. Now we have graphs of two voltages that can be
> varied by phase. In ASCII, the best I can do is:
>
>


>
>   ----------
>   /   \   reflected voltage
> __________/_____________________________________
>   /   \   /
>   /   \   /
> -----   ----------
>
> For the first 90 degrees of the above graph, the forward voltage
> is positive and the reflected voltage is negative. That is
> destructive interference so there's an excess of energy that
> is stored in the transmission line. For the second 90 degrees,
> the forward voltage is positive and the reflected voltage is
> positive. That is constructive interference so the excess energy
> from the first 90 degrees is sucked back out of the transmission
> line and dissipated in the source resistor.

You have shown that for some of the time energy is delivered to
the line and sometimes it returns energy. This is
Pg(t) = 32 + 68cos(2wt)
which has nothing to do with reflected wave energy dissipated in
the source resistor.

Pg(t) is equal, however, to Pf.g(t) + Pr.g(t).

> Given that the average
> reflected energy is dissipated in the source resistor and assuming
> we honor the conservation of energy principle, nothing else is
> possible.

But the premise in the above sentence (average reflected energy is
dissipated in the source resistor) is wrong, so the conclusion
(nothing else is possible) is as well.

...Keith

3124. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 11:37:22 UTC
From: Roger D Johnson <n1rj~@roadrunner.com>
Message-ID: <47d7c074$0$12576$4c368faf@roadrunner.com>
Source record: 27146

Robert11 wrote:
> Hello,
>
> Would you expect to see, in a practical sense, and meaningful difference
> between RG6 with a copper plated steel center conductor vs an all copper
> one, going from the antenna to a receiving scanner (50 foot run; 1 GHz max).
>
> Tried to find some attenuation tables for this in Google, but had no luck:
> Plenty for the coax cables themselves, but might you know of any chart links
> that show attenuation for the different types of connectors ?
>
> Thanks,
> B.
>

In the HF/VHF range the attenuation should be about the same as an
all copper center conductor. But, if you are running DC or low freq
AC through the coax to operate switching relays or a preamp, the
resistance of the copper coated center conductor is much higher than
an all copper conductor.

73, Roger

--
Remove tilde (~) to reply

Remember the USS Liberty (AGTR-5)
http://ussliberty.org/

3125. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 12:01:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ECPBj.774$LV5.444@newssvr19.news.prodigy.net>
Source record: 27147

mcclements@gmail.com wrote:
> Should I grid dip the elements and make sure they agree
> with my NEC2 model?

I use my MFJ-259B a lot more than I use my grid dip
meter. In any case, cutting and trying is usually
required to achieve the desired gain and F/B ratio
at the frequency of interest.
--
73, Cecil http://www.w5dxp.com

3126. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 12:02:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tfhi087p9e6d3@corp.supernews.com>
Source record: 27148

Jeff wrote:
> . . .
> My comments were not about properly made connectors, that will have very low
> loss, but were a caution that at high UHF and above care has to be taken and
> it is very easy to introduce loss. This is particularly the case when
> launching from connectors onto pc boards with microstrip or joining on to
> coax cable.
>
> Having been involved professionally for over 10 years in the design of
> microwave equipment I can assure you that there is an endless list of the
> ways that loss can creep into a system at high frequencies.

I sense a communication problem here.

"Loss" usually implies dissipation of some of the desired power in the form of heat, and that's the way I use the term.

However, people who spend a lot of time in a test equipment environment often use the term to mean loss as described above, "mismatch loss", or some combination of the two. And I've often seen people mistake "mismatch loss" for dissipative loss. But it's important to separate the two, since they have different causes and cures.

Dissipative loss is caused by current flowing through a resistance, which causes power in the amount of I^2 * R being lost as heat. When dealing with dielectric loss, it's often easier to calculate it as V^2 / R. The mechanism is somewhat different but the end result, dissipation, is the same.

"Mismatch loss" is entirely different, although someone making measurements with a network analyzer or other test system won't readily be able to distinguish it from dissipative loss. "Mismatch loss" works like this:

Suppose we have a signal generator with a 50 ohm fixed resistive output impedance which delivers 1 watt to a resistive 50 ohm load. If we were to insert, say, an inductor with a reactance of 100 ohms in series between the source and load, only 500 mW will be delivered to the 50 ohm load. Now, this is for a lossless inductor, so there's no dissipative loss in the inductor. Yet the inductor is said to have an "insertion loss" of 10 * log(1/0..5) ~ 3 dB because the amount of power delivered to the load is less than the amount which would be delivered under matched conditions. Consider another example -- a perfect, lossless transformer is inserted between the generator and 50 ohm load. If the transformer has a 2:1 turns ratio (4:1 impedance ratio), 640 mW will be delivered to the 50 ohm load. So the transformer is said to have an

"insertion loss" of ~ 1.9 dB.

The way to reduce dissipative loss is to reduce the I^2 * R or V^2 / R product one way or another. Power companies do this by raising the voltage for long distance transmission, thereby reducing I. We often use a larger diameter coaxial feedline, which reduces the conductor R -- or use an open wire line which reduces I because of its higher characteristic impedance.

"Mismatch loss" can be eliminated entirely by adding an impedance matching network. In the examples above, a matching network anywhere between the generator and load which causes the generator to see 50 ohms resistive will reduce the "mismatch loss" to zero -- that is, it will raise the power in the load resistor back to its maximum possible value of 1 watt.

Now when Jeff says that loss can be introduced by coax-to-microstrip transitions, he's speaking of "mismatch loss", not dissipative loss. There's no mechanism which would cause the I, V, or R to become high enough in the region of a transition to cause an appreciable amount of dissipative loss. It is, however, extremely difficult to make a transition which doesn't introduce a different impedance in the transition region. (And it's very nearly always a higher, or inductive, impedance due to the fields escaping or fringing from the regions immediately between the conductors.) I'm very familiar with this, having designed transitions which had to maintain the proper impedance from DC into the tens of GHz for very sensitive time domain equipment. It can, however, usually be compensated by introducing complementary impedances in the immediate vicinity -- this is the equivalent to providing an impedance match. The result is a clean transition with negligible loss -- "mismatch" or otherwise. It's not possible to compensate for dissipative loss in this way. If such a transition shows loss in a network analyzer measurement, for example, it's almost surely "mismatch loss" and not dissipative loss. It won't burn anyone's fingers if a kW is applied, and the cure wouldn't help dissipative loss at all.

"Mismatch loss" is useful mostly to people who have to stay in a fixed 50 ohm environment with no opportunity to apply impedance matching. That's not usually the case in amateur antenna systems. So when someone, especially someone with a test laboratory background, says "loss", it's important to ask whether they mean dissipative loss or "mismatch loss", since we can make the latter disappear but not the former.

So, I'll ask: Was the 2 dB connector loss dissipative (caused by an exceptionally high resistance series conductor and/or exceptionally lossy dielectric), or was it "mismatch loss" (caused by a dramatic impedance change within the connector due to a changed relationship between conductors -- say, missing dielectric or something like a helical conductor)?

Roy Lewallen, W7EL

3127. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 12:41:50 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <a866ce40-475f-4607-a4eb-9c68f25facdb@u72g2000hsf.googlegroups.com>
Source record: 27149

On Mar 12, 1:54 am, Roy Lewallen <w...@eznec.com> wrote:
> I'm a little concerned about the authoritative quotes I've seen lately
> which state that the field from a conductor is directly proportional to
> the current in the conductor. While true, it's seemingly being used to
> support the conclusion that a longer conductor inherently produces a
> greater field, and by extension, that a larger antenna fundamentally
> radiates more than a smaller one. Those conclusions are false, and I'll
> explain why.
>
> It's useful to start with the law of conservation of energy. If an
> antenna is lossless, then all the power fed to it must be radiated. This
> has to be true regardless of the antenna's size. So how can this be, if
> the field is proportional to the conductor length? Are longer conductors
> less lossy than short ones?
>
> No, the principle of field being proportional to current and conductor
> length assumes zero loss, so it has to apply to small and large antennas
> alike. But so does the law of conservation of energy.
>
> The answer to this apparent dilemma is that if you put a fixed *power*
> into dipoles, say, of various lengths, the current will increase as the
> antenna gets shorter. This keeps the product of length X current
> essentially constant, resulting in a nearly constant radiated field for
> a fixed power input. Another way of expressing the same thing which
> might be more familiar is that the radiation resistance decreases as the
> antenna gets shorter. Consequently, the current increases for a given
> power input. To look at it yet another way, consider that if all the
> power is to be radiated by both a short and long antenna, the current
> must be much higher to get the same radiation from a short conductor as
> a long one.
>
> This increase in current becomes dramatic when the antenna gets very
> small (in terms of wavelength), and that's where one of the problems
> lies with short antennas. The I^2 * R conductor loss can become not only
> significant but large even with very good conductors, when the antenna
> is small. And that's why small antennas are often less efficient than
> larger ones. It turns out to be due to the fact that the field is
> proportional to the current and conductor length but not for the
> simplistic reasons being implied. But the poor efficiency of a small
> antenna is a practical matter which can be mitigated, often to a very
> great extent, by using large and good conductors for example. It's not
> due to any fundamental rule of radiation.
>
> Another reason that looking only at the current - length rule for field

> strength can be misleading is that the radiated field is the sum of many
> incremental fields from the various parts of the antenna. Some antennas,
> such as small loops or a W8JK beam, create fields which fully or
> partially cancel in all directions. So the fields generated by the
> individual parts of the antennas are greater than they'd otherwise need
> to be in order to generate the resulting total radiation field. This
> further reduces the efficiency of these antenna types, since higher
> currents are being required to generate the larger fields. Still,
> though, the law of conservation of energy applies -- except for power
> lost to heating, all the power applied ends up in the radiated field,
> even if it takes a much larger local (near) field in order to produce it.
>
> There are other consequences of making an antenna small. One is that if
> you do succeed in making it efficient by keeping loss very low, the
> bandwidth will be very narrow. Another is that the very small radiation
> resistance is accompanied by a very high feedpoint reactance. Any
> practical network used to match this to the common 50 + j0 ohms required
> by most transmitters and receivers will also be likely to be quite lossy
> due to very high currents and/or voltages within the network. And, like
> the antenna, most reasonably efficient matching networks will tend to be
> very narrowbanded when being required to effect such an extreme
> impedance transformation.
>
> The considerations above are why small antennas are invariably
> narrowbanded, inefficient, or both, and if the matching network loss is
> included in the efficiency calculation, virtually never very efficient.
> Claims to the contrary are heard all the time. But under scrutiny and
> controlled test conditions, they don't fare any better than water dowsing.
>
> Roy Lewallen, W7EL

I go along with that but only if you meant electrically small
antennas.
Some of the group confuse electrically small with physically small.
Richard for years has viewed them as being the same despite my
corrections.
Fractional wavelength is electrically small tho some would say it must
be
less than 0.1 WL
Art

3128. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 12:49:14 UTC
From: Jeff <jeff@local.host>
Message-ID: <47d7d18d$0$1347$834e42db@reader.greatnowhere.com>
Source record: 27150

Snip>
"> So, I'll ask: Was the 2 dB connector loss dissipative (caused by an
> exceptionally high resistance series conductor and/or exceptionally lossy
> dielectric), or was it "mismatch loss" (caused by a dramatic impedance
> change within the connector due to a changed relationship between
> conductors -- say, missing dielectric or something like a helical
> conductor)?
>
> Roy Lewallen, W7EL

A good question Roy, but I cannot answer it, other than to say that the SMA interfaces were clean and apparently dimensionally in spec.. There was not the time or money to investigate further, the adaptors just went in the bin! (they were good quality adaptors by the way, probably MA/com).

73
Jeff

3129. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 13:10:22 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <2DQBj.20805$Ls6.4726@trnddc01>
Source record: 27151

<mcclements@gmail.com> wrote in message
news:d63b0a7e-77c5-46d7-a11d-6a58a3935ad8@n77g2000hse.googlegroups.com...
> Hi,
>
> So I've spent months, rather years, carefully designing a new 5 band
> cubical quad for myself. I've always known that I would use #12 solid
> copper wire (not stranded), so that is what I used when running NEC2
> to optimize this touchy antenna design (over millions of iterations).
>
> Well, real world things are starting to happen. For wire, I've decided
> what I would like to use is an enameled coated copperweld wire. I'll
> buy the plain copperweld wire and coat it myself.
>
I think I would spend the extra money and buy copper wire. One nick in your
coating and the copper surface and the wire will disappear. If you must use
copperweld, try The Wireman or The RF Connection for copperweld that has a
high density black polyethylene jacket.

I would hate to spend all the time to design and build a quad and then have
the wire be the weakest link.

Dale W4OP

3130. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 13:49:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xbRBj.261$qT6.19@nlpi070.nbdc.sbc.com>
Source record: 27152

Keith Dysart wrote:
> Actually, we have shown that that is not the case.

If the reflected energy is not being dissipated in
the source resistor, where does it go? It is not
dissipated in the load, by definition, and there is
no other source of dissipation in the network besides
the source resistor. There are no reflections and
no average interference to redistribute the reflected
energy back toward the load. The reflected wave
possesses energy and momentum which must be conserved.
Do your reflected waves obey your every whim and just
disappear and reappear as willed by you in violation
of the conservation of energy principle?

> You might like to visit
> http://keith.dysart.googlepages.com/radio6
> for a graph that shows the actual power dissipated in the
> source resistor along with the power in the reflected
> wave. It can be visually seen that the power dissipated in
> the source resistor has no relationship to the sum of the
> reflected power and the power that would be dissipated in
> the source resistor if there was no reflection.

The difference in your energy levels is in the reactance.
The reactance stores energy and delivers it later. Why
are you having so much trouble with that age-old concept?
The reflected energy that is not dissipated in the source
resistor at time 't' is stored in the reactance and dissipated
90 degrees later. Until you choose to account for that time
delay, your energy equations are not going to balance.

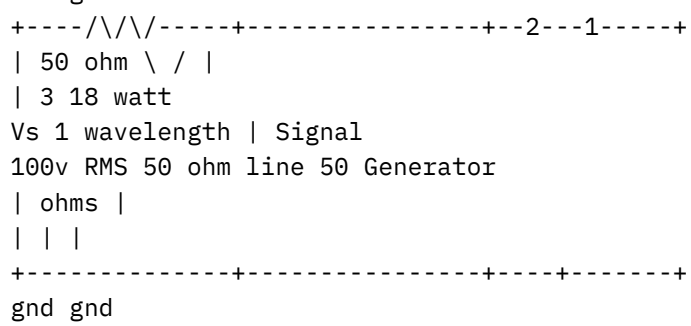
Your equations would be valid only if there were no reactance
and no delays in the network. The lumped circuit model strikes
again.
--
73, Cecil http://www.w5dxp.com

3131. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 14:17:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <BBRBj.22779$R84.3698@newssvr25.news.prodigy.net>
Source record: 27153

Keith Dysart wrote:
> Actually, we have shown that that is not the case. If the
> instantaneous power is not dissipated in the source resistor,
> then neither is the average of the instantaneous power. And
> we have shown that the instantaneous power is not dissipated
> in the source resistor.

Actually, we have shown exactly the opposite. Maybe a
different example will help. We are going to replace
the 23.5+j44.1 ohm load with a *phase-locked* signal
generator equipped with a circulator and 50 ohm load.
The signal generator supplies 18 watts back to the
original source and dissipates all of the incident
power of 50 watts, i.e. all of the forward power from
the original source. The original source sees
exactly the same 23.5+j44.1 ohms as a load.



The conditions at the original source are identical.
The circulator load resistor is dissipating the 50 watts
of forward power supplied by the original source. The
signal generator is sourcing 18 watts.

Your instantaneous power equations have not changed.
Are you going to try to tell us that the 18 watts from
the signal generator are not dissipated in Rs???? If
not in Rs, where????
--
73, Cecil http://www.w5dxp.com

3132. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 14:42:54 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <56e94876-ea7a-42a9-be47-0bff4aa26e44@n58g2000hsf.googlegroups.com>
Source record: 27154

On Mar 11, 9:54 pm, Mike Coslo <mco...@comcast.net> wrote:
> On Tue, 11 Mar 2008 11:18:08 -0700, Art Unwin wrote:
> > 15 years ago I stated that radiation is in the form of pulses,all
> > laughed Since then I have itemised the steps to make the small antenna,
> > all laughed.
>
> In refutation, the proof.
>
> > The info is in the archives many many times but to my knoweledge nobody
> > has tried it for themselves preferring to memorise what the books say.
> > Yes it does look like a tuned circuit on the end of a coax but what if
> > it is?
>
> Actually, if that is what it is, then fine! antennas such as that are
> perfectly legit. It will almost certainly use the feedline as a large
> part of the radiator. This antenna bears some resemblance to the Isotron
> line of antennas. Not for everyone, for sure, but I'm not going to get
> into a definition war on what comprises a "good" antenna, at least in
> this case..
>
> But unless there is something new going on - and I don't buy claims of
> newfangled physics without proofs - especially physics that need to
> include apparent ability of comprehension on my part, it is another
> radiating feed line antenna, and not much more.
>
> -73 de Mike N3LI -

On a more serious note,
you consistently refer to heating problems or
feed line radiation. Will you be good enough to explain what creates
these
functions and why you can thus refer to them as my problems?
To put things in order.
My antenna does not require a ground system
Electrical WL is alwaysa WL or more in length.
Measurements at the antenna are devoid of reactance at the point of
resonance
Measurements at the transmitter is the same.
Movement away from resonance supplies reactance.
Conformance with Maxwells laws are adhered to.
Now all these facts have been stated many times before, yet you repeat
your views so the actions that create feedline radiation and antenna
melting
problems are totally different to what I understand.

When moving away from the resonant point it provides reactance in
addition to the resistance
All frequencies have more than one resonant point

3133. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 14:50:08 UTC
From: mcclements@gmail.com
Message-ID: <d96744e8-99ba-439c-b68c-c466d7406775@n58g2000hsf.googlegroups.com>
Source record: 27155

> If I might anticipate because the copper oxidizes and presents a high
> resistance to current, I would point out that enamel is even more
> resistive and the current isn't going to travel through it either (the
> current will travel through the proverbial path of least resistance -
> under the coating of resistive layer covering no matter what it is
> composed of).

(I am addressing more than one post with this response)

Basically I want to use copperweld for durability. Its not a matter of saving money over hard drawn copper. I have no experience with (bare) copperweld, but I have read that if you get a nick in the copper layer, basically the steel will start rusting away at that point (very quickly). So I don't have problem using some enamel to protect it (and have done this in the past with hard drawn). I am using copperweld/ insulated wire for my low band antennas - but anyone who has actually built a quad knows insulated wire is much too heavy, esp. when you are dealing with 5 bands.

I have used hard drawn copper with enamel on it on 10 meters and never had a problem with a wire breaking in 10 years. So, I am not really sure if I need copperweld, but I have no expierence with larger quad loops. The goal is to have this thing be reliable.

Regardless still - whatever I wire I use - even if it was bare #12 solid copper wire, I still want to go through the exercise of getting the wire I actually used in sync with my model. So, I'd rather focus the conversation on that topic.

With respect to manually tuning the quad (reflector) after its up, yes, that seems to be the conventional wisdom. How practical and possible is that for me? Mine will sit on 72' US Tower crankup/tilt over - short of renting some huge bucket/boom, I can't see myself manually tuning it when its up. The best I will do is take some type of field measurements and see if it displays anything close to the pattern NEC2 predicts - or better yet, just see if I am happy with it as is. I did not have to make any adjustments to the monoband yagi that went right from NEC2 to the tower, so, I am hoping for the same good fortune.

-Scott, WU2X

3134. china cheap wholesale NFL NHL Jerseys (www.sneakersea.com) nike sneaker jordan shoes air force one gucci

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 15:00:57 UTC
From: "sneakersea@yahoo.com.cn" <sneakersea@yahoo.com.cn>
Message-ID: <951ee47f-e5c2-4648-80cb-105024f64394@e25g2000prg.googlegroups.com>
Source record: 27156

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3135. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 15:01:44 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <20fcce3b-5639-453b-90c1-5f4e5e51d098@v3g2000hsc.googlegroups.com>
Source record: 27157

On Mar 12, 9:50 am, mccleme...@gmail.com wrote:
> > If I might anticipate because the copper oxidizes and presents a high
> > resistance to current, I would point out that enamel is even more
> > resistive and the current isn't going to travel through it either (the
> > current will travel through the proverbial path of least resistance -
> > under the coating of resistive layer covering no matter what it is
> > composed of).
>
> (I am addressing more than one post with this response)
>
> Basically I want to use copperweld for durability. Its not a matter of
> saving money over hard drawn copper. I have no experience with (bare)
> copperweld, but I have read that if you get a nick in the copper
> layer, basically the steel will start rusting away at that point (very
> quickly). So I don't have problem using some enamel to protect it (and
> have done this in the past with hard drawn). I am using copperweld/
> insulated wire for my low band antennas - but anyone who has actually
> built a quad knows insulated wire is much too heavy, esp. when you are
> dealing with 5 bands.
>
> I have used hard drawn copper with enamel on it on 10 meters and never
> had a problem with a wire breaking in 10 years. So, I am not really
> sure if I need copperweld, but I have no expierence with larger quad
> loops. The goal is to have this thing be reliable.
>
> Regardless still - whatever I wire I use - even if it was bare #12
> solid copper wire, I still want to go through the exercise of getting
> the wire I actually used in sync with my model. So, I'd rather focus
> the conversation on that topic.
>
> With respect to manually tuning the quad (reflector) after its up,
> yes, that seems to be the conventional wisdom. How practical and
> possible is that for me? Mine will sit on 72' US Tower crankup/tilt
> over - short of renting some huge bucket/boom, I can't see myself
> manually tuning it when its up. The best I will do is take some type
> of field measurements and see if it displays anything close to the
> pattern NEC2 predicts - or better yet, just see if I am happy with it
> as is. I did not have to make any adjustments to the monoband yagi
> that went right from NEC2 to the tower, so, I am hoping for the same
> good fortune.
>
> -Scott, WU2X

Scott, you are introducing sharp corners to your new antenna so NEC
will stray from accuracy.
Art

3136. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 15:22:24 UTC
From: mcclements@gmail.com
Message-ID: <15e16bc3-a440-4a0c-840c-1a76737c2279@13g2000hsb.googlegroups.com>
Source record: 27158

On Mar 12, 11:01 am, Art Unwin <ArthurUn...@gmail.com> wrote:
> Scott, you are introducing sharp corners to your new antenna so NEC
> will stray from accuracy.

Is NEC4 better in this regard?

Here is the NEC2 reported performance of my current design. Its a 24 foot boom, with 5 bands. 4 elements on 15-10 and 3 elements on 20-17. Optimization is for F/R around mid-band and bandwidth (under 2.5:1 at edges).

http://remote.wu2x.com:8888/WU2X/

Click each <band>.html file to see the graphs on each band. The non-active driven elements are shorted.

Here is the stock Cubex 4 element quad, which is 4 elements on all bands (on a 24' boom).

http://remote.wu2x.com:8888/Cubex/

-Scott, WU2X

3137. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 16:58:52 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <2253005c-3564-4a13-bb99-790ed25793df@x30g2000hsd.googlegroups.com>
Source record: 27159

On Mar 12, 10:22 am, mccleme...@gmail.com wrote:
> On Mar 12, 11:01 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>
> > Scott, you are introducing sharp corners to your new antenna so NEC
> > will stray from accuracy.
>
> Is NEC4 better in this regard?
>
> Here is the NEC2 reported performance of my current design. Its a 24
> foot boom, with 5 bands. 4 elements on 15-10 and 3 elements on 20-17.
> Optimization is for F/R around mid-band and bandwidth (under 2.5:1 at
> edges).
>
> http://remote.wu2x.com:8888/WU2X/
>
> Click each <band>.html file to see the graphs on each band. The non-
> active driven elements are shorted.
>
> Here is the stock Cubex 4 element quad, which is 4 elements on all
> bands (on a 24' boom).
>
> http://remote.wu2x.com:8888/Cubex/
>
> -Scott, WU2X

I would suggest that you check with what Cebik says about it.
At the same time you are also now dealing with vertcal polarisation
which also has a lot of characteristics that are different from planar
yagis where the elements are not in equilibrrium as compared to a quad
design.
One can discharge corona where the other doesn't soto use the same
calculations
for designs that behave differently raises a lot of questions besides
the sharp corners.
Niether of the programs are perfect but better than shooting in the
dark.
Art

3138. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 18:30:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mo7gt31a1oaltv8sbj90sqvnbcqm0vn412@4ax.com>
Source record: 27160

On Wed, 12 Mar 2008 07:50:08 -0700 (PDT), mcclements@gmail.com wrote:

>With respect to manually tuning the quad (reflector) after its up,
>yes, that seems to be the conventional wisdom. How practical and
>possible is that for me? Mine will sit on 72' US Tower crankup/tilt
>over - short of renting some huge bucket/boom, I can't see myself
>manually tuning it when its up. The best I will do is take some type
>of field measurements and see if it displays anything close to the
>pattern NEC2 predicts - or better yet, just see if I am happy with it
>as is. I did not have to make any adjustments to the monoband yagi
>that went right from NEC2 to the tower, so, I am hoping for the same
>good fortune.

Hi Scott,

For tuning, one established technique is to get it up high enough off the ground, pointed up, so that it is not affected by ground too much, but still accessible by a ladder.

As for checking actual performance, note that in all practicality you lack the means to measure the full 3 dimensional performance. Further, even monitoring out 10 miles still puts you below the horizon, and for HF that is barely more than a correlative, as nearly every NEC tool shows performance above the horizon when it comes to the radiation lobe characteristics. Otherwise you would need a helicopter....

You can measure against beacons, but now you toss in the variable of propagation and you would have to marry the NEC output to WINCAP and perform several dozen tests each day over the course of a month or two. IF YOU ARE TALKING PRECISION AND ACCURACY.

On the other hand, you've already validated your testing, modeling, and performance to your efforts for one band - Trust your tools and data to be able to extrapolate it.

73's
Richard Clark, KB7QHC

3139. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 18:55:35 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fr98v7$b3s$1@news.jpl.nasa.gov>
Source record: 27162

Richard Clark wrote:
> On Tue, 11 Mar 2008 16:00:11 +0000, Ian Jackson
> <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote:
>
>
>>>>Even at 1GHz, I don't believe that you would get as much as 2dB of loss
>>>>even if you joined two pieces of coax by stripping the ends with a knife,
>>>>twisting the conductors together, and wrapping them in scotch tape.
>>>>--
>>>>Ian
>
>
>>>It is surprisingly easy to get significant loss at 1GHz and above, 2dB would
>>>be very easy to achieve even when using what appears to be a 'good'
>>>connection.
>>>
>>>regards
>>>Jeff
>>>
>>
> Hi All,
>
> Anyone can do it wrong (come up with 2dB loss), but we would have a
> great more deal traffic here if doing it wrong was that common.
>
> I have measured attenuation of near everything from DC to 12GHz at the
> standards bench and RG58 with BNCs for a short run (2 to 3 meters)
> never presented any problems being wildly imagined here. At the
> worst, the connectors (note plural) "might" show 0.2dB mismatch loss -
> trivial.
>
> On the other hand, if Jeff is so sure of this 2dB figure, it should
> reveal itself in blisters to the fingers for even mild power (100W).
> Since this unequivocal evidence is so obviously missing from the
> records (or the testimony, as the case may be); then it is very
> apparently one of those "someone heard from someone else about their
> brother's friend's boss who had a customer who made this claim."
>
> 73's
> Richard Clark, KB7QHC

I've encountered (defective or broken) SMA hardware that has remarkably
high *apparent* loss. Typically, internal cracks or voids. I had a
batch of Pasternack right angle M-F elbows that had losses that were all

over the place at 1 GHz sorts of frequencies. I'm pretty sure that internally, there was something not connected, or a spring loaded something that wasn't making contact.

In this case, the connector wasn't actually lossy, but more of an extreme mismatch, and when hooked up with a 50 ohm signal generator on one side and a 50 ohm power meter on the other, it looked like loss. Actually, it was reflecting the power back to the source.

In this scenario, with 100W, your fingers wouldn't have gotten burned (but the signal generator would probably shut down with reverse power warnings)

3140. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 19:27:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tgbkko5n0jk53@corp.supernews.com>
Source record: 27163

mcclements@gmail.com wrote:
> On Mar 12, 11:01 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>> Scott, you are introducing sharp corners to your new antenna so NEC
>> will stray from accuracy.
>
> Is NEC4 better in this regard?
>

Neither NEC-2 nor NEC-4 has any problem in this regard. Art's statement
is incorrect as quoted.

Roy Lewallen, W7EL

3141. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 19:35:59 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <dm9gt3dsetltkonfmj78gdmfma1lcpak38@4ax.com>
Source record: 27161

On Wed, 12 Mar 2008 08:36:12 -0000, "Jeff" <jeff@local.host> wrote:

>So please don't denigrate other people's comment without asking about the
>facts.

Hi Jeff,

Well, in fact, facts were preciously few and generalities were liberally asserted. I read facts attesting to "significant loss" and indicated that it should be attended by heat where in my experience (and as the head of an RF metrology lab) these connector issues far more commonly exhibit mismatch loss (and I chose my words with care) not "significant loss." Bird Wattmeter connectors suffer from this very problem and I have outlined that in the past.

Bob asked about receive properties and RG6 where BNC or N applications would be typically found for operation above 150 MHz. My response with respect to cables (plural) of a short length and terminated with on-par connectors (plural) indicate that loss (insertion loss both as dissipative and mismatch) is principally invested in the cable, not the connector. RCA or F or PL types are not taken seriously in the real world - but they would work suitably for receive. My personal limitation to 2 or 3 meter lengths were for jumpers application. My personal limitation to 1GHz for BNC was for leakage issues, not loss. BNCs/TNCs are rated to 4GHz and N higher to 12GHz. Bob can then research cable which has far more specification available on the web. Abstracting a one-off problem with a barrel connector into general cautions about issues of dielectric quality brings to mind that one data point does not denote a trend. An SMA/RG6 combination is not one that springs automatically to mind; neither does an SMA/50 foot line (presumably RG174 - even though I would do it in spite of demurring it as a solution).

For 50 feet, and considering the receiver and the service, and the link budget, none of this probably matters (not even 2dB). If this is for EME, then yes, it matters a lot. Bob didn't indicate EME.

73's
Richard Clark, KB7QHC

3142. Re: Attenuation Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 21:10:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <l0hgt35vcaujolrs07h0ng8h09t0n6ugh7@4ax.com>
Source record: 27164

On Wed, 12 Mar 2008 11:55:35 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
wrote:

>I've encountered (defective or broken) SMA hardware that has remarkably
>high *apparent* loss.

Hi Jim,

Modifiers abound, and such an abundance generally suggest there are
problems of understanding. Roy and I have already written to that
matter.

Returning to poor connectors, the cables that I gathered for jumpers
at the RF bench were selected, naturally. We had plenty to choose
from, but there were always poor performers for any of a number of
reasons we didn't care to investigate, simply because we tossed the
losers. Insertion loss was never a problem as long as it was
constant. The losers did not present a constant insertion loss which
could have been attributal to connector quality (or construction
quality); but some times there seemed to be the suggestion of
triboelectric effect (cable bending not associated with straining the
connector). Anyway, the cables were tossed without too much regard
for why - we had better things to do (the in shelves never seem to
empty).

73's
Richard Clark, KB7QHC

3143. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 21:18:59 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <6f0d0a71-961b-46f1-ac12-8473da7f3bc4@13g2000hsb.googlegroups.com>
Source record: 27165

On Mar 12, 2:27 pm, Roy Lewallen <w...@eznec.com> wrote:
> mccleme...@gmail.com wrote:
> > On Mar 12, 11:01 am, Art Unwin <ArthurUn...@gmail.com> wrote:
> >> Scott, you are introducing sharp corners to your new antenna so NEC
> >> will stray from accuracy.
>
> > Is NEC4 better in this regard?
>
> Neither NEC-2 nor NEC-4 has any problem in this regard. Art's statement
> is incorrect as quoted.
>
> Roy Lewallen, W7EL

That really is good news. Capacitive coupling between close spaced
wires,
progressive change in capacitive coupling to ground from a
verticle ,or wires
at different spacings and closeness must be a devil to calculate tho I
suppose you can also
insert fudge factors for alignment from impirical results which I
presume is the reason
for program modifications despite the inflexibility to change of
Maxwells laws.
Well you highlight one of the answers the gentleman was asking for so
a forthcoming
complete answer from you should give him closure on this subject
Art.

3144. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-12 23:13:09 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fr9o25$2f1$1@news.jpl.nasa.gov>
Source record: 27166

Art Unwin wrote:
> On Mar 12, 2:27 pm, Roy Lewallen <w...@eznec.com> wrote:
>
>>mccleme...@gmail.com wrote:
>>
>>>On Mar 12, 11:01 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>>>
>>>>Scott, you are introducing sharp corners to your new antenna so NEC
>>>>will stray from accuracy.
>>
>>>Is NEC4 better in this regard?
>>
>>Neither NEC-2 nor NEC-4 has any problem in this regard. Art's statement
>>is incorrect as quoted.
>>
>>Roy Lewallen, W7EL
>
>
> That really is good news. Capacitive coupling between close spaced
> wires,
> progressive change in capacitive coupling to ground from a
> verticle ,or wires
> at different spacings and closeness must be a devil to calculate

tedious, but not complex. Like all Finite Element approaches, you basically break the problem up into little tiny chunks and rigorously apply basic laws of physics. Charge is charge.

The challenge is not in the theory of operation, but in the practical implementation.

There's also the practical implementation detail of taking a high level description of something and turning it into many, many smaller pieces. (For instance, turning an arbitrary 3-d shape into lots of little plane triangles or quadrilaterals). You want a small number of pieces so the computational work is less (many of these techniques have "work" that goes as the cube of the number of pieces, so going from 10 segments to 100 segments takes 1000 times as much computation), but also you want the pieces small enough that they approximate the original continuous curve to an adequate level of accuracy (the calculus problem)

As you make the chunks smaller, round off errors and numerical precision become a bigger issue (e.g. on a computer with finite precision, summing a million millionths might not equal one). So even if you have a 1000 processor Beowulf cluster, it might not help.

tho I
> suppose you can also
> insert fudge factors for alignment from impirical results which I
> presume is the reason
> for program modifications despite the inflexibility to change of
> Maxwells laws.

No fudge factors in NEC. What changes there are between versions do
things like:

handle insulated wires, or wires embedded in a medium other than free
space. If you accept the constraint of uninsulated wires in a vacuum,
you can simplify the equations, which takes less computation (i.e. you
don't have to take epsilonr or sigma into account). Since air is pretty
close to a vacuum, and most people build antennas out of uninsulated
wires, the first version of NEC did the easy case.

better approximations of the charge distribution on the segment from a
numerical analysis standpoint. i.e. rather than using sin(x) for values
of x near pi/2, where small changes in x result in very small changes in
sin(x), you use 1-cos(x). You could have also just used a zillion
digit sin calculation, but that gets back to the computational
efficiency thing.

More accurate calculations of the interaction between chunks. NEC
essentially calculates the coupling between every possible pair of
segments in your model. Calculating coupling between two segments some
distance apart assuming the segment is very much smaller in diameter
than the spacing and where they are parallel is fairly straightforward.
Calculating coupling between two conductors of diameter d, separated
by a distance close to d, with them at an angle, is a bit tougher. (a
lot of it is back to the issue of precision of trig functions)

Easier ways to define a model. NEC4 includes a function to enter a wire
with a catenary curve. For NEC2, you'd have to do that outside, and
then enter the wire as a series of smaller wires.

There's a readily available paper out there that explains all the
improvements from NEC2 to the later versions, and how they were
experimentally validated.

{https://e-reports-ext.llnl.gov/pdf/210389.pdf}

> Well you highlight one of the answers the gentleman was asking for so
> a forthcoming
> complete answer from you should give him closure on this subject
> Art.

Here's the reference to the paper by Burke:
Title: Recent advances to NEC (Numerical Electromagnetics Code):
Applications and validation
Authors: Burke, G. J.
Affiliation: Lawrence Livermore National Lab., CA.
Journal: Presented at the Conference on Modern Antenna Design Using

Computers and Measurement Application To Antenna Problems of Military Interest, Ankara, Turkey, 19-20 Oct. 1989
Publication Date: 03/1989
Category: Communications and Radar
Origin: STI
NASA/STI Keywords:
ANTENNA DESIGN, COMPUTER AIDED DESIGN, COMPUTER PROGRAMS, ELECTROMAGNETISM, MATHEMATICAL MODELS, ELECTRICAL INSULATION, INTEGRAL EQUATIONS, WIRING
Bibliographic Code:
1989STIN...9011917B

Abstract

Capabilities of the antenna modeling code NEC are reviewed and results are presented to illustrate typical applications. Recent developments are discussed that will improve accuracy in modeling electrically small antennas, stepped-radius wires and junctions of tightly coupled wires, and also a new capability for modeling insulated wires in air or earth is described. These advances will be included in a future release of NEC, while for now the results serve to illustrate limitations of the present code. NEC results are compared with independent analytical and numerical solutions and measurements to validate the model for wires near ground and for insulated wires.

3145. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 00:34:47 UTC
From: Tom Horne <hornetd@veriqrmzon.net>
Message-ID: <HE_Bj.8100$HA3.54@trnddc02>
Source record: 27167

Dale Parfitt wrote:
> <mcclements@gmail.com> wrote in message
> news:d63b0a7e-77c5-46d7-a11d-6a58a3935ad8@n77g2000hse.googlegroups.com...
>> Hi,
>>
>> So I've spent months, rather years, carefully designing a new 5 band
>> cubical quad for myself. I've always known that I would use #12 solid
>> copper wire (not stranded), so that is what I used when running NEC2
>> to optimize this touchy antenna design (over millions of iterations).
>>
>> Well, real world things are starting to happen. For wire, I've decided
>> what I would like to use is an enameled coated copperweld wire. I'll
>> buy the plain copperweld wire and coat it myself.
>>
> I think I would spend the extra money and buy copper wire. One nick in your
> coating and the copper surface and the wire will disappear. If you must use
> copperweld, try The Wireman or The RF Connection for copperweld that has a
> high density black polyethylene jacket.
>
> I would hate to spend all the time to design and build a quad and then have
> the wire be the weakest link.
>
> Dale W4OP
>
>

Dale
He already said he didn't want to use insulated wire because of the
weight of the insulation.
--
Tom Horne

"This alternating current stuff is just a fad. It is much too dangerous
for general use." Thomas Alva Edison

3146. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 00:43:39 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <7a86518a-fbd7-46dd-9e46-177b498568a5@x41g2000hsb.googlegroups.com>
Source record: 27168

On Mar 12, 6:13 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Art Unwin wrote:
> > On Mar 12, 2:27 pm, Roy Lewallen <w...@eznec.com> wrote:
>
> >>mccleme...@gmail.com wrote:
>
> >>>On Mar 12, 11:01 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>
> >>>>Scott, you are introducing sharp corners to your new antenna so NEC
> >>>>will stray from accuracy.
>
> >>>Is NEC4 better in this regard?
>
> >>Neither NEC-2 nor NEC-4 has any problem in this regard. Art's statement
> >>is incorrect as quoted.
>
> >>Roy Lewallen, W7EL
>
> > That really is good news. Capacitive coupling between close spaced
> > wires,
> > progressive change in capacitive coupling to ground from a
> > verticle ,or wires
> > at different spacings and closeness must be a devil to calculate
>
> tedious, but not complex. Like all Finite Element approaches, you
> basically break the problem up into little tiny chunks and rigorously
> apply basic laws of physics. Charge is charge.
>
> The challenge is not in the theory of operation, but in the practical
> implementation.
>
> There's also the practical implementation detail of taking a high level
> description of something and turning it into many, many smaller pieces.
> (For instance, turning an arbitrary 3-d shape into lots of little plane
> triangles or quadrilaterals). You want a small number of pieces so the
> computational work is less (many of these techniques have "work" that
> goes as the cube of the number of pieces, so going from 10 segments to
> 100 segments takes 1000 times as much computation), but also you want
> the pieces small enough that they approximate the original continuous
> curve to an adequate level of accuracy (the calculus problem)
>
> As you make the chunks smaller, round off errors and numerical precision
> become a bigger issue (e.g. on a computer with finite precision, summing
> a million millionths might not equal one). So even if you have a 1000

> processor Beowulf cluster, it might not help.
>
> tho I
>
> > suppose you can also
> > insert fudge factors for alignment from impirical results which I
> > presume is the reason
> > for program modifications despite the inflexibility to change of
> > Maxwells laws.
>
> No fudge factors in NEC. What changes there are between versions do
> things like:
>
> handle insulated wires, or wires embedded in a medium other than free
> space. If you accept the constraint of uninsulated wires in a vacuum,
> you can simplify the equations, which takes less computation (i.e. you
> don't have to take epsilonr or sigma into account). Since air is pretty
> close to a vacuum, and most people build antennas out of uninsulated
> wires, the first version of NEC did the easy case.
>
> better approximations of the charge distribution on the segment from a
> numerical analysis standpoint. i.e. rather than using sin(x) for values
> of x near pi/2, where small changes in x result in very small changes in
> sin(x), you use 1-cos(x). You could have also just used a zillion
> digit sin calculation, but that gets back to the computational
> efficiency thing.
>
> More accurate calculations of the interaction between chunks. NEC
> essentially calculates the coupling between every possible pair of
> segments in your model. Calculating coupling between two segments some
> distance apart assuming the segment is very much smaller in diameter
> than the spacing and where they are parallel is fairly straightforward.
> Calculating coupling between two conductors of diameter d, separated
> by a distance close to d, with them at an angle, is a bit tougher. (a
> lot of it is back to the issue of precision of trig functions)
>
> Easier ways to define a model. NEC4 includes a function to enter a wire
> with a catenary curve. For NEC2, you'd have to do that outside, and
> then enter the wire as a series of smaller wires.
>
> There's a readily available paper out there that explains all the
> improvements from NEC2 to the later versions, and how they were
> experimentally validated.
>
> {https://e-reports-ext.llnl.gov/pdf/210389.pdf}
>
> > Well you highlight one of the answers the gentleman was asking for so
> > a forthcoming
> > complete answer from you should give him closure on this subject
> > Art.

>
> Here's the reference to the paper by Burke:
> Title: Recent advances to NEC (Numerical Electromagnetics Code):
> Applications and validation
> Authors: Burke, G. J.
> Affiliation: Lawrence Livermore National Lab., CA.
> Journal: Presented at the Conference on Modern Antenna Design Using
> Computers and Measurement Application To Antenna Problems of Military
> Interest, Ankara, Turkey, 19-20 Oct. 1989
> Publication Date: 03/1989
> Category: Communications and Radar
> Origin: STI
> NASA/STI Keywords:
> ANTENNA DESIGN, COMPUTER AIDED DESIGN, COMPUTER PROGRAMS, ELECTROMAGNETISM,
> MATHEMATICAL MODELS, ELECTRICAL INSULATION, INTEGRAL EQUATIONS, WIRING
> Bibliographic Code:
> 1989STIN...9011917B
>
> Abstract
>
> Capabilities of the antenna modeling code NEC are reviewed and results are
> presented to illustrate typical applications. Recent developments are
> discussed that will improve accuracy in modeling electrically small
> antennas, stepped-radius wires and junctions of tightly coupled wires, and
> also a new capability for modeling insulated wires in air or earth is
> described. These advances will be included in a future release of NEC,
> while for now the results serve to illustrate limitations of the present
> code. NEC results are compared with independent analytical and numerical
> solutions and measurements to validate the model for wires near ground and
> for insulated wires.

Jim, that was a comprehensive answer for the gen tleman. Probably more
information
that he can deal with.Seems like it is quite easy to have a yagi
behave when using NEC2
but I still hear stories of the diffuculty of tuning them after
following the nec2 instructions.
Never had a quad before so I am really out in left field on that one
Regards
Art

3147. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 01:22:43 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <JaudnZRozp5-HEXanZ2dnUVZ_sTinZ2d@comcast.com>
Source record: 27169

On Wed, 12 Mar 2008 07:42:54 -0700, Art Unwin wrote:

>> But unless there is something new going on - and I don't buy claims of
>> newfangled physics without proofs - especially physics that need to
>> include apparent ability of comprehension on my part, it is another
>> radiating feed line antenna, and not much more.
>>
>> -73 de Mike N3LI -
>
> On a more serious note,
> you consistently refer to heating problems or
> feed line radiation. Will you be good enough to explain what creates
> these functions and why you can thus refer to them as my problems? To
> put things in order.

You might have me mixed up with someone else, Art. I have commented on feedline radiation in this context, but my only posts about heating problems was with that antenna produced by the U of Delaware in which the initial press release touted that the original antenna was so efficient that it burnt up when 100 watts was applied. Subsequently removed from later text. I don't think that many people would believe that an antenna that melts is radiating efficiently. Otherwise I only predict that your feedline likely will radiate, not that it will heat.

> My antenna does not require a ground system
> Electrical WL is alwaysa WL or more in length. Measurements at the
> antenna are devoid of reactance at the point of resonance
> Measurements at the transmitter is the same. Movement away from
> resonance supplies reactance. Conformance with Maxwells laws are adhered
> to. Now all these facts have been stated many times before, yet you
> repeat your views so the actions that create feedline radiation and
> antenna melting problems are totally different to what I understand.

Sigh... would you like to point out the post(s) where I said all this?

Aside from that, I expect the feedline to radiate.

--
-73 de Mike N3LI -

3148. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 01:28:58 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <394b3b91-72df-46ff-8f3c-3073c0f2cf5c@n75g2000hsh.googlegroups.com>
Source record: 27170

On Mar 12, 8:22 pm, Mike Coslo <mco...@comcast.net> wrote:
> On Wed, 12 Mar 2008 07:42:54 -0700, Art Unwin wrote:
> >> But unless there is something new going on - and I don't buy claims of
> >> newfangled physics without proofs - especially physics that need to
> >> include apparent ability of comprehension on my part, it is another
> >> radiating feed line antenna, and not much more.
>
> >> -73 de Mike N3LI -
>
> > On a more serious note,
> > you consistently refer to heating problems or
> > feed line radiation. Will you be good enough to explain what creates
> > these functions and why you can thus refer to them as my problems? To
> > put things in order.
>
> You might have me mixed up with someone else, Art. I have commented on
> feedline radiation in this context, but my only posts about heating
> problems was with that antenna produced by the U of Delaware in which the
> initial press release touted that the original antenna was so efficient
> that it burnt up when 100 watts was applied. Subsequently removed from
> later text. I don't think that many people would believe that an antenna
> that melts is radiating efficiently. Otherwise I only predict that your
> feedline likely will radiate, not that it will heat.
>
> > My antenna does not require a ground system
> > Electrical WL is alwaysa WL or more in length. Measurements at the
> > antenna are devoid of reactance at the point of resonance
> > Measurements at the transmitter is the same. Movement away from
> > resonance supplies reactance. Conformance with Maxwells laws are adhered
> > to. Now all these facts have been stated many times before, yet you
> > repeat your views so the actions that create feedline radiation and
> > antenna melting problems are totally different to what I understand.
>
> Sigh... would you like to point out the post(s) where I said all this?
>
> Aside from that, I expect the feedline to radiate.
>
> --
> -73 de Mike N3LI -

Well I may have mixed people up. Sorry about that.
What will cause the feedline to radiate given the facts I have
provided?
Art

3149. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 01:49:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13th20mas6tgk6e@corp.supernews.com>
Source record: 27171

Jim Lux wrote:
>
> tedious, but not complex. Like all Finite Element approaches, you
> basically break the problem up into little tiny chunks and rigorously
> apply basic laws of physics. Charge is charge.
>
> The challenge is not in the theory of operation, but in the practical
> implementation.
>
> . . .

The last time I read any of Art's postings, he was using AO, which is MININEC-based. MININEC has a number of peculiarities due to choices made in its implementation, including problems with close spaced parallel wires, wires connected at an angle, and very simplified ground model. (See "MININEC: The Other Edge of the Sword", _QST_, Feb. 1991 for more detail.) NEC-2 and NEC-4 also have peculiarities due to their implementations, but ones which are different from MININEC and in some cases from each other.

Roy Lewallen, W7EL

3150. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 01:54:12 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47d88944$0$16663$4c368faf@roadrunner.com>
Source record: 27172

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:7a86518a-fbd7-46dd-9e46-177b498568a5@x41g2000hsb.googlegroups.com...

> but I still hear stories of the diffuculty of tuning them after
> following the nec2 instructions.

You are violating the 11 commandment: Thou shalt NEVER criticize NEC in rraa
lest the fleas of 1000 camels infest thy armpits.

3151. Re: Antenna suggestions for Vertex FTL-2011 mounted on Metal and fiberglass railroad equipment.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 02:28:23 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <s14ht35asvi0aa3b3ot10uo5r19v52j3p1@4ax.com>
Source record: 27173

On Thu, 28 Feb 2008 09:18:53 -0800 (PST), DVoeltz
<dvoeltz@pie.midco.net> wrote:

>I'm new to this and need your help in selecting which antennas to use
>on my railroad motorcars.
>

>The radio will be moved between two pieces of equipment. One cab has
>a flat metal roof and the other has a fiberglass cab. I would like an
>antenna that I can unscrew from the cab when traveling the equipment
>down the road on a trailer. The radio will be using the NARCOA
>licensed frequency of 151.625 MHz. I understand that this frequency is
>in what is known as the VHF-High Land Mobile Radio (LMR) Service band,
>and uses a modulation known as narrow band (5 kHz deviation) FM. I
>will be using a Vertex FLT 2011 40 Watt radio.
>
I don't know if it will help but for the ground plane part of the
antenna, you could use a pizza pan (16 inches should do it) and find
some way to mount it on the roof of either the metal or the fiberglass
roof.

>Thanks in advance.

you are welcome, but I thing I only gave you something to think and
build on.
>
>Dave in Pierre, SD
>
>To see pictures of what this equipment is, go to:
>
>www.narcoa.org

Cute, but I don't think I would want to 'meet' one of those
locomotives in your car ;(

Good luck
Buck
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3152. Question about Length of Antenna and Loading on Circuit

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 02:39:15 UTC
From: Archimedes <shelton.dcruz@gmail.com>
Message-ID: <d246b45c-5963-4a04-a790-d6a7e3d214e3@i29g2000prf.googlegroups.com>
Source record: 27174

Hi All

I have built the circuit on this website

http://braincambre500.freeservers.com/rss(1)(1)(1).htm

and the circuit diagram is here:

http://braincambre500.freeservers.com/rss%20schematic.gif

My question is this:

When I increase the antenna length to say 30cms, from the recommeded 6inchs or 15cms, the circuit does not work. Why is this? I know the antenna captures RF signals and this current is fed into the circuit, but I dont know why the circuit stops working - is it something to do with overloading the circuit ?

Thanks for your time
Shelton.

3153. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 04:52:13 UTC
From: richardharrison@webtv.net
Message-ID: <23750-47D8B2FD-76@storefull-3251.bay.webtv.net>
Source record: 27175

Scott, WU2X wrote:
"I`ve always known that I would use #12 solid copper wire (not stranded) so that is what I used when running NEC2 to optimize this touchy antenna design (over millions of iterations).

Bill Orr, W6SAI devotes Chapter 9 in "All About Cubical Quad Antennas" to tuning and adjustment.

John Devoldere, ON4UN wrote on page 13-52 of the 2nd edition of "Low-Band DXing:
"I designed the quad (for 80-m) with two quad loops of identical length (for a 2 mm OD conductor or no.12 wire).

William I.(Bill)Orr, W6SAI wrote on page 77 of the 2nd edition of "All About Cubical Quad Antennas";
'the individual gamma devices are made of #12 solid copper wire and a small variable capacitor."

Ed Laport pictures a Wind Turbine Company insulator used for two wire balanced lines on page 485 of "Radio Antenna engineering". These were used in WW-2 Signal Corps fhombic antenna kits to support the 600-ohm feedline. The wire was a cable made from (3) #12 twisted Copperweld wires. This same cable also was used to make the rhombic curtain which contained (3) of these Copperweld cables. I used many miles of this cable and never saw a breakage in normal use despite years of aging in all weather and the fact that we were using 100 KW in an antenna kit designed for 5 KW. We did redesign the stainless steel dissipation lines to withstand the high power. With new dissipation lines installed we got many letters of complaint from South America from listeners who had benefited from our bidirectional antennas which were intended to cover central Europe only. Too bad, but other broadcasters claimed the target area we were temporarily occupying in South America.

Best regards, Richard Harrison, KB5WZI

3154. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 07:22:01 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <frakmq$2on$1@aioe.org>
Source record: 27176

Art Unwin wrote:
> ...

Art:

It basically "burns" cancer cells in the same manner as it "burns" saltwater.

The cancer is first treated with a virus or biochemical laced with metal ions--the virus/chemical is picked so as ONLY the cancer cells will "pick-up" the materials AND metal ions. The RF is then applied to the area/areas and heating is caused MAINLY in the cancer cells. The cancer cells are killed with the heat with the surrounding areas not damaged or only damage to a recoverable degree.

I tell you, this method is diabolical and the cancer is so deserving of such ... HEHEHEHEHEEEEEEEEEEEEEEEEEEEEEE!

Regards,
JS

3155. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 07:27:15 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <fral0j$2on$2@aioe.org>
Source record: 27177

Jim Higgins wrote:

> What Kanzius (note proper spelling if you plan to Google him) has
> RE-discovered is the principle behind what's commonly called
> "induction (or inductively) coupled plasma" - ICP for short. The
> ...

Really? I didn't realize John would be so forth right in sharing all
this technical data with you.

If possible, please go on and include any other notes you made while
sharing Johns' ideas/equipment with him--I would be greatly interested
and it would vastly improve the credibility of your post in my mind.

Thanks in advance,
JS

3156. Re: Question about Length of Antenna and Loading on Circuit

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 12:20:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6_8Cj.27401$J41.11814@newssvr14.news.prodigy.net>
Source record: 27178

Archimedes wrote:
> When I increase the antenna length to say 30cms, from the recommeded
> 6inchs or 15cms, the circuit does not work.

The device is a super-regenerative receiver. The antenna
is part of the oscillator circuit. If you change the
length of the antenna, you change the resonant frequency
and/or possibly cause the oscillator to stop oscillating.
Either of those results will cause the receiver not to
work right.
--
73, Cecil http://www.w5dxp.com

3157. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 12:57:17 UTC
From: Jon Kåre Hellan <dev@null.com>
Message-ID: <1mzlt2hjde.fsf@persaunet.uninett.no>
Source record: 27179

Jim Lux <james.p.lux@jpl.nasa.gov> writes:

> Here's the reference to the paper by Burke:
> Title: Recent advances to NEC (Numerical Electromagnetics Code):
> Applications and validation
> Authors: Burke, G. J.
> Affiliation: Lawrence Livermore National Lab., CA.
> Journal: Presented at the Conference on Modern Antenna Design Using
> Computers and Measurement Application To Antenna Problems of Military
> Interest, Ankara, Turkey, 19-20 Oct. 1989
> Publication Date: 03/1989

Thanks.

Recent advances, dated 1989.

What's been going on during the 18 years since then? Polishing NEC-4,
and developing other codes for specialized purposes, presumably. I
know it's a big question, but maybe somebody here can tell us
something.

73
LA4RT Jon, Trondheim, Norway

3158. Broadband HF vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 14:07:21 UTC
From: ukmonitor@hotmail.com
Message-ID: <8f74c6c4-a545-40a4-bf6a-3804b3f4f73f@e25g2000prg.googlegroups.com>
Source record: 27180

Some interesting info starting to apear on the web

http://www.vk5zdb.com/cha250bxii.pdf

http://g8jnj.webs.com/cometcha250b.htm

http://g8jnj.webs.com/broadbandhfvertical.htm

http://chat.qth.com/viewtopic.php?t=4455

Is it worth constructing one ? How well would it work ?

UKM

3159. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 15:13:42 UTC
From: mcclements@gmail.com
Message-ID: <53f94ac9-d815-4159-b97b-04785f3f64d3@u72g2000hsf.googlegroups.com>
Source record: 27181

Ok, so I guess my subject line might have open the door to this discussion. So NEC4 can model insulated wire, which seems like it might be helpful for me. I see the price is down to 300$ now for US non-commercial. Now if I can just get them to answer my email. So what is included in the package - its not listed on the LLNL website. Does NEC4 use the same input deck as NEC2? I assume there are maybe some more input cards? What about the output?

I wrote my own cubical quad optimizing software that reads and writes to the NEC2 input deck and reads the output directly - hopefully it wouldn't require to much change to adapt it to use a NEC4 engine instead.

-Scott, WU2X

3160. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 16:01:12 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frbj48$d3j$1@news.jpl.nasa.gov>
Source record: 27184

Jon Kï¿½re Hellan wrote:
> Jim Lux <james.p.lux@jpl.nasa.gov> writes:
>
>
>>Here's the reference to the paper by Burke:
>>Title: Recent advances to NEC (Numerical Electromagnetics Code):
>>Applications and validation
>>Authors: Burke, G. J.
>>Affiliation: Lawrence Livermore National Lab., CA.
>>Journal: Presented at the Conference on Modern Antenna Design Using
>>Computers and Measurement Application To Antenna Problems of Military
>>Interest, Ankara, Turkey, 19-20 Oct. 1989
>>Publication Date: 03/1989
>
>
> Thanks.
>
> Recent advances, dated 1989.
>
> What's been going on during the 18 years since then? Polishing NEC-4,
> and developing other codes for specialized purposes, presumably. I
> know it's a big question, but maybe somebody here can tell us
> something.

That's about it. NEC-4 is sort of about as good as you can get for a
"wires" based MoM code. The math isn't changing, the implementation does
the math, etc.

These days, it's other modeling techniques that are being developed:
various FDTD schemes
various voxel based schemes
all manner of harmonic balance

lots of work on automatic meshing (i.e., take the mechanical solid model
from Unigraphics or Pro/E or Solidworks or whatever and turn it into
something that a EM code can process)

>
> 73
> LA4RT Jon, Trondheim, Norway

3161. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 16:01:54 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frbj5i$d3j$2@news.jpl.nasa.gov>
Source record: 27185

mcclements@gmail.com wrote:
> Ok, so I guess my subject line might have open the door to this
> discussion. So NEC4 can model insulated wire, which seems like it
> might be helpful for me. I see the price is down to 300$ now for US
> non-commercial. Now if I can just get them to answer my email. So what
> is included in the package - its not listed on the LLNL website. Does
> NEC4 use the same input deck as NEC2? I assume there are maybe some
> more input cards? What about the output?

yes.. input is basically the same as NEC2, as is the output. A few new
cards (catenaries, for instance)

>
> I wrote my own cubical quad optimizing software that reads and writes
> to the NEC2 input deck and reads the output directly - hopefully it
> wouldn't require to much change to adapt it to use a NEC4 engine
> instead.

Almost none.

>
> -Scott, WU2X
>
>
>
>
>

3162. Re: Broadband HF vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 16:50:37 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13timr0le6ufce2@corp.supernews.com>
Source record: 27182

A well known way to achieve wide bandwidth is to introduce loss. It appears that's what is being done here. Because many amateurs use much more power than necessary, quite a few people find that the reduced signal from the B & W resistance-loaded folded dipole is a worthwhile trade for increased bandwidth. I'm sure that some will be happy with a similar trade with this antenna. Whether you would or not is up to you.

I believe you'll find it to be very poor on the lower bands unless you have a very good ground system.

Roy Lewallen, W7EL

ukmonitor@hotmail.com wrote:
> Some interesting info starting to apear on the web
>
> http://www.vk5zdb.com/cha250bxii.pdf
>
> http://g8jnj.webs.com/cometcha250b.htm
>
> http://g8jnj.webs.com/broadbandhfvertical.htm
>
> http://chat.qth.com/viewtopic.php?t=4455
>
> Is it worth constructing one ? How well would it work ?
>
> UKM

3163. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 16:53:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tin0ljrpof914@corp.supernews.com>
Source record: 27183

With a few exceptions, NEC-4 and NEC-2 have the same input and output format. NEC-4 has some additional 'card' types, such as the one for wire insulation.

EZNEC programs can also model insulated wire. EZNEC+ is able to import the wire coordinates (GW 'cards') from an NEC file.

Roy Lewallen, W7EL

mcclements@gmail.com wrote:
> Ok, so I guess my subject line might have open the door to this
> discussion. So NEC4 can model insulated wire, which seems like it
> might be helpful for me. I see the price is down to 300$ now for US
> non-commercial. Now if I can just get them to answer my email. So what
> is included in the package - its not listed on the LLNL website. Does
> NEC4 use the same input deck as NEC2? I assume there are maybe some
> more input cards? What about the output?
>
> I wrote my own cubical quad optimizing software that reads and writes
> to the NEC2 input deck and reads the output directly - hopefully it
> wouldn't require to much change to adapt it to use a NEC4 engine
> instead.
>
> -Scott, WU2X
>
>
>
>
>

3164. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 17:46:27 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frbp9j$18v4$1@f04n12.cac.psu.edu>
Source record: 27186

Art Unwin wrote:
> On Mar 12, 8:22 pm, Mike Coslo <mco...@comcast.net> wrote:
>> On Wed, 12 Mar 2008 07:42:54 -0700, Art Unwin wrote:
>>>> But unless there is something new going on - and I don't buy claims of
>>>> newfangled physics without proofs - especially physics that need to
>>>> include apparent ability of comprehension on my part, it is another
>>>> radiating feed line antenna, and not much more.
>>>> -73 de Mike N3LI -
>>> On a more serious note,
>>> you consistently refer to heating problems or
>>> feed line radiation. Will you be good enough to explain what creates
>>> these functions and why you can thus refer to them as my problems? To
>>> put things in order.
>> You might have me mixed up with someone else, Art. I have commented on
>> feedline radiation in this context, but my only posts about heating
>> problems was with that antenna produced by the U of Delaware in which the
>> initial press release touted that the original antenna was so efficient
>> that it burnt up when 100 watts was applied. Subsequently removed from
>> later text. I don't think that many people would believe that an antenna
>> that melts is radiating efficiently. Otherwise I only predict that your
>> feedline likely will radiate, not that it will heat.
>>
>>> My antenna does not require a ground system
>>> Electrical WL is alwaysa WL or more in length. Measurements at the
>>> antenna are devoid of reactance at the point of resonance
>>> Measurements at the transmitter is the same. Movement away from
>>> resonance supplies reactance. Conformance with Maxwells laws are adhered
>>> to. Now all these facts have been stated many times before, yet you
>>> repeat your views so the actions that create feedline radiation and
>>> antenna melting problems are totally different to what I understand.
>> Sigh... would you like to point out the post(s) where I said all this?
>>
>> Aside from that, I expect the feedline to radiate.
>>
>> --
>> -73 de Mike N3LI -
>
> Well I may have mixed people up. Sorry about that.
> What will cause the feedline to radiate given the facts I have
> provided?

Remember that I do not have all the facts here. There are certainly
assertions. One of the "problems" with scientific inquiry is that it
helps to have an actual device to test. There appears to be one device

(two maybe? and it is in the hands of a snowbound ham in the great north. I really want to see the test results.

So I just don't know. I trust that you would expect no less from me. I have to go on the limited description, and that description sounds like the tuned circuit on the end of coax, giving rise to an unbalanced condition, from there, we can expect feedline radiation.

I understand your frustration Art. I have some of my own. I've asked twice now for a test protocol, and gotten nothing.

I'm hoping that a test protocol is not asking too much...

- 73 de Mike N3LI -

3165. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 19:09:51 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <3d99cd32-372e-475c-9358-3cd165ef1490@s50g2000hsb.googlegroups.com>
Source record: 27187
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 13, 7:40 pm, Tom Bruhns <k7...@msn.com> wrote:
> On Mar 13, 9:35 am, Artem <artem.b...@gmail.com> wrote:
>
> > Hello all.
> > I'm looking how to make narrow band active antenna for 7 or 10.1mzh.
> > My idea: I will use magnetic antenna with one loop. A one-turn loop of
> > 3.14m cupper pipe with diameter 15mm has 2.687uH. With Varicaps of
> > 192pf it will have resonance frequency of 7MHz. I will load this LC
> > tank directly to Gate one of dual gate
MOSFET.http://homepage.eircom.net/%257Eei9gq/rx_circ.htmlhttp://homepage.eir...
> > Should it work? I'll never seen such schematics. Usually people use
> > transformers. But I will place this transistor directly inside gap in
> > the loop of cupper pipe. The Gate of MOSFET will add only additional
> > 2pf to Varicaps and it will be very easy to compensate.
>
> > Sorry for English.
>
> You should probably download Reg Edwards' RJELoop3 and/or RJELoop1
> programs, which will tell you that the conductor loss resistance of
> your loop will be about ten times the radiation resistance,

How can calculate radiation resistance? resistance at 7MHz is
skin effect
http://circuitcalculator.com/wordpress/2007/06/18/skin-effect-calculator/
0.028mm.
for copper pipe 15mm in diameter:
octave:1> 15*3.14*0.028
ans = 1.3188mm^2

0.0155Om/m * 3.14m
ans = 0.048670 Om.
I think it's not bad.

> even counting the relatively low Q of varactor diodes, you'll have
> quite a bit of loss. On the other hand, even at 7MHz the atmospheric
> noise is so high that the loss won't be a significant problem so long
> as your amplifier is reasonably low noise. I'd recommend you use a
> C0G ceramic or possibly silvered-mica capacitor for most of the tuning
> capacitance, to keep the Q as high as possible (the losses as low as
> possible).

You recommended did hot use varistors? I'm thinking about
some kind
http://www.toshiba.com/taec/components2/Datasheet_Sync//273/1343.pdf

20 in parallel

Ultra low series resistance: rs = 0.20 Ω (typ.)

It will be 0.02 Om

Reg suggests the Q for use at 7MHz will be around 2000, so
> the bandwidth is quite narrow. If the Q really is that high (polish
> the copper and coat it with a protective varnish or paint...), the
> parallel resonant impedance will be up around 200k ohms, so it should
> be a decent match to your FET amplifier. Make sure any loading at the
> gap is well above 200k ohms resistive, to keep from introducing
> significant additional loss.

I'm thinking about soldering a box from FR4.

If you want the antenna to also do a
> good job rejecting locally generated E field noise, you need to keep
> things well balanced.

What you mean about balanced? Differential output? I should think
about it.

But at 7MHz, this is probably of marginal
> utility since any noise generators whose noise would be rejected would
> have to be very close to the antenna--within a few tens of meters.
> -- I've done similar amplifiers for multi-turn loops for LF, down
> around 150kHz, using a balanced JFET design directly across the loop,
> with good success.
>
> You can find the suggested programs athttp://www.zerobeat.net/G4FGQ/.
> And you likely would get some additional replies if you cross-post to
> rec.radio.amateur.antenna.

Thank.

Artem.

3166. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 19:13:02 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <f693f138-0735-4f79-a49c-defb94874a17@59g2000hsb.googlegroups.com>
Source record: 27188

On Mar 13, 12:46 pm, Michael Coslo <m...@psu.edu> wrote:
> Art Unwin wrote:
> > On Mar 12, 8:22 pm, Mike Coslo <mco...@comcast.net> wrote:
> >> On Wed, 12 Mar 2008 07:42:54 -0700, Art Unwin wrote:
> >>>> But unless there is something new going on - and I don't buy claims of
> >>>> newfangled physics without proofs - especially physics that need to
> >>>> include apparent ability of comprehension on my part, it is another
> >>>> radiating feed line antenna, and not much more.
> >>>> -73 de Mike N3LI -
> >>> On a more serious note,
> >>> you consistently refer to heating problems or
> >>> feed line radiation. Will you be good enough to explain what creates
> >>> these functions and why you can thus refer to them as my problems? To
> >>> put things in order.
> >> You might have me mixed up with someone else, Art. I have commented on
> >> feedline radiation in this context, but my only posts about heating
> >> problems was with that antenna produced by the U of Delaware in which the
> >> initial press release touted that the original antenna was so efficient
> >> that it burnt up when 100 watts was applied. Subsequently removed from
> >> later text. I don't think that many people would believe that an antenna
> >> that melts is radiating efficiently. Otherwise I only predict that your
> >> feedline likely will radiate, not that it will heat.
>
> >>> My antenna does not require a ground system
> >>> Electrical WL is alwaysa WL or more in length. Measurements at the
> >>> antenna are devoid of reactance at the point of resonance
> >>> Measurements at the transmitter is the same. Movement away from
> >>> resonance supplies reactance. Conformance with Maxwells laws are adhered
> >>> to. Now all these facts have been stated many times before, yet you
> >>> repeat your views so the actions that create feedline radiation and
> >>> antenna melting problems are totally different to what I understand.
> >> Sigh... would you like to point out the post(s) where I said all this?
>
> >> Aside from that, I expect the feedline to radiate.
>
> >> --
> >> -73 de Mike N3LI -
>
> > Well I may have mixed people up. Sorry about that.
> > What will cause the feedline to radiate given the facts I have
> > provided?
>
> Remember that I do not have all the facts here. There are certainly
> assertions. One of the "problems" with scientific inquiry is that it

> helps to have an actual device to test. There appears to be one device
> (two maybe? and it is in the hands of a snowbound ham in the great
> north. I really want to see the test results.
>
> So I just don't know. I trust that you would expect no less from me. I
> have to go on the limited description, and that description sounds like
> the tuned circuit on the end of coax, giving rise to an unbalanced
> condition, from there, we can expect feedline radiation.
>
> I understand your frustration Art. I have some of my own. I've asked
> twice now for a test protocol, and gotten nothing.
>
> I'm hoping that a test protocol is not asking too much...
>
> - 73 de Mike N3LI -

I don't think we have the right to ask him anything.
He volunteered to do it and I accepted
If he answered everything on this net it would start a lot of insults
again.
He has offered to do it for me not the group.
He can make any furthur descisions after that
So we must all be patient and let him do things how he wants after
which you can ask him anything
where he may chose to answer or not.
He has been an observer for a long while and has tried to curtail the
insults
that have gone around these past few years and contrary to others is
willing to pursue
anything that may profit ham radio and not retard it because of
dislike of change.
We are fortunate that there are people around that do not have to add
insults
to their expertise to get the ears and attention of fellow hams
He deserves our respect.
Art
Regard
Art

3167. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 19:16:09 UTC
From: artem.bond@gmail.com
Message-ID: <dc254e6d-c713-4ef4-a1dd-a65c1233addc@k13g2000hse.googlegroups.com>
Source record: 27189
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 13, 9:09 pm, Artem <artem.b...@gmail.com> wrote:
Sorry.

Hello all.
I'm looking how to make narrow band active antenna for 7 or 10.1mzh.
My idea: I will use magnetic antenna with one loop. A one-turn loop of
3.14m cupper pipe with diameter 15mm has 2.687uH. With Varicaps of
192pf it will have resonance frequency of 7MHz. I will load this LC
tank directly to Gate one of dual gate MOSFET.
http://homepage.eircom.net/%257Eei9gq/rx_circ.html
http://homepage.eircom.net/%257Eei9gq/mosifamp.GIF
Should it work? I'll never seen such schematics. Usually people use
transformers. But I will place this transistor directly inside gap in
the loop of cupper pipe. The Gate of MOSFET will add only additional
2pf to Varicaps and it will be very easy to compensate.

> Artem.

3168. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 19:44:52 UTC
From: Tom Bruhns <k7itm@msn.com>
Message-ID: <de9ddcbb-1c93-482f-830e-8be2037eba9d@f63g2000hsf.googlegroups.com>
Source record: 27190
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 13, 12:09 pm, Artem <artem.b...@gmail.com> wrote:
> On Mar 13, 7:40 pm, Tom Bruhns <k7...@msn.com> wrote:
>
>
>
> > On Mar 13, 9:35 am, Artem <artem.b...@gmail.com> wrote:
>
> > > Hello all.
> > > I'm looking how to make narrow band active antenna for 7 or 10.1mzh.
> > > My idea: I will use magnetic antenna with one loop. A one-turn loop of
> > > 3.14m cupper pipe with diameter 15mm has 2.687uH. With Varicaps of
> > > 192pf it will have resonance frequency of 7MHz. I will load this LC
> > > tank directly to Gate one of dual gate
MOSFET.http://homepage.eircom.net/%257Eei9gq/rx_circ.htmlhttp://homepage.eir...
> > > Should it work? I'll never seen such schematics. Usually people use
> > > transformers. But I will place this transistor directly inside gap in
> > > the loop of cupper pipe. The Gate of MOSFET will add only additional
> > > 2pf to Varicaps and it will be very easy to compensate.
>
> > > Sorry for English.
>
> > You should probably download Reg Edwards' RJELoop3 and/or RJELoop1
> > programs, which will tell you that the conductor loss resistance of
> > your loop will be about ten times the radiation resistance,
>
> How can calculate radiation resistance? resistance at 7MHz is
> skin effecthttp://circuitcalculator.com/wordpress/2007/06/18/skin-effect-calcula...
> 0.028mm.
> for copper pipe 15mm in diameter:
> octave:1> 15*3.14*0.028
> ans = 1.3188mm^2
>
> 0.0155Om/m * 3.14m
> ans = 0.048670 Om.
> I think it's not bad.

See http://personal.ee.surrey.ac.uk/Personal/D.Jefferies/antennexarticles/cloops.htm
for info on calculating the radiation resistance. I believe that will
be helpful. I assume Reg's RJELoop1.exe uses essentially the formula
you'll find there. For your loop, that program says inductance is
2.69uH, conductor loss resistance is 46.2 milliohms, and radiation
resistance is 5.7 milliohms. Although the conductor loss resistance
(essentialy the same as you calculated above is "not bad," you need to

consider it with relation to the very low radiation resistance. A current in the loop will dissipate far more power in the resistive loss than in the radiation resistance. You ideally will keep the loss resistance small compared with the radiation resistance, though for receiving (because of the very high level of atmospheric noise on HF and lower frequencies) it matters not nearly so much as for transmitting. When transmitting, you want your power to go into radio waves, not heat. When receiving you only need signal greater than noise, and it is relatively easy to make an amplifier with low enough noise figure that even an inefficient antenna will result in an amplifier output whose noise is dominated by the atmospheric noise received by the antenna.

>
> > even counting the relatively low Q of varactor diodes, you'll have
> > quite a bit of loss. On the other hand, even at 7MHz the atmospheric
> > noise is so high that the loss won't be a significant problem so long
> > as your amplifier is reasonably low noise. I'd recommend you use a
> > C0G ceramic or possibly silvered-mica capacitor for most of the tuning
> > capacitance, to keep the Q as high as possible (the losses as low as
> > possible).
>
> You recommended did hot use varistors? I'm thinking about
> some kindhttp://www.toshiba.com/taec/components2/Datasheet_Sync//273/1343.pdf
> 20 in parallel
> ---------------------------------------
> Ultra low series resistance: rs = 0.20 Ù (typ.)
> ---------------------------------------
> It will be 0.02 Om

So 0.02 ohms sounds like a small amount, but it's almost half as much as the resistance of the copper loop. This may not be a bad thing, because the Q is so high that the bandwidth will only be about 3.5kHz assuming a lossless capacitor, and with the added loss the Q will be lowered to perhaps 1400, allowing a slightly wider bandwidth. With so narrow a bandwidth you need to be concerned about the stability of the varicap diodes' capacitance. Still, I would think a very high Q fixed capacitor supplying most of the total capacitance would be a good thing. Use only enough varicap to cover the tuning range you want. So for example, with 2.69uH inductance, if you want to cover 7.00MHz to 7.30MHz, you need 192.2pF at the low end and 176.7pF at the high end, a range of a little less than 16pF. You should be able to do that easily with two of your suggested varicap diodes, perhaps a couple of fixed 82pF high Q caps, and a high Q trimmer such as a piston trimmer to trim the center of the range.
>
> > Reg suggests the Q for use at 7MHz will be around 2000, so
> > the bandwidth is quite narrow. If the Q really is that high (polish
> > the copper and coat it with a protective varnish or paint...), the
> > parallel resonant impedance will be up around 200k ohms, so it should
> > be a decent match to your FET amplifier. Make sure any loading at the

> > gap is well above 200k ohms resistive, to keep from introducing
> > significant additional loss.
>
> I'm thinking about soldering a box from FR4.
>
> If you want the antenna to also do a
>
> > good job rejecting locally generated E field noise, you need to keep
> > things well balanced.
>
> What you mean about balanced? Differential output? I should think
> about it.

It has more to do with the symmetry of the way the antenna is
mounted. You want to make sure that the capacitance to ground from
each side is as nearly the same as possible. You need to put the gap
in the loop (the feedpoint) either at the top or at the bottom of the
antenna, and for mounting it's often easier to put it at the top.
That way you can clamp onto the middle of the bottom of the loop to
mount to a pole... But if you have a balanced amplifier at the
bottom and bridge the gap symmetrically across the box that amplifier
is mounted in, it should also work well. I recommend to you the
discussion about small loop antennas in King, Mimno and Wing's
"Transmission Lines, Antennas and Waveguides."

>
> > But at 7MHz, this is probably of marginal
> > utility since any noise generators whose noise would be rejected would
> > have to be very close to the antenna--within a few tens of meters.
> > -- I've done similar amplifiers for multi-turn loops for LF, down
> > around 150kHz, using a balanced JFET design directly across the loop,
> > with good success.
>
> > You can find the suggested programs athttp://www.zerobeat.net/G4FGQ/.
> > And you likely would get some additional replies if you cross-post to
> > rec.radio.amateur.antenna.
>
> Thank.
>
> Artem.

Cheers,
Tom

3169. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 20:18:55 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <d05e344a-0be7-40fe-8b3f-d857a511b2c6@s12g2000prg.googlegroups.com>
Source record: 27191
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 13, 9:44 pm, Tom Bruhns <k7...@msn.com> wrote:
> On Mar 13, 12:09 pm, Artem <artem.b...@gmail.com> wrote:
>
>
>
> > On Mar 13, 7:40 pm, Tom Bruhns <k7...@msn.com> wrote:
>
> > > On Mar 13, 9:35 am, Artem <artem.b...@gmail.com> wrote:
>
> > > > Hello all.
> > > > I'm looking how to make narrow band active antenna for 7 or 10.1mzh.
> > > > My idea: I will use magnetic antenna with one loop. A one-turn loop of
> > > > 3.14m cupper pipe with diameter 15mm has 2.687uH. With Varicaps of
> > > > 192pf it will have resonance frequency of 7MHz. I will load this LC
> > > > tank directly to Gate one of dual gate
MOSFET.http://homepage.eircom.net/%257Eei9gq/rx_circ.htmlhttp://homepage.eir...
> > > > Should it work? I'll never seen such schematics. Usually people use
> > > > transformers. But I will place this transistor directly inside gap in
> > > > the loop of cupper pipe. The Gate of MOSFET will add only additional
> > > > 2pf to Varicaps and it will be very easy to compensate.
>
> > > > Sorry for English.
>
> > > You should probably download Reg Edwards' RJELoop3 and/or RJELoop1
> > > programs, which will tell you that the conductor loss resistance of
> > > your loop will be about ten times the radiation resistance,
>
> > How can calculate radiation resistance? resistance at 7MHz is
> > skin effecthttp://circuitcalculator.com/wordpress/2007/06/18/skin-effect-calcula...
> > 0.028mm.
> > for copper pipe 15mm in diameter:
> > octave:1> 15*3.14*0.028
> > ans = 1.3188mm^2
>
> > 0.0155Om/m * 3.14m
> > ans = 0.048670 Om.
> > I think it's not bad.
>
> Seehttp://personal.ee.surrey.ac.uk/Personal/D.Jefferies/antennexarticles...
> for info on calculating the radiation resistance. I believe that will
> be helpful.
Thank. I'll try to understand what that mean tomorrow.

I assume Reg's RJELoop1.exe uses essentially the formula
> you'll find there. For your loop, that program says inductance is
> 2.69uH, conductor loss resistance is 46.2 milliohms, and radiation
> resistance is 5.7 milliohms. Although the conductor loss resistance
> (essentialy the same as you calculated above is "not bad," you need to
> consider it with relation to the very low radiation resistance. A
> current in the loop will dissipate far more power in the resistive
> loss than in the radiation resistance. You ideally will keep the loss
> resistance small compared with the radiation resistance, though for
> receiving (because of the very high level of atmospheric noise on HF
> and lower frequencies) it matters not nearly so much as for
> transmitting. When transmitting, you want your power to go into radio
> waves, not heat.

No transmitted. Only received.

When receiving you only need signal greater than
> noise, and it is relatively easy to make an amplifier with low enough
> noise figure that even an inefficient antenna will result in an
> amplifier output whose noise is dominated by the atmospheric noise
> received by the antenna.

Is the BF981 will be good enough for this?

> > You recommended did hot use varistors? I'm thinking about
> > some kindhttp://www.toshiba.com/taec/components2/Datasheet_Sync//273/1343.pdf
> > 20 in parallel
> > ---------------------------------------
> > Ultra low series resistance: rs = 0.20 Ù (typ.)
> > ---------------------------------------
> > It will be 0.02 Om
>
> So 0.02 ohms sounds like a small amount, but it's almost half as much
> as the resistance of the copper loop. This may not be a bad thing,
> because the Q is so high that the bandwidth will only be about 3.5kHz
> assuming a lossless capacitor, and with the added loss the Q will be
> lowered to perhaps 1400, allowing a slightly wider bandwidth. With so

I'm interesting in QRSS receiving. So narrow bandwidth is very useful
because it will help suppress noise from PC with I will connect to
radio.

> narrow a bandwidth you need to be concerned about the stability of the
> varicap diodes' capacitance. Still, I would think a very high Q fixed
> capacitor supplying most of the total capacitance would be a good
> thing. Use only enough varicap to cover the tuning range you want.
> So for example, with 2.69uH inductance, if you want to cover 7.00MHz
> to 7.30MHz, you need 192.2pF at the low end and 176.7pF at the high
> end, a range of a little less than 16pF. You should be able to do
> that easily with two of your suggested varicap diodes, perhaps a
> couple of fixed 82pF high Q caps, and a high Q trimmer such as a
> piston trimmer to trim the center of the range.

Understand. Its uneasy to find high stable capacitor at this range.
But maybe I can find vacuum capacitors or something like this.

>
> > What you mean about balanced? Differential output? I should think
> > about it.
>
> It has more to do with the symmetry of the way the antenna is
> mounted. You want to make sure that the capacitance to ground from
> each side is as nearly the same as possible. You need to put the gap
> in the loop (the feedpoint) either at the top or at the bottom of the
> antenna, and for mounting it's often easier to put it at the top.

I think that gap at the bottom add more mechanical strength. And it
should be easy to connect coaxial cable.

> That way you can clamp onto the middle of the bottom of the loop to
> mount to a pole... But if you have a balanced amplifier at the
> bottom and bridge the gap symmetrically across the box that amplifier
> is mounted in, it should also work well.

It's mean two transistors ans transformer for connect this to the
cable.
Thank.

3170. Re: From NEC2 to the real world with accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 20:52:56 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frc478$1gau$1@f04n12.cac.psu.edu>
Source record: 27192

AI4QJ wrote:
> "Art Unwin" <ArthurUnwin@gmail.com> wrote in message
> news:7a86518a-fbd7-46dd-9e46-177b498568a5@x41g2000hsb.googlegroups.com...
>
>> but I still hear stories of the diffuculty of tuning them after
>> following the nec2 instructions.
>
> You are violating the 11 commandment: Thou shalt NEVER criticize NEC in rraa
> lest the fleas of 1000 camels infest thy armpits.

Been plenty of NEC2 commentary in here. NEC2 has it's limitations.
That's why NEC4 came along 8^)

- 73 de Mike N3LI -

3171. 30e RADIO FLEA MARKET in BEETSTERZWAAG on 31 May 2008

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 21:21:57 UTC
From: pa3esf@gmail.com
Message-ID: <a0e040fa-45f8-47a9-b075-51688fa5fe67@e23g2000prf.googlegroups.com>
Source record: 27193

30e RADIO FLEA MARKET in BEETSTERZWAAG on 31 May 2008

The radio flea market takes place to - 31 May 2008. Do you look for an exotic transistor kit or a super recipient, fixed and do manufacture kit...
or do meet of radio friends? Dan comes Saturday 31 May to the Friese radio market into Beetsterzwaag!

Many thousand visitors come each year from the entire Netherlands and Europe to this radio flea market spectacle, approx. 100 dealers, with most diverse articles, like transmitters, recievers, power supplies, antennas, software, hardware and literature.

Additionally of businessmen in the place also a flea market with many attraction organized for large and small. There are some sales desks free at the moment on the radio flea market, you can reserve by telephone & email, contact on to take with the executive committee. Down are these addresses.

How does one find after Beetsterzwaag? From direction Apeldoorn = > Zwolle = > Meppel = > Heerenveen = > Drachten, departure after Gorredijk Tijnje comes departure (28) Beetsterzwaag.

From direction Bremen = > Groningen = > Drachten = > Heerenveen, departure after Drachten Haven comes departure (28) Beetsterzwaag.

On 2mtr, 145,700 Digi Heerenveen can one to instruct leave themselves. Inlet is from 09:00 to 16:00 MESZ, into which Cafeteria one also boarded into this time.

This whole is organized of VERON FRIESE WOUDEN. Cordially Welcome in Friesland on the 30e FRM!

Look for more information at the site: www.frm.a63.org

Contact people, are:

Announce sales desks & Public relation:
Weit Lap, PA3ESF
Bouekers 40 9247 AR URETERP
Tel. 0031(0) 512 302702
E-mail : admin.frm@a63.org

3172. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 21:38:45 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <df31a022-94eb-4c0e-9a37-0eeea0c471f3@t54g2000hsg.googlegroups.com>
Source record: 27194
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 13, 1:18 pm, Artem <artem.b...@gmail.com> wrote:
... (snipping out a lot to keep this a reasonably length...)
>
> No transmitted. Only received.

I understand, but my point is that an antenna is reciprocal: there is the same percentage loss in the copper resistance whether receiving or transmitting.

...
>
> Is the BF981 will be good enough for this?

I would think almost any modern RF mosfet would be fine. You do not need very good noise figure for HF reception, even with an antenna with modest efficiency. Just make sure the amplifier input has high effective shunt resistance at the operating frequency-- greater than 200kohms--to preserve the high Q.
...
> Understand. Its uneasy to find high stable capacitor at this range.
> But maybe I can find vacuum capacitors or something like this.

It should not be that bad. C0G dielectric (also called NPO) capacitors have a _maximum_ temperature coefficient of 30ppm/C. The diameter of the loop itself, and therefore its inductance, will change with temperature in the same range, I believe. C0G capacitors, especially surface mount type, also have extremely low effective series resistance. I've found some C0G SMT caps that seem to have very close to zero temperature coefficient--it varies from lot to lot, apparently depending on the exact mix of the dielectric. What do you suppose the temperature coefficient of the capacitance of varactor diodes is? Note: 100ppm change in capacitance causes 50ppm change in resonant frequency. That's 350Hz at 7MHz. You probably wouldn't even notice that. It's only about 10 percent of the 3dB bandwidth of the antenna.

Cheers,
Tom

3173. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 23:02:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <joiCj.20552$0w.16232@newssvr27.news.prodigy.net>
Source record: 27195

Keith Dysart wrote:
> If the
> instantaneous power is not dissipated in the source resistor,
> then neither is the average of the instantaneous power.

Let's see what happens when we use that same logic with my
AC wall sockets:

If the instantaneous AC voltage at my QTH is ever
non-zero, then the average voltage cannot be zero.

Agree? Disagree?
--
73, Cecil http://www.w5dxp.com

3174. Re: Question about Length of Antenna and Loading on Circuit

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-13 23:04:12 UTC
From: Archimedes <shelton.dcruz@gmail.com>
Message-ID: <ab38df77-0843-4aa2-a0cb-171c3a736b14@d4g2000prg.googlegroups.com>
Source record: 27196

>
> The device is a super-regenerative receiver. The antenna
> is part of the oscillator circuit. If you change the
> length of the antenna, you change the resonant frequency
> and/or possibly cause the oscillator to stop oscillating.
> Either of those results will cause the receiver not to
> work right.
> --
> 73, Cecil http://www.w5dxp.com

Hi Cecil

Thankyou very much for explaining that to me - yes i didnt know that
as a superregen, the antenna becomes part of the resonant circuit!

Thanks!
Shelton.

3175. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 01:57:04 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c5bf4a16-3609-47ca-add1-efac5c4ea616@e6g2000prf.googlegroups.com>
Source record: 27197

On Mar 12, 9:49 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Actually, we have shown that that is not the case.
>
> If the reflected energy is not being dissipated in
> the source resistor, where does it go?

Good question.

> It is not
> dissipated in the load, by definition, and there is
> no other source of dissipation in the network besides
> the source resistor.

Not true. The voltage source also absorbs energy whenever
its voltage is positive but its current is negative.

> There are no reflections and
> no average interference to redistribute the reflected
> energy back toward the load. The reflected wave
> possesses energy and momentum which must be conserved.
> Do your reflected waves obey your every whim and just
> disappear and reappear as willed by you in violation
> of the conservation of energy principle?

It would be nice, but, unfortunately, no.

> > You might like to visit
> >http://keith.dysart.googlepages.com/radio6
> > for a graph that shows the actual power dissipated in the
> > source resistor along with the power in the reflected
> > wave. It can be visually seen that the power dissipated in
> > the source resistor has no relationship to the sum of the
> > reflected power and the power that would be dissipated in
> > the source resistor if there was no reflection.
>
> The difference in your energy levels is in the reactance.
> The reactance stores energy and delivers it later. Why
> are you having so much trouble with that age-old concept?

I have no trouble with the concept, but the exposition you
have offered is weak.

Show me the reactance and its power function of time such that
it stores and releases the energy at the correct time.

Otherwise... Just handwaving.

> The reflected energy that is not dissipated in the source
> resistor at time 't' is stored in the reactance and dissipated
> 90 degrees later. Until you choose to account for that time
> delay, your energy equations are not going to balance.

I see no reactance that performs this function.

But the actual answer is that it is the voltage source which is
absorbing the energy for part of the cycle and delivering the extra
energy to the source resistor for the other part of the cycle.

So again, it is not the energy in the reflected wave that accounts
for the change of the dissipation in the source resistor.

...Keith

3176. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 01:57:13 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <6d513406-d02a-47aa-8b9f-1ac0c999486c@s8g2000prg.googlegroups.com>
Source record: 27198

On Mar 12, 10:17 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Actually, we have shown that that is not the case. If the
> > instantaneous power is not dissipated in the source resistor,
> > then neither is the average of the instantaneous power. And
> > we have shown that the instantaneous power is not dissipated
> > in the source resistor.
>
> Actually, we have shown exactly the opposite. Maybe a
> different example will help. We are going to replace
> the 23.5+j44.1 ohm load with a *phase-locked* signal
> generator equipped with a circulator and 50 ohm load.
> The signal generator supplies 18 watts back to the
> original source and dissipates all of the incident
> power of 50 watts, i.e. all of the forward power from
> the original source. The original source sees
> *exactly the same 23.5+j44.1 ohms as a load*.
>
> Rs Vg
> +----/\/\/-----+----------------+--2---1-----+
> | 50 ohm \ / |
> | 3 18 watt
> Vs 1 wavelength | Signal
> 100v RMS 50 ohm line 50 Generator
> | ohms |
> | | |
> +--------------+----------------+----+-------+
> gnd gnd
>
> The conditions at the original source are identical.
> The circulator load resistor is dissipating the 50 watts
> of forward power supplied by the original source. The
> signal generator is sourcing 18 watts.
>
> Your instantaneous power equations have not changed.
> Are you going to try to tell us that the 18 watts from
> the signal generator are not dissipated in Rs???? If
> not in Rs, where????

As you note, the conditions at the original source have
not changed, so, since the energy in the reflected wave
was not dissipated in the source resistor in the original
circuit, it is not dissipated there in the revised circuit.

So, no changes at the original source.

Let us look at the circulator. Assuming a circulator
which does not accumulate energy, the net energy into
circulator must be zero.

0 = Pcp1(t) + Pcp2(t) + Pcp3(t)

Let us start with the 18 W producing 0 output.

Let us turn on the original source
Pg(t) = 50 + 50cos(2wt)

After one cycle, the wave reaches the circulator,
so at the circulator
Pcp1(t) = 0
Pcp2(t) = 50 + 50cos(2wt)
Pcp3(t) = -50 - 50cos(2wt)
which satisifies
0 = Pcp1(t) + Pcp2(t) + Pcp3(t)

Now turn on the right signal generator set to produce
18 W. Using the phase relationship needed to reproduce
the conditions from the original experiment
Pcp1(t) = 18 - 18cos(2wt)

This alters the voltage and current conditions at Port 2
of the circulator so that power delivered to this port is
now
Pcp2(t) = 32 + 68cos(wt)

and the power into Port 3 remains
Pcp3(t) = -50 - 50cos(2wt)

which still satisfies
0 = Pcp1(t) + Pcp2(t) + Pcp3(t)

Since turning on the 18 W generator altered the conditions
at Port 2, this change in line state propagates back towards
the original source and this state change reaches point Vg
Pg.before(t) = 50 + 50cos(2wt)
changes to
Pg(t) = 32 + 68cos(2wt)
which is good since this is the same power extracted from
the line at the circulator.

The changed load conditions at Vg alter the dissipation in
the source resistor as well as changing the power delivered
by the voltage source.

So where is the 18 Watts from the generator dissipated?
This is obvious. When the 18 W generator was turned on,
the power delivered to the circulator from the line (i.e.
the power delivered into Port 2, Pcp2(t) above) dropped,
but the power dissipated in the 50 ohm resistor stayed
the same. So it must be that the 18 W from Port 1 is now
being used to heat the resistor attached to Port 3.

...Keith

3177. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 01:57:20 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <12104636-65fc-4adc-8d63-c8c1d57130e9@i7g2000prf.googlegroups.com>
Source record: 27199

On Mar 13, 7:02 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > If the
> > instantaneous power is not dissipated in the source resistor,
> > then neither is the average of the instantaneous power.
>
> Let's see what happens when we use that same logic with my
> AC wall sockets:
>
> If the instantaneous AC voltage at my QTH is ever
> non-zero, then the average voltage cannot be zero.
>
> Agree? Disagree?

Agree with what? That it is the same logic? You will have to
expand on your question.

Regardless, the average voltage is zero.

...Keith

3178. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 02:28:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vplCj.20576$0w.14208@newssvr27.news.prodigy.net>
Source record: 27200

Keith Dysart wrote:
> Show me the reactance and its power function of time such that
> it stores and releases the energy at the correct time.

You've got to be kidding - EE201.

> I see no reactance that performs this function.

Have you no ideal what the +j44.1 ohms means?
--
73, Cecil http://www.w5dxp.com

3179. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 02:30:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <erlCj.20578$0w.13112@newssvr27.news.prodigy.net>
Source record: 27201

Keith Dysart wrote:
> So where is the 18 Watts from the generator dissipated?
> This is obvious. When the 18 W generator was turned on,
> the power delivered to the circulator from the line (i.e.
> the power delivered into Port 2, Pcp2(t) above) dropped,
> but the power dissipated in the 50 ohm resistor stayed
> the same. So it must be that the 18 W from Port 1 is now
> being used to heat the resistor attached to Port 3.

Keith, I'm going to now leave you alone with your new
religion. Good grief!
--
73, Cecil http://www.w5dxp.com

3180. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 02:33:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <bulCj.2952$6H.1486@newssvr22.news.prodigy.net>
Source record: 27202

Keith Dysart wrote:
> Regardless, the average voltage is zero.

No, that contradicts what you said before which
was, if it ever wasn't zero instantaneously, it
cannot possibly average out to zero.

I'm sorry, Keith. Your assertions have gotten
just as irrational as my 96 year old aunt's.
--
73, Cecil http://www.w5dxp.com

3181. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 03:22:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_bmCj.2969$6H.595@newssvr22.news.prodigy.net>
Source record: 27203

Keith Dysart wrote:
> Show me the reactance and its power function of time such that
> it stores and releases the energy at the correct time.
> I see no reactance that performs this function.

Huh??? When the instantaneous source voltage is zero,
the instantaneous source power is zero. Yet, there
is instantaneous power dissipation in every resistive
element in a circuit with a reactive component. Where
do you reckon that power is coming from? It is apparent
that you are now just trying to pull my leg with your
ridiculous assertions. That's too bad. For awhile, I
thought you were serious.
--
73, Cecil http://www.w5dxp.com

3182. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 03:48:34 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <mAmCj.16450$xq2.10668@newssvr21.news.prodigy.net>
Source record: 27204

Keith Dysart wrote:
> On Mar 13, 7:02 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> Keith Dysart wrote:
>>> If the
>>> instantaneous power is not dissipated in the source resistor,
>>> then neither is the average of the instantaneous power.
>> Let's see what happens when we use that same logic with my
>> AC wall sockets:
>>
>> If the instantaneous AC voltage at my QTH is ever
>> non-zero, then the average voltage cannot be zero.
>>
>> Agree? Disagree?
>
> Agree with what? That it is the same logic? You will have to
> expand on your question.
>
> Regardless, the average voltage is zero.
>
> ...Keith

Keith;

Put your fingers across the bare wires and then tell me the results, if
you are still around that is. ;^)

Dave N

3183. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 04:49:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <dtnCj.1003$LV5.924@newssvr19.news.prodigy.net>
Source record: 27205

Keith Dysart wrote:
> So where is the 18 Watts from the generator dissipated?
> This is obvious. When the 18 W generator was turned on,
> the power delivered to the circulator from the line (i.e.
> the power delivered into Port 2, Pcp2(t) above) dropped,

Sorry Keith, that's not the way circulators work. The
power incident upon port 2 does NOT change when the
18w generator is turned on.
--
73, Cecil http://www.w5dxp.com

3184. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 04:59:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <5DnCj.22894$R84.11909@newssvr25.news.prodigy.net>
Source record: 27206

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> The difference in your energy levels is in the reactance.
>> The reactance stores energy and delivers it later. Why
>> are you having so much trouble with that age-old concept?
>
> Show me the reactance and its power function of time such that
> it stores and releases the energy at the correct time.

I don't have time to teach you AC circuit theory which
you really do need to understand. The power function
for the reactance is of the same form as it is for a
resistance, i.e. V(t)*I(t). I haven't seen you include
that reactance power function anywhere. When you do,
you will find your "missing" power and balance your
energy equations.

>> The reflected energy that is not dissipated in the source
>> resistor at time 't' is stored in the reactance and dissipated
>> 90 degrees later. Until you choose to account for that time
>> delay, your energy equations are not going to balance.
>
> I see no reactance that performs this function.

Please go take an AC circuits course. That's exactly
what a reactance does. The source terminals see +j44.1
ohms of reactance looking into the transmission line.
--
73, Cecil http://www.w5dxp.com

3185. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 09:58:51 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <123f2550-00e1-4585-88c0-14ddf06cee96@e6g2000prf.googlegroups.com>
Source record: 27207

On Mar 13, 10:33 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Regardless, the average voltage is zero.
>
> No, that contradicts what you said before which
> was, if it ever wasn't zero instantaneously, it
> cannot possibly average out to zero.

If you could kindly point out which of my previous
writings you misinterpreted to be say this, I will
gladly correct your misunderstanding.

...Keith

3186. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 10:00:34 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <5d98a18f-b0d7-4dae-966d-3ee7de2d48c5@i12g2000prf.googlegroups.com>
Source record: 27208

On Mar 13, 11:48 pm, "David G. Nagel" <nagel.da...@sbcglobal.net>
wrote:
> Keith Dysart wrote:
> > On Mar 13, 7:02 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> >> Keith Dysart wrote:
> >>> If the
> >>> instantaneous power is not dissipated in the source resistor,
> >>> then neither is the average of the instantaneous power.
> >> Let's see what happens when we use that same logic with my
> >> AC wall sockets:
>
> >> If the instantaneous AC voltage at my QTH is ever
> >> non-zero, then the average voltage cannot be zero.
>
> >> Agree? Disagree?
>
> > Agree with what? That it is the same logic? You will have to
> > expand on your question.
>
> > Regardless, the average voltage is zero.
>
> > ...Keith
>
> Keith;
>
> Put your fingers across the bare wires and then tell me the results, if
> you are still around that is. ;^)
>
> Dave N- Hide quoted text -
>
> - Show quoted text -

The average of a sine wave is 0. Positive half the time,
negative half the time, sums to 0.

Perhaps you are confusing average with root-mean-square?

...Keith

3187. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 10:07:40 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <919731ba-4b5d-406e-a568-3ee2b377b234@s12g2000prg.googlegroups.com>
Source record: 27209

On Mar 13, 10:28 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Show me the reactance and its power function of time such that
> > it stores and releases the energy at the correct time.
>
> You've got to be kidding - EE201.
>
> > I see no reactance that performs this function.
>
> Have you no ideal what the +j44.1 ohms means?

This is the third opportunity you have had to clearly
identify the component and show that its energy flow
as a function of time is exactly that needed to store
and release the energy in the reflected wave.

Since you have not done so, I conclude that you can't
find it either.

...Keith

3188. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 10:17:19 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <583a5ea6-3d62-4dce-87c9-b47a49208116@d21g2000prf.googlegroups.com>
Source record: 27210

On Mar 13, 11:22 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > > Show me the reactance and its power function of time such that
> > > it stores and releases the energy at the correct time.
> > > I see no reactance that performs this function.
>
> > Huh??? When the instantaneous source voltage is zero,
> > the instantaneous source power is zero.

So true.
> Yet, there
> is instantaneous power dissipation in every resistive
> element in a circuit with a reactive component. Where
> do you reckon that power is coming from?

Fairly obviously, the equations I have presented show
that it comes from energy stored in the line.

Recall that
Pg(t) = 32 + 68cos(2wt)

For some of the cycle, energy flow is from the line
towards the resistor and the voltage source.

But this is not the energy in the reflected wave
which has the function
Pr.g(t) = -18 + cos(2wt)
and only flows in one direction, towards the source.
And it is this supposed energy that can not be
accounted for in the dissipation of the source
resistor.

> It is apparent
> that you are now just trying to pull my leg with your
> ridiculous assertions. That's too bad. For awhile, I
> thought you were serious.

Completely serious, I am.

...Keith

3189. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 10:20:38 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <be29f748-8777-4548-9fa3-cb8a84fe9d53@e10g2000prf.googlegroups.com>
Source record: 27211

On Mar 14, 12:49 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > So where is the 18 Watts from the generator dissipated?
> > This is obvious. When the 18 W generator was turned on,
> > the power delivered to the circulator from the line (i.e.
> > the power delivered into Port 2, Pcp2(t) above) dropped,
>
> Sorry Keith, that's not the way circulators work. The
> power incident upon port 2 does NOT change when the
> 18w generator is turned on.

You need to read more carefully. I made no statement about
the energy incident upon port 2, only about the energy
flowing into port 2, which, after the 18 W generator is
turned on, is
Pcp2(t) = 32 + 68cos(wt)

...Keith

3190. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 10:24:43 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <d254a17b-ce5a-4c5c-9e61-b4d8da0c4333@s37g2000prg.googlegroups.com>
Source record: 27212

On Mar 14, 12:59 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
> >> The difference in your energy levels is in the reactance.
> >> The reactance stores energy and delivers it later. Why
> >> are you having so much trouble with that age-old concept?
>
> > Show me the reactance and its power function of time such that
> > it stores and releases the energy at the correct time.
>
> I don't have time to teach you AC circuit theory which
> you really do need to understand. The power function
> for the reactance is of the same form as it is for a
> resistance, i.e. V(t)*I(t). I haven't seen you include
> that reactance power function anywhere. When you do,
> you will find your "missing" power and balance your
> energy equations.

A fourth opportunity missed.

> >> The reflected energy that is not dissipated in the source
> >> resistor at time 't' is stored in the reactance and dissipated
> >> 90 degrees later. Until you choose to account for that time
> >> delay, your energy equations are not going to balance.
>
> > I see no reactance that performs this function.
>
> Please go take an AC circuits course. That's exactly
> what a reactance does. The source terminals see +j44.1
> ohms of reactance looking into the transmission line.

Yes indeed. The reactance looking into the line. But
the reflected wave is not going into the line so this
is not a reactance that it sees.

Recall, the whole premise of forward and reverse waves
is that they see the line characteristic impedance, in
these examples, a real 50 ohms with no reactance.

...Keith

3191. proposal for new group!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 11:50:59 UTC
From: Dave <noone@nowhere.com>
Message-ID: <DEtCj.13174$iD2.9957@trndny09>
Source record: 27213

i propose we create a rec.radio.amateur.no.useful.solutions group.
r.r.a.n.u.s. kind of has a nice ring to it.

3192. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 11:53:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lHtCj.32143$J41.2238@newssvr14.news.prodigy.net>
Source record: 27214

Keith Dysart wrote:
> Yes indeed. The reactance looking into the line. But
> the reflected wave is not going into the line so this
> is not a reactance that it sees.

Part of the reflected wave energy is going into the
reactance along with part of the forward wave energy
when the instantaneous interference between those two
waves is destructive at the source resistor. Anything
else would violate the conservation of energy principle.
That same energy is returned to the source resistor 90
degrees later as constructive interference. Your missing
energy is in the reactance. Now you know why Hecht said
instantaneous power is "of limited utility". Where the
instantaneous energy is at any point in time is a
complicated mess that you haven't solved.

It is the average power that really matters and all the
average reflected power is dissipated in the source
resistor when the reflected wave is 90 degrees out of
phase with the forward wave but under no other conditions.

Instantaneous power is completely irrelevant to the
average power data posted on my web page. You are
saying that because my pickup has black tires, it
is not a white pickup. My article stands as written
with a disclaimer about any importance being attached
to instantaneous power.

Walter Maxwell didn't deal with instantaneous powers.
Steven Best didn't deal with instantaneous powers.
To the best of my knowledge, the instantaneous power
straw man was invented by you for the purpose of
muddying the waters.

Your instantaneous power analysis is also incorrect
because you completely ignored the instantaneous
power in the system reactance. You have completely
ignored the role of destructive and constructive
interference. You cannot possibly understand where
the energy goes until you understand interference.

We have reached the end of the discussion road and
hashed it to death. If we are still in disagreement,
we are just going to have to agree to disagree.
--

73, Cecil http://www.w5dxp.com

3193. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 11:59:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8MtCj.1064$qT6.1058@nlpi070.nbdc.sbc.com>
Source record: 27215

Keith Dysart wrote:
> This is the third opportunity you have had to clearly
> identify the component and show that its energy flow
> as a function of time is exactly that needed to store
> and release the energy in the reflected wave.

P(t).reactance = [V(t).reactance][I(t).reactance]

Where is that term in your equations?
--
73, Cecil http://www.w5dxp.com

3194. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 12:08:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <PUtCj.32146$J41.16586@newssvr14.news.prodigy.net>
Source record: 27216

Keith Dysart wrote:
> You need to read more carefully. I made no statement about
> the energy incident upon port 2, only about the energy
> flowing into port 2, which, after the 18 W generator is
> turned on, is
> Pcp2(t) = 32 + 68cos(wt)

If we have two pipes each carrying one gallon of water
per minute in opposite directions, we can agree that
the net flow of water is zero. But you are taking it
one step farther and arguing there is no water flowing
at all which is a ridiculous assertion. I'm going to
ignore this latest obvious diversion.
--
73, Cecil http://www.w5dxp.com

3195. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 13:02:57 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frdt21$13k4$1@f04n12.cac.psu.edu>
Source record: 27217

Art Unwin wrote:

>> I understand your frustration Art. I have some of my own. I've asked
>> twice now for a test protocol, and gotten nothing.
>>
>> I'm hoping that a test protocol is not asking too much...
>>
>> - 73 de Mike N3LI -
>
> I don't think we have the right to ask him anything.

Of course we have a "right". And I've gotten my answer. Asking for a test protocol for your antenna tests is too much to ask. Okay. So I'll sit back and patiently watch for any results proffered.

But you might want to think about it. What if some parameter in the test process is such that will make the antenna test out as performing poorly when in fact it does not.

> He volunteered to do it and I accepted If he answered everything
> on this net it would start a lot of insults
> again.

With all due respect, what is this with the insults? I've worked with engineers of all stripes, and the conversations can get pretty animated at times. I've been told my ideas are stupid on occasion, and have told others the same. Then we have a cup of coffee, and get back to work. Engineering of any sort should not the province of people with easily bruised egos.

>He has offered to do it for me not the group.

Perhaps it would have been better to tell us about it after the tests were finished, then no one would be insulting anyone. The you could present the test results and the rest of us could eat crow.

- 73 de Mike N3LI -

3196. Re: proposal for new group!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 13:19:50 UTC
From: ltdoc@yahoo.com
Message-ID: <20a2bb05-f112-4c9f-967a-ac2a0eef0106@k13g2000hse.googlegroups.com>
Source record: 27218

...only if I can be a charter member!
- 'Doc

3197. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 15:05:52 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <60530f4d-d384-45ce-ad7a-ea627020974b@x30g2000hsd.googlegroups.com>
Source record: 27219

On Mar 14, 8:02 am, Michael Coslo <m...@psu.edu> wrote:
> Art Unwin wrote:
> >> I understand your frustration Art. I have some of my own. I've asked
> >> twice now for a test protocol, and gotten nothing.
>
> >> I'm hoping that a test protocol is not asking too much...
>
> >> - 73 de Mike N3LI -
>
> > I don't think we have the right to ask him anything.
>
> Of course we have a "right". And I've gotten my answer. Asking for a
> test protocol for your antenna tests is too much to ask. Okay. So I'll
> sit back and patiently watch for any results proffered.
>
> But you might want to think about it. What if some parameter in the test
> process is such that will make the antenna test out as performing poorly
> when in fact it does not.
>
> > He volunteered to do it and I accepted If he answered everything
> > on this net it would start a lot of insults
> > again.
>
> With all due respect, what is this with the insults? I've worked with
> engineers of all stripes, and the conversations can get pretty animated
> at times. I've been told my ideas are stupid on occasion, and have told
> others the same. Then we have a cup of coffee, and get back to work.
> Engineering of any sort should not the province of people with easily
> bruised egos.
>
> >He has offered to do it for me not the group.
>
> Perhaps it would have been better to tell us about it after the tests
> were finished, then no one would be insulting anyone. The you could
> present the test results and the rest of us could eat crow.
>
> - 73 de Mike N3LI -

I think you have now chosen the correct path because a lot of people
are going to have to eat crow.
I am not sure if you are computor savvy but it appears that those who
do
are holding back on sharing the tipped radiator thing.
Can you do it for those who are not computor savvy because at the

moment nobody has stepped forward
and helped them determine if it is correct or not. At the moment
Richard has stated it is a myth
but he is not computor savvy so his remark is off the cuff. So again
amateurs are being left in
the dark by the computor savvy people of this newsgroup who refuse to
help.
What gives?
regards
Art

3198. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 15:09:42 UTC
From: richardharrison@webtv.net
Message-ID: <28490-47DA9536-319@storefull-3254.bay.webtv.net>
Source record: 27221

Mike, N3LI wrote:
"There appears to be one device (two maybe?) and it is in the hands of a snowbound ham in the great north."

Build a small scale model that can be tested indoors and report its characteristics. Antennas are scaleable.

Best regards, Richard Harrison, KB5WZI

3199. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 16:06:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <fh8lt31k8i46j43lo1lqan8p8u5cqvi9ku@4ax.com>
Source record: 27220

On Fri, 14 Mar 2008 09:02:57 -0400, Michael Coslo <mjc5@psu.edu>
wrote:

>Perhaps it would have been better to tell us about it after the tests
>were finished, then no one would be insulting anyone. The you could
>present the test results and the rest of us could eat crow.

Hi Mike,

A case of "Life is short, eat desert first."

73's
Richard Clark, KB7QHC

3200. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 16:19:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2AxCj.21757$0w.10060@newssvr27.news.prodigy.net>
Source record: 27223

Richard Harrison wrote:
> Build a small scale model that can be tested indoors and report its
> characteristics. Antennas are scaleable.

For an antenna like this, would the wire diameter
also have to be scaled?
--
73, Cecil http://www.w5dxp.com

3201. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 16:20:22 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <303fcdcd-485c-48d4-a7ff-94b43dd58404@b64g2000hsa.googlegroups.com>
Source record: 27224
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 13, 11:38 pm, K7ITM <k7...@msn.com> wrote:
>
> It should not be that bad. C0G dielectric (also called NPO)
> capacitors have a _maximum_ temperature coefficient of 30ppm/C. The
> diameter of the loop itself, and therefore its inductance, will change
> with temperature in the same range, I believe. C0G capacitors,
> especially surface mount type, also have extremely low effective
> series resistance. I've found some C0G SMT caps that seem to have
> very close to zero temperature coefficient--it varies from lot to lot,
> apparently depending on the exact mix of the dielectric. What do you
> suppose the temperature coefficient of the capacitance of varactor
> diodes is? Note: 100ppm change in capacitance causes 50ppm change in
> resonant frequency. That's 350Hz at 7MHz. You probably wouldn't even
> notice that. It's only about 10 percent of the 3dB bandwidth of the
> antenna.

Thank you very much. About about transformer (for connect coaxial
cable). I can use any ferrite with small permeabilty?

3202. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 16:51:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5ialt3tn15hn67pqdoq2ccj600dolneil8@4ax.com>
Source record: 27222

On Fri, 14 Mar 2008 10:09:42 -0500, richardharrison@webtv.net (Richard Harrison) wrote:

>Mike, N3LI wrote:
>"There appears to be one device (two maybe?) and it is in the hands of a
>snowbound ham in the great north."
>
>Build a small scale model that can be tested indoors and report its
>characteristics. Antennas are scaleable.

Hi Richard,

A scaled model of an antenna the size of two shoe boxes? Gives new meaning to the toys kids used to collect called "matchboxes."

If going from 160M to half a meter was achievable, then going to a couple of centimeters should be a walk in the park. If scaling down 300 times was achievable and saw great boon, then scaling down another tenth must bring even more efficiency gains.

Why was this option left on the table when it results in a vastly simpler construction and a superior product?

Something tells me NO ONE knows why.

73's
Richard Clark, KB7QHC

3203. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 18:10:47 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fref37$150i$1@f04n12.cac.psu.edu>
Source record: 27226

Richard Clark wrote:
> On Mon, 10 Mar 2008 19:39:28 -0700 (PDT), Art Unwin
> <ArthurUnwin@gmail.com> wrote:
>
>> Water is diamagnetic thus it needs to oxidise
>
> There are always interesting claims made in this forum. This one is
> an amusing declaration that rusty Hydrogen must get oxidised (sic).
>
> It is consistent, however, with the feeble science of the topic.

Water does not burn because it is already burnt.

Guess I'm kinda saying the same thing, eh?

- 73 de Mike N3LI -

3204. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 18:57:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tlikummle42e5@corp.supernews.com>
Source record: 27227

Richard Harrison wrote:
>
> Build a small scale model that can be tested indoors and report its
> characteristics. Antennas are scaleable.

That's more easily said than done. One of the critical characteristics of a small antenna is loss. And to correctly replicate loss in a scaled antenna requires scaling the conductivity of the conductors as the square root of the frequency. To scale to a higher frequency requires that the conductivity be better than the original. Unless the original is made from lead and the scale factor moderate, this wouldn't be possible.

Roy Lewallen, W7EL

3205. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 19:02:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3oilt3pijnohc7vsuk04bf5pfcoj6ti9mf@4ax.com>
Source record: 27225

On Mon, 10 Mar 2008 19:39:28 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>Water is diamagnetic thus it needs to oxidise

There are always interesting claims made in this forum. This one is
an amusing declaration that rusty Hydrogen must get oxidised (sic).

It is consistent, however, with the feeble science of the topic.

73's
Richard Clark, KB7QHC

3206. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 20:06:58 UTC
From: Tom Bruhns <k7itm@msn.com>
Message-ID: <8468c19d-ff23-4483-ae67-87f2ec4c876d@s19g2000prg.googlegroups.com>
Source record: 27229
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 14, 9:20 am, Artem <artem.b...@gmail.com> wrote:
> On Mar 13, 11:38 pm, K7ITM <k7...@msn.com> wrote:
>
>
>
> > It should not be that bad. C0G dielectric (also called NPO)
> > capacitors have a _maximum_ temperature coefficient of 30ppm/C. The
> > diameter of the loop itself, and therefore its inductance, will change
> > with temperature in the same range, I believe. C0G capacitors,
> > especially surface mount type, also have extremely low effective
> > series resistance. I've found some C0G SMT caps that seem to have
> > very close to zero temperature coefficient--it varies from lot to lot,
> > apparently depending on the exact mix of the dielectric. What do you
> > suppose the temperature coefficient of the capacitance of varactor
> > diodes is? Note: 100ppm change in capacitance causes 50ppm change in
> > resonant frequency. That's 350Hz at 7MHz. You probably wouldn't even
> > notice that. It's only about 10 percent of the 3dB bandwidth of the
> > antenna.
>
> Thank you very much. About about transformer (for connect coaxial
> cable). I can use any ferrite with small permeabilty?

Yes, that should be fine. I suppose a transformer will be a
convenient way to better match the FET amplifier output to a
transmission line. The transformer can be physically quite small.
MiniCircuits and some others (CoilCraft; M/A-Com; ...) sell
appropriate transformers, and of course they are easy to make if you
have an appropriate core. Also you can feed power to the amplifier
through the transmission line. The transformer secondary can return
to a bypass capacitor instead of directly to ground, and your DC feed
appears across that capacitor. The circuit I used for 150kHz loops
used a shunt voltage regulator in the amplifier, and by feeding the
other end with a controlled variable current, I could avoid problems
with uncertain voltage drop in the line plus connectors, and also use
the current through the regulator to control the tuning voltage on the
varicap diodes. So everything was done through the transmission line.

Cheers,
Tom

3207. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 20:27:36 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <gqnlt3p1obtpea61d46pk38gls5h3uli5d@4ax.com>
Source record: 27228

On Fri, 14 Mar 2008 14:10:47 -0400, Michael Coslo <mjc5@psu.edu>
wrote:

>Richard Clark wrote:
>> On Mon, 10 Mar 2008 19:39:28 -0700 (PDT), Art Unwin
>> <ArthurUnwin@gmail.com> wrote:
>>
>>> Water is diamagnetic thus it needs to oxidise
>>
>> There are always interesting claims made in this forum. This one is
>> an amusing declaration that rusty Hydrogen must get oxidised (sic).
>>
>> It is consistent, however, with the feeble science of the topic.
>
>
> Water does not burn because it is already burnt.
>
>
> Guess I'm kinda saying the same thing, eh?

In the words of that great scientific analyst, Neil Young:
"Rust never sleeps."

73's
Richard Clark, KB7QHC

3208. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 20:52:41 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <47dc9bb0-f530-488b-a705-18af230772fb@s8g2000prg.googlegroups.com>
Source record: 27230

On Mar 14, 8:08 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > You need to read more carefully. I made no statement about
> > the energy incident upon port 2, only about the energy
> > flowing into port 2, which, after the 18 W generator is
> > turned on, is
> > Pcp2(t) = 32 + 68cos(wt)
>
> If we have two pipes each carrying one gallon of water
> per minute in opposite directions, we can agree that
> the net flow of water is zero. But you are taking it
> one step farther and arguing there is no water flowing
> at all which is a ridiculous assertion. I'm going to
> ignore this latest obvious diversion.
> --
> 73, Cecil http://www.w5dxp.com

If there were two transmission lines, then I could see
why you might want two pipes in an analogy.

But since there is only one transmission line, an
analogy with one pipe makes more sense.

So you want to argue that when there is one pipe
with no water flowing, what is really happening is
that one gallon per minute is simultaneously flowing
in each direction. In the same pipe. At the same
time. I don't buy it.

You should think a bit more about
Pcp2(t) = 32 + 68cos(wt)

It is the time rate of energy flow into the port.
It can trivially be computed from the voltage and
current functions at that port.

It sums with the energy flows into the other ports
appropriately to satisfy the principle of conservation
of energy.

All is well.

And there is only one pipe for each port.

...Keith

3209. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 20:52:56 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <29802005-87db-459e-a7a2-0671f54533a5@e25g2000prg.googlegroups.com>
Source record: 27231

On Mar 14, 7:59 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > This is the third opportunity you have had to clearly
> > identify the component and show that its energy flow
> > as a function of time is exactly that needed to store
> > and release the energy in the reflected wave.
>
> P(t).reactance = [V(t).reactance][I(t).reactance]
>
> Where is that term in your equations?

It is unnecessary. But if you believe me wrong, show me
where it goes, compute the values, and show how it
accounts for the energy that is not dissipated in the
source resistor.

...Keith

3210. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 20:53:08 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c65be296-1735-4692-90ca-648a69d9840c@s37g2000prg.googlegroups.com>
Source record: 27232

On Mar 14, 7:53 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Yes indeed. The reactance looking into the line. But
> > the reflected wave is not going into the line so this
> > is not a reactance that it sees.
>
> Part of the reflected wave energy is going into the
> reactance along with part of the forward wave energy
> when the instantaneous interference between those two
> waves is destructive at the source resistor. Anything
> else would violate the conservation of energy principle.
> That same energy is returned to the source resistor 90
> degrees later as constructive interference. Your missing
> energy is in the reactance.

Still handwaving. Show the expressions and the numbers
that make it balance. Otherwise, just handwaving.

> Now you know why Hecht said
> instantaneous power is "of limited utility".

I've known that for quite a while. It is because it is so
difficult to measure with optical signals.

> Where the
> instantaneous energy is at any point in time is a
> complicated mess that you haven't solved.

Not at all. Follow the spreadsheet for a full accounting.

> It is the average power that really matters and all the
> average reflected power is dissipated in the source
> resistor when the reflected wave is 90 degrees out of
> phase with the forward wave but under no other conditions.

Averaging is a mathetical operation applied to a function.
In this case a function of time.

The underlying function of time conveys more information than
does just the average which is why just dealing with averages
can lead one astray.

> Instantaneous power is completely irrelevant to the
> average power data posted on my web page.

Well, it does disprove some of your claims so I can see
why you like to belittle it.

> You are
> saying that because my pickup has black tires, it
> is not a white pickup. My article stands as written
> with a disclaimer about any importance being attached
> to instantaneous power.

See previous comment.

> Walter Maxwell didn't deal with instantaneous powers.
> Steven Best didn't deal with instantaneous powers.
> To the best of my knowledge, the instantaneous power
> straw man was invented by you for the purpose of
> muddying the waters.
>
> Your instantaneous power analysis is also incorrect
> because you completely ignored the instantaneous
> power in the system reactance. You have completely
> ignored the role of destructive and constructive
> interference. You cannot possibly understand where
> the energy goes until you understand interference.

I observe that you have not provided any expansion
based on either reactance or interference that accounts
for the differences.
Most probably because it is not possible.

> We have reached the end of the discussion road and
> hashed it to death. If we are still in disagreement,
> we are just going to have to agree to disagree.

Are you really going to let me be the last man standing
this time?

We shall see.

...Keith

3211. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 21:15:48 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <a3c17e97-891a-4e9a-b443-660f9c83204e@u72g2000hsf.googlegroups.com>
Source record: 27233
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 14, 10:06 pm, Tom Bruhns <k7...@msn.com> wrote:
> On Mar 14, 9:20 am, Artem <artem.b...@gmail.com> wrote:
>
>
>
> > On Mar 13, 11:38 pm, K7ITM <k7...@msn.com> wrote:
>
> > > It should not be that bad. C0G dielectric (also called NPO)
> > > capacitors have a _maximum_ temperature coefficient of 30ppm/C. The
> > > diameter of the loop itself, and therefore its inductance, will change
> > > with temperature in the same range, I believe. C0G capacitors,
> > > especially surface mount type, also have extremely low effective
> > > series resistance. I've found some C0G SMT caps that seem to have
> > > very close to zero temperature coefficient--it varies from lot to lot,
> > > apparently depending on the exact mix of the dielectric. What do you
> > > suppose the temperature coefficient of the capacitance of varactor
> > > diodes is? Note: 100ppm change in capacitance causes 50ppm change in
> > > resonant frequency. That's 350Hz at 7MHz. You probably wouldn't even
> > > notice that. It's only about 10 percent of the 3dB bandwidth of the
> > > antenna.
>
> > Thank you very much. About about transformer (for connect coaxial
> > cable). I can use any ferrite with small permeabilty?
>
> Yes, that should be fine. I suppose a transformer will be a
> convenient way to better match the FET amplifier output to a
> transmission line.

I mean that I will use you suggestion about balanced amplifier. I'll
use two FETs. I'll place one more tube from middle of the loop to the
gap. And I will use this point as ground point for balanced amplifier.
In this case I will have differential signal at FET Drains and I will
need transformer for put this signal to coaxial cable.

The transformer can be physically quite small.
> MiniCircuits and some others (CoilCraft; M/A-Com; ...) sell
> appropriate transformers, and of course they are easy to make if you
> have an appropriate core. Also you can feed power to the amplifier
> through the transmission line. The transformer secondary can return
> to a bypass capacitor instead of directly to ground, and your DC feed
> appears across that capacitor. The circuit I used for 150kHz loops
> used a shunt voltage regulator in the amplifier, and by feeding the
> other end with a controlled variable current, I could avoid problems
> with uncertain voltage drop in the line plus connectors, and also use

> the current through the regulator to control the tuning voltage on the
> varicap diodes. So everything was done through the transmission line.

My cable only 10m long. So I this it would be unnecessary. And I will
operate with three signals:
1. Varicaps voltages.
2,3 - voltages at secondary FETs gates.

>
> Cheers,
> Tom

3212. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 21:29:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <m7CCj.3334$Rq1.2883@nlpi068.nbdc.sbc.com>
Source record: 27234

Keith Dysart wrote:
> If there were two transmission lines, then I could see
> why you might want two pipes in an analogy.
>
> But since there is only one transmission line, an
> analogy with one pipe makes more sense.

Unfortunately for your argument, molecular water and
EM waves are considerably different animals. Water
energy traveling in opposite directions in a pipe
interact. EM waves traveling in opposite directions
in a transmission line interact only at an impedance
discontinuity or at an impedor. As long as only a
constant Z0 environment exists, the forward wave and
reflected wave pass like ships in the night. For you
to prove otherwise, you are going to have to define
the position and momentum of a single photon. Good
luck on that one.
--
73, Cecil http://www.w5dxp.com

3213. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 21:37:40 UTC
From: richardharrison@webtv.net
Message-ID: <21227-47DAF024-508@storefull-3258.bay.webtv.net>
Source record: 27235

Richard Clark, KB7QHC wrote:
"Something tells me NO ONE knows why."

The technique works. Before erection we had a newly designed 6&7 MHz curtain antenna modeled in the lab at 450 MHz, about a freq. ratio of 70. The as-built antennas were measured and found to perform exactly as predicted by the scaled-down version.

Cecil`s question about continuously loaded antennas is appropriate. I suspect the wire size needs to be modeled too, but Cecil knows much more about loading coils than I do.

Best regards, Richard Harrison, KB5WZI

3214. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 21:51:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lrCCj.19787$Ej5.7109@newssvr29.news.prodigy.net>
Source record: 27236

Keith Dysart wrote:
> On Mar 14, 7:59 am, Cecil Moore <nos...@w5dxp.com> wrote:
>> P(t).reactance = [V(t).reactance][I(t).reactance]
>> Where is that term in your equations?
>
> It is unnecessary. But if you believe me wrong, show me
> where it goes, compute the values, and show how it
> accounts for the energy that is not dissipated in the
> source resistor.

It is unnecessary to account for all of the instantaneous power???? Your problem is greater than just a simple misunderstanding of the laws of physics by which we must all abide.

The DC energy is stored in your vehicle's battery until it is needed to start your vehicle. That delay between stored energy and needed energy is related to the (undefined) wavelength. Think about it.

In an AC circuit, the reactance has no say as to when to store the energy and when it is delivered back to the system. It is also related to wavelength which is defined.

When the source voltage is zero at its zero crossing point/time, the instantaneous power dissipation in the source resistor is NOT zero! Doesn't that give you pause to wonder where the instantaneous power is coming from when the instantaneous power delivered by the source is zero???? Why do you ignore that power and try to sweep it under the rug?

You are making the mistakes that your EE 201 professor warned you not to make. You are superposing powers, something that all the gurus on this newsgroup will condemn. Until you learn not to superpose powers, you will remain forever ignorant. Richard C. made the same mistake when he declared that the reflections from non-reflective thin-film coatings on glass are "brighter than the surface of the sun". If one ignores the laws of physics, anything is possible.

There is a condition where it is valid to superpose powers. That is when (V1^2 + V2^2) = (V1 + V2)^2
You have obviously not satisfied that condition and are paying for your violations of those laws of physics.

Until you give up on your superposition of powers, I
cannot help you.
--
73, Cecil http://www.w5dxp.com

3215. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 22:00:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pACCj.3336$Rq1.1957@nlpi068.nbdc.sbc.com>
Source record: 27237

Keith Dysart wrote:
> Still handwaving. Show the expressions and the numbers
> that make it balance. Otherwise, just handwaving.

Show the expressions and the numbers for how many angles
can dance on the head of a pin???? Shirley, you jest.
This is not the proper venue to try to establish your
new religion.

> Are you really going to let me be the last man standing
> this time?

No, you died in action a few weeks ago and don't realize
it. It happened the first time you superposed powers when
(V1^2 + V2^2) is not equal to (V1 + V2)^2. Too bad you
are incapable of comprehending exactly what that means.
You can easily work it out for yourself but you haven't
yet attempted to do so. Hopefully, one of the resident
gurus whom you trust will explain it to you.

Until you correct your ignorance on that subject, *you* are
just handwaving. I suggest you contact someone who is more
knowledgeable than you on the subject. Ask Richard C. to
prove his assertion that the reflections from a non-reflective
thin-film surface are brighter than the sun. If you detect
what is wrong with his argument, you will know what is wrong
with yours.
--
73, Cecil http://www.w5dxp.com

3216. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 22:06:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <4GCCj.3337$Rq1.2379@nlpi068.nbdc.sbc.com>
Source record: 27238

Richard Harrison wrote:
> Cecil`s question about continuously loaded antennas is appropriate. I
> suspect the wire size needs to be modeled too, but Cecil knows much more
> about loading coils than I do.

I doubt that, Richard. When the length of a dipole is
much, much greater than the diameter of the wire, the
antenna will scale appropriately. But what happens when
the length of the antenna is not a lot greater than the
diameter of the wire?

It is the same problem as trying to use water in scale
models of boats. It just doesn't work.
--
73, Cecil http://www.w5dxp.com

3217. Looking For Free Porn witout B.S.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 22:11:13 UTC
From: sgptz9fzulfnpfsr4fab@gmail.com
Message-ID: <9c04c21e-6baf-4aad-8d74-5868366b5e72@m36g2000hse.googlegroups.com>
Source record: 27239

Hey guys looking for free porn check this out http://2xrl.com/671/

Not quite what you were looking for lots of free porn at
http://mandyssexsearch.com

3218. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 22:28:24 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <802355f4-5719-49bf-9624-a005ac241f36@i12g2000prf.googlegroups.com>
Source record: 27240
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 14, 2:15 pm, Artem <artem.b...@gmail.com> wrote:
...
>
> I mean that I will use you suggestion about balanced amplifier. I'll
> use two FETs. I'll place one more tube from middle of the loop to the
> gap. And I will use this point as ground point for balanced amplifier.
> In this case I will have differential signal at FET Drains and I will
> need transformer for put this signal to coaxial cable.
>
> The transformer can be physically quite small.
>

Yes...very good. That should help keep the loop nicely balanced,
especially if you build it all very symmetrical. That one more tube
can also then help support the loop mechanically. Good luck with your
project!

Cheers,
Tom

3219. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 23:26:43 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <80a7c21e-b83b-4115-a51f-e4becf04c294@s13g2000prd.googlegroups.com>
Source record: 27241

On Mar 14, 5:29 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > If there were two transmission lines, then I could see
> > why you might want two pipes in an analogy.
>
> > But since there is only one transmission line, an
> > analogy with one pipe makes more sense.
>
> Unfortunately for your argument, molecular water and
> EM waves are considerably different animals. Water
> energy traveling in opposite directions in a pipe
> interact. EM waves traveling in opposite directions
> in a transmission line interact only at an impedance
> discontinuity or at an impedor. As long as only a
> constant Z0 environment exists, the forward wave and
> reflected wave pass like ships in the night. For you
> to prove otherwise, you are going to have to define
> the position and momentum of a single photon. Good
> luck on that one.

I accept your retraction of your analogy.

...Keith

3220. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 23:27:07 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a2326bc9-fa38-4b4b-9b81-d8017c6c2f06@d4g2000prg.googlegroups.com>
Source record: 27242

On Mar 14, 6:00 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Still handwaving. Show the expressions and the numbers
> > that make it balance. Otherwise, just handwaving.
>
> Show the expressions and the numbers for how many angles
> can dance on the head of a pin???? Shirley, you jest.
> This is not the proper venue to try to establish your
> new religion.

First you proffer reactance or interference or both as the
solution to the missing energy, and then you characterize
it as 'angels dancing'. Which is it?

> > Are you really going to let me be the last man standing
> > this time?
>
> No,

I didn't really expect so.

...Keith

3221. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 23:27:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <de36abde-f5c1-40d9-97ce-3df0735413af@h11g2000prf.googlegroups.com>
Source record: 27243

On Mar 14, 5:51 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > On Mar 14, 7:59 am, Cecil Moore <nos...@w5dxp.com> wrote:
> >> P(t).reactance = [V(t).reactance][I(t).reactance]
> >> Where is that term in your equations?
>
> > It is unnecessary. But if you believe me wrong, show me
> > where it goes, compute the values, and show how it
> > accounts for the energy that is not dissipated in the
> > source resistor.
>
> It is unnecessary to account for all of the instantaneous
> power???? Your problem is greater than just a simple
> misunderstanding of the laws of physics by which we must
> all abide.
>
> The DC energy is stored in your vehicle's battery until
> it is needed to start your vehicle. That delay between
> stored energy and needed energy is related to the
> (undefined) wavelength. Think about it.
>
> In an AC circuit, the reactance has no say as to when
> to store the energy and when it is delivered back to the
> system. It is also related to wavelength which is defined.
>
> When the source voltage is zero at its zero crossing
> point/time, the instantaneous power dissipation in
> the source resistor is NOT zero! Doesn't that give
> you pause to wonder where the instantaneous power
> is coming from when the instantaneous power delivered
> by the source is zero????

Previously explained, as you may have forgotten, with
the energy cyclically returned from the line.

For your convenience, I copy from a previous post:

Recall that
Pg(t) = 32 + 68cos(2wt)

For some of the cycle, energy flow is from the line
towards the resistor and the voltage source.

But this is not the energy in the reflected wave
which has the function

Pr.g(t) = -18 + cos(2wt)
and only flows in one direction, towards the source.
And it is this supposed energy that can not be
accounted for in the dissipation of the source
resistor.

And, as expected
Ps(t) = Prs(t) + Pg(t)

Energy is conserved.

...Keith

3222. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-14 23:53:58 UTC
From: Dave <noone@nowhere.com>
Message-ID: <qeECj.1035$dq2.616@trndny05>
Source record: 27244

"Keith Dysart" <Keith.Dysart@gmail.com> wrote in message
news:de36abde-f5c1-40d9-97ce-3df0735413af@h11g2000prf.googlegroups.com...
On Mar 14, 5:51 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>Energy is conserved.

qed.

now, can we get back to antennas?? its much more fun mocking art than the
endless discussions of electrons and holes sloshing back and forth.

3223. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 00:36:28 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <frf5mh$k36$1@aioe.org>
Source record: 27245

Michael Coslo wrote:

> ...
> Water does not burn because it is already burnt.
>
>
> Guess I'm kinda saying the same thing, eh?
>
>
> - 73 de Mike N3LI -

Waddaya mean? Any idiot knows water burns!

Ya just havta separate the BIG parts from the little parts and then ignite 'em! Indeed, this process is truly perpetual! Ya's never lose one single atom and 'ya can take a bath in the "ashes!" Then, ta boot, you can do it again ...

<chuckle>
JS

3224. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 02:54:30 UTC
From: richardharrison@webtv.net
Message-ID: <23752-47DB3A66-66@storefull-3251.bay.webtv.net>
Source record: 27246

Cecil Moore wrote:
"When the length of a dipole is much, much greater than the diameter of the wire, the antenna will scale appropriately.

Yes. An assumption made to ease calculations is that the diameter of the radiator is vanishingly thin. Art`s antenna configuration is something of a mystery to me but I infer that it may be a dipole in which the two lengths of wire have been wound into coils and not extended to their maximum length. Further, my guess is that the dipole is resonant so that it readily accepts energy. Such antenna elements, I believe usually emit energy in the radial mode and resemble the continuously loaded vertical antenna as shown on page 6-28 in the 20th edition of the ARRL Antenna Book.

Description of the resonant element includes:
"The relationship between length of wire needed for resonance and a full quarter wave at the desired frequency depends on several factors. Some of these are wire size, diameter of the turns, and dielectric properties of the form material to name a few. Experience has indicated that a section of wire approximately one half wavelength long, wound on an insulating form with a linear pitch (equal spacing between turns) will come close to yielding a resonant quarter wavelength. Bill Orr says about the same thing on page 78 of "Vertical Antennas". Continuing from the Antenna Book: "Therefore, an antenna for use on 160 meters would require approximately 260 feet of wire spirally wound on the support."

If Art has made a dipole of two such 1/4-wave elements, it should have about a full wavelength of wire which I believe is consistent with his miserly description.

Performance of a full wave of coiled wire will be much less than the performance of the same wire stretched out into a straight line at the same height above earth.

Best regards, Richard Harrison, KB5WZI

3225. Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 11:11:21 UTC
From: billcalley <billcalley@yahoo.com>
Message-ID: <e93d7a93-a8c1-4671-b830-3c33905405c6@u10g2000prn.googlegroups.com>
Source record: 27247
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

Hi All,

I always hear that antennas have to be matched to their radio, but in receivers (such as FM and shortwave radios) I see mostly long random length antennas used, and these antennas -- be they a telescoping whip or a long wire out a window -- are used over some really wide bandwidths. How is this possible if an impedance match must always be maintained for radios? And since there cannot be a good match over such wide bandwidths with any (typical) wire antenna, what is the downside to using these completely unmatched long antennas for receivers? (Poor gain patterns with lots of nulls? Lower sensitivity due to bad noise figure or gain match for any LNA or frontend amp? Degraded overall antenna gain)?

Thanks; I'm very confused on this subject!

-Bill

3226. Re:Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 11:43:48 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <UDOCj.41483$nw4.16282@fe1.news.blueyonder.co.uk>
Source record: 27248

Hi

I am in the process of building a Cobwebb Homebrew and have a question about it.

On the one I'm building the gap at the ends of the element for each band are all different. I have also just come across one built by M0MMR that has all the gaps set at 3 inch's.

Does one antenna work better than the other?

Many thanks

3227. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 12:14:53 UTC
From: ltdoc@yahoo.com
Message-ID: <64777bc4-d2ab-4127-bd7b-fd0aea7d3801@8g2000hse.googlegroups.com>
Source record: 27249
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

Bill,
That's one of those "sort of" kind of questions. It depends a lot on the particular receiver and what frequency range you plan to listen to, and then on the amount of space you have for an antenna.
In general, receivers that listen to the lower frequency bands, HF for example, are more sensitive than those that are used for the higher bands (VHF, UHF, SHF). That means that to hear a typical signal a specifically designed antenna having the exact output impedance as the receiver's input impedance isn't required. Almost anything will work to some extent. The receiver just isn't that 'picky', since it typically has more 'hearing' ability than required.
There's a 'catch' though. Reducing the amount of signal losses in that 'whatever' antenna is going to make the resulting signal getting to the receiver that much stronger. Something always nice to have, but there are practical limits. If that 'whatever' antenna meets your requirements, then it's as 'good' as anything, sort of. If it doesn't, then making that antenna less 'lossy' is also nice. That "less 'lossy'" thingy also includes making it directional, longer, shorter, higher, whatever, to increase the amount of signal getting to the receiver. So, looking at it from that point of view, the antenna ought'a be reasonably 'close' to what will typically 'work' well on the received frequency. Huge range in that 'close' quality and the definition of what 'works' means.
There is no 'perfect', 'do everything', antenna. Just too many factors involved. 'Higher' and 'longer' tends to 'work' better than 'lower' and 'shorter', in general. Which, like any generalization, is never always true.
That's the sort of 'long', half-assed, technical answer. The 'quick-n-dirty' answer is, no, they don't have to be 'matched' to the receiver. Which says nothing about transmitters.
- 'Doc

[all puns intended]

3228. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 12:15:40 UTC
From: commander_coder@hotmail.com
Message-ID: <52bc945c-7344-4f7d-aaae-93efbd7b0523@q78g2000hsh.googlegroups.com>
Source record: 27250

The difference between antennas used for receive only and antennas used for send/receive is that in the former case you are not going to fry the radio's insides because of the mismatch.

But I'll bet that as you change the settings on your antenna tuner you hear the received signal go up and down-- in particular, reception goes up as you get a better match.

3229. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 12:28:01 UTC
From: Andrew Holme <ah@nospam.co.uk>
Message-ID: <frgfcj$6bf$1$8300dec7@news.demon.co.uk>
Source record: 27053
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

"billcalley" <billcalley@yahoo.com> wrote in message
news:e93d7a93-a8c1-4671-b830-3c33905405c6@u10g2000prn.googlegroups.com...
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?

Correct. Those are downsides. The upside is convenience and simplicity.
It's sub-optimal; but it works!

3230. Re: Re:Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 12:28:54 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <aiPCj.41541$nw4.38668@fe1.news.blueyonder.co.uk>
Source record: 27051

What I meant to say, is there any benefits in performance if I changed all the gaps to 3 inch's rather than keep them to the original Cobwebb spec?

Thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message news:UDOCj.41483$nw4.16282@fe1.news.blueyonder.co.uk...
> Hi
>
> I am in the process of building a Cobwebb Homebrew and have a question
> about it.
>
> On the one I'm building the gap at the ends of the element for each band
> are all different. I have also just come across one built by M0MMR that
> has all the gaps set at 3 inch's.
>
> Does one antenna work better than the other?
>
> Many thanks
>
>

3231. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 12:29:39 UTC
From: Tom Biasi <tombiasi@optonline.net>
Message-ID: <47dbc133$0$5644$607ed4bc@cv.net>
Source record: 27052
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

"billcalley" <billcalley@yahoo.com> wrote in message
news:e93d7a93-a8c1-4671-b830-3c33905405c6@u10g2000prn.googlegroups.com...
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
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> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

The best transfer of energy is achieved when the antenna impedance matches
the input circuit impedance of the receiver.
This should be the case for the entire band of the desired received signal.
It is not always feasible to do this and it is often not necessary. Today's
receivers have very high gain and excellent selectivity.
They need very small signal strengths to operate and excess signal is
attenuated.
So a piece of wire used as an antenna in an area where the signal strength
is large will not do any worse than a perfectly matched antenna.
In an area where the signal strength is weak (like Mars) matching of the
antenna to the front end of the receiver is desired.
There are other considerations for transmitters.

Tom

3232. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 12:51:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <sDPCj.14166$5K1.8854@newssvr12.news.prodigy.net>
Source record: 27054
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

billcalley wrote:
> Thanks; I'm very confused on this subject!

The AGC circuit in receivers has enough dynamic
range to compensate for low amplitude signals
from a mismatched HF antenna. The S/N ratio
on HF is mostly external to the receiver.
--
73, Cecil http://www.w5dxp.com

3233. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 13:42:04 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <TuidnWJRnJ22T0banZ2dnUVZ_siknZ2d@bright.net>
Source record: 27055

Dear Bill (no call sign):
It depends. The goal of a receiver is to have a satisfactory
signal-to-noise & distortion ratio. Many factors enter into that ratio.

Let us consider just the antenna: Below something like 30 MHz, it is
easy to have receivers that are quiet relative to noise picked up by most
antennas. In other words, below something like 30 MHz, the SNR is
determined outside of the receiver and tweaking the tuning between the
antenna and receiver just increases or decreases the volume. At VHF and
higher frequencies, the noisiness of the receiver tends to be a significant
player. It has long been known (see MIT Radiation Lab volume 18) that the
maximum SNR occurs close to a conjugate match between the antenna and
receiver's first stage.

However, many consumer VHF-UHF receivers (FM broadcast, TV, scanners)
are presented with such large signals that there is little point in tweaking
the interface between antenna and receiver for an even larger SNR.

In the early days of radio astronomy, when we were still using vacuum
tubes, a lot of attention was paid to having the right amount of mis-match
so as to maximize SNR.

So: HF and below: be concerned about the directivity of the antenna
(is it reasonably sensitive in the direction of interest).
VHF and above: have the antenna's impedance, transmission line's
impedance, and receiver's input impedance be within a factor of 2 of each
other AND point the antenna in a desired direction.

Regards, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"billcalley" <billcalley@yahoo.com> wrote in message
news:e93d7a93-a8c1-4671-b830-3c33905405c6@u10g2000prn.googlegroups.com...
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> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or

> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

3234. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 13:46:31 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <9faec4a1-180d-4e73-8a62-1797de29c45d@59g2000hsb.googlegroups.com>
Source record: 27056

On Mar 8, 11:21 am, richardharri...@webtv.net (Richard Harrison)
wrote:
> Art wrote:
>
> "---my antenna is a full wavelength which meets Maxwell`s requirements,
> it is just that the volume is small despite the wavelength."
>
> In 1949, I worked at the KPRC-KXYZ broadcast plant. Another operator
> there, J.L. Davis, W5LIT had a new 1949 Ford in which he installed a
> surplus ART-13 and a PE-103 dynamotor. For an antenna he wound wire turn
> by turn on a bamboo pole until it was resonant on a slice of the
> 75-meter band.
>
> When J.L. modulated, Q in the coil produced a tip corona on the first
> good peak and modulation became loud without a receiver.
>
> The 20th edition of the ARRL Antenna Book on page 16-13 says this about
> continuously loaded antennas: "The general approach has been to use a
> coil made from heavy wire (#14 or larger), with length-to-diameter
> ratios as high as 21. British experimeters have reported good results
> with 8-foot overall length on the 1.8- and 3.5 MHz bands. The idea of
> making the entire antenna out of one section of coil has been tried with
> some success."
>
> Art`s antenna containing a "full wavelength" of wire would likely
> feature a greater loss than J.L.`s 1/4-wave resonant coil from simply a
> greater length of wire while both have peactances balanced to zero.
> Art`s lower Q would probably kill the corona, increase the bandwidth,
> while losing the gain that a fullwave straight conductor enjoys.
>
> Cecil can probably report on results of continuously loaded mobile
> antennas versus a bug catcher loaded whip in the California shoot-outs.
>
> Best regards, Richard Harrison, KB5WZI

Considering that it meets Maxwells requirements and is at least a
wavelenght
of a radiator my expectations are much higher than yours
I suspect that the output will exceed that of a 160 M antenna which
has a ground plane.
I also suspect that if I diddn't concentrated so much on small
physical size it could easily be uprated
to compete with a yagi!
I would anticipate that in a couple of years the top band will have

twice as many users that it has now.
I am hoping also that its small size will allow for receiving
abililities in line with the angle of incoming
radiation via its manouvarability. Of course if all is already known
about radio this would seem impossible
but in a few weeks I myself will have a few QSOs to see how it matches
up to my expectations.
The archives show all the building instruction but it appears that
readers have concentrated on
nonsensical retorts without reading the content. If an antenna is at
least off one wavelength
and is in equilibrium I see no reason why it should not beat existing
antennas with ground plane losses
regardless of its shape or size. Time will tell. Either way the
experimental trail undertaken I have found to
be very rewarding as many other amateurs have had when experimenting
with antennas and who refuse
to accept that all is known
Art

3235. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 14:29:31 UTC
From: Tim Wescott <tim@seemywebsite.com>
Message-ID: <HpudnTz1wunWQEbanZ2dnUVZ_j6dnZ2d@web-ster.com>
Source record: 27057
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Sat, 15 Mar 2008 05:14:53 -0700, ltdoc wrote:

> Bill,
> That's one of those "sort of" kind of questions. It depends a lot
> on the particular receiver and what frequency range you plan to listen
> to, and then on the amount of space you have for an antenna.
> In general, receivers that listen to the lower frequency bands, HF
> for example, are more sensitive than those that are used for the higher
> bands (VHF, UHF, SHF).

More correctly, it's _easier_ to make an HF receiver with a good noise figure, and harder to do so as the frequency goes up.

However, atmospheric noise goes _down_ as the frequency goes up. So for weak-signal work a receiver designer has a lot of motivation to make really quiet front ends on VHF and higher equipment. Basically if the radio is cheap (i.e. if it's for consumer use) then the front end may as well be made of wood. If the radio is used for long-distance communication (i.e. microwave links, space communication, some military or amateur radio) then designers will go to great lengths to get the noise figure down.

-- snip --

--
Tim Wescott
Control systems and communications consulting
http://www.wescottdesign.com

Need to learn how to apply control theory in your embedded system?
"Applied Control Theory for Embedded Systems" by Tim Wescott
Elsevier/Newnes, http://www.wescottdesign.com/actfes/actfes.html

3236. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 14:35:22 UTC
From: Tim Wescott <tim@seemywebsite.com>
Message-ID: <HpudnT_1wuk3Q0banZ2dnUVZ_j6dnZ2d@web-ster.com>
Source record: 27058
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Sat, 15 Mar 2008 04:11:21 -0700, billcalley wrote:

> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long random
> length antennas used, and these antennas -- be they a telescoping whip
> or a long wire out a window -- are used over some really wide
> bandwidths. How is this possible if an impedance match must always be
> maintained for radios? And since there cannot be a good match over such
> wide bandwidths with any (typical) wire antenna, what is the downside to
> using these completely unmatched long antennas for receivers? (Poor
> gain patterns with lots of nulls? Lower sensitivity due to bad noise
> figure or gain match for any LNA or frontend amp? Degraded overall
> antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

In areas where it matters receive antennas are matched, and are something other than random wire. This is why you can go to Radio Shack and buy TV antennas* -- they're designed** to be both directional and a good match over the broad frequency ranges of TV signals.

Get into amateur radio or military communications and you'll find many different permutations of directional, matched antennas on receive.

Note: For many LNA designs, the best signal/noise ratio occurs at an impedance that is close to, but not really, a perfect conjugate match. The signal is coupled to the amplifier best at the conjugate match impedance, but sometimes the noise is enhanced even more.

* or could -- does Rat Shack still carry antennas?
** kinda -- they're really designed to _look_ like they'd make a good antenna, but they're better than rabbit ears.

--
Tim Wescott
Control systems and communications consulting
http://www.wescottdesign.com

Need to learn how to apply control theory in your embedded system?
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Elsevier/Newnes, http://www.wescottdesign.com/actfes/actfes.html

3237. Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 15:52:01 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <e92366c7-59e4-4ede-b159-a50dd548d8df@m44g2000hsc.googlegroups.com>
Source record: 27059

I have on order a tilting system for my antenna to probe the
polarisation of incoming signals
for maximum audio clarity and gain.
There are instruments out there that can automatically tell you the
polarisation
without one taking the trouble to pan the antenna in different
directions.
Anybody out there follow such a procedure with the antenna or use a
homebrew
or commercial instrument to save time?
Regards
Art

3238. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 15:52:59 UTC
From: Mark <makolber@yahoo.com>
Message-ID: <eeca6f1e-f1c5-4005-b013-cf80f3d506bb@u69g2000hse.googlegroups.com>
Source record: 27060
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

>
> Note: For many LNA designs, the best signal/noise ratio occurs at an
> impedance that is close to, but not really, a perfect conjugate match.
> The signal is coupled to the amplifier best at the conjugate match
> impedance, but sometimes the noise is enhanced even more.
>

That brings up an intersting question I never did get a good answer
to...

It is my assertion that an LNA that is physically at room temperature
(290K) can have a noise figure no better than 3 dB (i.e. its effective
noise temperature is 290K) IF it is also conjugatly matched i.e.
looks like 50 Ohms.

Yes you can make the noise figure better than 3 dB, but then you must
either cool the device or MISMATCH it to the line.

In other words if it looks like 50 Ohms and it is physically at 290 K,
it's effective noise temperature must also be 290K.

How could it be otherwise?

Comments plese.

Mark

3239. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 16:31:53 UTC
From: Dave <noone@nowhere.com>
Message-ID: <ZRSCj.3410$FK1.3269@trndny08>
Source record: 27062

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:9faec4a1-180d-4e73-8a62-1797de29c45d@59g2000hsb.googlegroups.com...
> On Mar 8, 11:21 am, richardharri...@webtv.net (Richard Harrison)
> wrote:
>> Art wrote:
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>> "---my antenna is a full wavelength which meets Maxwell`s requirements,
>> it is just that the volume is small despite the wavelength."
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>> there, J.L. Davis, W5LIT had a new 1949 Ford in which he installed a
>> surplus ART-13 and a PE-103 dynamotor. For an antenna he wound wire turn
>> by turn on a bamboo pole until it was resonant on a slice of the
>> 75-meter band.
>>
>> When J.L. modulated, Q in the coil produced a tip corona on the first
>> good peak and modulation became loud without a receiver.
>>
>> The 20th edition of the ARRL Antenna Book on page 16-13 says this about
>> continuously loaded antennas: "The general approach has been to use a
>> coil made from heavy wire (#14 or larger), with length-to-diameter
>> ratios as high as 21. British experimeters have reported good results
>> with 8-foot overall length on the 1.8- and 3.5 MHz bands. The idea of
>> making the entire antenna out of one section of coil has been tried with
>> some success."
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>> Art`s antenna containing a "full wavelength" of wire would likely
>> feature a greater loss than J.L.`s 1/4-wave resonant coil from simply a
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>> Best regards, Richard Harrison, KB5WZI
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> Considering that it meets Maxwells requirements and is at least a
> wavelenght
> of a radiator my expectations are much higher than yours
> I suspect that the output will exceed that of a 160 M antenna which
> has a ground plane.
> I also suspect that if I diddn't concentrated so much on small
> physical size it could easily be uprated

> to compete with a yagi!
> I would anticipate that in a couple of years the top band will have
> twice as many users that it has now.
> I am hoping also that its small size will allow for receiving
> abililities in line with the angle of incoming
> radiation via its manouvarability. Of course if all is already known
> about radio this would seem impossible
> but in a few weeks I myself will have a few QSOs to see how it matches
> up to my expectations.
> The archives show all the building instruction but it appears that
> readers have concentrated on
> nonsensical retorts without reading the content. If an antenna is at
> least off one wavelength
> and is in equilibrium I see no reason why it should not beat existing
> antennas with ground plane losses
> regardless of its shape or size. Time will tell. Either way the
> experimental trail undertaken I have found to
> be very rewarding as many other amateurs have had when experimenting
> with antennas and who refuse
> to accept that all is known
> Art

of course all is known, we have been trying to tell YOU that but you won't believe it and insist on trying things that are known NOT to work. you will learn, it will be a long and hard experience from what we have heard from you on here, but you will learn someday that there ain't no such thing as a free lunch when it comes to antennas.

3240. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 16:35:00 UTC
From: Dave <noone@nowhere.com>
Message-ID: <UUSCj.8305$u62.5806@trndny07>
Source record: 27063
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

"Tom Biasi" <tombiasi@optonline.net> wrote in message
news:47dbc133$0$5644$607ed4bc@cv.net...
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> "billcalley" <billcalley@yahoo.com> wrote in message
> news:e93d7a93-a8c1-4671-b830-3c33905405c6@u10g2000prn.googlegroups.com...
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>> Thanks; I'm very confused on this subject!
>>
>> -Bill
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> The best transfer of energy is achieved when the antenna impedance matches
> the input circuit impedance of the receiver.

OH NO! now you have done it! i hope cecil doesn't see this or you have just
openend another endless energy sloshing around thread! what does happen if
the antenna isn't matched to the radio? where does the mismatch energy
go???

3241. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 16:55:02 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <f6668c30-3e30-4a43-bd17-57c33791f582@u69g2000hse.googlegroups.com>
Source record: 27064

On Mar 15, 11:31 am, "Dave" <no...@nowhere.com> wrote:
> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> news:9faec4a1-180d-4e73-8a62-1797de29c45d@59g2000hsb.googlegroups.com...
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> > be very rewarding as many other amateurs have had when experimenting
> > with antennas and who refuse
> > to accept that all is known
> > Art
>
> of course all is known, we have been trying to tell YOU that but you won't
> believe it and insist on trying things that are known NOT to work. you will
> learn, it will be a long and hard experience from what we have heard from
> you on here, but you will learn someday that there ain't no such thing as a
> free lunch when it comes to antennas.

Nothing free....I have done a lot of work. Now I get the benefits of
that work.
I disagree that all experiments on antennas should stop based on the
proweress of your particular brain. You have consistently over
estimate
your abilities

3242. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 17:14:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <sfunt3pcm19ljr5quvkvasl2j99m8dbihg@4ax.com>
Source record: 27061

On Sat, 15 Mar 2008 06:46:31 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>I suspect that the output will exceed that of a 160 M antenna which
>has a ground plane.

Hi ï¿½ther,

Suspect away, but the best you could accomplish is in the digits to
the right of the decimal place of percent efficiency. On the S-Meter
scale of any listener, that would be an invisible shift of the needle.
Of course, their only experience of this antenna will be at least a
10dB drop from a conventional antenna which would be easily seen on
the S-Meter.

>I also suspect that if I diddn't concentrated so much on small
>physical size it could easily be uprated
>to compete with a yagi!

Suspect some more, but that is not going to happen unless you have
more elements, widely dispersed (and we've been there before, and the
yagi is more efficient than any of your usual suspects). As you
discard planarity, so do you discard directivity unless you drive
every element directly. You don't do this, and you have yet to
exhibit the knowledge of why you have to, to meet your claims.

This lack of knowledge, in itself, clearly reveals that not all is
known about antennas. However, others who can accomplish recovering
this directionality do exhibit this knowledge. The readers can
discern how the remainder of your post lacks in this regard.

>I would anticipate that in a couple of years the top band will have
>twice as many users that it has now.

The Solar cycle will have more to say about that than any suspicion.

>I am hoping also that its small size will allow for receiving
>abililities in line with the angle of incoming
>radiation via its manouvarability.

No need for hope, transistor pocket radios have been doing that for,
what, 50 years? Even there, loop sticks have probably been around
longer than that. Try transmitting through one and discover fire
again.

>Of course if all is already known
>about radio this would seem impossible

No, if everything written above has been forgotten (or never learned,
same thing) THEN it would seem impossible.

>but in a few weeks I myself will have a few QSOs to see how it matches
>up to my expectations.

Without comparisons, any contact is bound to raise the estimation of
such expectations.

>The archives show all the building instruction but it appears that
>readers have concentrated on
> nonsensical retorts without reading the content.

The same archives show a multiplicity of "instructions." However, as
they all suffer in comparison to simple antennas, they are easily
dismissed against the claims presented for them.

It merely takes diligence to take them on one at a time, as they are
announced, and line them up like dominoes to watch them tumble in
line. The archive contains these results for all time. This design
is no different in that respect than the last, or the several before
the last.

>If an antenna is at
>least off one wavelength
>and is in equilibrium I see no reason why it should not beat existing
>antennas with ground plane losses
>regardless of its shape or size.

And yet they don't, and so reason is not a principal component here so
much as wish and hope braced with the courage of ignoring knowledge.

>Time will tell. Either way the
>experimental trail undertaken I have found to
>be very rewarding as many other amateurs have had when experimenting
>with antennas and who refuse
>to accept that all is known

The sad truth is that only one, maybe two here have the professional
contacts to antenna test sites, and you have refused their offers.

I have dog-eared the post:
On Thu, 13 Mar 2008 12:13:02 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:
>He volunteered
>he answered
>He has offered
>He can make
>let him do
>how he wants
>ask him
>he may chose
>He has been
>He deserves our respect.

It is notable you always fail to identify "Him." Throughout the entire post you use the impersonal "He" and never a name.

So, I am going to turn you slowly on the spit over the fire of dignity, are you going to use "His" name? We have call signs that makes us brothers, can Cain acknowledge Abel?

73's
Richard Clark, KB7QHC

3243. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 18:32:57 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47dc1659$0$17359$4c368faf@roadrunner.com>
Source record: 27067

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:e92366c7-59e4-4ede-b159-a50dd548d8df@m44g2000hsc.googlegroups.com...
>I have on order a tilting system for my antenna to probe the
> polarisation of incoming signals
> for maximum audio clarity and gain.
> There are instruments out there that can automatically tell you the
> polarisation
> without one taking the trouble to pan the antenna in different
> directions.
> Anybody out there follow such a procedure with the antenna or use a
> homebrew
> or commercial instrument to save time?
> Regards
> Art

How do you change the polarity of a helical antenna?

3244. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 19:06:33 UTC
From: You <you@shadow.orgs>
Message-ID: <you-09B35E.11062715032008@netnews.worldnet.att.net>
Source record: 27069

In article <47dc1659$0$17359$4c368faf@roadrunner.com>,
"AI4QJ" <nospam@ns.ns.com> wrote:

> "Art Unwin" <ArthurUnwin@gmail.com> wrote in message
> news:e92366c7-59e4-4ede-b159-a50dd548d8df@m44g2000hsc.googlegroups.com...
> >I have on order a tilting system for my antenna to probe the
> > > polarisation of incoming signals
> > > for maximum audio clarity and gain.
> > > There are instruments out there that can automatically tell you the
> > > polarisation
> > > without one taking the trouble to pan the antenna in different
> > > directions.
> > > Anybody out there follow such a procedure with the antenna or use a
> > > homebrew
> > > or commercial instrument to save time?
> > > Regards
> > > Art
>
> How do you change the polarity of a helical antenna?

You wind the Helix in the OPPOSITE Direction..... Duh.....

3245. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 19:13:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <eq7ot318rgirvr2sf6icn4l2lkj59fkul0@4ax.com>
Source record: 27065
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Sat, 15 Mar 2008 04:11:21 -0700 (PDT), billcalley
<billcalley@yahoo.com> wrote:

>How is this possible if an impedance match
>must always be maintained for radios?

Hi Bill,

It is not always needed if the signal is strong enough. If the signal
is not strong enough, then you can obtain considerable gain through
tuning.

Tuning also brings other advantages by rejecting signals that could
depress your radio's sensitivity.

73's
Richard Clark, KB7QHC

3246. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 19:14:38 UTC
From: Joop <jojo@xs4all.nl>
Message-ID: <cs7ot3huh6dfaukrn4av65fr990kpp5333@4ax.com>
Source record: 27070
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Sat, 15 Mar 2008 16:35:00 GMT, "Dave" <noone@nowhere.com> wrote:
>> The best transfer of energy is achieved when the antenna impedance matches
>> the input circuit impedance of the receiver.
>
>OH NO! now you have done it! i hope cecil doesn't see this or you have just
>openend another endless energy sloshing around thread! what does happen if
>the antenna isn't matched to the radio? where does the mismatch energy
>go???
>
Your neighbours ;-)
Less of the energy is "taken" from the received EM field.

Joop

3247. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 19:16:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <538ot3htb1ae6co0thnjagb606ilb6t5a1@4ax.com>
Source record: 27066

On Sat, 15 Mar 2008 08:52:01 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>Anybody out there follow such a procedure with the antenna

Phase steerable array.

73's
Richard Clark, KB7QHC

3248. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 19:34:46 UTC
From: Jeff Liebermann <jeffl@cruzio.com>
Message-ID: <4f8ot31t46kgr827adkstrkhgief7odjbg@4ax.com>
Source record: 27071
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Sat, 15 Mar 2008 09:35:22 -0500, Tim Wescott <tim@seemywebsite.com>
wrote:

>This is why you can go to Radio Shack and buy TV
>antennas* -- they're designed** to be both directional and a good match
>over the broad frequency ranges of TV signals.

I once cranked out an NEC2 model of a Radio Shock TV antenna to see
what it really did over the 54-890MHz range. It was fairly horrible.
There were actually a few frequencies where the impedance was close to
300 ohms. There were also a few frequencies where it actually had
some gain. At some frequenies, it had more gain in the reverse
direction than forward. As an example of a "directional and a good
match" antenna, that typical Radio Shock TV antenna doth truly suck.

I'll see if I can find the model. Unfortunately, it may have been on
a hard disk that crashed a few years ago.

Not having a good match between the antenna and LNA has several
effects. The mismatch will affect the system noise figure thus
reducing sensitivity. Some LNA's are not unconditionally stable and
will oscillate when presented with a weird source impedance. At HF
frequencies, the atmospheric noise level is above the receiver input
noise level, so considerable mismatching can be tolerated. About
about 20MHz, this is no longer the case, and a match is required.

Antennas are also affected by their load impedance. A highly
directional yagi antenna pattern can easily be ruined by mismatched
coax or LNA input impedance. For the antenna to work as advertised,
it has to see the rated load.

--
Jeff Liebermann jeffl@cruzio.com
150 Felker St #D http://www.LearnByDestroying.com
Santa Cruz CA 95060 http://802.11junk.com
Skype: JeffLiebermann AE6KS 831-336-2558

3249. The N8WWM archives

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 19:46:48 UTC
From: dougay patrol <slapadougay@slapslap.com>
Message-ID: <47dc27b8@news.x-privat.org>
Source record: 27072
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.policy

Liten to Douglas the fool on the air:

http://media.putfile.com/dougayactsafooloncb

http://media.putfile.com/dougay-whines-again

http://media.putfile.com/dougay-whines

3250. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 19:55:12 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <lcaot3hfqrovm7vg204h7d7jb69jocgo7c@4ax.com>
Source record: 27068

On Sat, 15 Mar 2008 14:32:57 -0400, "AI4QJ" <nospam@ns.ns.com> wrote:

>How do you change the polarity of a helical antenna?

Swap the feeds.

73's
Richard Clark, KB7QHC

3251. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 20:25:23 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47dc30b3$0$22791$4c368faf@roadrunner.com>
Source record: 27073

"You" <you@shadow.orgs> wrote in message
news:you-09B35E.11062715032008@netnews.worldnet.att.net...
> In article <47dc1659$0$17359$4c368faf@roadrunner.com>,
> "AI4QJ" <nospam@ns.ns.com> wrote:
>
>> "Art Unwin" <ArthurUnwin@gmail.com> wrote in message
>> news:e92366c7-59e4-4ede-b159-a50dd548d8df@m44g2000hsc.googlegroups.com...
>> >I have on order a tilting system for my antenna to probe the
>> > polarisation of incoming signals
>> > for maximum audio clarity and gain.
>> > There are instruments out there that can automatically tell you the
>> > polarisation
>> > without one taking the trouble to pan the antenna in different
>> > directions.
>> > Anybody out there follow such a procedure with the antenna or use a
>> > homebrew
>> > or commercial instrument to save time?
>> > Regards
>> > Art
>>
>> How do you change the polarity of a helical antenna?
>
> You wind the Helix in the OPPOSITE Direction....... Duh.....

Yes, like putting the heads on the other side of the nail.

3252. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 22:31:03 UTC
From: richardharrison@webtv.net
Message-ID: <11457-47DC4E27-499@storefull-3255.bay.webtv.net>
Source record: 27074

Dave wrote:
"Where does the mismatch energy go?'

It is mostly reradiated from the receiving antenna.

Best regards, Richard Harrison, KB5WZI

3253. improve fm reception on transistor radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 23:14:48 UTC
From: Uncle Scotty <scottspiegler@gmail.com>
Message-ID: <45176e7d-63ad-41b0-b089-c50326464ab3@x30g2000hsd.googlegroups.com>
Source record: 27075

I bought this old-fashioned style radio from LL Bean to listen to a
Prairie Home Companion on.

http://www.llbean.com/webapp/wcs/stores/servlet/CategoryDisplay?page=crosley-radio&categor
yId=56013&storeId=1&catalogId=1&langId=-1&parentCategory=7985&cat4=7984&shop_method=pp&fea
t=7985-tn

It is broadcast locally on PBS radio, but I am in an apartment and am
not getting strong reception. Beyond moving the radio (which I have
tried to several locations) is there anything else I can do to improve
it?

Thanks, Scott

3254. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-15 23:32:37 UTC
From: Phil Hobbs <pcdhSpamMeSenseless@pergamos.net>
Message-ID: <13ton4m2vvqgfa@corp.supernews.com>
Source record: 27076
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

Dave wrote:
> "Tom Biasi" <tombiasi@optonline.net> wrote in message
> news:47dbc133$0$5644$607ed4bc@cv.net...
>> "billcalley" <billcalley@yahoo.com> wrote in message
>> news:e93d7a93-a8c1-4671-b830-3c33905405c6@u10g2000prn.googlegroups.com...
>>> Hi All,
>>>
>>> I always hear that antennas have to be matched to their radio, but
>>> in receivers (such as FM and shortwave radios) I see mostly long
>>> random length antennas used, and these antennas -- be they a
>>> telescoping whip or a long wire out a window -- are used over some
>>> really wide bandwidths. How is this possible if an impedance match
>>> must always be maintained for radios? And since there cannot be a
>>> good match over such wide bandwidths with any (typical) wire antenna,
>>> what is the downside to using these completely unmatched long antennas
>>> for receivers? (Poor gain patterns with lots of nulls? Lower
>>> sensitivity due to bad noise figure or gain match for any LNA or
>>> frontend amp? Degraded overall antenna gain)?
>>>
>>> Thanks; I'm very confused on this subject!
>>>
>>> -Bill
>> The best transfer of energy is achieved when the antenna impedance matches
>> the input circuit impedance of the receiver.
>
> OH NO! now you have done it! i hope cecil doesn't see this or you have just
> openend another endless energy sloshing around thread! what does happen if
> the antenna isn't matched to the radio? where does the mismatch energy
> go???
>
>

A good deal of it is re-radiated by the antenna.

Cheers,

Phil Hobbs

3255. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 00:31:14 UTC
From: nm5k@wt.net
Message-ID: <c631bf06-84d2-4c37-b1b5-cdd6cc55449c@e25g2000prg.googlegroups.com>
Source record: 27077

On Mar 15, 7:46 am, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Mar 8, 11:21 am, richardharri...@webtv.net (Richard Harrison)
> wrote:
>
>
>
> > Art wrote:
>
> > "---my antenna is a full wavelength which meets Maxwell`s requirements,
> > it is just that the volume is small despite the wavelength."
>
> > In 1949, I worked at the KPRC-KXYZ broadcast plant. Another operator
> > there, J.L. Davis, W5LIT had a new 1949 Ford in which he installed a
> > surplus ART-13 and a PE-103 dynamotor. For an antenna he wound wire turn
> > by turn on a bamboo pole until it was resonant on a slice of the
> > 75-meter band.
>
> > When J.L. modulated, Q in the coil produced a tip corona on the first
> > good peak and modulation became loud without a receiver.
>
> > The 20th edition of the ARRL Antenna Book on page 16-13 says this about
> > continuously loaded antennas: "The general approach has been to use a
> > coil made from heavy wire (#14 or larger), with length-to-diameter
> > ratios as high as 21. British experimeters have reported good results
> > with 8-foot overall length on the 1.8- and 3.5 MHz bands. The idea of
> > making the entire antenna out of one section of coil has been tried with
> > some success."
>
> > Art`s antenna containing a "full wavelength" of wire would likely
> > feature a greater loss than J.L.`s 1/4-wave resonant coil from simply a
> > greater length of wire while both have peactances balanced to zero.
> > Art`s lower Q would probably kill the corona, increase the bandwidth,
> > while losing the gain that a fullwave straight conductor enjoys.
>
> > Cecil can probably report on results of continuously loaded mobile
> > antennas versus a bug catcher loaded whip in the California shoot-outs.
>
> > Best regards, Richard Harrison, KB5WZI
>
> Considering that it meets Maxwells requirements and is at least a
> wavelenght
> of a radiator my expectations are much higher than yours

Typical of one with delusions of radiation grandeur...

> I suspect that the output will exceed that of a 160 M antenna which
> has a ground plane.

How many people do you know that use elevated ground planes
on 160m? This may or may not be a trick question.

> I also suspect that if I diddn't concentrated so much on small
> physical size it could easily be uprated
> to compete with a yagi!

I suspect it would also be capable of browning the food, if
said food was placed close to the device when high power
was applied.
But the last time I checked, food warmers are not known
as very good radiators of RF.

> I would anticipate that in a couple of years the top band will have
> twice as many users that it has now.

Because all of a sudden you show up using a sub par antenna?
How would this effect the number of users of that band?
Why would anyone modify their operating habits because
you refuse to use an antenna that is halfway efficient?

> I am hoping also that its small size will allow for receiving
> abililities in line with the angle of incoming
> radiation via its manouvarability. Of course if all is already known
> about radio this would seem impossible

Only to you I suspect...

> but in a few weeks I myself will have a few QSOs to see how it matches
> up to my expectations.

Matches? This is the part of the system which is going to eat
your lunch. Chortle...

> The archives show all the building instruction but it appears that
> readers have concentrated on
> nonsensical retorts without reading the content.

I have no time to waste on sub par antenna designs.

>If an antenna is at
> least off one wavelength
> and is in equilibrium I see no reason why it should not beat existing
> antennas with ground plane losses

How many people do you know that use elevated ground planes
on 160m? This may or may not be a trick question.
But even if one was to use an elevated ground plane, or
even a ground mounted vertical, who are you to say if
the system is lossy or not?
I know of plenty of vertical systems on 160m which will
whip your puny shoe box antenna like a long lost stepchild,

regardless of the level of equilibrium noted.
Whatever that means...

> regardless of its shape or size.

Regardless of shape or size... yea right...

>Time will tell. Either way the
> experimental trail undertaken I have found to
> be very rewarding as many other amateurs have had when experimenting
> with antennas and who refuse
> to accept that all is known
> Art

The only thing I "know" for sure is you have your
head stuck so far up your whiny kazoo it has clouded all rational
thought.

As an example..

>I disagree that all experiments on antennas should stop based on the
>proweress of your particular brain. You have consistently over
>estimate your abilities

#1, define proweress...
#2 define your abilities, and then we will all vote as to who
has the greater level of proweress between the particular
brains in question.

Everyone is brain dead, except for prior Art. lol...
BTW, I said I would wait for your grand test before
I commented further, but seeing as you continue to spew
your silly bafflegab, and also horses ass comments to anyone
that dare question your silly crap, I retire my earlier stance.
MK

3256. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 00:51:47 UTC
From: AndyS <andysharpe@juno.com>
Message-ID: <77dbb0b5-3c5d-4ff8-aae4-f46e3fd61fa8@u10g2000prn.googlegroups.com>
Source record: 27078
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

billcalley wrote:
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios

Andy writes:

As a practical matter, if the background noise heard in the receiver
increases when the antenna is attached, the antenna is good enough.

This means that the atmospheric noise, in the frequency range that
the receiver is tuned to, is greater than the internal receiver
noise....

It also means that any signal that is to be received that exceeds
the
atmospheric noise, will be heard......

Unless you are using some signal processing that can detect signals
below the atmospheric noise level, this is a very good rule of
thumb....

Consider an airborne LORAN antenna, used on aircraft, to receive
100 khz signals. It works out that around 22 inches is the length
where
the atmospheric noise exceeds the general receiver noise for most
receivers. Making the antenna longer will pick up more desired
signal,
but also more atmospheric noise, in the same ratio.....so the SNR
doesn't
get much better. Note that a matched antenna for 100khz will be
many many hundreds of feet long.... but is never used either in boats
or airplanes, since a "matched" antenna serves no advantage to
sensitivity (SNR)....

These are rules of thumb, and useful approximations, but, in
effect,
you don't need a great antenna unless you are trying to receive a weak
signal....or have a method to increase the SNR by signal processing.

Andy in Eureka, Texas W4OAH

3257. Re: The N8WWM archives

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 01:09:11 UTC
From: WB2DBH <wb2dbh@hotmail.com>
Message-ID: <47dc7332$0$4965$4c368faf@roadrunner.com>
Source record: 27079
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.policy

YAWN....

"dougay patrol" <slapadougay@slapslap.com> wrote in message
news:47dc27b8@news.x-privat.org...
> Liten to Douglas the fool on the air:
>
> http://media.putfile.com/dougayactsafooloncb
>
> http://media.putfile.com/dougay-whines-again
>
> http://media.putfile.com/dougay-whines
>

3258. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 01:18:48 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <mcidnUC068fl6EHanZ2dnUVZ_tTinZ2d@comcast.com>
Source record: 27080

On Fri, 14 Mar 2008 11:57:41 -0700, Roy Lewallen wrote:

> Richard Harrison wrote:
>>
>> Build a small scale model that can be tested indoors and report its
>> characteristics. Antennas are scaleable.
>
> That's more easily said than done. One of the critical characteristics
> of a small antenna is loss. And to correctly replicate loss in a scaled
> antenna requires scaling the conductivity of the conductors as the
> square root of the frequency. To scale to a higher frequency requires
> that the conductivity be better than the original. Unless the original
> is made from lead and the scale factor moderate, this wouldn't be
> possible.

If what I suspect is true, would not the coax also need to be scaled?

- 73 de Mike N3LI -

--
-73 de Mike N3LI -

3259. Re: OT:UPDATE on John Kansius

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 01:24:32 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <mcidnUO068dN60HanZ2dnUVZ_tTinZ2d@comcast.com>
Source record: 27081

On Fri, 14 Mar 2008 17:36:28 -0700, John Smith wrote:

> Michael Coslo wrote:
>
>> ...
>> Water does not burn because it is already burnt.
>>
>>
>> Guess I'm kinda saying the same thing, eh?
>>
>>
>> - 73 de Mike N3LI -
>
> Waddaya mean? Any idiot knows water burns!
>
> Ya just havta separate the BIG parts from the little parts and then
> ignite 'em! Indeed, this process is truly perpetual! Ya's never lose
> one single atom and 'ya can take a bath in the "ashes!" Then, ta boot,
> you can do it again ...

But of course, in the state in which it can burn again, it isn't water
any more. 8^)

--
-73 de Mike N3LI -

3260. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 01:28:22 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47dc77a8$0$6484$4c368faf@roadrunner.com>
Source record: 27082

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:lcaot3hfqrovm7vg204h7d7jb69jocgo7c@4ax.com...
> On Sat, 15 Mar 2008 14:32:57 -0400, "AI4QJ" <nospam@ns.ns.com> wrote:
>
>>How do you change the polarity of a helical antenna?
>
> Swap the feeds.

Ha ha Richard, I assume you are aware that this is a joke given that a helical antenna is circularly polarized. I am not so sure about this "You" character though, he seems to take it seriously. And Art...well, the British have been known for their dry humour too. Good one, Art.

AI4QJ

3261. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 01:33:17 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47dc78d2$0$6478$4c368faf@roadrunner.com>
Source record: 27083
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

"billcalley" <billcalley@yahoo.com> wrote in message
news:e93d7a93-a8c1-4671-b830-3c33905405c6@u10g2000prn.googlegroups.com...
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!

For a receive antenna, you don't need to worry as nearly as much about an impedance match as you do with a transmitter. You are dealing with much higher gain on the input side as you are on the output side.

3262. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 01:49:36 UTC
From: dplatt@radagast.org
Message-ID: <guaua5-ijg.ln1@radagast.org>
Source record: 27087

In article <aiPCj.41541$nw4.38668@fe1.news.blueyonder.co.uk>,
Barrett <barrett@blueyounder.co.uk> wrote:

>What I meant to say, is there any benefits in performance if I changed all
>the gaps to 3 inch's rather than keep them to the original Cobwebb spec?

Changing the end spacing in this sort of antenna alters the
capacitance between the ends. This has a very significant effect on
the impedance at the feedpoint, and thus on the SWR. If the original
design had a different spacing and had a good SWR match, and you
change the spacing to 3" and don't make any compensating change to the
wire length, I suspect that you'll find that the antenna is no longer
as well matched and won't work as well with a 50-ohm feed source.

If the changes in tip spacing / capacitance aren't too serious, you
could probably compensate with an antenna tuner/transmatch. There
would be some amount of excess loss in the feedline due to the higher
SWR, but it might not be enough to affect performance significantly.

On the other hand, if the CobWebb with the 3" spacing has had its
radiator lengths adjusted to compensate for the change in tip-to-tip
capacitance, it might match up just fine. If that's the case, then
I'd expect that its performance would probably be indistinguishable
from an equally-well-matched Cobbweb with different tip spacings.

When I built a 2-meter halo antenna, I found that a change of 1/16" in
the tip spacing made a big difference in the SWR. After several
attempts to construct a tip spacer that was neither too wide nor too
narrow (but was *just* right, like a good bowl of porridge) I gave up.
I just used one of the "too wide" spacers, and then added a bit of
aluminum tape at the end of one tip and trimmed it until the SWR was
as good-as-it-got.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3263. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 01:52:42 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <mcidnUK068f34EHanZ2dnUVZ_tTinZ2d@comcast.com>
Source record: 27085

On Sat, 15 Mar 2008 06:46:31 -0700, Art Unwin wrote:

> Considering that it meets Maxwells requirements and is at least a
> wavelenght of a radiator my expectations are much higher than yours I
>suspect that
> the output will exceed that of a 160 M antenna which has a ground plane.

A full length vertical is what you are talking about?

> I also suspect that if I diddn't concentrated so much on small physical
> size it could easily be uprated to compete with a yagi!

Now here do you mean a directional antenna of your kind, or which?

Of course if all is already known about radio this
> would seem impossible but in a few weeks I myself will have a few QSOs
> to see how it matches up to my expectations.
> The archives show all the building instruction but it appears that
> readers have concentrated on
> nonsensical retorts without reading the content.

Art, throw me a bone here. I've looked in the archives a bit, and you've
been a prolific poster! I saw a 160 meter vertical you were posting
about, but it had a radial system, and I don't think this one does.

-73 de Mike N3LI -

3264. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 01:54:47 UTC
From: Phil Hobbs <pcdhSpamMeSenseless@pergamos.net>
Message-ID: <13tovf9ljsoen9c@corp.supernews.com>
Source record: 27086
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

Mark wrote:
>> Note: For many LNA designs, the best signal/noise ratio occurs at an
>> impedance that is close to, but not really, a perfect conjugate match.
>> The signal is coupled to the amplifier best at the conjugate match
>> impedance, but sometimes the noise is enhanced even more.
>>
>
> That brings up an intersting question I never did get a good answer
> to...
>
> It is my assertion that an LNA that is physically at room temperature
> (290K) can have a noise figure no better than 3 dB (i.e. its effective
> noise temperature is 290K) IF it is also conjugatly matched i.e.
> looks like 50 Ohms.
>
> Yes you can make the noise figure better than 3 dB, but then you must
> either cool the device or MISMATCH it to the line.
>
> In other words if it looks like 50 Ohms and it is physically at 290 K,
> it's effective noise temperature must also be 290K.
>
> How could it be otherwise?
>
> Comments plese.
>
> Mark
>
>
That beer in your hand was also cooled in a 300K ambient. How is that
possible? (Hint: the fluctuation-dissipation theorem only applies to
systems in thermodynamic equilibrium. The moment you turn on the power,
that assumption is violated, just as it is in your domestic refrigerator.)

An ordinary room-temperature diode has a noise temperature of 150K
(Tambient/2) as you can show in about 3 lines of algebra, starting from
the diode equation and the shot noise and Johnson noise formulas.

Cheers,

Phil Hobbs

Cheers,

Phil Hobbs

3265. Re: improve fm reception on transistor radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 03:09:36 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <VdSdnXRzyePAEkHanZ2dnUVZ_hWdnZ2d@comcast.com>
Source record: 27088

"Uncle Scotty" <scottspiegler@gmail.com> wrote in message
news:45176e7d-63ad-41b0-b089-c50326464ab3@x30g2000hsd.googlegroups.com...
>I bought this old-fashioned style radio from LL Bean to listen to a
> Prairie Home Companion on.
>
> http://www.llbean.com/webapp/wcs/stores/servlet/CategoryDisplay?page=crosley-radio&categ
oryId=56013&storeId=1&catalogId=1&langId=-1&parentCategory=7985&cat4=7984&shop_method=pp&f
eat=7985-tn
>
> It is broadcast locally on PBS radio, but I am in an apartment and am
> not getting strong reception. Beyond moving the radio (which I have
> tried to several locations) is there anything else I can do to improve
> it?
>
> Thanks, Scott

Not much you can do unless there is an antenna input on the back.

Tam

3266. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 03:45:02 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A6395E66866Cnonenowhere@61.9.191.5>
Source record: 27089

"AI4QJ" <nospam@ns.ns.com> wrote in
news:47dc77a8$0$6484$4c368faf@roadrunner.com:

>
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:lcaot3hfqrovm7vg204h7d7jb69jocgo7c@4ax.com...
>> On Sat, 15 Mar 2008 14:32:57 -0400, "AI4QJ" <nospam@ns.ns.com> wrote:
>>
>>>How do you change the polarity of a helical antenna?
>>
>> Swap the feeds.
>
> Ha ha Richard, I assume you are aware that this is a joke given that a
> helical antenna is circularly polarized. I am not so sure about this

AI4QJ, perhaps you have a different understanding of the meaning of
circular polarisation to most of us.

Owen

3267. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 04:18:24 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47dc9f82$0$6486$4c368faf@roadrunner.com>
Source record: 27090

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A6395E66866Cnonenowhere@61.9.191.5...
> "AI4QJ" <nospam@ns.ns.com> wrote in
> news:47dc77a8$0$6484$4c368faf@roadrunner.com:
>
>>
>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> news:lcaot3hfqrovm7vg204h7d7jb69jocgo7c@4ax.com...
>>> On Sat, 15 Mar 2008 14:32:57 -0400, "AI4QJ" <nospam@ns.ns.com> wrote:
>>>
>>>>How do you change the polarity of a helical antenna?
>>>
>>> Swap the feeds.
>>
>> Ha ha Richard, I assume you are aware that this is a joke given that a
>> helical antenna is circularly polarized. I am not so sure about this
>
> AI4QJ, perhaps you have a different understanding of the meaning of
> circular polarisation to most of us.
>
> Owen

Perhaps, Owen. My view is that the radiation from a helical antenna (Art's design) is circularly polarized, that is to say that the electromagnetic field rotates about the axis of the helix in the direction of the helix turn. What is your understanding? If in fact it happens to be the same as mine, then please tell me how Art could possibly "pan the antenna in different directions" for "maximum clarity and audio gain" (as you could with linear polarization)?

I look forward to learning about your alternative concept of circular polarization, and, how maximized clarity and audio gain could be achieved using Art's stated methods. Thanks,

73 de AI4QJ

3268. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 04:19:33 UTC
From: Bill Bowden <wrongaddress@att.net>
Message-ID: <0ca7b704-6aa3-4555-8315-c89168285dcd@i29g2000prf.googlegroups.com>
Source record: 27091
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Mar 15, 3:11 am, billcalley <billcal...@yahoo.com> wrote:
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

Well, I 'm not an expert, but it seems that with a transmitting antenna, the idea is to transfer as much power as possible to increase efficiency, and so the antenna needs to be closely matched to the output of the transmitter for best results. But the receiving antenna is a different problem, since no power from the antenna is needed to drive the receiver, and so who cares about the match? The idea with the receiving antenna is to get the most voltage and highest S/N ratio with no load. The input to the receiver should be buffered with a high impedance FET amplifier, or some such, so the receiver draws almost no power from the antenna. This leaves you free to design the antenna and input tuning circuit for the highest Q and lowest noise figure without worrying about impedance match.

Just my opinion.

-Bill

3269. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 04:36:30 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <47DCA3CE.6070803@nosspam.activ8.net.au>
Source record: 27092

Art Unwin wrote:
> I have on order a tilting system for my antenna to probe the
> polarisation of incoming signals
> for maximum audio clarity and gain.
> There are instruments out there that can automatically tell you the
> polarisation
> without one taking the trouble to pan the antenna in different
> directions.

Never saw one that didn't need an antenna capable of being switched
(either electronically or machanically) beween different polarizations.
Which instrument did you see?

Alan

3270. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 05:26:07 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47dcaf61$0$6475$4c368faf@roadrunner.com>
Source record: 27093

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A6395E66866Cnonenowhere@61.9.191.5...
> "AI4QJ" <nospam@ns.ns.com> wrote in
> news:47dc77a8$0$6484$4c368faf@roadrunner.com:
>
>>
>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> news:lcaot3hfqrovm7vg204h7d7jb69jocgo7c@4ax.com...
>>> On Sat, 15 Mar 2008 14:32:57 -0400, "AI4QJ" <nospam@ns.ns.com> wrote:
>>>
>>>>How do you change the polarity of a helical antenna?
>>>
>>> Swap the feeds.
>>
>> Ha ha Richard, I assume you are aware that this is a joke given that a
>> helical antenna is circularly polarized. I am not so sure about this
>
> AI4QJ, perhaps you have a different understanding of the meaning of
> circular polarisation to most of us.
>
> Owen

Are you talking about the possibility of Art communicating with other people who are transmitting on similar helical circularly polarized antennas where CW vs CCW direction must be considered? I dismissed this possibility entirely. Most hams's signals arrive either veritcal, norizontal or somewhere in between (not rotating) originating at a linear polarized source. Is he communicating with satellites? I really haven't heard of helix antennas on the HF bands other than the Unwin compact model. If so, then yes, you can only switch the feedpoint to change from CW to CCW and that can make a BIG difference in gain. The probability of Art finding another HF helical to QSO with should be negligible to null. Satellites are another matter.

73 de AI4QJ

3271. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 05:55:34 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A63AC0821D44nonenowhere@61.9.191.5>
Source record: 27094

"AI4QJ" <nospam@ns.ns.com> wrote in
news:47dcaf61$0$6475$4c368faf@roadrunner.com:

...
> Are you talking about the possibility of Art communicating with other
> people who are transmitting on similar helical circularly polarized
> antennas where CW vs CCW direction must be considered? I dismissed

If this is his compact wonder, it is probably not an axial mode helical.
(I don't know that one could ever describe an axial mode helical as
'compact'.)

Normal mode helicals deliver linear polarisation.

> this possibility entirely. Most hams's signals arrive either veritcal,
> norizontal or somewhere in between (not rotating) originating at a
> linear polarized source. Is he communicating with satellites? I really
> haven't heard of helix antennas on the HF bands other than the Unwin
> compact model. If so, then yes, you can only switch the feedpoint to

Normal mode helicals are commonly used on HF.

> change from CW to CCW and that can make a BIG difference in gain. The
> probability of Art finding another HF helical to QSO with should be
> negligible to null. Satellites are another matter.

Owen

3272. Re: improve fm reception on transistor radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 13:35:32 UTC
From: Uncle Scotty <scottspiegler@gmail.com>
Message-ID: <0537c48c-2189-4cf5-abeb-be11ffbf924e@59g2000hsb.googlegroups.com>
Source record: 27095

On Mar 15, 11:09 pm, "Tam" <t-tamm...@comcast.net> wrote:

> Not much you can do unless there is an antenna input on the back.

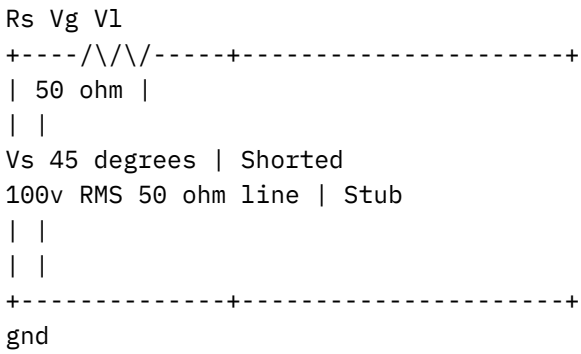
There's no input, but there is an antenna wire that comes out of the
back of the unit about 18" long. Can I attach something to that that
might boost the signal?

3273. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 14:21:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <D1aDj.65307$Pv2.29418@newssvr23.news.prodigy.net>
Source record: 27096

Keith Dysart wrote:
> And, as expected
> Ps(t) = Prs(t) + Pg(t)

Would you please explain how energy is conserved in the
following example at the zero-crossing point for Vs?



At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
is supplying zero watts at that time but Prs(t) = 100w.
Where is the 100 watts coming from?
--
73, Cecil http://www.w5dxp.com

3274. Re: improve fm reception on transistor radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 14:23:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <t3aDj.65308$Pv2.26111@newssvr23.news.prodigy.net>
Source record: 27097

Uncle Scotty wrote:
> There's no input, but there is an antenna wire that comes out of the
> back of the unit about 18" long. Can I attach something to that that
> might boost the signal?

Without a schematic, you won't know until you try it.
--
73, Cecil http://www.w5dxp.com

3275. Re: improve fm reception on transistor radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 14:26:33 UTC
From: ltdoc@yahoo.com
Message-ID: <578f6186-0bd8-4838-b3df-f0de0b03672b@f63g2000hsf.googlegroups.com>
Source record: 27098

Sure, try extending that length of antenna and see what happens. If
it helps, then you have a chance of finding the optimum length for
your particular situation. Quit when you don't hear any more
improvement (or when you run out of wire or places to run it).
- 'Doc

3276. Re: improve fm reception on transistor radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 15:26:19 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <O5edncb1H8uVoUDanZ2dnUVZ_tmhnZ2d@comcast.com>
Source record: 27099

"Uncle Scotty" <scottspiegler@gmail.com> wrote in message
news:0537c48c-2189-4cf5-abeb-be11ffbf924e@59g2000hsb.googlegroups.com...
> On Mar 15, 11:09 pm, "Tam" <t-tamm...@comcast.net> wrote:
>
>> Not much you can do unless there is an antenna input on the back.
>
> There's no input, but there is an antenna wire that comes out of the
> back of the unit about 18" long. Can I attach something to that that
> might boost the signal?
>
Extend it to about 30 - 31 inches with the whole wire in a straight line.

Tam

3277. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 16:03:29 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <988829ed-4809-4215-a084-34f1f0527976@d45g2000hsc.googlegroups.com>
Source record: 27100

On Mar 15, 8:52 pm, Mike Coslo <mco...@comcast.net> wrote:
> On Sat, 15 Mar 2008 06:46:31 -0700, Art Unwin wrote:
> > Considering that it meets Maxwells requirements and is at least a
> > wavelenght of a radiator my expectations are much higher than yours I
> >suspect that
> > the output will exceed that of a 160 M antenna which has a ground plane.
>
> A full length vertical is what you are talking about?
>
> > I also suspect that if I diddn't concentrated so much on small physical
> > size it could easily be uprated to compete with a yagi!
>
> Now here do you mean a directional antenna of your kind, or which?
>
> Of course if all is already known about radio this
>
> > would seem impossible but in a few weeks I myself will have a few QSOs
> > to see how it matches up to my expectations.
> > The archives show all the building instruction but it appears that
> > readers have concentrated on
> > nonsensical retorts without reading the content.
>
> Art, throw me a bone here. I've looked in the archives a bit, and you've
> been a prolific poster! I saw a 160 meter vertical you were posting
> about, but it had a radial system, and I don't think this one does.
>
> -73 de Mike N3LI -

OK mike one last time.
Make a former to wind apon.
Set it up vertically and secure so that it doesn't fall over.
Get two reels of insulated wire preferbly pre wound paired
wire on each reel. Join the paired wires
Put the joint at the rear of the former with one reel to the left
and one reel to the right.
Wnd one wire clockwise and then wind counterclockwise the
wire from the other reel. Repeat these two functions making
sure the overlapped wires stay parallel with each other.
When you have completed the length of the spool then join
one wire to another wire from the opposite reel. You now have two
wires in your hands
one from each of the reels. These two wires are what you connect to
the transmission line..
Suggestions for the former. Make two cross arrangements using 1/2 inch

plastic piping.
At each of the 8 ends place a tee connection. Four pipes around a foot long can the join the two sections,
Use tees instead of elbows so the antenna is easier to mount.
If you want it to be all frequencie:
Cut a 1/2 inch plastic pipe in half,' length wise.
Make wire loops and fit them over the cut pipe and solder them tight.
Place a quick start threaded rod inside the cut pipe with a motor at one end.
Make a electrical wiper to place on the quick start thread to make electrical
connection to the loops as the motor turns.
Connect a meter to one of the start wires and disconnect it from the joint.
Place a sowing needle on the other end of the instrument and pierce the
wires in sequence until one
gets to the coax connection points marking each wire that is connected to the meter.
Connect the marked wires to the loop that were made sp electrical contact
can be made to the threaded shaft
Connect the shaft to one of the wires that consists of the feed points.
Rejoin the wire connections at the start point so that now you have a complete electrical
circuit starting at the feed points
Place assembly anywhere and apply power and have a qso.
Now will somebody that is savvy with computors do that excercise that I suggested
with regard to tipped radiators and report on it before you make this antenna or start
tilting towers around ten degrees sinc the change is not worth it when calculating total gain?
Art Unwin KB9MZ...XG (uk)
Art

3278. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 16:06:07 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <a1583727-147f-40ea-899f-fa4b16632cc1@8g2000hsu.googlegroups.com>
Source record: 27001

On Mar 16, 12:55 am, Owen Duffy <n...@no.where> wrote:
> "AI4QJ" <nos...@ns.ns.com> wrote innews:47dcaf61$0$6475$4c368faf@roadrunner.com:
>
> ...
>
> > Are you talking about the possibility of Art communicating with other
> > people who are transmitting on similar helical circularly polarized
> > antennas where CW vs CCW direction must be considered? I dismissed
>
> If this is his compact wonder, it is probably not an axial mode helical.
> (I don't know that one could ever describe an axial mode helical as
> 'compact'.)
>
> Normal mode helicals deliver linear polarisation.
>
> > this possibility entirely. Most hams's signals arrive either veritcal,
> > norizontal or somewhere in between (not rotating) originating at a
> > linear polarized source. Is he communicating with satellites? I really
> > haven't heard of helix antennas on the HF bands other than the Unwin
> > compact model. If so, then yes, you can only switch the feedpoint to
>
> Normal mode helicals are commonly used on HF.
>
> > change from CW to CCW and that can make a BIG difference in gain. The
> > probability of Art finding another HF helical to QSO with should be
> > negligible to null. Satellites are another matter.
>
> Owen

See recent posting on E ham
Art

3279. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 16:41:52 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4213f166-205f-4180-a297-1305d5544e30@s19g2000prg.googlegroups.com>
Source record: 27002

On Mar 16, 10:21 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > And, as expected
> > Ps(t) = Prs(t) + Pg(t)
>
> Would you please explain how energy is conserved in the
> following example at the zero-crossing point for Vs?
>
>
>   Rs   Vg   Vl
>   +----/\/\/-----+----------------------+
> | 50 ohm |
> | |
>   Vs   45 degrees | Shorted
>   100v RMS   50 ohm line | Stub
> | |
> | |
>   +--------------+----------------------+
>   gnd
>
> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
> is supplying zero watts at that time but Prs(t) = 100w.
> Where is the 100 watts coming from?

Vs(t) = 1.414cos(wt)

After settling, from some circuit analysis...

Vg(t) = 100 cos(wt+45degrees)
Ig(t) = 2 cos(wt-45degrees)

Vrs(t) = Vs(t) - Vg(t)
= 100 cos(wt-45degrees)
Irs(t) = Ig(t)
= 2 cos(wt-45degrees)

Is(t) = Ig(t)
= 2 cos(wt-45degrees)

Ps(t) = Vs(t) * Is(t)
= 100 + 141.4213562 cos(2wt-45degrees)

Prs(t) = Vrs(t) * Irs(t)
= 100 + 100 cos(2wt-90degrees)

Pg(t) = Vg(t) * Ig(t)
= 0 + 100 cos(2wt)

For confirmation of conservation of energy, the above
is in agreement with
Ps(t) = Prs(t) + Pg(t)

Ps(t) = 100 + 141.4213562 cos(2wt-45degrees)
so, Ps(t) = 0, occurs whenever
141.4213562 cos(2wt-45degrees)
is equal to
-100
which, for example, would happen when 2wt = 180 degrees
or wt = 90 degrees.

At this time, again for example, the energy being
dissipated in the source resistor
Prs(t) = 100 + 100 cos(2wt-90degrees)
= 100 + 0
= 100

Since no energy is being delivered from the source,
(Ps(t) is 0), then given
Ps(t) = Prs(t) + Pg(t)
the energy must be coming from the line. Let us
check the energy flow at the point Vg at this
time
Pg(t) = 0 + 100 cos(2wt)
= -100
as required.

So the energy being dissipated in the source
resistor at this time is being returned from
the line.

Just for completeness we can compute the line
state at the point Vg in terms of forward and
reverse waves...

Vf.g(t) = 70.71067812 cos(wt)
Vr.g(t) = 70.71067812 cos(wt+90degrees)
Vg(t) = Vf.g(t) + Vr.g(t)
= 100 cos(wt+45degrees)

If.g(t) = 1.414213562 cos(wt)
Ir.g(t) = 1.414213562 cos(wt-90degrees)
Ig(t) = If.g(t) + Ir.g(t)
= 2 cos(wt-45degrees)

Pf.g(t) = Vf.g(t) * If.g(t)
= 50 + 50 cos(2wt)

Pr.g(t) = Vr.g(t) * Ir.g(t)
= -50 + 50 cos(2wt)

And since
Pg(t) = Pf.g(t) + Pr.g(t)

= 0 + 100 cos(2wt)
confirming the previously computed values.

It is valuable to examine Pr.g(t) at the time when
Ps(t) is zero. Substituting wt = 90degrees
into Pr.g(t)...

Pr.g(t) = -50 + 50 cos(2wt)
= -50 -50
= -100
which would appear to be the 100 watts needed to
heat the source resistor. This is misleading.
When all the values of t are examined it will be
seen that only the sum of Pf.g(t) and Pr.g(t),
that is, Pg(t), provides the energy not provided
from the source that heats the source resistor.
wt=90 is a special case in that Pf.g(t) is 0 at
this particular time.

The line input impedance does have a reactive
component and it is this reactive component that
can store and return energy. The energy flow
into and out of this impedance (pure reactance
for the example under consideration) is described
by Pg(t).

In summary,
Ps(t) = Prs(t) + Pg(t)

and by substitution, if the solution is preferred
in terms of Pf and Pr,
Ps(t) = Prs(t) + Pf.g(t) + Pr.g(t)

Ps and Pr alone are insufficient to explain the
heating of the source resistor.

...Keith

3280. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 17:33:35 UTC
From: You <you@shadow.orgs>
Message-ID: <you-33AE20.09333816032008@netnews.worldnet.att.net>
Source record: 27003

```
In article <you-09B35E.11062715032008@netnews.worldnet.att.net>,
You <you@shadow.orgs> wrote:

> In article <47dc1659$0$17359$4c368faf@roadrunner.com>,
> "AI4QJ" <nospam@ns.ns.com> wrote:
>
> > "Art Unwin" <ArthurUnwin@gmail.com> wrote in message
> > news:e92366c7-59e4-4ede-b159-a50dd548d8df@m44g2000hsc.googlegroups.com...
> > >I have on order a tilting system for my antenna to probe the
> > > polarisation of incoming signals
> > > for maximum audio clarity and gain.
> > > There are instruments out there that can automatically tell you the
> > > polarisation
> > > without one taking the trouble to pan the antenna in different
> > > directions.
> > > Anybody out there follow such a procedure with the antenna or use a
> > > homebrew
> > > or commercial instrument to save time?
> > > Regards
> > > Art
> >
> > How do you change the polarity of a helical antenna?
>
> You wind the Helix in the OPPOSITE Direction....... Duh.....
```

Just for "Grins" consider this..... What Polorization would you get
if you mounted the Dipole Feed of a Corner Reflector Antenna, at
45&#65533; instead of inline with the Axis of the Reflector?

3281. stop the lies

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 19:30:42 UTC
From: an_old_friend <kb9rqz@gmail.com>
Message-ID: <ee549f67-7d48-4e99-ace7-8900ef312737@m36g2000hse.googlegroups.com>
Source record: 27004
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Mar 15, 9:09 pm, "WB2DBH" <wb2...@hotmail.com> wrote:
> YAWN....

you got that right

what how many years have the ng been dominated by those that insist
their sick and twisted views omust be made front and center

without any reply from the victums
>
> "dougay patrol" <slapadou...@slapslap.com> wrote in message
>
> news:47dc27b8@news.x-privat.org...
>
>
>
> > Liten to Douglas the fool on the air:
>
> >http://media.putfile.com/dougayactsafooloncb
>
> >http://media.putfile.com/dougay-whines-again
>
> >http://media.putfile.com/dougay-whines- Hide quoted text -
>
> - Show quoted text -

3282. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 19:45:39 UTC
From: Jeff Liebermann <jeffl@cruzio.com>
Message-ID: <rlsqt3hnmsahnh1ss086gfjhabdsqpbo99@4ax.com>
Source record: 27005
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Sat, 15 Mar 2008 17:51:47 -0700 (PDT), AndyS <andysharpe@juno.com>
wrote:

>Consider an airborne LORAN antenna, used on aircraft, to receive
>100 khz signals. It works out that around 22 inches is the length
>where
>the atmospheric noise exceeds the general receiver noise for most
>receivers. Making the antenna longer will pick up more desired
>signal,
>but also more atmospheric noise, in the same ratio.....so the SNR
>doesn't
>get much better.

Agreed. However, the short 18" antenna is commonly used for handheld
and aircraft Loran receivers. However marine Loran antennas are
typically 8ft long.
<http://shakespeare-marine.com/antennas.asp?antenna=5220>

That's not the only reason that Loran antennas are rather short. If
the antenna were longer, the impedance would increase, causing it to
pickup more percipitation static, atmospheric noise, and 60Hz
harmonics. A longer antenna would also not be as narrow band and low
impedance as a short (loaded) antenna. The relatively narrow
bandwidth is helpful for eliminating broadcast, beacon band, and other
forms of interference.

Incidentally, that's also one reason why some remote Loran systems
have a pre-amp that really burns some watts. It needs to handle the
out of band overload and stay linear. If the antenna were made
longer, the amplifier would need to handle proportionately more power
(and probably melt). Some details in the patent at:
<http://www.google.com/patents?id=ONUrAAAAEBAJ&dq=4875019>
The "background" section is worth reading. The other reason for the
amplifier is to give the antenna system a 50 ohm output impedance so
that cheap coax can be used.

--
Jeff Liebermann jeffl@cruzio.com
150 Felker St #D http://www.LearnByDestroying.com
Santa Cruz CA 95060 http://802.11junk.com
Skype: JeffLiebermann AE6KS 831-336-2558

3283. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 19:48:31 UTC
From: richardharrison@webtv.net
Message-ID: <11457-47DD798F-672@storefull-3255.bay.webtv.net>
Source record: 27006

Art wrote:
"Normal mode helicals are commonly used on HF."

Yes. Such antennas include small diameter coils making up solenoids. The turns act as small stacked loops.

A small loop acts as a short dipole but with its E and H fields interchanged. See page 58 of the 3rd edition of "Antennas" by Kraus, Marthefka, et al.

Best regards, Richard Harrison, KB5WZI

3284. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 20:05:48 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <9b0084a3-1420-4daa-b3bf-8264ab523c23@e39g2000hsf.googlegroups.com>
Source record: 27007

On Mar 16, 2:48 pm, richardharri...@webtv.net (Richard Harrison)
wrote:
> Art wrote:
>
> "Normal mode helicals are commonly used on HF."
>
> Yes. Such antennas include small diameter coils making up solenoids. The
> turns act as small stacked loops.
>
> A small loop acts as a short dipole but with its E and H fields
> interchanged. See page 58 of the 3rd edition of "Antennas" by Kraus,
> Marthefka, et al.
>
> Best regards, Richard Harrison, KB5WZI

I did not say that. The quote is from somewhere else.
I am sure that he will be happy about the facts that you
have revealed to him as a personal favor and a book
that he can read up for himself what "Normal mode" means
Then explain it to you so you understand what you read
In the mean time I will try loading up a solenoid on 20 M
to see how many people are using them..

3285. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 21:57:51 UTC
From: richardharrison@webtv.net
Message-ID: <1153-47DD97DF-584@storefull-3256.bay.webtv.net>
Source record: 27008

Art wrote:
"I have an on order a tilting system for my antenna to probe the polarisation of incoming signals for maximum audio clarity and gain."

That may be interesting but do you ever recall cross polarization of an incoming ionosphere reflected signal being unreadable because polarization was wrong?

So many different and quickly changing path variations exist in the ionosphere that the best antenna to use is based on probability.

E.A. Laporte says on page 215 of "Radio Antenna Engineering":

"To make best use of this effect (randomness of ionospheric waves) it is desirable to employ complimentary antennas for transmitting and receiving."

Most commercial HF circuits I`ve experienced and seen use horizontal polarization. It is because much severe man made interference arriving at a receiving antenna is vertically polarized.

Best regards, Richard Harrison, KB5WZI

3286. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 22:21:02 UTC
From: richardharrison@webtv.net
Message-ID: <1153-47DD9D4E-588@storefull-3256.bay.webtv.net>
Source record: 27009

I apologize to Art Unwin. It was Owen Duffy who wrote:
"Normal mode helicals are commonly used on HF."

A normal mode helical antenna radiates perpendicularly to the axis of the helix. The axial mode helix antenna invented by John Kraus radiates in the direction of the axis of the helix.

Best regards, Richard Harrison, KB5WZI

3287. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 23:03:07 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47dda888$0$24105$4c368faf@roadrunner.com>
Source record: 27010

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:1153-47DD9D4E-588@storefull-3256.bay.webtv.net...
>I apologize to Art Unwin. It was Owen Duffy who wrote:
> "Normal mode helicals are commonly used on HF."
>
> A normal mode helical antenna radiates perpendicularly to the axis of
> the helix. The axial mode helix antenna invented by John Kraus radiates
> in the direction of the axis of the helix.

Richard,

Mr. Un win has not sufficiently described his antenna for anyone to determine how much/if any radiation is axial or normal. We do not know the relationship between coil diameter, length and wavelength. I thought this was all a joke because I had assumed axial mode. It is possible to understand Art's concerns seriously if you assume normal mode. But normal mode is not the function of a true helical mode antenna, it is merely using a coil as an 'antenna shortener' by adding distributed inductance, like a strectched out slinky....there are many HF CB antennas constructed that way thru their entire length and they do likely have normal polarization. It is up to Art to answer to us how his secret design is working, normal or axial mode? Art, what is your coil ID, antenna length and frequency of operation? If it turns out you are axial, then you know what to do: be able to switch the feed point. If it is normal, then I suggest you consider a modified inverted V antenna construction, if possible, at 45 degrees, as having a higher probability of closer polarization match than straight horizontal or vertical, just as is the case with a normal dipole.

3288. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-16 23:50:33 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <dniDj.714$Nr1.510@trnddc01>
Source record: 27011

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A63AC0821D44nonenowhere@61.9.191.5...
> "AI4QJ" <nospam@ns.ns.com> wrote in
> news:47dcaf61$0$6475$4c368faf@roadrunner.com:
>
> ...
>> Are you talking about the possibility of Art communicating with other
>> people who are transmitting on similar helical circularly polarized
>> antennas where CW vs CCW direction must be considered? I dismissed
>
> If this is his compact wonder, it is probably not an axial mode helical.
> (I don't know that one could ever describe an axial mode helical as
> 'compact'.)
>
> Normal mode helicals deliver linear polarisation.
>
>> this possibility entirely. Most hams's signals arrive either veritcal,
>> norizontal or somewhere in between (not rotating) originating at a
>> linear polarized source. Is he communicating with satellites? I really
>> haven't heard of helix antennas on the HF bands other than the Unwin
>> compact model. If so, then yes, you can only switch the feedpoint to
>
> Normal mode helicals are commonly used on HF.
>
>> change from CW to CCW and that can make a BIG difference in gain. The
>> probability of Art finding another HF helical to QSO with should be
>> negligible to null. Satellites are another matter.
>
> Owen

Hi Owen

I have no disagreement with your thoughts. I do want to point out that
the short helical antenna named Quad Helix does give good CP normal to the
helix axis.

Jerry KD6JDJ

3289. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 00:48:22 UTC
From: richardharrison@webtv.net
Message-ID: <23750-47DDBFD6-655@storefull-3251.bay.webtv.net>
Source record: 27012

Art wrote:
"Anybody out there follow such a procedure with the antenna or use a homebrew or commercial instrument to save time?"

Search on goniometer.

I was doing my thing in Argentina when El Jefe or the boss called me into his office to ask me why my assistant had requisitioned a goniometer instead of the company doctor. I had to explain that it was not a medical diagnostic instrument.

Best regards, Richard Harrison, KB5WZI

3290. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 00:56:18 UTC
From: richardharrison@webtv.net
Message-ID: <23750-47DDC1B2-656@storefull-3251.bay.webtv.net>
Source record: 27013

My apology to Edmund A. Laport, author of a marvelous book: "Radio Antenna Engineering". He does not add an "e" after the "t" in his name. I was the culprit that did it in an earlier post.

Best regards, Richard Harrison, KB5WZI

3291. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 01:41:34 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <GV_Cj.64971$Pv2.48329@newssvr23.news.prodigy.net>
Source record: 27084
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

billcalley wrote:
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

Bill;

I haven't looked at the back of a radio in a long time, but those that I
have looked at usually had a trimmer capacitor that helped tune the
antenna to the radio input. This is the impedance match you are looking at.

Dave WD9BDZ

3292. Re: improve fm reception on transistor radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 02:05:41 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <blkDj.10762$%15.9481@bignews7.bellsouth.net>
Source record: 27014

If you can run a wire to a water pipe or electrical ground and over to
'close proximity' to your radio, it will probably increase reception.
It did for my little transistor radio when I was a kid (a few years back).

"Uncle Scotty" <scottspiegler@gmail.com> wrote in message
news:45176e7d-63ad-41b0-b089-c50326464ab3@x30g2000hsd.googlegroups.com...
>I bought this old-fashioned style radio from LL Bean to listen to a
> Prairie Home Companion on.
>
> http://www.llbean.com/webapp/wcs/stores/servlet/CategoryDisplay?page=crosley-radio&categ
oryId=56013&storeId=1&catalogId=1&langId=-1&parentCategory=7985&cat4=7984&shop_method=pp&f
eat=7985-tn
>
> It is broadcast locally on PBS radio, but I am in an apartment and am
> not getting strong reception. Beyond moving the radio (which I have
> tried to several locations) is there anything else I can do to improve
> it?
>
> Thanks, Scott

3293. Re: improve fm reception on transistor radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 02:35:46 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <6OkDj.628$bN3.6@trnddc03>
Source record: 27015

"Uncle Scotty" <scottspiegler@gmail.com> wrote in message
news:0537c48c-2189-4cf5-abeb-be11ffbf924e@59g2000hsb.googlegroups.com...
> On Mar 15, 11:09 pm, "Tam" <t-tamm...@comcast.net> wrote:
>
>> Not much you can do unless there is an antenna input on the back.
>
> There's no input, but there is an antenna wire that comes out of the
> back of the unit about 18" long. Can I attach something to that that
> might boost the signal?
>

Hi Uncle

If you are ambitious, you could consider building a multiturn loop antenna
(http://www.mindspring.com/~loop_antenna/)and coupling it to your receiver
by wrapping several turns of wire around it. A 2 foot diameter loop can
improve reception appreciably, when tuned properly.

Jerry

3294. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 03:24:28 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <MvlDj.6325$7d1.4651@news01.roc.ny>
Source record: 27016

Art Unwin wrote:

> Considering that it meets Maxwells requirements and is at least a
> wavelenght
> of a radiator my expectations are much higher than yours
> I suspect that the output will exceed that of a 160 M antenna which
> has a ground plane.
> I also suspect that if I diddn't concentrated so much on small
> physical size it could easily be uprated
> to compete with a yagi!

I can hardly wait for the trials, Art.

> Either way the
> experimental trail undertaken I have found to
> be very rewarding as many other amateurs have had when experimenting
> with antennas and who refuse
> to accept that all is known

Perhaps you're repeating the attempts of those experimenters of long
ago, who knew and discarded.

Dave K8MN

3295. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 03:35:18 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <WFIDj.6326$7d1.1622@news01.roc.ny>
Source record: 27017

Art Unwin wrote:

> OK mike one last time.
> Make a former to wind apon.
> Set it up vertically and secure so that it doesn't fall over.
> Get two reels of insulated wire preferbly pre wound paired
> wire on each reel. Join the paired wires
> Put the joint at the rear of the former with one reel to the left
> and one reel to the right.
> Wnd one wire clockwise and then wind counterclockwise the
> wire from the other reel. Repeat these two functions making
> sure the overlapped wires stay parallel with each other.
> When you have completed the length of the spool then join
> one wire to another wire from the opposite reel. You now have two
> wires in your hands
> one from each of the reels. These two wires are what you connect to
> the transmission line..
> Suggestions for the former. Make two cross arrangements using 1/2 inch
> plastic piping.
> At each of the 8 ends place a tee connection. Four pipes around a foot
> long can the join the two sections,
> Use tees instead of elbows so the antenna is easier to mount.
> If you want it to be all frequencie:
> Cut a 1/2 inch plastic pipe in half,' length wise.
> Make wire loops and fit them over the cut pipe and solder them tight.
> Place a quick start threaded rod inside the cut pipe with a motor at
> one end.
> Make a electrical wiper to place on the quick start thread to make
> electrical
> connection to the loops as the motor turns.
> Connect a meter to one of the start wires and disconnect it from the
> joint.
> Place a sowing needle on the other end of the instrument and pierce
> the
> wires in sequence until one
> gets to the coax connection points marking each wire that is
> connected to the meter.
> Connect the marked wires to the loop that were made sp electrical
> contact
> can be made to the threaded shaft
> Connect the shaft to one of the wires that consists of the feed
> points.
> Rejoin the wire connections at the start point so that now you have a
> complete electrical

> circuit starting at the feed points
> Place assembly anywhere and apply power and have a qso.
> Now will somebody that is savvy with computors do that excercise that
> I suggested
> with regard to tipped radiators and report on it before you make this
> antenna or start
> tilting towers around ten degrees sinc the change is not worth it when
> calculating total gain?

Well, there it is. I'm going to scrounge a "former" and a "sowing"
needle and get right to work.

Dave K8MN

3296. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 04:21:24 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <8lmDj.23424$0w.15064@newssvr27.news.prodigy.net>
Source record: 27018

Dave Heil wrote:
> Art Unwin wrote:
>
>> OK mike one last time.
>> Make a former to wind apon.
>> Set it up vertically and secure so that it doesn't fall over.
>> Get two reels of insulated wire preferbly pre wound paired
>> wire on each reel. Join the paired wires
>> Put the joint at the rear of the former with one reel to the left
>> and one reel to the right.
>> Wnd one wire clockwise and then wind counterclockwise the
>> wire from the other reel. Repeat these two functions making
>> sure the overlapped wires stay parallel with each other.
>> When you have completed the length of the spool then join
>> one wire to another wire from the opposite reel. You now have two
>> wires in your hands
>> one from each of the reels. These two wires are what you connect to
>> the transmission line..
>> Suggestions for the former. Make two cross arrangements using 1/2 inch
>> plastic piping.
>> At each of the 8 ends place a tee connection. Four pipes around a foot
>> long can the join the two sections,
>> Use tees instead of elbows so the antenna is easier to mount.
>> If you want it to be all frequencie:
>> Cut a 1/2 inch plastic pipe in half,' length wise.
>> Make wire loops and fit them over the cut pipe and solder them tight.
>> Place a quick start threaded rod inside the cut pipe with a motor at
>> one end.
>> Make a electrical wiper to place on the quick start thread to make
>> electrical
>> connection to the loops as the motor turns.
>> Connect a meter to one of the start wires and disconnect it from the
>> joint.
>> Place a sowing needle on the other end of the instrument and pierce
>> the
>> wires in sequence until one
>> gets to the coax connection points marking each wire that is
>> connected to the meter.
>> Connect the marked wires to the loop that were made sp electrical
>> contact
>> can be made to the threaded shaft
>> Connect the shaft to one of the wires that consists of the feed
>> points.
>> Rejoin the wire connections at the start point so that now you have a

>> complete electrical
>> circuit starting at the feed points
>> Place assembly anywhere and apply power and have a qso.
>> Now will somebody that is savvy with computors do that excercise that
>> I suggested
>> with regard to tipped radiators and report on it before you make this
>> antenna or start
>> tilting towers around ten degrees sinc the change is not worth it when
>> calculating total gain?
>
> Well, there it is. I'm going to scrounge a "former" and a "sowing"
> needle and get right to work.
>
> Dave K8MN

Don't forget an 'apon'....

Dave WD9BDZ

3297. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 05:06:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <I%mDj.1543$LV5.1190@newssvr19.news.prodigy.net>
Source record: 27019

Keith Dysart wrote:
> Pr.g(t) = -50 + 50 cos(2wt)
> = -50 -50
> = -100
> which would appear to be the 100 watts needed to
> heat the source resistor.

Which, contrary to your previous assertions, agrees with what I have said previously. This is the destructive interference energy stored in the feedline 90 degrees earlier and being returned as constructive interference to the source resistor. It's impossible to sweep it under the rug when the source power is zero, huh?

All power comes from the source. Since power is being delivered to the source resistor at a time when the source is delivering zero power, it must have been previously been stored in the reactance of the transmission line.
--
73, Cecil http://www.w5dxp.com

3298. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 05:16:40 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A64A56F1A5B7nonenowhere@61.9.191.5>
Source record: 27020

"Jerry" <j.jmartes@verizon.net> wrote in
news:dniDj.714$Nr1.510@trnddc01:

...
> Hi Owen
>
> I have no disagreement with your thoughts. I do want to point out
> that
> the short helical antenna named Quad Helix does give good CP normal to
> the helix axis.

Hi Jerry,

John Kraus' explanation of "normal mode" is where the radiation normal to the helix axis dominates. On that basis, the Quad Helix (which he discusses in his book) is neither an axial mode helix nor a normal mode helix, it is large enough that it has significant radiation both normal and axial, but not large enough to be dominated by the axial lobe, and it is a multi-filar helix which allows CP normal to the helix axis.

The Quadrifilar Helix is an interesting antenna, and I was aware of your particular interest from previous reading.

I don't know of a mono-filar normal mode helix that gives CP, but I expect that two of them with phased feeds could be used in the same way as crossed dipoles.

We are of course all guessing what Art had in mind, there is a conspicous and familiar lack of coherent detail.

Owen

3299. jobs

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 07:29:12 UTC
From: usha <ms.shilpa1@gmail.com>
Message-ID: <136b7f2d-0c31-411e-8914-7cb825be13c7@u10g2000prn.googlegroups.com>
Source record: 27021

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http://jobnowkirjoli.blogspot.com

3300. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 08:06:45 UTC
From: Jeroen Belleman <jeroen@nospam.please>
Message-ID: <frl8ql$2ec$1@aioe.org>
Source record: 27022
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

Mark wrote:
>> Note: For many LNA designs, the best signal/noise ratio occurs at an
>> impedance that is close to, but not really, a perfect conjugate match.
>> The signal is coupled to the amplifier best at the conjugate match
>> impedance, but sometimes the noise is enhanced even more.
>>
>
> That brings up an intersting question I never did get a good answer
> to...
>
> It is my assertion that an LNA that is physically at room temperature
> (290K) can have a noise figure no better than 3 dB (i.e. its effective
> noise temperature is 290K) IF it is also conjugatly matched i.e.
> looks like 50 Ohms.
>
> Yes you can make the noise figure better than 3 dB, but then you must
> either cool the device or MISMATCH it to the line.
>

I make amplifiers with 50 Ohms input impedance and 300pV/rtHz input-
referred noise. By your assertion, that should have been impossible.
The trick is that the input impedance obtained by feedback: The
cooled resistor trick. It works.

Jeroen Belleman

3301. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 10:00:10 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <8dedf2d9-3ecc-4181-8880-58ae213a0a54@s19g2000prg.googlegroups.com>
Source record: 27023

On Mar 17, 1:06 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Pr.g(t) = -50 + 50 cos(2wt)
> >   = -50 -50
> >   = -100
> > which would appear to be the 100 watts needed to
> > heat the source resistor.
>
> Which, contrary to your previous assertions, agrees
> with what I have said previously. This is the
> destructive interference energy stored in the
> feedline 90 degrees earlier and being returned
> as constructive interference to the source
> resistor. It's impossible to sweep it under the
> rug when the source power is zero, huh?

The intriguing question is:
1. Do you just stop reading as soon as you find a snippet
that aligns with your claim?
2. Do you keep reading, but do not understand because you
are so gleeful at finding a snippet that aligns with
your claim?
3. Or do you read, understand, but choose to disingenuously
ignore that which follows the snippet that aligns with
your claim?

Regardless, if you use the snippet above to support
your claim, you have effectively modified your claim.
You are now saying that the reflected energy is
dissipated in the source resistor only at particular
times, such as when the source voltage is 0, and that
you are not interested in what happens during the rest
of the cycle.

For example, if you were to do the same analysis,
except do it for t such that wt equals 100 degrees,
instead of 90, you would find that you need more terms
than just Pr.g to make the energy flows balance.

When wt equals 100 degrees
Ps = -28.170
Prs = 65.798
Pg = -93.96
so, as expected
Ps = Prs + Pg

And
Pr.g = -96.985
Pf.g = 3.015
Ooooppppss, no way to make those add to 65.798.

But
Ps = Prs + Pf.g + Pr.g
since
Pg = Pf.g + Pr.g

So all is well with world.

> All power comes from the source. Since power is
> being delivered to the source resistor at a time
> when the source is delivering zero power, it must
> have been previously been stored in the reactance
> of the transmission line.

This is true. But it is, of course, Pg(t) that
describes the energy flow in and out of the line,
not Pr.g(t).

So are you now agreeing that it is not the energy
in the reflected wave that accounts for the
difference in the heating of the source resistor
but, rather, the energy stored and returned from
the line, i.e. Pg(t)?

Note also, that when wt is 100 degrees, not only is
the source resistor being heated by energy being
returned from the line, the source is also absorbing
some of the energy being returned from the line
(Ps = -28.170).

...Keith

3302. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 13:16:54 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frlr06$fk0$1@f04n12.cac.psu.edu>
Source record: 27024

David G. Nagel wrote:
> Dave Heil wrote:

>> Well, there it is. I'm going to scrounge a "former" and a "sowing"
>> needle and get right to work.
>>
>> Dave K8MN
>
>
> Don't forget an 'apon'....

Can you guys tell us the correct way to spell coil former? It's a bobbin made of insulating material upon which wire is wound. Here's one that got a patent:

http://www.patentstorm.us/patents/6262650.html

- 73 de Mike N3LI -

3303. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 13:38:36 UTC
From: dirskyster@gmail.com
Message-ID: <6d769249-7b13-446b-9660-0437629c0eb4@s8g2000prg.googlegroups.com>
Source record: 27025
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On 3月15日, 下午7时11分, billcalley <billcal...@yahoo.com> wrote:
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

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3304. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 13:49:51 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <3GuDj.2307$CO3.1784@trnddc04>
Source record: 27026

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A64A56F1A5B7nonenowhere@61.9.191.5...
> "Jerry" <j.jmartes@verizon.net> wrote in
> news:dniDj.714$Nr1.510@trnddc01:
>
> ...
>> Hi Owen
>>
>> I have no disagreement with your thoughts. I do want to point out
>> that
>> the short helical antenna named Quad Helix does give good CP normal to
>> the helix axis.
>
> Hi Jerry,
>
> John Kraus' explanation of "normal mode" is where the radiation normal to
> the helix axis dominates. On that basis, the Quad Helix (which he
> discusses in his book) is neither an axial mode helix nor a normal mode
> helix, it is large enough that it has significant radiation both normal
> and axial, but not large enough to be dominated by the axial lobe, and it
> is a multi-filar helix which allows CP normal to the helix axis.
>
> The Quadrifilar Helix is an interesting antenna, and I was aware of your
> particular interest from previous reading.
>
> I don't know of a mono-filar normal mode helix that gives CP, but I
> expect that two of them with phased feeds could be used in the same way
> as crossed dipoles.
>
> We are of course all guessing what Art had in mind, there is a conspicous
> and familiar lack of coherent detail.
>
> Owen

Hi Owen

Art who??

Again, I am in full agreement with you on the limited application of nthe
term "Normal" to the radiation of a helix. In addition, I suspect there is
little need to elaborate, but, if a person had need, he could make a
bi-directional CP radiator from 1/2 of a Quad helix.

Jerry KD6JDJ

3305. cheap max 2007 running shoes tennis shoes suppliers at www.nice-sneakers.com

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 14:02:24 UTC
From: mynicesneakers3@yahoo.com.cn
Message-ID: <f1043a5a-aa3c-4ff7-a146-c4cee67f8719@h11g2000prf.googlegroups.com>
Source record: 27027

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3306. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 14:05:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8VuDj.32468$J41.32104@newssvr14.news.prodigy.net>
Source record: 27028

Keith Dysart wrote:
> Regardless, if you use the snippet above to support
> your claim, you have effectively modified your claim.

False. My claim is what it has always been which is:
An amateur radio antenna system obeys the conservation
of energy principle and abides by the principles of
superposition (including interference) and the wave
reflection model. Everything I have claimed falls out
from those principles.

Your claims, however, are in direct violation of the
principles of superposition and of the wave reflection
model, e.g. waves smart enough to decide to be reflected
when the physical reflection coefficient is 0.0. Your
claims even violate the principles of AC circuit theory,
e.g. a reactance doesn't store energy and deliver it back
to the system at a later time in the same cycle.

> You are now saying that the reflected energy is
> dissipated in the source resistor only at particular
> times, such as when the source voltage is 0, and that
> you are not interested in what happens during the rest
> of the cycle.

You haven't read my article yet, have you? Here's a quote:
"For this *special case*, it is obvious that the reflected energy
from the load is flowing through the source resistor, RS, and
is being dissipated there. But remember, we chose a special
case (resistive RL and 1/8 wavelength feedline) in order to
make that statement true and it is *usually not true* in the
general case."

If there is one case where your assertion is wrong, then
your assertion is false. I found that special case when
the source voltage is zero that makes your assertions
false.

> For example, if you were to do the same analysis,
> except do it for t such that wt equals 100 degrees,
> instead of 90, you would find that you need more terms
> than just Pr.g to make the energy flows balance.

Yes, you have realized that destructive and constructive
interference energy must be accounted for to balance the
energy equations. I have been telling you that for weeks.

I repeat: The *only time* that reflected energy is 100%
dissipated in the source resistor is when the two component
voltages satisfy the condition: (V1^2 + V2^2) = (V1 + V2)^2.
None of your examples have satisfied that necessary condition.
All it takes is one case to prove the following assertion false:

"Reflected energy is *always* re-reflected from the
source and redistributed back toward the load."

You appear to think that if you can find many cases where
an assertion is true, then you can simply ignore the cases
where it is not true. I have presented some special cases
where it is not true. It may be true for 99.9% of cases,
but that nagging 0.1% makes the statement false overall.

Equally false is the assertion: "Reflected energy is
always dissipated in the source resistor." The amount
of reflected energy dissipated in the source resistor
can vary from 0% to 100% depending upon network
conditions. That statement has been in my article from
the beginning.

> So are you now agreeing that it is not the energy
> in the reflected wave that accounts for the
> difference in the heating of the source resistor
> but, rather, the energy stored and returned from
> the line, i.e. Pg(t)?

I have already presented a case where there is *zero*
power dissipated in the source resistor in the presence
of reflected energy so your statement is obviously just
false innuendo, something I have come to expect from
you when you lose an argument.
--
73, Cecil http://www.w5dxp.com

3307. Re: The N8WWM archives

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 15:14:49 UTC
From: kb9rqz <kb9rqz@punce.com>
Message-ID: <frm1t0$n3l$1@stable.tornevall.net>
Source record: 27029
Cross-posted to:
alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.policy,rec.radio.amateur.equipment,rec.radio.swap

"an_old_friend" <kb9rqz@gmail.com> wrote in message
news:ee549f67-7d48-4e99-ace7-8900ef312737@m36g2000hse.googlegroups.com...
On Mar 15, 9:09 pm, "WB2DBH" <wb2...@hotmail.com> wrote:
> YAWN....

you got that right

what how many years have the ng been dominated by those that insist
their sick and twisted views omust be made front and center

without any reply from the victums
>
>
you two is indeed my kind of homosexal and i is indeed a victum thank two
woger et al tis is indeed why i indeed moronatate teh blog i has sea four
youselve
http://ipunce.blogspot.com/

> "dougay patrol" <slapadou...@slapslap.com> wrote in message
>
> news:47dc27b8@news.x-privat.org...
>
>
>
> > Liten to Douglas the fool on the air:
>
> >http://media.putfile.com/dougayactsafooloncb
>
> >http://media.putfile.com/dougay-whines-again
>
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3308. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 16:17:01 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frm5ht$d12$1@news.jpl.nasa.gov>
Source record: 27032

Art Unwin wrote:
> I have on order a tilting system for my antenna to probe the
> polarisation of incoming signals
> for maximum audio clarity and gain.
> There are instruments out there that can automatically tell you the
> polarisation
> without one taking the trouble to pan the antenna in different
> directions.
> Anybody out there follow such a procedure with the antenna or use a
> homebrew
> or commercial instrument to save time?
> Regards
> Art
There's lots of ways to do this. calibration is always an issue.

For instance, two helices wound with opposite senses can be run through
a variable combiner. (the helices can be on the same form, and are
coincident.

There'a variety of tripole antennas used for this sort of thing, too.

3 crossed short, resistively loaded dipoles or loops is also used.

A very clever scheme uses half loops sticking out of a conductive sphere
as a simultaneous E and H field probe. The electronics is all inside
the sphere, and you bring the data out on fiber optics.

3309. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 16:27:45 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frm660$nl7$1@news.jpl.nasa.gov>
Source record: 27031

Richard Harrison wrote:
> Art wrote:
> "I have an on order a tilting system for my antenna to probe the
> polarisation of incoming signals for maximum audio clarity and gain."
>
> That may be interesting but do you ever recall cross polarization of an
> incoming ionosphere reflected signal being unreadable because
> polarization was wrong?
>
> So many different and quickly changing path variations exist in the
> ionosphere that the best antenna to use is based on probability.

Or, use diversity combining. Several researchers in France have done
work with this, and discovered there's very little correlation between
the ordinary and extraordinary rays, so diversity combining is extremely
effective on HF skywave paths. They used physically co-located antennas
that had different polarization sensitivities (a loop and a whip, as I
recall).
>
> E.A. Laporte says on page 215 of "Radio Antenna Engineering":
>
> "To make best use of this effect (randomness of ionospheric waves) it is
> desirable to employ complimentary antennas for transmitting and
> receiving."

>
> Most commercial HF circuits I`ve experienced and seen use horizontal
> polarization. It is because much severe man made interference arriving
> at a receiving antenna is vertically polarized.

Interference polarization is not necessarily the case. (I believe
there are measurements that show it is essentially random). More what
it is has to do with the antenna pattern of horizontal and vertical
antennas for sources at ground level and reasonably close. For example,
A horizontal antenna not too high over a ground plane has a null right
at zero elevation.

>
> Best regards, Richard Harrison, KB5WZI
>

3310. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 16:56:01 UTC
From: Joel Koltner <zapwireDASHgroups@yahoo.com>
Message-ID: <GoxDj.22598$Uf4.5206@en-nntp-08.dc1.easynews.com>
Source record: 27030
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

"Tim Wescott" <tim@seemywebsite.com> wrote in message
news:HpudnT_1wuk3Q0banZ2dnUVZ_j6dnZ2d@web-ster.com...
> * or could -- does Rat Shack still carry antennas?

Yes. If anything there's been a bit of a rebirth in antenna sales as people start hearing about free over-the-air (ATSC) HDTV.

(Speaking of HDTV... Fry's is advertisiting ATSC->NTSC converters for $59, coming very close to the $49 I was predicting a while or so ago... Joerg will be pleased. :-))

3311. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 17:00:53 UTC
From: Joel Koltner <zapwireDASHgroups@yahoo.com>
Message-ID: <etxDj.71327$Gv.49820@en-nntp-07.dc1.easynews.com>
Source record: 27033
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

"AndyS" <andysharpe@juno.com> wrote in message
news:77dbb0b5-3c5d-4ff8-aae4-f46e3fd61fa8@u10g2000prn.googlegroups.com...
> As a practical matter, if the background noise heard in the receiver
> increases when the antenna is attached, the antenna is good enough.

This implies only that the antenna/receiver *matching* is good enough... yes?

(I'm thinking that you would still sometimes prefer a highly directional
antenna over just a dipole even though both increase the background noise.
I.e., in both cases the antenna matching is good enough, but without the
directionality the antenna itself might not be good enough to eliminate
interference, overloading, etc. from sources other than the one you're
interested in.)

3312. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 17:53:18 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <8790ba6d-3491-4dab-9982-8f03f68903aa@n77g2000hse.googlegroups.com>
Source record: 27035

On Mar 17, 11:27 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Richard Harrison wrote:
> > Art wrote:
> > "I have an on order a tilting system for my antenna to probe the
> > polarisation of incoming signals for maximum audio clarity and gain."
>
> > That may be interesting but do you ever recall cross polarization of an
> > incoming ionosphere reflected signal being unreadable because
> > polarization was wrong?
>
> > So many different and quickly changing path variations exist in the
> > ionosphere that the best antenna to use is based on probability.
>
> Or, use diversity combining. Several researchers in France have done
> work with this, and discovered there's very little correlation between
> the ordinary and extraordinary rays, so diversity combining is extremely
> effective on HF skywave paths. They used physically co-located antennas
> that had different polarization sensitivities (a loop and a whip, as I
> recall).
>
>
>
> > E.A. Laporte says on page 215 of "Radio Antenna Engineering":
>
> > "To make best use of this effect (randomness of ionospheric waves) it is
> > desirable to employ complimentary antennas for transmitting and
> > receiving."
>
> > Most commercial HF circuits I`ve experienced and seen use horizontal
> > polarization. It is because much severe man made interference arriving
> > at a receiving antenna is vertically polarized.
>
> Interference polarization is not necessarily the case. (I believe
> there are measurements that show it is essentially random). More what
> it is has to do with the antenna pattern of horizontal and vertical
> antennas for sources at ground level and reasonably close. For example,
> A horizontal antenna not too high over a ground plane has a null right
> at zero elevation.
>
>
>
> > Best regards, Richard Harrison, KB5WZI

Jim'
My 160M antenna is totaly at 70 feet. Not below or above. With the
tilting and pan mechanism and a couple of relays
it is possible to automate it so that every so often it will cycle
thru all modes using the single antenna. When a louder signal arises
then it is simple to stay on that polarisation
. This combiation thus is a reduction of land space required for two
or more separate antennas.
I was just curious as to what other hams were doing and it appears to
be nothing in this area.
Regards
Art

3313. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 18:26:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0nctt31m498n9e8q9f88pthl8r02j7tief@4ax.com>
Source record: 27034

On Mon, 17 Mar 2008 09:17:01 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
wrote:

> run through a variable combiner

Hi Jim,

As Richard pointed out, a goniometer (what, a 100 years old already?)
works fine for this. I bought one at a Ham swap when I was a
teenager. I also pointed this goniometer/antenna application out to
Arthur to demonstrate what he thought was novel was quite old (in
reference to the work of Tosi and Bellini). Arthur does not
acknowledge prior inventors, so this topic consistently re-emerges
with a fair periodicity. It should reappear around July again.

For those who want to see a schematic of the goniometer and antenna
application, here is a perfectly good example:
http://www.elektronikschule.de/~krausg/Longwave/Collection/Receiver_Techniques/On%20the%20art%20of%20NDB%20DXing/chapter5/On%20The%20Art%20of%20NDB%20DXing%20-%205.htm

73's
Richard Clark, KB7QHC

3314. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 18:31:18 UTC
From: David Harmon <source@netcom.com>
Message-ID: <13tteakfokn8g49@corp.supernews.com>
Source record: 27036
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Mon, 17 Mar 2008 09:56:01 -0700 in rec.radio.amateur.antenna,
"Joel Koltner" <zapwireDASHgroups@yahoo.com> wrote,
>(Speaking of HDTV... Fry's is advertisiting ATSC->NTSC converters for $59,
>coming very close to the $49 I was predicting a while or so ago.

I saw two models at Wal-Mart for $49 each. Magnavox and some other
name I don't know. That comes even closer.

3315. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 18:51:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <V4zDj.17374$xq2.6120@newssvr21.news.prodigy.net>
Source record: 27037
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

David Harmon wrote:
> On Mon, 17 Mar 2008 09:56:01 -0700 in rec.radio.amateur.antenna,
> "Joel Koltner" <zapwireDASHgroups@yahoo.com> wrote,
>> (Speaking of HDTV... Fry's is advertisiting ATSC->NTSC converters for $59,
>> coming very close to the $49 I was predicting a while or so ago.
>
> I saw two models at Wal-Mart for $49 each. Magnavox and some other
> name I don't know. That comes even closer.

Does Walmart honor the $40 coupon at:
https://www.dtv2009.gov/ApplyCoupon.aspx
--
73, Cecil http://www.w5dxp.com

3316. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 18:57:21 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frmeuhfho1@news.jpl.nasa.gov>
Source record: 27038

Richard Clark wrote:
> On Mon, 17 Mar 2008 09:17:01 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
> wrote:
>
>
>>run through a variable combiner
>
>
> Hi Jim,
>
> As Richard pointed out, a goniometer (what, a 100 years old already?)
> works fine for this.

A potential problem with a goniometers is that they aren't particularly broadband, although, I suppose that if the relative coupling ratios change with frequency, at least they're consistent.

The example cited below is an example of this. You adjust for best null/peak on your desired signal, which is narrow band. The setting for one frequency isn't likely to be the same as the setting for another frequency.

In an application where you want to combine multiple skywave paths, one probably wants something that can be automatically adjusted.

I bought one at a Ham swap when I was a
> teenager. I also pointed this goniometer/antenna application out to
> Arthur to demonstrate what he thought was novel was quite old (in
> reference to the work of Tosi and Bellini). Arthur does not
> acknowledge prior inventors, so this topic consistently re-emerges
> with a fair periodicity. It should reappear around July again.
>
> For those who want to see a schematic of the goniometer and antenna
> application, here is a perfectly good example:
> http://www.elektronikschule.de/~krausg/Longwave/Collection/Receiver_Techniques/On%20the%20art%20of%20NDB%20DXing/chapter5/On%20The%20Art%20of%20NDB%20DXing%20-%205.htm
>
> 73's
> Richard Clark, KB7QHC

3317. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 19:03:58 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frmfau$jf8$1@news.jpl.nasa.gov>
Source record: 27042

Art Unwin wrote:
> On Mar 17, 11:27 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
>>Richard Harrison wrote:
>>
>>>Art wrote:
>>>"I have an on order a tilting system for my antenna to probe the
>>>polarisation of incoming signals for maximum audio clarity and gain."
>>
>>>That may be interesting but do you ever recall cross polarization of an
>>>incoming ionosphere reflected signal being unreadable because
>>>polarization was wrong?
>>
>>>So many different and quickly changing path variations exist in the
>>>ionosphere that the best antenna to use is based on probability.
>>
>>Or, use diversity combining. Several researchers in France have done
>>work with this, and discovered there's very little correlation between
>>the ordinary and extraordinary rays, so diversity combining is extremely
>>effective on HF skywave paths. They used physically co-located antennas
>>that had different polarization sensitivities (a loop and a whip, as I
>>recall).
>>
>>
>>
>>
>>>E.A. Laporte says on page 215 of "Radio Antenna Engineering":
>>
>>>"To make best use of this effect (randomness of ionospheric waves) it is
>>>desirable to employ complimentary antennas for transmitting and
>>>receiving."
>>
>>>Most commercial HF circuits I`ve experienced and seen use horizontal
>>>polarization. It is because much severe man made interference arriving
>>>at a receiving antenna is vertically polarized.
>>
>>Interference polarization is not necessarily the case. (I believe
>>there are measurements that show it is essentially random). More what
>>it is has to do with the antenna pattern of horizontal and vertical
>>antennas for sources at ground level and reasonably close. For example,
>>A horizontal antenna not too high over a ground plane has a null right
>>at zero elevation.
>>
>>

>>
>>
>>> Best regards, Richard Harrison, KB5WZI
>
>
> Jim'
> My 160M antenna is totaly at 70 feet. Not below or above. With the
> tilting and pan mechanism and a couple of relays
> it is possible to automate it so that every so often it will cycle
> thru all modes using the single antenna. When a louder signal arises
> then it is simple to stay on that polarisation
> . This combiation thus is a reduction of land space required for two
> or more separate antennas.
> I was just curious as to what other hams were doing and it appears to
> be nothing in this area.

Lots of hams have done things with polarization diversity combining for HF. Check out Ralph, W0RPK's site at:
http://showcase.netins.net/web/wallio/POLAR.html

He has some actual recorded levels over a 20-30 second interval on a 10m skywave signal.

The problem with physically moving the antenna is that you need a fairly fast positioner, since the fades (in any one polarization) are on the order of 1 second. With a single antenna, you also don't know, a priori, which way to move it or when to move it (is that an overall fade, or is the polarization changing). You can use a scanning or dithering technique (much like conical scan for high gain parabolas), as long as the scan period is much less than the fading time scale.

With two co-located antennas, you've got lots more possibilities, and with modern signal processing hardware, it's cheap.

(and, of course, most FM car radios use some form of diversity combining these days, as do virtually all Wireless LAN access points)

> Regards
> Art

3318. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 19:16:27 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <cbf58506-d526-4a8c-ba9c-0ad6e474b03b@a1g2000hsb.googlegroups.com>
Source record: 27040

On Mar 17, 12:53 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Mar 17, 11:27 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
>
>
> > Richard Harrison wrote:
> > > Art wrote:
> > > "I have an on order a tilting system for my antenna to probe the
> > > polarisation of incoming signals for maximum audio clarity and gain."
>
> > > That may be interesting but do you ever recall cross polarization of an
> > > incoming ionosphere reflected signal being unreadable because
> > > polarization was wrong?
>
> > > So many different and quickly changing path variations exist in the
> > > ionosphere that the best antenna to use is based on probability.
>
> > Or, use diversity combining. Several researchers in France have done
> > work with this, and discovered there's very little correlation between
> > the ordinary and extraordinary rays, so diversity combining is extremely
> > effective on HF skywave paths. They used physically co-located antennas
> > that had different polarization sensitivities (a loop and a whip, as I
> > recall).
>
> > > E.A. Laporte says on page 215 of "Radio Antenna Engineering":
>
> > > "To make best use of this effect (randomness of ionospheric waves) it is
> > > desirable to employ complimentary antennas for transmitting and
> > > receiving."
>
> > > Most commercial HF circuits I`ve experienced and seen use horizontal
> > > polarization. It is because much severe man made interference arriving
> > > at a receiving antenna is vertically polarized.
>
> > Interference polarization is not necessarily the case. (I believe
> > there are measurements that show it is essentially random). More what
> > it is has to do with the antenna pattern of horizontal and vertical
> > antennas for sources at ground level and reasonably close. For example,
> > A horizontal antenna not too high over a ground plane has a null right
> > at zero elevation.
>
> > > Best regards, Richard Harrison, KB5WZI
>
> Jim'

> My 160M antenna is totaly at 70 feet. Not below or above. With the
> tilting and pan mechanism and a couple of relays
> it is possible to automate it so that every so often it will cycle
> thru all modes using the single antenna. When a louder signal arises
> then it is simple to stay on that polarisation
> . This combiation thus is a reduction of land space required for two
> or more separate antennas.
> I was just curious as to what other hams were doing and it appears to
> be nothing in this area.
> Regards
> Art

Jim, Allow mw to share my thoughts with you on my antenna design
and where my experimental trail is leading. I say experimental
because the trail cannot be pursued in the mind only unless one is
absolutely sure one knows everything
and thus cannot be faultedn
I constantly experiment to prove that my mind is correct or corrected
if experimentation proves it to be in error which thus require re
evalution
and redirection. without experimentaion you have nothing but a talking
head sitting on a couch.
My antenna is actually several antennas rolled up into one. As a
contra wound helix on top of each other we have a ambidextrious
antenna
that with tilting provides horizontal and vertical polarisation
because the windings and counter windings cancel each other out.
If one circular sign al is dominant I expected the cancellation
remainder will be added to the horizontal and vertical polarisation
signal.
At the same time eithe of the cancelled polarities can be issollated
from all otheres by shorting it out.
I also wanted purity of polarisation to which I have referred to in
the past where signals are not at 90 degrees to earth but tipped 10
degrees plus. Hopefully this will all work out as I have solve the
combination polarisation problem while keeping the readiator small
enough for three degree movement. I have to do all this to first
confirm that the direction that I am taking so I can move on to arrays
using tilted radiators
fashhioned in a a array in equilibrium where two degrees of freedom
with respect to volume which is forcasted by the combination of Gauss
with Maxwell. Obviously every structure has to have the ability of
many experiments as possible to flush out any errors in my analysis as
possible in the early stages. Fortunately my single radiator pursuit
with respect to size came out o.k. and thus with the incoming
mechanism for tilt and scan operation can now procede without the huge
mechanical difficulties imposed by planar and large radiators. This
comming portion of the experimental trail is of utmost im portance to
ensure that the comming arrays are truly in equilibrium such that the
spacings of

the individual small radiators can be reduceded over those of planar arrays. In my work with the small signal radiator I have found it possible to make them directive such that it may well render the idea of small arrays as moot when considering the advances made by zeroing on the signal polarity and pursuing a delay phase addition circuit with what I have at present. A long trail that was started years ago which I find very rewarding where I can now see the light at the end of the tunnel.
Best regards
Art Unwin KB9MZ.....XG (uk)

3319. stop the lies Dloyd

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 19:57:52 UTC
From: an_old_friend <kb9rqz@gmail.com>
Message-ID: <c2f5a9b7-0e8c-4a4a-9310-47f7d51898a1@x41g2000hsb.googlegroups.com>
Source record: 27041
Cross-posted to:
alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.policy,rec.radio.amateur.equipment,rec.radio.swap

On Mar 17, 11:14 am, "kb9rqz" <kb9...@punce.com> wrote:
>
fake

3320. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 20:05:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <okjtt3llqp93gbtdj7empi5decfq5oq46o@4ax.com>
Source record: 27039

On Mon, 17 Mar 2008 11:57:21 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
wrote:

>In an application where you want to combine multiple skywave paths, one
>probably wants something that can be automatically adjusted.

Hi Jim,

That would be called a telephone.

The objection to adjustments being necessary is duly noted; the same
characterisitic is one that has been historically prized within the
Ham world.

My goniometer was untuned.

73's
Richard Clark, KB7QHC

3321. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 20:25:31 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <0dd4cc8b-7e51-429f-a146-6861da5fa7a0@e39g2000hsf.googlegroups.com>
Source record: 27043

On Mar 17, 2:03 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Art Unwin wrote:
> > On Mar 17, 11:27 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
> >>Richard Harrison wrote:
>
> >>>Art wrote:
> >>>"I have an on order a tilting system for my antenna to probe the
> >>>polarisation of incoming signals for maximum audio clarity and gain."
>
> >>>That may be interesting but do you ever recall cross polarization of an
> >>>incoming ionosphere reflected signal being unreadable because
> >>>polarization was wrong?
>
> >>>So many different and quickly changing path variations exist in the
> >>>ionosphere that the best antenna to use is based on probability.
>
> >>Or, use diversity combining. Several researchers in France have done
> >>work with this, and discovered there's very little correlation between
> >>the ordinary and extraordinary rays, so diversity combining is extremely
> >>effective on HF skywave paths. They used physically co-located antennas
> >>that had different polarization sensitivities (a loop and a whip, as I
> >>recall).
>
> >>>E.A. Laporte says on page 215 of "Radio Antenna Engineering":
>
> >>>"To make best use of this effect (randomness of ionospheric waves) it is
> >>>desirable to employ complimentary antennas for transmitting and
> >>>receiving."
>
> >>>Most commercial HF circuits I`ve experienced and seen use horizontal
> >>>polarization. It is because much severe man made interference arriving
> >>>at a receiving antenna is vertically polarized.
>
> >>Interference polarization is not necessarily the case. (I believe
> >>there are measurements that show it is essentially random). More what
> >>it is has to do with the antenna pattern of horizontal and vertical
> >>antennas for sources at ground level and reasonably close. For example,
> >>A horizontal antenna not too high over a ground plane has a null right
> >>at zero elevation.
>
> >>> Best regards, Richard Harrison, KB5WZI
>
> > Jim'

> > My 160M antenna is totaly at 70 feet. Not below or above. With the
> > tilting and pan mechanism and a couple of relays
> > it is possible to automate it so that every so often it will cycle
> > thru all modes using the single antenna. When a louder signal arises
> > then it is simple to stay on that polarisation
> > . This combiation thus is a reduction of land space required for two
> > or more separate antennas.
> > I was just curious as to what other hams were doing and it appears to
> > be nothing in this area.
>
> Lots of hams have done things with polarization diversity combining for
> HF. Check out Ralph, W0RPK's site at:http://showcase.netins.net/web/wallio/POLAR.html
>
> He has some actual recorded levels over a 20-30 second interval on a 10m
> skywave signal.
>
> The problem with physically moving the antenna is that you need a fairly
> fast positioner, since the fades (in any one polarization) are on the
> order of 1 second. With a single antenna, you also don't know, a
> priori, which way to move it or when to move it (is that an overall
> fade, or is the polarization changing). You can use a scanning or
> dithering technique (much like conical scan for high gain parabolas), as
> long as the scan period is much less than the fading time scale.
>
> With two co-located antennas, you've got lots more possibilities, and
> with modern signal processing hardware, it's cheap.
>
> (and, of course, most FM car radios use some form of diversity combining
> these days, as do virtually all Wireless LAN access points)
>
> > Regards
> > Art

Can't afford more land, I have to economise or do nothing
Art

3322. Re: improve fm reception on transistor radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 21:20:02 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47dee080$1$30676$4c368faf@roadrunner.com>
Source record: 27044

"Tam" <t-tammaru@comcast.net> wrote in message
news:O5edncb1H8uVoUDanZ2dnUVZ_tmhnZ2d@comcast.com...
>
> "Uncle Scotty" <scottspiegler@gmail.com> wrote in message
> news:0537c48c-2189-4cf5-abeb-be11ffbf924e@59g2000hsb.googlegroups.com...
>> On Mar 15, 11:09 pm, "Tam" <t-tamm...@comcast.net> wrote:
>>
>>> Not much you can do unless there is an antenna input on the back.
>>
>> There's no input, but there is an antenna wire that comes out of the
>> back of the unit about 18" long. Can I attach something to that that
>> might boost the signal?
>>
> Extend it to about 30 - 31 inches with the whole wire in a straight line.
>
> Tam
That gets my vote. I had a clock radio that had about a foot of wire hanging out the back. I extended the wire to about 3ft with it running up the corner of the room on the wall. Reception was much improved. Imagine what a really good antenna would do.

Jimmie

3323. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 21:28:05 UTC
From: richardharrison@webtv.net
Message-ID: <414-47DEE265-607@storefull-3253.bay.webtv.net>
Source record: 27045

Jim Lux wrote:
"Interference polarization is not necessarily the case. --------For example, A horizontal antenna not too high over a ground plane has a null right at zero elevation."

Good point. The worst noise is likely local and arrives via ground wave. Ground waves are vertically polarized because horizontal components of an electric field are exactly canceled at the surface of a perfect reflector.

Examination of the radiation patterns of horizontal antennas confirms that they invariably have zero response at zero elevation on their best azimuths.

From researching susceptibility of antennas to noise I came across a statement interesting to me in Terman`s 1955 opus on page 929:

"----a loop antenna responds much less to the electric induction field than does a simple wire antenna of comparable intercept area. This is of importance because electric induction fields predominate in the man-made noise that causes disturbances in radio receivers, and this explains in part the popularity of loop antennas in broadcast receivers."

Best regards, Richard Harrison, KB5WZI

3324. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 22:22:48 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <YaCDj.297496$3m6.132261@fe2.news.blueyonder.co.uk>
Source record: 27046

Thanks Dave for all the info. I will give it ago with the original spacing.
I have also ordered the MFJ-259B to help tune it. Just have to work out how
to use it properly. Hi.

73

"Dave Platt" <dplatt@radagast.org> wrote in message
news:guaua5-ijg.ln1@radagast.org...
> In article <aiPCj.41541$nw4.38668@fe1.news.blueyonder.co.uk>,
> Barrett <barrett@blueyounder.co.uk> wrote:
>
>>What I meant to say, is there any benefits in performance if I changed all
>>the gaps to 3 inch's rather than keep them to the original Cobwebb spec?
>
> Changing the end spacing in this sort of antenna alters the
> capacitance between the ends. This has a very significant effect on
> the impedance at the feedpoint, and thus on the SWR. If the original
> design had a different spacing and had a good SWR match, and you
> change the spacing to 3" and don't make any compensating change to the
> wire length, I suspect that you'll find that the antenna is no longer
> as well matched and won't work as well with a 50-ohm feed source.
>
> If the changes in tip spacing / capacitance aren't too serious, you
> could probably compensate with an antenna tuner/transmatch. There
> would be some amount of excess loss in the feedline due to the higher
> SWR, but it might not be enough to affect performance significantly.
>
> On the other hand, if the CobWebb with the 3" spacing has had its
> radiator lengths adjusted to compensate for the change in tip-to-tip
> capacitance, it might match up just fine. If that's the case, then
> I'd expect that its performance would probably be indistinguishable
> from an equally-well-matched Cobbweb with different tip spacings.
>
> When I built a 2-meter halo antenna, I found that a change of 1/16" in
> the tip spacing made a big difference in the SWR. After several
> attempts to construct a tip spacer that was neither too wide nor too
> narrow (but was *just* right, like a good bowl of porridge) I gave up.
> I just used one of the "too wide" spacers, and then added a bit of
> aluminum tape at the end of one tip and trimmed it until the SWR was
> as good-as-it-got.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will

> boycott any company which has the gall to send me such ads!
>

3325. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 22:28:02 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frmr9i$a6s$1@news.jpl.nasa.gov>
Source record: 26951

Richard Clark wrote:
> On Mon, 17 Mar 2008 11:57:21 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
> wrote:
>
>
>>In an application where you want to combine multiple skywave paths, one
>>probably wants something that can be automatically adjusted.
>
>
> Hi Jim,
>
> That would be called a telephone.

Or a reliable communications system.
>
> The objection to adjustments being necessary is duly noted; the same
> characterisitic is one that has been historically prized within the
> Ham world.

More knobs better?
>
> My goniometer was untuned.

Most Iv'e seen are basically just coils and not designed to be narrow band. My comment was more that the transfer function varies not only as a function of the moving coil position, but also frequency. I suppose one could build a tuned one.

>
> 73's
> Richard Clark, KB7QHC

3326. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 22:29:35 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <frmrch$ht1$1@aioe.org>
Source record: 27047

> Examination of the radiation patterns of horizontal antennas confirms
> that they invariably have zero response at zero elevation on their best
> azimuths.

If this were true then most television broadcast stations would have nearly zero field strength near the earth over much of their present coverage areas.

Instead, the fields there are directly related to the peak ERP of the TV station -- which typically is radiated in, or a few tenths of a degree below the horizontal plane.

RF

3327. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 22:33:40 UTC
From: richardharrison@webtv.net
Message-ID: <1154-47DEF1C4-71@storefull-3256.bay.webtv.net>
Source record: 27048

Richard Fry in a private e-mail noted that I had misquoted E. A. Laport
who wrote:
"---it is desirable to employ complementary antennas for transmitting
and receiving."

I typed "complimentary" which means praise or a gift. Surely Laport
meant antennas which work together to perfection which is even better
than getting them free. I made a typo.

I apologize for my mistake.

Best regards, Richard Harrison, KB5WZI

3328. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 22:51:14 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <ZBCDj.27$Cn4.15@news02.roc.ny>
Source record: 27049

Michael Coslo wrote:
> David G. Nagel wrote:
>> Dave Heil wrote:
>
>>> Well, there it is. I'm going to scrounge a "former" and a "sowing"
>>> needle and get right to work.
>>>
>>> Dave K8MN
>>
>>
>> Don't forget an 'apon'....
>
>
> Can you guys tell us the correct way to spell coil former? It's a
> bobbin made of insulating material upon which wire is wound. Here's one
> that got a patent:
>
> http://www.patentstorm.us/patents/6262650.html

You've done well, Mike. Now what is a "sowing needle" and what might an
"apon" be?

Dave K8MN
the product of an inferior American education
(at least according to Art Unwin)

3329. Re: Low Noise receiving Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 23:00:44 UTC
From: Bob Baldwin <bob-baldwin@tamu.edu>
Message-ID: <VJCDj.31393$0M3.24173@newsfe17.lga>
Source record: 27050

Tony Giacometti wrote:
> My neighborhood is loaded with some kind of electrical noise which makes
> working 160 & 75 meters difficult. I have tried to locate the source but
> have come up empty at this point. It appears to be something other than
> power line noise which may mean its coming from someones house.

Tony,
This may have already been suggested as I only got about half way through the replies. As a test, isolate the receiver from _everything_ (ground & ac power) except for a 12 volt battery and the loop. I did this in order to receive 600 meter test transmissions. It turned out that most of my noise was related to underground supplied AC power. I can now easily copy several of the WD2XSH test transmissions with a 5 foot square indoor loop with no preamp.
Note that I am not transmitting, and I am only suggesting this as a test to verify that your AC power line isn't the problem.

Regards,

bob baldwin
bryan, texas

3330. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 23:19:43 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <j0DDj.12697$hP3.98@trnddc02>
Source record: 26952

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:0nctt31m498n9e8q9f88pthl8r02j7tief@4ax.com...
> On Mon, 17 Mar 2008 09:17:01 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
> wrote:
>
>> run through a variable combiner
>
> Hi Jim,
>
> As Richard pointed out, a goniometer (what, a 100 years old already?)
> works fine for this. I bought one at a Ham swap when I was a
> teenager. I also pointed this goniometer/antenna application out to
> Arthur to demonstrate what he thought was novel was quite old (in
> reference to the work of Tosi and Bellini). Arthur does not
> acknowledge prior inventors, so this topic consistently re-emerges
> with a fair periodicity. It should reappear around July again.
>
> For those who want to see a schematic of the goniometer and antenna
> application, here is a perfectly good example:
> http://www.elektronikschule.de/~krausg/Longwave/Collection/Receiver_Techniques/On%20the%
20art%20of%20NDB%20DXing/chapter5/On%20The%20Art%20of%20NDB%20DXing%20-%205.htm
>
> 73's
> Richard Clark, KB7QHC

Hi Richard

Is it possible that Sheldon Remington is trying to acknowledge Art's
previous work as indicated by his naming him in the title of his article?

J

3331. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-17 23:55:07 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <c3e29046-bda9-4aab-ae82-9f971a8acb5e@a1g2000hsb.googlegroups.com>
Source record: 26953

On Mar 17, 5:29 pm, "Richard Fry" <r...@adams.net> wrote:
> > Examination of the radiation patterns of horizontal antennas confirms
> > that they invariably have zero response at zero elevation on their best
> > azimuths.
>
> ----------
>
> If this were true then most television broadcast stations would have nearly
> zero field strength near the earth over much of their present coverage
> areas.
>
> Instead, the fields there are directly related to the peak ERP of the TV
> station -- which typically is radiated in, or a few tenths of a degree below
> the horizontal plane.
>
> RF

So you are saying that Termqn's book has errors?
Amazing!

3332. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 00:16:41 UTC
From: nm5k@wt.net
Message-ID: <1fdc5292-a4e0-4a71-8b23-10af1b5a5412@c19g2000prf.googlegroups.com>
Source record: 26956

On Mar 17, 3:28 pm, richardharri...@webtv.net (Richard Harrison)
wrote:

>
> "----a loop antenna responds much less to the electric induction field
> than does a simple wire antenna of comparable intercept area. This is of
> importance because electric induction fields predominate in the man-made
> noise that causes disturbances in radio receivers, and this explains in
> part the popularity of loop antennas in broadcast receivers."
>
> Best regards, Richard Harrison, KB5WZI

I'll have to ponder his statement, but my reg flag is waving...
This almost seems akin to the shielded loop controversy.
It may well be true in whatever manner he is considering, but
for some reason it doesn't seem quite right to me.
Maybe I'm missing something, so I'll await further comments.
MK

3333. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 00:49:08 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47df1185$0$22796$4c368faf@roadrunner.com>
Source record: 26957

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:c3e29046-bda9-4aab-ae82-9f971a8acb5e@a1g2000hsb.googlegroups.com...
> On Mar 17, 5:29 pm, "Richard Fry" <r...@adams.net> wrote:
>> > Examination of the radiation patterns of horizontal antennas confirms
>> > that they invariably have zero response at zero elevation on their best
>> > azimuths.
>>
>> _____________
>>
>> If this were true then most television broadcast stations would have
>> nearly
>> zero field strength near the earth over much of their present coverage
>> areas.
>>
>> Instead, the fields there are directly related to the peak ERP of the TV
>> station -- which typically is radiated in, or a few tenths of a degree
>> below
>> the horizontal plane.
>>
>> RF
>
> So you are saying that Termqn's book has errors?
> Amazing!

This is another lie that Art fabricated for rhetorical reasons. Nothing new.
Nobody is saying that. For TV, broadcast gain is absolutely a dependency on
ERP within a few degrees offset from the horizontal plane.

3334. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 00:54:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ej4ut3p07l27dftrj4pivigj8aku1stglg@4ax.com>
Source record: 26954

On Mon, 17 Mar 2008 23:19:43 GMT, "Jerry" <j.jmartes@verizon.net>
wrote:

> Is it possible that Sheldon Remington is trying to acknowledge Art's
>previous work as indicated by his naming him in the title of his article?

Hi Jerry,

Well.....

It does in many ways suggest prior Art is responsible, yes.

73's
Richard Clark, KB7QHC

3335. High Sierra Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 01:02:15 UTC
From: noespaem <nospaem@nospaem.go.away>
Message-ID: <yeGdnTUrm8NomELanZ2dnUVZ_uOmnZ2d@comcast.com>
Source record: 26955

Has anyone used their products ?

I looked on E-ham net reviews, and the results
are a mixed bag.

What i'm interested in is their new "Frontier"
multi-band antenna (consisting of a remote screwdriver
HF antenna, and a UHF/VHF antenna that are mounted
on a tripod).

But for $675, the price is in "outrageous"
territory.

Wondering if anyone has actually purchased/used
one, and if it's worth the money.

Yeah, i'm lazy, don't feel like messing around with
manually moving taps on a coil, or have to adjust
lengths of the antenna sections each time i switch
bands.

2nd Question: ..... mounting a scanner antenna
near the antennas for the rig, what do most folks
use to prevent blowing out the rx front end on
the scanner ? (from keying up the HF rig).

3336. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 03:04:47 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47df314f$0$22830$4c368faf@roadrunner.com>
Source record: 26958
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

"Joel Koltner" <zapwireDASHgroups@yahoo.com> wrote in message
news:GoxDj.22598$Uf4.5206@en-nntp-08.dc1.easynews.com...
> "Tim Wescott" <tim@seemywebsite.com> wrote in message
> news:HpudnT_1wuk3Q0banZ2dnUVZ_j6dnZ2d@web-ster.com...
>> * or could -- does Rat Shack still carry antennas?
>
> Yes. If anything there's been a bit of a rebirth in antenna sales as
> people start hearing about free over-the-air (ATSC) HDTV.
>
> (Speaking of HDTV... Fry's is advertisiting ATSC->NTSC converters for $59,
> coming very close to the $49 I was predicting a while or so ago... Joerg
> will be pleased. :-))

Over the air HDTV is superior to cable and satellite HDTV. They may sell more outdoor antennas as soon as it becomes clear that, from the 1996 telecommunications, not only did the FCC ruling on small satellite dishes overrule the homeowner association covents restricting dsmall satellite antennas, they ALSO overruled covenants restricting outdoor TV (i.e.yagi type) antennas...this was done to promote fair competition for cable, satellite and broadcast TV. I did put up a regular radio shack yagi style outdoor TV antenna back then and the HOA did contact their lawyer and found they could do nothing about it. If I ever splurge and buy my 1080p, I will do it again because the OTA picture is absolutely the best.

AI4QJ

3337. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 03:41:24 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <frndl6$9i3$1@aioe.org>
Source record: 26959

"Art Unwin" wrote:
>> If this were true then most television broadcast stations would have
>> nearly
>> zero field strength near the earth over much of their present coverage
>> areas.
>>
>> Instead, the fields there are directly related to the peak ERP of the TV
>> station -- which typically is radiated in, or a few tenths of a degree
>> below
>> the horizontal plane.
>>
>> RF
>
> So you are saying that Termqn's book has errors?
> Amazing!

---

art,

Your post above shows that you don't understand this subject, and
what Terman wrote about it. Not so sure about "Termqn," though.

Doesn't your common sense and life experience support
what I stated in my post? If not, why not?

Please consider using "due diligence" and proofreading before
you click your send button. Such will serve you better.

RF

3338. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 06:13:35 UTC
From: "Paul Hovnanian P.E." <paul@hovnanian.com>
Message-ID: <47DF5D8F.96693641@hovnanian.com>
Source record: 26960
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

AI4QJ wrote:
>
[snip]

> Over the air HDTV is superior to cable and satellite HDTV. They may sell
> more outdoor antennas as soon as it becomes clear that, from the 1996
> telecommunications, not only did the FCC ruling on small satellite dishes
> overrule the homeowner association covents restricting dsmall satellite
> antennas, they ALSO overruled covenants restricting outdoor TV (i.e.yagi
> type) antennas...this was done to promote fair competition for cable,
> satellite and broadcast TV. I did put up a regular radio shack yagi style
> outdoor TV antenna back then and the HOA did contact their lawyer and found
> they could do nothing about it. If I ever splurge and buy my 1080p, I will
> do it again because the OTA picture is absolutely the best.
>
> AI4QJ

Put up one of these: http://www.digitalhome.ca/ota/superantenna

A home brewed double Gray-Hoverman. Apparently, they work pretty well
and if you build a really impressive one, the HOA will really get their
panties in a bunch.

--
Paul Hovnanian mailto:Paul@Hovnanian.com

The only tools one needs in life:
WD-40 to make things go and duct tape to make them stop.

3339. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 07:32:39 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <XbpnyfEXA33HFAco@ifwtech.co.uk>
Source record: 26961

Michael Coslo wrote:
>David G. Nagel wrote:
>> Dave Heil wrote:
>
>>> Well, there it is. I'm going to scrounge a "former" and a "sowing"
>>>needle and get right to work.
>>>
>>> Dave K8MN
>> Don't forget an 'apon'....
>
>
> Can you guys tell us the correct way to spell coil former? It's
>a bobbin made of insulating material upon which wire is wound.

Alternatively, wind the wire onto a mandrill.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

3340. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 07:53:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tut7lhom8bfdd@corp.supernews.com>
Source record: 26962

Mike Coslo wrote:
> On Fri, 14 Mar 2008 11:57:41 -0700, Roy Lewallen wrote:
>
>> Richard Harrison wrote:
>>> Build a small scale model that can be tested indoors and report its
>>> characteristics. Antennas are scaleable.
>> That's more easily said than done. One of the critical characteristics
>> of a small antenna is loss. And to correctly replicate loss in a scaled
>> antenna requires scaling the conductivity of the conductors as the
>> square root of the frequency. To scale to a higher frequency requires
>> that the conductivity be better than the original. Unless the original
>> is made from lead and the scale factor moderate, this wouldn't be
>> possible.
>
> If what I suspect is true, would not the coax also need to be scaled?

Dunno. What do you suspect?

Roy Lewallen, W7EL

3341. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 07:58:58 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A65C0F31705nonenowhere@61.9.191.5>
Source record: 26963

Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
news:XbpnyfEXA33HFAco@ifwtech.co.uk:

> Alternatively, wind the wire onto a mandrill.

Or would that be a mandrel?

Owen

3342. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 08:02:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tutnokjfmk156@corp.supernews.com>
Source record: 26964

Michael Coslo wrote:
>
> Can you guys tell us the correct way to spell coil former? It's a
> bobbin made of insulating material upon which wire is wound. Here's one
> that got a patent:
>
> http://www.patentstorm.us/patents/6262650.html
>

"Former" is simply the British English equivalent to "coil form" in U.S. English.

Roy Lewallen, W7EL

3343. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 08:35:49 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <U5VH68PI733HFA$d@ifwtech.co.uk>
Source record: 26965

Owen Duffy wrote:
>Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
>news:XbpnyfEXA33HFAco@ifwtech.co.uk:
>
>> Alternatively, wind the wire onto a mandrill.
>
>Or would that be a mandrel?
>

I've seen both spellings recommended in print, but winding wire onto a mandrill will be far more entertaining.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

3344. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 09:11:57 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A65CD52B2FEAnonenowhere@61.9.191.5>
Source record: 26966

Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in news:U5VH68Pl733HFA
$d@ifwtech.co.uk:

> Owen Duffy wrote:
>>Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
>>news:XbpnyfEXA33HFAco@ifwtech.co.uk:
>>
>>> Alternatively, wind the wire onto a mandrill.
>>
>>Or would that be a mandrel?
>>
>
> I've seen both spellings recommended in print, but winding wire onto a
> mandrill will be far more entertaining.

Ah, when popularity displaces correctness!

But, I can see the confusion when you place a mandrel into a drill to
wind the coil.

Or should it be a persondrel? Is PC still in vogue?

Owen

PS: my (rather old) Concise Oxford Dictionary thinks a mandrill is a
"Large fierce West African baboon", fierce I guess when bound with wire.
It hasn't caught up with the alternative use for mandrel, well not by
1979.

3345. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 09:15:23 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <LKLDj.830$Nr1.824@trnddc01>
Source record: 26967

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13tlikummle42e5@corp.supernews.com...
> Richard Harrison wrote:
>>
>> Build a small scale model that can be tested indoors and report its
>> characteristics. Antennas are scaleable.
>
> That's more easily said than done. One of the critical characteristics of
> a small antenna is loss. And to correctly replicate loss in a scaled
> antenna requires scaling the conductivity of the conductors as the square
> root of the frequency. To scale to a higher frequency requires that the
> conductivity be better than the original. Unless the original is made from
> lead and the scale factor moderate, this wouldn't be possible.
>
> Roy Lewallen, W7EL

Hi Roy

I'm curious to know why you didnt use stainless steel as an example rather
than lead as your example.

Jerry

3346. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 10:22:42 UTC
From: Mike <emce@iinet.net.au>
Message-ID: <47df97f8$0$6824$5a62ac22@per-qv1-newsreader-01.iinet.net.au>
Source record: 26968

I can bear it no longer. We have Art the English educated antenna expert
who cannot write the English language,and now a Scot who doesn't know that a
Mandrill is a West African Baboon.
If you wind Art's wire on a Baboon it is going to get seriously pissed off.
From an elderly Pom in Aus.
"Ian White GM3SEK" <gm3sek@ifwtech.co.uk> wrote in message
news:XbpnyfEXA33HFAco@ifwtech.co.uk...
> Michael Coslo wrote:
>>David G. Nagel wrote:
>>> Dave Heil wrote:
>>
>>>> Well, there it is. I'm going to scrounge a "former" and a "sowing"
>>>> needle and get right to work.
>>>>
>>>> Dave K8MN
>>> Don't forget an 'apon'....
>>
>>
>> Can you guys tell us the correct way to spell coil former? It's a
>> bobbin made of insulating material upon which wire is wound.
>
> Alternatively, wind the wire onto a mandrill.
>
>
> --
>
> 73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.co.uk/g3sek

3347. Re: High Sierra Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 11:06:38 UTC
From: "Helmut Wabnig"
Message-ID: <ug8vt314426puk85n81d4qmomqffeibhkv@4ax.com>
Source record: 26969

On Mon, 17 Mar 2008 20:02:15 -0500, "noespaem"
<nospaem@nospaem.go.away> wrote:

>
>
>Has anyone used their products ?
>
>I looked on E-ham net reviews, and the results
>are a mixed bag.
>
>What i'm interested in is their new "Frontier"
>multi-band antenna (consisting of a remote screwdriver
>HF antenna, and a UHF/VHF antenna that are mounted
>on a tripod).
>
>But for $675, the price is in "outrageous"
>territory.
>
>Wondering if anyone has actually purchased/used
>one, and if it's worth the money.
>
>Yeah, i'm lazy, don't feel like messing around with
>manually moving taps on a coil, or have to adjust
>lengths of the antenna sections each time i switch
>bands.
>
>2nd Question: ..... mounting a scanner antenna
>near the antennas for the rig, what do most folks
>use to prevent blowing out the rx front end on
>the scanner ? (from keying up the HF rig).
>

Hmm. Most folks use xtance.

w.

3348. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 14:58:06 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080318075806.3be6d350.rsparks@elltel.net>
Source record: 26970

On Mon, 17 Mar 2008 03:00:10 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 17, 1:06 am, Cecil Moore <nos...@w5dxp.com> wrote:
> > Keith Dysart wrote:
> > > Pr.g(t) = -50 + 50 cos(2wt)
> > >   = -50 -50
> > >   = -100
> > > which would appear to be the 100 watts needed to
> > > heat the source resistor.
> >

Thanks for a comprehensive analysis Keith. It was helpful to me to see how you step by step analyzed the circuit.

--
73, Roger, W7WKB

3349. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 15:29:08 UTC
From: richardharrison@webtv.net
Message-ID: <1153-47DFDFC4-792@storefull-3256.bay.webtv.net>
Source record: 26971

I can`t find it now, but I believe Mark, NM5K on this thread wrote that my quotation from page 929 of Terman`s 1955 opus raised flags. I said I was surprised in my original posting. I was aware at the time that Kraus shows identical field paterns for a small loop an a short dipole, but the E and H fields are exchaged between the two antenna types. The Kraus diagrams are on page 58 of the 3rd edition of "Antennas".

I`ve learned not to quarrel with Terman. So, I reread the page 929 quotation. I posted it correctly. He did say a loop antenna responds much less to the electric induction field than does a simple wire antenna of comparable intercept area.

So I looked for a similar statement in Terman`s "Radio Engineering" in an edition published in 1947. On page 664, I find:
"In the case of a doublet antenna, the electrostatic induction field becomes proportionally stronger than the magnetic induction field as one comes closer to the antenna. With the loop antenna the reverse is true."

We know that the induction, or near, field is equal to the radiation field at about 1/6 wavelength. Closer to the radiator, the induction field is much stronger. Farther away, the radiation field predominates Our intrest is usually in the radiation, or far field. Measurements are usually made several wavelengths away from an antenna to be sure the induction field has become insignificant.

I`ve thought how and why my experience confirms Terman`s statements but I won`t bore anyone with these thoughts.

Best regards, Richard Harrison, KB5WZI

3350. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 16:16:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vVRDj.21690$0o7.20106@newssvr13.news.prodigy.net>
Source record: 26972

Roger Sparks wrote:
>>> Keith Dysart wrote:
>>>> Pr.g(t) = -50 + 50 cos(2wt)
>>>> = -50 -50
>>>> = -100
>>>> which would appear to be the 100 watts needed to
>>>> heat the source resistor.
>
> Thanks for a comprehensive analysis Keith. It was helpful to me to see how you step by step analyzed the circuit.

Note that his analysis proves that destructive interference
energy is indeed stored in the reactance of the network and
dissipated later in the cycle as constructive interference
in the source resistor at a time when the instantaneous
source power equals zero.
--
73, Cecil http://www.w5dxp.com

3351. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 17:16:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tvu6s44regsfc@corp.supernews.com>
Source record: 26973

Richard Harrison wrote:
> . . .
> From researching susceptibility of antennas to noise I came across a
> statement interesting to me in Terman`s 1955 opus on page 929:
>
> "----a loop antenna responds much less to the electric induction field
> than does a simple wire antenna of comparable intercept area. This is of
> importance because electric induction fields predominate in the man-made
> noise that causes disturbances in radio receivers, and this explains in
> part the popularity of loop antennas in broadcast receivers."

Like so many bons mots lifted from Terman, we have to use a bit of care in extending it to everyday amateur applications.

A very small loop responds less strongly to the electric field than a very small dipole only within a fraction of a wavelength of the antenna. Beyond that, it actually responds more strongly to the electric field than the dipole does. So at HF, for example, it would be helpful only in rejecting electric field noise being radiated within a few feet of the antenna.

Roy Lewallen, W7EL

3352. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 17:26:28 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frou04$u0m$1@f04n12.cac.psu.edu>
Source record: 26974

Roy Lewallen wrote:
> Mike Coslo wrote:
>> On Fri, 14 Mar 2008 11:57:41 -0700, Roy Lewallen wrote:
>>
>>> Richard Harrison wrote:
>>>> Build a small scale model that can be tested indoors and report its
>>>> characteristics. Antennas are scaleable.
>>> That's more easily said than done. One of the critical characteristics
>>> of a small antenna is loss. And to correctly replicate loss in a scaled
>>> antenna requires scaling the conductivity of the conductors as the
>>> square root of the frequency. To scale to a higher frequency requires
>>> that the conductivity be better than the original. Unless the original
>>> is made from lead and the scale factor moderate, this wouldn't be
>>> possible.
>>
>> If what I suspect is true, would not the coax also need to be scaled?
>
> Dunno. What do you suspect?

I suspect that the antenna is a tuned circuit on top of coax, and it
needs that coax to radiate effectively. So just scaling the antenna
wouldn't translate to the same results?

- 73 de Mike N3LI -

3353. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 17:28:07 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frou37$u0m$2@f04n12.cac.psu.edu>
Source record: 26975

Dave Heil wrote:
> Michael Coslo wrote:
>> David G. Nagel wrote:
>>> Dave Heil wrote:
>>
>>>> Well, there it is. I'm going to scrounge a "former" and a "sowing"
>>>> needle and get right to work.
>>>>
>>>> Dave K8MN
>>>
>>>
>>> Don't forget an 'apon'....
>>
>>
>> Can you guys tell us the correct way to spell coil former? It's a
>> bobbin made of insulating material upon which wire is wound. Here's
>> one that got a patent:
>>
>> http://www.patentstorm.us/patents/6262650.html
>
> You've done well, Mike. Now what is a "sowing needle" and what might an
> "apon" be?

Those are typos. I just figure we should only rib Art on the real
typos. 8^)

> Dave K8MN
> the product of an inferior American education
> (at least according to Art Unwin)

Me too 8^)

- 73 d eMike N3LI -

3354. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 17:30:05 UTC
From: Jeff Liebermann <jeffl@cruzio.com>
Message-ID: <5ntvt3dehpechilg9aa7hm686sqa9pui7c@4ax.com>
Source record: 26976
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Mon, 17 Mar 2008 22:13:35 -0800, "Paul Hovnanian P.E."
<paul@hovnanian.com> wrote:

>AI4QJ wrote:
>>
>[snip]
>
>> Over the air HDTV is superior to cable and satellite HDTV. They may sell
>> more outdoor antennas as soon as it becomes clear that, from the 1996
>> telecommunications, not only did the FCC ruling on small satellite dishes
>> overrule the homeowner association covents restricting dsmall satellite
>> antennas, they ALSO overruled covenants restricting outdoor TV (i.e.yagi
>> type) antennas...this was done to promote fair competition for cable,
>> satellite and broadcast TV. I did put up a regular radio shack yagi style
>> outdoor TV antenna back then and the HOA did contact their lawyer and found
>> they could do nothing about it. If I ever splurge and buy my 1080p, I will
>> do it again because the OTA picture is absolutely the best.
>>
>> AI4QJ

>Put up one of these: http://www.digitalhome.ca/ota/superantenna

Nice. Too bad it only goes from about 400-800MHz, which covers the
UHF channels. It doesn't work for the VHF channels. Looking at the
4NEC2 plots, it's not very good on VSWR, has reasonable gain, but only
on the lower UHF channels (no problem because the higher channels are
being auctioned off by the FCC).
<http://www.qsl.net/va3rr/hdtv/hoverman.htm>

>A home brewed double Gray-Hoverman. Apparently, they work pretty well
>and if you build a really impressive one, the HOA will really get their
>panties in a bunch.

The local OTA digital TV is on Channel 8 (KSBW) at roughly 87MHz. The
reflector of a suitable Gray-Hoverman antenna should be about 1.5
meters wide. I think the aesthetics committee will be banging on the
front door rather quickly. What's that giant fly swatter doing on the
roof? I wonder if a TV antenna can legitimize a solar cell array if
the array is mounted on the TV antenna?

"Comparing some commercially available antennas"
<http://www.hdtvprimer.com/ANTENNAS/comparing.html>
I really like the negative gain (i.e. loss) in some of the commercial
VHF antennas. Too bad they didn't run antenna patterns, as many such
TV yagis have more gain in the reverse direction, than forward.

Incidentally, I once built a vertically polarized omnidirectional OTA TV antenna intended as a disguise antenna (if you consider a 2.5 meter white fiberglass pipe to be suitable disguise). It worked well enough from about Channel 8 to about Channel 47. Not much gain (about 4dbi) but the big problem was that it was prone to receiving ghosts (reflections). I should probably resurrect the design, rename it "Ultimate Digital Disguise Magic Super-Antenna", and join the hype instead of fighting it.

--
Jeff Liebermann jeffl@cruzio.com
150 Felker St #D http://www.LearnByDestroying.com
Santa Cruz CA 95060 http://802.11junk.com
Skype: JeffLiebermann AE6KS 831-336-2558

3355. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 17:34:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tvv9ii5rfm9a4@corp.supernews.com>
Source record: 26977

Jerry wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:13tlikummle42e5@corp.supernews.com...
>> Richard Harrison wrote:
>>> Build a small scale model that can be tested indoors and report its
>>> characteristics. Antennas are scaleable.
>> That's more easily said than done. One of the critical characteristics of
>> a small antenna is loss. And to correctly replicate loss in a scaled
>> antenna requires scaling the conductivity of the conductors as the square
>> root of the frequency. To scale to a higher frequency requires that the
>> conductivity be better than the original. Unless the original is made from
>> lead and the scale factor moderate, this wouldn't be possible.
>>
>> Roy Lewallen, W7EL
>
> Hi Roy
>
> I'm curious to know why you didnt use stainless steel as an example rather
> than lead as your example.

The main reason is that many years ago I was involved in using physical models scaled up in size in order to optimize microstrip transitions and other features used for time domain equipment having rise times on the order of 10 ps. At that time, I looked to see if it was possible to model the loss accurately, and found I'd need a semiconductor to do it. I recall that lead was about the least conductive common metal available. So I tossed that one out in my example.

I don't remember investigating stainless or other steels, but that might indeed be a way to do it. To make a strictly accurate scale model, the permeability and permittivity (dielectric constant) stay fixed with frequency, so a non-magnetic stainless steel would be necessary. However, since the skin depth is inversely proportional to the square root of permeability, a magnetic material has the loss of a non-magnetic material having a conductivity lower by a factor equal to its relative permeability. So a magnetic material such as steel or magnetic stainless steel might be used to extend the range of possible loss values available for making larger physical models. There's a very large number of steel and stainless steel alloys, and good information on the required parameters can be hard or impossible to find. So samples would probably have to be measured.

In the case in question, however, a smaller scale model was proposed, and we can probably assume that the original is made from copper. So it's not really possible to create a smaller scale model which

accurately imitates the loss of the original.

Roy Lewallen, W7EL

3356. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 17:41:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13tvvmem9qdt838@corp.supernews.com>
Source record: 26978

Michael Coslo wrote:
> Roy Lewallen wrote:
>> Mike Coslo wrote:
>>> On Fri, 14 Mar 2008 11:57:41 -0700, Roy Lewallen wrote:
>>>
>>>> Richard Harrison wrote:
>>>>> Build a small scale model that can be tested indoors and report its
>>>>> characteristics. Antennas are scaleable.
>>>> That's more easily said than done. One of the critical characteristics
>>>> of a small antenna is loss. And to correctly replicate loss in a scaled
>>>> antenna requires scaling the conductivity of the conductors as the
>>>> square root of the frequency. To scale to a higher frequency requires
>>>> that the conductivity be better than the original. Unless the original
>>>> is made from lead and the scale factor moderate, this wouldn't be
>>>> possible.
>>>
>>> If what I suspect is true, would not the coax also need to be scaled?
>>
>> Dunno. What do you suspect?
>
> I suspect that the antenna is a tuned circuit on top of coax, and it
> needs that coax to radiate effectively. So just scaling the antenna
> wouldn't translate to the same results?

Yes. If the coax is radiating, it's part of the antenna. To make an accurate scale model of the antenna, you have to scale the entire antenna (that is, every radiating conductor), not just some part of it which someone has declared to be "The Antenna". In this case, however, radiating coax isn't likely to be a major fraction of the total loss, so scaling it in a model probably wouldn't make much difference to the loss. Its diameter might have a noticeable effect on how much current it gets and therefore how much it radiates, though, which is an argument in favor of scaling it.

Roy Lewallen, W7EL

3357. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 17:54:25 UTC
From: "Paul Hovnanian P.E." <paulh@seanet.com>
Message-ID: <47E001D1.5F314612@seanet.com>
Source record: 26979
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

Jeff Liebermann wrote:
>
> On Mon, 17 Mar 2008 22:13:35 -0800, "Paul Hovnanian P.E."
> <paul@hovnanian.com> wrote:
>
> >AI4QJ wrote:
> >>
> >[snip]
> >
> >> Over the air HDTV is superior to cable and satellite HDTV. They may sell
> >> more outdoor antennas as soon as it becomes clear that, from the 1996
> >> telecommunications, not only did the FCC ruling on small satellite dishes
> >> overrule the homeowner association covents restricting dsmall satellite
> >> antennas, they ALSO overruled covenants restricting outdoor TV (i.e.yagi
> >> type) antennas...this was done to promote fair competition for cable,
> >> satellite and broadcast TV. I did put up a regular radio shack yagi style
> >> outdoor TV antenna back then and the HOA did contact their lawyer and found
> >> they could do nothing about it. If I ever splurge and buy my 1080p, I will
> >> do it again because the OTA picture is absolutely the best.
> >>
> >> AI4QJ
>
> >Put up one of these: http://www.digitalhome.ca/ota/superantenna
>
> Nice. Too bad it only goes from about 400-800MHz, which covers the
> UHF channels. It doesn't work for the VHF channels. Looking at the
> 4NEC2 plots, it's not very good on VSWR, has reasonable gain, but only
> on the lower UHF channels (no problem because the higher channels are
> being auctioned off by the FCC).
> <http://www.qsl.net/va3rr/hdtv/hoverman.htm>
>
> >A home brewed double Gray-Hoverman. Apparently, they work pretty well
> >and if you build a really impressive one, the HOA will really get their
> >panties in a bunch.
>
> The local OTA digital TV is on Channel 8 (KSBW) at roughly 87MHz. The
> reflector of a suitable Gray-Hoverman antenna should be about 1.5
> meters wide. I think the aesthetics committee will be banging on the
> front door rather quickly. What's that giant fly swatter doing on the
> roof? I wonder if a TV antenna can legitimize a solar cell array if
> the array is mounted on the TV antenna?

Does your HOA forbid solar arrays? Some of them can be pretty anal
retentive. Mine won't let me put up my thermonuclear clothes dryer. :-(

> "Comparing some commercially available antennas"
> <http://www.hdtvprimer.com/ANTENNAS/comparing.html>
> I really like the negative gain (i.e. loss) in some of the commercial
> VHF antennas. Too bad they didn't run antenna patterns, as many such
> TV yagis have more gain in the reverse direction, than forward.
>
> Incidentally, I once built a vertically polarized omnidirectional OTA
> TV antenna intended as a disguise antenna (if you consider a 2.5 meter
> white fiberglass pipe to be suitable disguise). It worked well enough
> from about Channel 8 to about Channel 47. Not much gain (about 4dbi)
> but the big problem was that it was prone to receiving ghosts
> (reflections). I should probably resurrect the design, rename it
> "Ultimate Digital Disguise Magic Super-Antenna", and join the hype
> instead of fighting it.

Ghosts are a big problem where I live. Or multipath and the resulting
dropouts the case of DTV broadcasts. That's why I like highly
directional designs (both horizontally as well as vertically). Other
than that, I can get all of our local stations with rabbit ears and a
UHF loop.

All of our DTV stations broadcast on UHF as the VHF band in the Seattle
area is pretty much filled up with the legacy analog stuff. I'm not
certain what the stations plan on doing once the digital cut over is
complete. They might move their digital signal down onto their analog
slot or abandon the analog slot altogether. That will be a factor in
what kind of antenna I put up.

> --
> Jeff Liebermann jeffl@cruzio.com
> 150 Felker St #D http://www.LearnByDestroying.com
> Santa Cruz CA 95060 http://802.11junk.com
> Skype: JeffLiebermann AE6KS 831-336-2558

--
Paul Hovnanian paul@hovnanian.com

Procrastinators: The leaders for tomorrow.

3358. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 17:56:12 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <cf6a62a9-151a-4adf-b168-2ce5aeed0710@a23g2000hsc.googlegroups.com>
Source record: 26980

On Mar 18, 12:26 pm, Michael Coslo <m...@psu.edu> wrote:
> Roy Lewallen wrote:
> > Mike Coslo wrote:
> >> On Fri, 14 Mar 2008 11:57:41 -0700, Roy Lewallen wrote:
>
> >>> Richard Harrison wrote:
> >>>> Build a small scale model that can be tested indoors and report its
> >>>> characteristics. Antennas are scaleable.
> >>> That's more easily said than done. One of the critical characteristics
> >>> of a small antenna is loss. And to correctly replicate loss in a scaled
> >>> antenna requires scaling the conductivity of the conductors as the
> >>> square root of the frequency. To scale to a higher frequency requires
> >>> that the conductivity be better than the original. Unless the original
> >>> is made from lead and the scale factor moderate, this wouldn't be
> >>> possible.
>
> >> If what I suspect is true, would not the coax also need to be scaled?
>
> > Dunno. What do you suspect?
>
> I suspect that the antenna is a tuned circuit on top of coax, and it
> needs that coax to radiate effectively. So just scaling the antenna
> wouldn't translate to the same results?
>
> - 73 de Mike N3LI -

If you are familiar with computor programming then why not model it
instead of repeating over and over again this transmission line
radiation theory.?

3359. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 18:39:22 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frp28q$18iq$1@f04n12.cac.psu.edu>
Source record: 26982

Ian White GM3SEK wrote:
>
>
> Alternatively, wind the wire onto a mandrill.

Howl! Almost lost my coffee on that one....

- 73 de Mike N3LI -

3360. Re: High Sierra Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 18:54:25 UTC
From: ltdoc@yahoo.com
Message-ID: <a20cb3c2-34e1-4b14-9a15-a625ab52dce1@b64g2000hsa.googlegroups.com>
Source record: 26983

Since I don't own one, you have to take this as a generalization.

Any HF mobile antenna is going to be a compromise, just won't be as 'good' as a real-live full sized antenna. If that same mobile HF antenna is used as a base, it's still gonna be a compromise. Of course, if you don't have the room for that real-live full sized antenna, then that little one is certainly a better option than no antenna at all.

The cost of this antenna relates more to convenience than anything else. Just how much is convenience worth to you? Being naturally cheap, I can change a lot of 'taps' for that amount of money, so I'm not likely to own one very soon (after I win the lottery!). I don't have any deed restrictions, and quite frankly, I couldn't care less what the neighbors think about antennas... within reason.

The VHF antenna and the HF antenna. As previously said, distance between the two makes for 'better'. What's the 'best' distance? A nice answer is, as much as possible. That's the same for any two (or more) antennas not just HF/VHF. Along with not having a 'zap' happen, it's also nice if the radiation/reception patterns are disturbed as little as possible.

Great answer, huh? Lot's of specifics, CYAs, and so on. Oh well...
- 'Doc

3361. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 19:10:59 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ba40u3p3q3fe7bn5j37ifkqhga1oqabgef@4ax.com>
Source record: 26981

On Tue, 18 Mar 2008 09:11:57 GMT, Owen Duffy <none@no.where> wrote:

>>>> Alternatively, wind the wire onto a mandrill.
>>>
>>>Or would that be a mandrel?
>>>
>>
>> I've seen both spellings recommended in print, but winding wire onto a
>> mandrill will be far more entertaining.
>
>PS: my (rather old) Concise Oxford Dictionary thinks a mandrill is a
>"Large fierce West African baboon", fierce I guess when bound with wire.
>It hasn't caught up with the alternative use for mandrel, well not by
>1979.

The OED being old only excludes newer words - either way, mine shows
the spelling mandril.

73's
Richard Clark, KB7QHC

3362. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 19:16:59 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A663FC2BE628nonenowhere@61.9.191.5>
Source record: 26984

Roy Lewallen <w7el@eznec.com> wrote in
news:13tvu6s44regsfc@corp.supernews.com:

> A very small loop responds less strongly to the electric field than a
> very small dipole only within a fraction of a wavelength of the
> antenna.

I have seen this expressed as a sensitivity to E and H that imply an impedance that varies with distance from the antenna, and that it "bounces around" (that is a technical term, you know) eventually converging on 120*pi.

Is that correct?

> Beyond that, it actually responds more strongly to the electric field
> than the dipole does. So at HF, for example, it would be helpful only
> in

Roy, accepting that the response of the loop and dipole to electric and magnetic fields are different close the the antenna, do they not eventually converge on sensitivity to E and H in the ratio of 120*pi when immersed in the far radiation field?

I don't know if I have put that sensibly.

My understanding was that when placed a very long way from the sources, neither one had any advantage in response to the desired signal just by virtue of their type (loop vs dipole).

Owen

3363. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 19:34:46 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frp5gm$gt5$1@news.jpl.nasa.gov>
Source record: 26989

Ian White GM3SEK wrote:
> Michael Coslo wrote:
>
>> David G. Nagel wrote:
>>
>>> Dave Heil wrote:
>>
>>
>>>> Well, there it is. I'm going to scrounge a "former" and a "sowing"
>>>> needle and get right to work.
>>>>
>>>> Dave K8MN
>>>
>>> Don't forget an 'apon'....
>>
>>
>>
>> Can you guys tell us the correct way to spell coil former? It's
>> a bobbin made of insulating material upon which wire is wound.
>
>
> Alternatively, wind the wire onto a mandrill.
>
>
Do you sedate the mandrill first? perhaps by clubbing it over the head
with a mandrel? or a mandril?

<grin>

http://en.wikipedia.org/wiki/Mandrill
http://en.wikipedia.org/wiki/Mandrel

3364. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 19:34:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13u06ao7mup3626@corp.supernews.com>
Source record: 26985

Owen Duffy wrote:
> Roy Lewallen <w7el@eznec.com> wrote in
> news:13tvu6s44regsfc@corp.supernews.com:
>
>> A very small loop responds less strongly to the electric field than a
>> very small dipole only within a fraction of a wavelength of the
>> antenna.
>
> I have seen this expressed as a sensitivity to E and H that imply an
> impedance that varies with distance from the antenna, and that it
> "bounces around" (that is a technical term, you know) eventually
> converging on 120*pi.
>
> Is that correct?

They do converge, but only after one change in slope. More below.

>> Beyond that, it actually responds more strongly to the electric field
>> than the dipole does. So at HF, for example, it would be helpful only
>> in
>
> Roy, accepting that the response of the loop and dipole to electric and
> magnetic fields are different close the the antenna, do they not
> eventually converge on sensitivity to E and H in the ratio of 120*pi
> when immersed in the far radiation field?

Yes.

> I don't know if I have put that sensibly.
>
> My understanding was that when placed a very long way from the sources,
> neither one had any advantage in response to the desired signal just by
> virtue of their type (loop vs dipole).

That's correct.

E/H is the impedance of the field and, close to a small loop, the impedance is small as expected. (As a receiving antenna, this means that it's relatively more sensitive to the H field than the E field if the source is very close.) However, the impedance rises rapidly as you get farther from the loop, and at a fraction of a wavelength, it actually overshoots 276 ohms. Then, after reaching its peak, it monotonically approaches 276 ohms from the high side as you get farther and farther away. A short dipole acts just the same, but with E and H reversed: the impedance is high very close to the antenna, then overshoots on the low side, and from there approaches 276 ohms at a great distance. So at all

points except very close, the impedance of the loop's field is actually higher than that of the dipole's. In practice, the difference is negligible except perhaps for a very small region, so they behave virtually the same for signals coming from any distance of, say, a wavelength or further away.

You can very easily see this behavior with NEC-2 or EZNEC modeling, using the near field analysis. The free demo version of EZNEC is adequate.

Roy Lewallen, W7EL

3365. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 19:39:42 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frp5pu$gt5$2@news.jpl.nasa.gov>
Source record: 26988

Paul Hovnanian P.E. wrote:
> AI4QJ wrote:
>
> [snip]
>
>
>>Over the air HDTV is superior to cable and satellite HDTV. They may sell
>>more outdoor antennas as soon as it becomes clear that, from the 1996
>>telecommunications, not only did the FCC ruling on small satellite dishes
>>overrule the homeowner association covents restricting dsmall satellite
>>antennas, they ALSO overruled covenants restricting outdoor TV (i.e.yagi
>>type) antennas...this was done to promote fair competition for cable,
>>satellite and broadcast TV. I did put up a regular radio shack yagi style
>>outdoor TV antenna back then and the HOA did contact their lawyer and found
>>they could do nothing about it. If I ever splurge and buy my 1080p, I will
>>do it again because the OTA picture is absolutely the best.
>>
>>AI4QJ
>
>
> Put up one of these: http://www.digitalhome.ca/ota/superantenna
>
> A home brewed double Gray-Hoverman. Apparently, they work pretty well
> and if you build a really impressive one, the HOA will really get their
> panties in a bunch.
>

And the best thing is that there's no size limit in the OTARD rules for
these antennas. the 1 meter limit is ONLY for satellite antennas. OTA
terrestrial has no size limit. Build that 20 bay curtain array.

3366. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 19:41:58 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A6643FF31194nonenowhere@61.9.191.5>
Source record: 26986

Roy Lewallen <w7el@eznec.com> wrote in
news:13u06ao7mup3626@corp.supernews.com:

....
> actually overshoots 276 ohms. Then, after reaching its peak, it
> monotonically approaches 276 ohms from the high side as you get

120*pi or 377?

Owen

3367. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 19:45:03 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frp640$n0f$1@news.jpl.nasa.gov>
Source record: 26987

Jeff Liebermann wrote:
> On Mon, 17 Mar 2008 22:13:35 -0800, "Paul Hovnanian P.E."
> <paul@hovnanian.com> wrote:
>
>
>>AI4QJ wrote:
>>
>>[snip]
>>
>>
>>>Over the air HDTV is superior to cable and satellite HDTV. They may sell
>>>more outdoor antennas as soon as it becomes clear that, from the 1996
>>>telecommunications, not only did the FCC ruling on small satellite dishes
>>>overrule the homeowner association covents restricting dsmall satellite
>>>antennas, they ALSO overruled covenants restricting outdoor TV (i.e.yagi
>>>type) antennas...this was done to promote fair competition for cable,
>>>satellite and broadcast TV. I did put up a regular radio shack yagi style
>>>outdoor TV antenna back then and the HOA did contact their lawyer and found
>>>they could do nothing about it. If I ever splurge and buy my 1080p, I will
>>>do it again because the OTA picture is absolutely the best.
>>>
>>>AI4QJ
>
>
>>Put up one of these: http://www.digitalhome.ca/ota/superantenna
>
>
> Nice. Too bad it only goes from about 400-800MHz, which covers the
> UHF channels. It doesn't work for the VHF channels. Looking at the
> 4NEC2 plots, it's not very good on VSWR, has reasonable gain, but only
> on the lower UHF channels (no problem because the higher channels are
> being auctioned off by the FCC).
> <http://www.qsl.net/va3rr/hdtv/hoverman.htm>
>
>>A home brewed double Gray-Hoverman. Apparently, they work pretty well
>>and if you build a really impressive one, the HOA will really get their
>>panties in a bunch.
>
>
> The local OTA digital TV is on Channel 8 (KSBW) at roughly 87MHz. The
> reflector of a suitable Gray-Hoverman antenna should be about 1.5
> meters wide. I think the aesthetics committee will be banging on the
> front door rather quickly. What's that giant fly swatter doing on the
> roof?

The OTARD rules say, "tough beans" to the HOA. No size limit.

I wonder if a TV antenna can legitimize a solar cell array if
> the array is mounted on the TV antenna?

There are other laws in many states that prohibit a HOA from restricting
alternative energy sources (like solar panels for hot water or
electricity, wind generators)

>

3368. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 20:18:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13u08sj4rcqd41e@corp.supernews.com>
Source record: 26990

Sorry, of course you're right. Thanks for the correction. I apologize
for the (repeated) error.

Roy

Owen Duffy wrote:
> Roy Lewallen <w7el@eznec.com> wrote in
> news:13u06ao7mup3626@corp.supernews.com:
>
> ....
>> actually overshoots 276 ohms. Then, after reaching its peak, it
>> monotonically approaches 276 ohms from the high side as you get
>
> 120*pi or 377?
>
> Owen

3369. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 20:34:38 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frp90u$1552$1@f04n12.cac.psu.edu>
Source record: 26991

Owen Duffy wrote:
> Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in news:U5VH68Pl733HFA
> $d@ifwtech.co.uk:
>
>> Owen Duffy wrote:
>>> Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
>>> news:XbpnyfEXA33HFAco@ifwtech.co.uk:
>>>
>>>> Alternatively, wind the wire onto a mandrill.
>>> Or would that be a mandrel?
>>>
>> I've seen both spellings recommended in print, but winding wire onto a
>> mandrill will be far more entertaining.
>
> Ah, when popularity displaces correctness!

Ian was making a Pun, Owen! Visualize winding wire onto that Mandrill!
Yikes!

- 73 de Mike N3LI -

3370. Re: Incoming radio wave polarisation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 20:35:10 UTC
From: richardharrison@webtv.net
Message-ID: <24886-47E0358E-918@storefull-3257.bay.webtv.net>
Source record: 26998

Examination of the radiation patterns of horizontal HF antennas (Dipoles, horizontal rhombics, etc.) near the earth confirms that they invariably have zero response at zero elevation on their best azimuths. (Should have made it clear that the antennas were near the earth, not just their patterns.)

The earth reflects energy which strikes it at a grazing incidence inverting the phase on reflection. The incident and reflected HF horizontally polarized waves add to zero producing a null along the earth`s surface.

I did not include enough detail in my earlier posting so Richard Fry replied:
"If this were true (zero response at zero elevation on their best azimuths) then most television stations would have zero field strength near the earth over much of their present coverage areas."

If TV station antennas were 1/2-wavelength or less above the earth, their field strengths near the earth would truly be near zero over much of their present coverage areas, VHF, or UHF.

Best regards, Richard Harrison, KB5WZI

3371. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 20:36:12 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frp93r$1552$2@f04n12.cac.psu.edu>
Source record: 26992

Mike wrote:
> I can bear it no longer. We have Art the English educated antenna expert
> who cannot write the English language,and now a Scot who doesn't know that a
> Mandrill is a West African Baboon.
> If you wind Art's wire on a Baboon it is going to get seriously pissed off.
> From an elderly Pom in Aus.

Dijya ever notice how after a few times of having to explain it, a joke
just isn't as funny?

Well, I got it, Ian.......

- 73 de Mike N3LI -

3372. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 20:37:23 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frp962$1552$3@f04n12.cac.psu.edu>
Source record: 26993

Richard Harrison wrote:

> I`ve learned not to quarrel with Terman. So, I reread the page 929
> quotation. I posted it correctly. He did say a loop antenna responds
> much less to the electric induction field than does a simple wire
> antenna of comparable intercept area.

Even Mandrills know better than to quarrel with Terman....

- 73 de Mike N3LI -

3373. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 20:50:27 UTC
From: dplatt@radagast.org
Message-ID: <jhm5b5-6u8.ln1@radagast.org>
Source record: 26994

In article <frp5pu$gt5$2@news.jpl.nasa.gov>,
Jim Lux <james.p.lux@jpl.nasa.gov> wrote:

>> A home brewed double Gray-Hoverman. Apparently, they work pretty well
>> and if you build a really impressive one, the HOA will really get their
>> panties in a bunch.

>And the best thing is that there's no size limit in the OTARD rules for
>these antennas. the 1 meter limit is ONLY for satellite antennas. OTA
>terrestrial has no size limit. Build that 20 bay curtain array.

There's no explicit size limit stated for the antennas. However, it
could be argued that building an antenna which is larger than
necessary for good reception is not protected... prohibited
restrictions include those which "preclude(s) a person from receiving
or transmitting an acceptable quality signal from an antenna covered
under the rule."

Hence, if you can receive an acceptable-quality signal on all channels
with a 1-bay antenna, the FCC *might* consider as reasonable a
restriction against putting up a 20-bay antenna.

The rules also say "Masts higher than 12 feet above the roofline may
be subject to local permitting" and that the rules do not preempt
"legitimate safety restrictions".

It's clear that a blanket "no on-the-roof TV antennas" restriction by
HOR rules or CCRs is generally unenforceable.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3374. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 21:08:25 UTC
From: dirskyster@gmail.com
Message-ID: <f5d7491f-3073-4e09-b030-848da2510b6f@i12g2000prf.googlegroups.com>
Source record: 26995
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On 3月15日, 下午7时11分, billcalley <billcal...@yahoo.com> wrote:
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

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manufacturers... but lack the time to contact suppliers, negotiate
contracts, arrange shipping or monitor product quality? Don't worry -
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Audio, and Computer Accessories now by visiting the online wholesale
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our warehouse to your customers using our unique drop-shipping
service. You can profit by selling hundreds of different products,
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be answered by the seriouswholesale English-speaking customer support
team... Their aim is to make your China electronics importing business
easier to run than ever before.

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wholesaler & drop-shipper: seriouswholesale. com

3375. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 21:21:46 UTC
From: dirskyster@gmail.com
Message-ID: <c3435d92-6258-4193-8747-1e64ccc5295f@s13g2000prd.googlegroups.com>
Source record: 26996
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On 3月15日, 下午7时11分, billcalley <billcal...@yahoo.com> wrote:
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

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*Check out the huge range of Gadgets, MP3 / MP4 Players, Car DVD /
Audio, and Computer Accessories now by visiting the online wholesale
catalog at seriouswholesale. com You'll have peace of mind thanks to
the seriouswholesale Quality Control, 12-month Warranty on all
products, and easy secure payment by credit card through Paypal.

Selling on eBay or your own online store? Send products direct from
our warehouse to your customers using our unique drop-shipping
service. You can profit by selling hundreds of different products,
without holding any of your own inventory! Any questions you have will
be answered by the seriouswholesale English-speaking customer support
team... Their aim is to make your China electronics importing business
easier to run than ever before.

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with no additional fee - Pay by safely by PayPal seriouswholesale
Wholesale Co., Ltd.: Chinas original and best online electronics

wholesaler & drop-shipper: seriouswholesale. com

3376. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 21:29:15 UTC
From: Dave <noone@nowhere.com>
Message-ID: <LuWDj.6650$SF2.2169@trndny03>
Source record: 26997

"Ian White GM3SEK" <gm3sek@ifwtech.co.uk> wrote in message
news:U5VH68Pl733HFA$d@ifwtech.co.uk...
> Owen Duffy wrote:
>>Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
>>news:XbpnyfEXA33HFAco@ifwtech.co.uk:
>>
>>> Alternatively, wind the wire onto a mandrill.
>>
>>Or would that be a mandrel?
>>
>
> I've seen both spellings recommended in print, but winding wire onto a
> mandrill will be far more entertaining.
>

what i have seen is a 'coil form' is something that remains inside the coil
once it is complete. a 'coil former' is a removable frame or device that
you wind the coil on and then remove. These can be for large coils that are
then supported by something else, like tank coils in amps. Or for coils
that are then put on a core that is built separately, as in a high voltage
power transformer.

3377. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 22:13:37 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frpeqh$ef7$1@news.jpl.nasa.gov>
Source record: 26999

Dave Platt wrote:
> In article <frp5pu$gt5$2@news.jpl.nasa.gov>,
> Jim Lux <james.p.lux@jpl.nasa.gov> wrote:
>
>
>>>A home brewed double Gray-Hoverman. Apparently, they work pretty well
>>>and if you build a really impressive one, the HOA will really get their
>>>panties in a bunch.
>
>
>>And the best thing is that there's no size limit in the OTARD rules for
>>these antennas. the 1 meter limit is ONLY for satellite antennas. OTA
>>terrestrial has no size limit. Build that 20 bay curtain array.
>
>
> There's no explicit size limit stated for the antennas. However, it
> could be argued that building an antenna which is larger than
> necessary for good reception is not protected... prohibited
> restrictions include those which "preclude(s) a person from receiving
> or transmitting an acceptable quality signal from an antenna covered
> under the rule."
>
> Hence, if you can receive an acceptable-quality signal on all channels
> with a 1-bay antenna, the FCC *might* consider as reasonable a
> restriction against putting up a 20-bay antenna.

And the FCC has carefully stayed away from defining "acceptable" . In fact, in one case, they've said that it's in the judgement of the person receiving the signal (The HOA wanted to make the homeowner put the antenna inside the attic, claiming that since they were close to the transmitter site, that an acceptable signal was available). (I can't find the reference off hand.. it's in Maryland or Virginia, as I recall)

One might also want to look up the very interesting case of Stanley and Vera Holliday (5 masts, 30 ft high, 3 dishes, etc.)
http://www.fcc.gov/Bureaus/Cable/Orders/1999/da992132.txt

I spent a while trying to hunt down what "acceptable" might be in FCC rules terms (e.g. what's a minimum performance standard for a Cable TV).. It's pretty tough to find a numerical standard. There are standard service contours which relate to RF field strength, but they're also statistical.

For digital receivers, in fact, on 21 Jan 2001, the FCC: "Denied requests to set performance standards for digital receivers, expressing

concern that the effect of setting such standards at this point would be to stifle innovation and limit performance to current capabilities. The Commission said it would continue to monitor receiver issues;" As recently as June, 2007, an article in CED Magazine said:"The FCC has never before adopted receiver performance specifications or interference rejection requirements. It has the authority to do since Senator Goldwater introduced a bill that became Public Law 97-259 in 1982, which added the italicized language below to the Communications Act:..."

ATSC has a document A/74 which defines a recommended practice for receiver performance, but it's kind of a clunky document, based on technology that was available in 2003-2004, and not really intended for this sort of thing. FWIW, the FCC assumes you need 7dB SNR for UHF and 10dB for VHF, with an assumed 7dB NF.

So, one could claim you need that 20x20 bay antenna to get enough signal to compensate for your horrid transmission line and terrible receiver.

>
> The rules also say "Masts higher than 12 feet above the roofline may
> be subject to local permitting" and that the rules do not preempt
> "legitimate safety restrictions".
The FCC has set a pretty high bar on safety restrictions. They have to be clearly articulated and justified in the rules (i.e. no "in the opinion of the architectural review board, that's unsafe"). The 12 foot thing is a building code issue. The city or jurisdiction would have to have a fairly specifically articulated justification.

>
> It's clear that a blanket "no on-the-roof TV antennas" restriction by
> HOR rules or CCRs is generally unenforceable.
>

Yep.. In fact, can't even have a "must put antenna in position X" or "must plant or paint" rule, unless the cost of compliance is trivially small (as in <$5, see the Meade,KS case) and has ZERO effect on reception

3378. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 23:25:02 UTC
From: Jeff Liebermann <jeffl@cruzio.com>
Message-ID: <9di0u3lr9a0voiidtf9d3ss8tj2bljoqb6@4ax.com>
Source record: 27000
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Tue, 18 Mar 2008 10:54:25 -0700, "Paul Hovnanian P.E."
<paulh@seanet.com> wrote:

>Does your HOA forbid solar arrays? Some of them can be pretty anal
>retentive. Mine won't let me put up my thermonuclear clothes dryer. :-(

No home owners association in my neighborhood. (However, I am the
self-appointed chair person and bill collector for the private road
committee). If we had an HOA, I would be the first to be lynched as I
have 2 dead cars in front of the house, a huge mess ready for
recycling, and an antenna farm on the roof.

However, I have friends that bought into the "planned community"
philosophy and are stuck with CC&R's from hell. Basically, anything
that can be seen from ground level is unacceptable. In the CC&R's
I've read, solar arrays are certainly not allowed, especially on the
roof.
<http://www.renewableenergyworld.com/rea/news/ate/story?id=45648>
I've found the local cities and county bureaucracy on behalf of
various homeowners. Batting average is about 50%.

>Ghosts are a big problem where I live. Or multipath and the resulting
>dropouts the case of DTV broadcasts. That's why I like highly
>directional designs (both horizontally as well as vertically). Other
>than that, I can get all of our local stations with rabbit ears and a
>UHF loop.

I live too far away from the local digital TV xmitters to get reliable
reception. My rule of thumb is that if OTA analog TV reception is
marginal, digital TV will be worse.

Highly directional antennas are the right way to eliminate ghosts
(reflections). However, I keep running into problems with f/b (front
to back) ratio problems, where the ghosts are reflected from behind
the antenna. That's where the lower gain, but higher f/b ratio
antennas, such as a barbeque grill backed bowtie array, makes more
sense. My preference is to use single channel narrowband yagi's for
maximum gain, but that gets really ugly as one per channel is
required.

>All of our DTV stations broadcast on UHF as the VHF band in the Seattle
>area is pretty much filled up with the legacy analog stuff.

We have Channel's digital 10 (KSBW) and digital Channel 12 (KNTV)
<http://en.wikipedia.org/wiki/KNTV>
<http://en.wikipedia.org/wiki/KSBW>

I once did a paper design for a trapped yagi, designed solely for channels 8 and 11 (the analog channels) and no others. It probably would work, but nobody was interested in buying one.

>I'm not
>certain what the stations plan on doing once the digital cut over is
>complete.

All of them. The station owners would need to be insane not do do digital. It's a free extra channel with the oportunity to sell additional services (i.e. data broadcasting).

>They might move their digital signal down onto their analog
>slot or abandon the analog slot altogether. That will be a factor in
>what kind of antenna I put up.

Duh... I never thought to ask the local broadcast engineers what the channel lineup is going to be after the Feb 17, 2009 fire drill. I'll ask.

Every day, I go on an extended exercise constitutional. One day, I decided to count outdoor TV antennas in my mountain neighborhood. My guess is that I passed about 100 houses and only saw three outdoor antennas (which looked ancient and inoperative). I'm wondering if anyone watches OTA TV in my area.

--
Jeff Liebermann 150 Felker St #D Santa Cruz CA 95060
831-336-2558 jeffl@comix.santa-cruz.ca.us
http://802.11junk.com jeffl@cruzio.com
http://www.LearnByDestroying.com AE6KS

3379. "Splitter" Losses

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-18 23:32:15 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <w4OdnfY4qYVmzX3anZ2dnUVZ_v2pnZ2d@comcast.com>
Source record: 26851

Hello,

Expect to purchase an A/B switch box to switch the coax lead from a single receive-only antenna to one of two scanners.

Got to wonder about using a "Splitter" instead.

What is the typical insertion loss for a Splitter ?
(the Scanner freq's go up close to 1 GHz)

I will always be using, and have On, only one of the receivers at a time.
Thus the other spigot will be always be looking at a receiver that is Off.

Will I still have the insertion loss if only one receiver is on (but the other receiver that is Off would still be connected to the Splitter) ?

Thanks,
Bob

3380. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 00:06:21 UTC
From: Jim Thompson <To-Email-Use-The-Envelope-Icon@My-Web-Site.com>
Message-ID: <35m0u31mmbr3mst7rmoj10k411cicb2ugd@4ax.com>
Source record: 26852
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Tue, 18 Mar 2008 16:25:02 -0700, Jeff Liebermann <jeffl@cruzio.com>
wrote:

>On Tue, 18 Mar 2008 10:54:25 -0700, "Paul Hovnanian P.E."
><paulh@seanet.com> wrote:
>
[snip]
>
>However, I have friends that bought into the "planned community"
>philosophy and are stuck with CC&R's from hell. Basically, anything
>that can be seen from ground level is unacceptable. In the CC&R's
>I've read, solar arrays are certainly not allowed, especially on the
>roof.
><http://www.renewableenergyworld.com/rea/news/ate/story?id=45648>
>I've found the local cities and county bureaucracy on behalf of
>various homeowners. Batting average is about 50%.
>
[snip]

Check your state laws, solar is allowed, period, here in AZ...
irrespective of HOA regulations.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
E-mail Address at Website Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

America: Land of the Free, Because of the Brave

3381. Re: "Splitter" Losses

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 00:29:53 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <1427d536-781a-4056-86dc-65eed6c1fe9f@f63g2000hsf.googlegroups.com>
Source record: 26853

On Mar 18, 4:32 pm, "Robert11" <rgs...@notme.com> wrote:
> Hello,
>
> Expect to purchase an A/B switch box to switch the coax lead from a single
> receive-only antenna to one of two scanners.
>
> Got to wonder about using a "Splitter" instead.
>
> What is the typical insertion loss for a Splitter ?
> (the Scanner freq's go up close to 1 GHz)
>
> I will always be using, and have On, only one of the receivers at a time.
> Thus the other spigot will be always be looking at a receiver that is Off.
>
> Will I still have the insertion loss if only one receiver is on (but the
> other receiver that is Off would still be connected to the Splitter) ?
>
> Thanks,
> Bob

A decent splitter, driven by a source whose impedance is the impedance
the splitter is designed for, delivers half the available power to a
matched load on either side, independent of what's hooked to the other
side. A decent splitter should not have more than a dB or so internal
loss. That said, antennas and receiver inputs are seldom very close
to their nominal impedance, so YMMV. In general, though, don't expect
one receiver being on or off to matter significantly to the other
receiver.

Cheers,
Tom
who recently designed, built and installed a 1-to-8 splitter plus
amplifier here at work for a receiver antenna system. The one here
really is good about isolation among the outputs; shorts or opens on
one output affect any of the others by a couple tenths of a dB max.

3382. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 01:05:16 UTC
From: Jeff Liebermann <jeffl@cruzio.com>
Message-ID: <ltn0u31u1njtve9bhae1epn9tntj57uuv4@4ax.com>
Source record: 26854
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Tue, 18 Mar 2008 17:06:21 -0700, Jim Thompson
<To-Email-Use-The-Envelope-Icon@My-Web-Site.com> wrote:

>On Tue, 18 Mar 2008 16:25:02 -0700, Jeff Liebermann <jeffl@cruzio.com>
>wrote:
>
>>On Tue, 18 Mar 2008 10:54:25 -0700, "Paul Hovnanian P.E."
>><paulh@seanet.com> wrote:
>>
>[snip]
>>
>>However, I have friends that bought into the "planned community"
>>philosophy and are stuck with CC&R's from hell. Basically, anything
>>that can be seen from ground level is unacceptable. In the CC&R's
>>I've read, solar arrays are certainly not allowed, especially on the
>>roof.
>><http://www.renewableenergyworld.com/rea/news/ate/story?id=45648>
>>I've found the local cities and county bureaucracy on behalf of
>>various homeowners. Batting average is about 50%.
>>
>[snip]

>Check your state laws, solar is allowed, period, here in AZ...
>irrespective of HOA regulations.
> ...Jim Thompson

The State of Schwarzenegger has had a "Solar Right Act" since 1978.
See:
<http://www.sandiego.edu/epic/publications/documents/070123_RightsActPaperFINAL.pdf>
The Calif Civil Code Section 714 limits the power of HOA's and
governments to restrict solar installations.
<http://www.akeena.net/cm/About_Solar_Power/California_Civil_Code_714.html>

The problem is that term there seems to be some variations in what
constitutes "reasonable restrictions" which are allowed by the law. If
the purpose of the CC&R's is to maintain some semblance of aesthetic
integrity, the local courts have ruled it "reasonable" for them to
block the installation of just about anything with a visual impact.
The interpretation of "reasonable" varies in different jurisdictions
but locally, it seems almost random.

Incidentally, I've read CC&R's that were apparently written perhaps 50
years ago. They're full of restrictions based on race, color,
ethnicity, and such, which are obviously unenforceable. The buyers
were told that that the old contract is good enough because anything

that's illegal won't be enforced. These contracts tend to also have very broad clauses blocking "anything with an aesthetic impact" and such, which is where the solar prohibition originated. One contract I've read itemized examples of prohibited installations, which included all forms of antennas and mentioned solar panels.

Locally, one planning department imposed some siting and support structure restrictions that effectively prevented installing of any solar panels. That apparently was accidental, but it took a year and an expensive legal action to get them to admit that they goofed.

One homeowner wanted a variance to install the solar panels very close to the property line. No CC&R's. The variance was denied because of neighbors protests. It went to court and he lost. Another tried to get his radio tower approved on the basis of it providing supports for his tower mounted solar panels. That also was denied.

--
Jeff Liebermann 150 Felker St #D Santa Cruz CA 95060
831-336-2558 jeffl@comix.santa-cruz.ca.us
http://802.11junk.com jeffl@cruzio.com
http://www.LearnByDestroying.com AE6KS

3383. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 02:36:04 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <47e07c12$0$30677$4c368faf@roadrunner.com>
Source record: 26855

"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:frpeqh$ef7$1@news.jpl.nasa.gov...
> Dave Platt wrote:
>> In article <frp5pu$gt5$2@news.jpl.nasa.gov>,
>> Jim Lux <james.p.lux@jpl.nasa.gov> wrote:
>>
>>
>>>>A home brewed double Gray-Hoverman. Apparently, they work pretty well
>>>>and if you build a really impressive one, the HOA will really get their
>>>>panties in a bunch.
>>
>>
>>>And the best thing is that there's no size limit in the OTARD rules for
>>>these antennas. the 1 meter limit is ONLY for satellite antennas. OTA
>>>terrestrial has no size limit. Build that 20 bay curtain array.
>>
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>> There's no explicit size limit stated for the antennas. However, it
>> could be argued that building an antenna which is larger than
>> necessary for good reception is not protected... prohibited
>> restrictions include those which "preclude(s) a person from receiving
>> or transmitting an acceptable quality signal from an antenna covered
>> under the rule."
>>
>> Hence, if you can receive an acceptable-quality signal on all channels
>> with a 1-bay antenna, the FCC *might* consider as reasonable a
>> restriction against putting up a 20-bay antenna.
>
> And the FCC has carefully stayed away from defining "acceptable" . In
> fact, in one case, they've said that it's in the judgement of the person
> receiving the signal (The HOA wanted to make the homeowner put the antenna
> inside the attic, claiming that since they were close to the transmitter
> site, that an acceptable signal was available). (I can't find the
> reference off hand.. it's in Maryland or Virginia, as I recall)
>
> One might also want to look up the very interesting case of Stanley and
> Vera Holliday (5 masts, 30 ft high, 3 dishes, etc.)
> http://www.fcc.gov/Bureaus/Cable/Orders/1999/da992132.txt
>
> I spent a while trying to hunt down what "acceptable" might be in FCC
> rules terms (e.g. what's a minimum performance standard for a Cable TV)..
> It's pretty tough to find a numerical standard. There are standard
> service contours which relate to RF field strength, but they're also
> statistical.

>
> For digital receivers, in fact, on 21 Jan 2001, the FCC: "Denied requests
> to set performance standards for digital receivers, expressing concern
> that the effect of setting such standards at this point would be to stifle
> innovation and limit performance to current capabilities. The Commission
> said it would continue to monitor receiver issues;" As recently as June,
> 2007, an article in CED Magazine said:"The FCC has never before adopted
> receiver performance specifications or interference rejection
> requirements. It has the authority to do since Senator Goldwater
> introduced a bill that became Public Law 97-259 in 1982, which added the
> italicized language below to the Communications Act:..."
>
>
> ATSC has a document A/74 which defines a recommended practice for receiver
> performance, but it's kind of a clunky document, based on technology that
> was available in 2003-2004, and not really intended for this sort of
> thing. FWIW, the FCC assumes you need 7dB SNR for UHF and 10dB for VHF,
> with an assumed 7dB NF.
>
> So, one could claim you need that 20x20 bay antenna to get enough signal
> to compensate for your horrid transmission line and terrible receiver.
>
>>
>> The rules also say "Masts higher than 12 feet above the roofline may
>> be subject to local permitting" and that the rules do not preempt
>> "legitimate safety restrictions".
> The FCC has set a pretty high bar on safety restrictions. They have to be
> clearly articulated and justified in the rules (i.e. no "in the opinion of
> the architectural review board, that's unsafe"). The 12 foot thing is a
> building code issue. The city or jurisdiction would have to have a fairly
> specifically articulated justification.

The whole ruling is clearly biased to favor the homeowner. It is so biased that, if the HOA requires proof that your antenna is need to receive a signal, then the HOA must pay for any engineering costs that a site test would cost. Arguing distance from the transmitters (all of them) does not work because there might be sources of interference at your particular location. The test itself could be argued because it might not be performed under worst case conditions such as weather. The credentials of the tester could be questioned. Legal fees incurred by the HOA could be excessive. The HOA must pay for your legal expenses, I THINK even if you lose. This ruling clearly put the HOA's in their box. If the HOA lawywer knows the law (most of them do) they won't follow up on any threats. An HOA may try to use threats to get you to take it down anyway, hoping you are not aware of your rights. In that case, you can complain to the FCC. This practice is illegal.

3384. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 02:56:14 UTC
From: David Harmon <source@netcom.com>
Message-ID: <13u109n5tlv6ldb@corp.supernews.com>
Source record: 26856
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Mon, 17 Mar 2008 18:51:33 GMT in rec.radio.amateur.antenna, Cecil
Moore <nospam@w5dxp.com> wrote,
>
>Does Walmart honor the $40 coupon

Duh.

3385. Antenna computor programs(AO PRO)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 04:35:27 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <29a0dfab-593b-494b-8484-951dd98b0452@m44g2000hsc.googlegroups.com>
Source record: 26857

Gentlemen,
I roughed out the antenna with the exception of the "twisted" pair
wires
All computor characteristics pretty much matched the measured
characteristics
of the antenna presently being evaluated.Wish I had more memory so the
segments could be increased.
I suspect it will take a couple of weeks before I can install the
tilting system, maybe longer
May do some qso,s while I wait for the equipment to arrive. Need to
get away from design work
for a few days.Everything I have hoped for so far has been acomplished
plus a few nice
surprises with respect to gain. May piddle with a dish reflector
iaddition n the mean time
Regards
Art Unwin.....KB9MZ xg (uk)

3386. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 08:58:00 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <TC41wcKYWN4HFAFj@ifwtech.co.uk>
Source record: 26859

Michael Coslo wrote:
>> I can bear it no longer. We have Art the English educated antenna
>>expert who cannot write the English language,and now a Scot who
>>doesn't know that a Mandrill is a West African Baboon.
>> If you wind Art's wire on a Baboon it is going to get seriously
>>pissed off. From an elderly Pom in Aus.
>
>
>Dijya ever notice how after a few times of having to explain it, a joke
>just isn't as funny?
>
>
> Well, I got it, Ian.......
>
Thank you, Mike! I was losing the will to live.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

3387. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 08:59:16 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <bC33A7KkXN4HFAkD@ifwtech.co.uk>
Source record: 26858

Dave wrote:
>
>"Ian White GM3SEK" <gm3sek@ifwtech.co.uk> wrote in message
>news:U5VH68Pl733HFA$d@ifwtech.co.uk...
>> Owen Duffy wrote:
>>>Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
>>>news:XbpnyfEXA33HFAco@ifwtech.co.uk:
>>>
>>>> Alternatively, wind the wire onto a mandrill.
>>>
>>>Or would that be a mandrel?
>>>
>>
>> I've seen both spellings recommended in print, but winding wire onto a
>> mandrill will be far more entertaining.
>>

OK, this time it's serious (well, mostly)...

The original meaning of "mandrel" seems to have been a rod-shaped tool, onto which metal can be forged or glass can be mo(u)lded. The mandrel is removed to leave a shaped cavity, and the mandrel can be used again. This meaning is obviously very old, and would have crossed the Atlantic with the Founding Fathers.

In the more recent context of coil winding, a mandrel is an object onto which the wire can be wound. Again, the mandrel is always removed - it is a tool, not part of the finished coil.

Some dictionaries note an alternative spelling, "mandril". This is an old English dialect pronunciation, just like "chisil". (I don't know any dialect-speaking blacksmiths, but can attest that "chisil" is still very much alive.)

The confusion with "mandrill" comes from the fact that a convenient mandrel of known size is the shank of... a drill.

The consequences of winding wire onto a mandrill - or indeed, onto a ferret - are Nature's way of punishing engineers who can't spell.

Dave said:
>
>what i have seen is a 'coil form' is something that remains inside the coil
>once it is complete. a 'coil former' is a removable frame or device that
>you wind the coil on and then remove. These can be for large coils that are
>then supported by something else, like tank coils in amps. Or for coils

>that are then put on a core that is built separately, as in a high voltage
>power transformer.
>
That's completely different from British engineering usage. We don't use
"coil form" at all. "Coil former" almost always means something that
remains inside the completed coil. If it were meant to be removed, that
would have to be made clear from the context.

Cross-posted from rec.radio.amateur.etymology. We now return our antenna
readers to Prior Art.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

3388. Re: "Splitter" Losses

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 09:18:44 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <On1xq4H0pN4HFwUq@g3ohx.demon.co.uk>
Source record: 26860

In message
<1427d536-781a-4056-86dc-65eed6c1fe9f@f63g2000hsf.googlegroups.com>,
K7ITM <k7itm@msn.com> writes
>On Mar 18, 4:32 pm, "Robert11" <rgs...@notme.com> wrote:
>> Hello,
>>
>> Expect to purchase an A/B switch box to switch the coax lead from a single
>> receive-only antenna to one of two scanners.
>>
>> Got to wonder about using a "Splitter" instead.
>>
>> What is the typical insertion loss for a Splitter ?
>> (the Scanner freq's go up close to 1 GHz)
>>
>> I will always be using, and have On, only one of the receivers at a time.
>> Thus the other spigot will be always be looking at a receiver that is Off.
>>
>> Will I still have the insertion loss if only one receiver is on (but the
>> other receiver that is Off would still be connected to the Splitter) ?
>>
>> Thanks,
>> Bob
>
>A decent splitter, driven by a source whose impedance is the impedance
>the splitter is designed for, delivers half the available power to a
>matched load on either side, independent of what's hooked to the other
>side. A decent splitter should not have more than a dB or so internal
>loss. That said, antennas and receiver inputs are seldom very close
>to their nominal impedance, so YMMV. In general, though, don't expect
>one receiver being on or off to matter significantly to the other
>receiver.
>
>Cheers,
>Tom
>who recently designed, built and installed a 1-to-8 splitter plus
>amplifier here at work for a receiver antenna system. The one here
>really is good about isolation among the outputs; shorts or opens on
>one output affect any of the others by a couple tenths of a dB max.

Thinking 'cheap', a two-way equal-output cable TV passive
(non-amplified) splitter will have a signal reduction of around 4dB at
each port. This consists of an unavoidable 3dB (because the power is
halved) plus the circuit losses. Typical signal reduction figures are
3.5dB at 5MHz, 4dB at 500MHz and (say) 5dB at 1000MHz. For slightly

better performance at UHF, a satellite splitter might be a little better, but it may not perform at the lower frequencies.

The maker's spec for the isolation between the output ports will be about 25dB (theoretically infinite), but only when the source impedance (ie the antenna feed) is 75 ohms. If you have 50 ohms, it will be lower (theoretically, it can never better than ~21dB). This is more than enough.

Because of the unavoidable signal loss, I would hesitate about using an unamplified splitter. However, if you do use an amplified one, make sure that it has a good noise figure. Personally, if you don't need the two receivers to operate at the same time, I'd use a cable TV A/B switch.
--
Ian

3389. From OP: Re: "Splitter" Losses

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 10:25:31 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <WIKdneQuG_2Fd33anZ2dnUVZ_gCdnZ2d@comcast.com>
Source record: 26861

Hi Guys,

Thanks for info. and advice.
Appreciate it.

Bob

"Robert11" <rgsros@notme.com> wrote in message
news:w4OdnfY4qYVmzX3anZ2dnUVZ_v2pnZ2d@comcast.com...
> Hello,
>
> Expect to purchase an A/B switch box to switch the coax lead from a single
> receive-only antenna to one of two scanners.
>
> Got to wonder about using a "Splitter" instead.
>
> What is the typical insertion loss for a Splitter ?
> (the Scanner freq's go up close to 1 GHz)
>
> I will always be using, and have On, only one of the receivers at a time.
> Thus the other spigot will be always be looking at a receiver that is Off.
>
> Will I still have the insertion loss if only one receiver is on (but the
> other receiver that is Off would still be connected to the Splitter) ?
>
> Thanks,
> Bob
>

3390. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 11:41:29 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b4068c7c-4685-4a7b-97b4-15d6ed681d24@m36g2000hse.googlegroups.com>
Source record: 26862

On Mar 17, 10:05 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Regardless, if you use the snippet above to support
> > your claim, you have effectively modified your claim.
>
> False. My claim is what it has always been which is:
> An amateur radio antenna system obeys the conservation
> of energy principle and abides by the principles of
> superposition (including interference) and the wave
> reflection model.

Well who could argue with that. But don't all systems
obey? And why limit it to amateur?

> Everything I have claimed falls out from those principles.

But the question then becomes "Have the prinicples been
correctly applied?"

> Your claims, however, are in direct violation of the
> principles of superposition and of the wave reflection
> model, e.g. waves smart enough to decide to be reflected
> when the physical reflection coefficient is 0.0. Your
> claims even violate the principles of AC circuit theory,
> e.g. a reactance doesn't store energy and deliver it back
> to the system at a later time in the same cycle.

An intriguing set of assertions. It would be good if you
could point out the equations that are in violation.

Is there an error in either
Ps(t) = Prs(t) + Pg(t)
or
Pg(t) = Pf.g(t) + Pr.g(t)

Both by derivation and by example, these seem to be true.

Do you disagree?

> > You are now saying that the reflected energy is
> > dissipated in the source resistor only at particular
> > times, such as when the source voltage is 0, and that
> > you are not interested in what happens during the rest
> > of the cycle.
>
> You haven't read my article yet, have you? Here's a quote:
> "For this *special case*, it is obvious that the reflected energy

> from the load is flowing through the source resistor, RS, and
> is being dissipated there.

I would suggest that it is not 'obvious'. Some times the
energy from the reflected wave is being absorbed in the
source.

'Obvious' is often an excuse for an absence of rigour.

> But remember, we chose a special
> case (resistive RL and 1/8 wavelength feedline) in order to
> make that statement true and it is *usually not true* in the
> general case."
>
> If there is one case where your assertion is wrong, then
> your assertion is false. I found that special case when
> the source voltage is zero that makes your assertions
> false.

Which assertion is wrong?
Ps(t) = Prs(t) + Pg(t) ?
Pg(t) = Pf.g(t) + Pr.g(t) ?

> > For example, if you were to do the same analysis,
> > except do it for t such that wt equals 100 degrees,
> > instead of 90, you would find that you need more terms
> > than just Pr.g to make the energy flows balance.
>
> Yes, you have realized that destructive and constructive
> interference energy must be accounted for to balance the
> energy equations. I have been telling you that for weeks.

You do use the words, but do not offer any equations that
describe the behaviour. The claim is thus quite weak.

> I repeat: The *only time* that reflected energy is 100%
> dissipated in the source resistor is when the two component
> voltages satisfy the condition: (V1^2 + V2^2) = (V1 + V2)^2.
> None of your examples have satisfied that necessary condition.
> All it takes is one case to prove the following assertion false:
>
> "Reflected energy is *always* re-reflected from the
> source and redistributed back toward the load."

I have never made that claim. So if that is your concern, I agree
completely that it is false.

My claim is that "the energy in the reflected wave can not usually be
accounted for in the source resistor dissipation, and that this is
especially so for the example you have offerred".

> You appear to think that if you can find many cases where
> an assertion is true, then you can simply ignore the cases

> where it is not true. I have presented some special cases
> where it is not true. It may be true for 99.9% of cases,
> but that nagging 0.1% makes the statement false overall.

Having never claimed the truth of the statement, I have
never attempted to prove it.

> Equally false is the assertion: "Reflected energy is
> always dissipated in the source resistor." The amount
> of reflected energy dissipated in the source resistor
> can vary from 0% to 100% depending upon network
> conditions. That statement has been in my article from
> the beginning.

But you have claimed special cases where the energy
is dissipated in the source resistor.

Ps(t) = Prs(t) + Pg(t)
and
Pg(t) = Pf.g(t) + Pr.g(t)
demonstrate this to be false for the example you have offerred.

> > So are you now agreeing that it is not the energy
> > in the reflected wave that accounts for the
> > difference in the heating of the source resistor
> > but, rather, the energy stored and returned from
> > the line, i.e. Pg(t)?
>
> I have already presented a case where there is *zero*
> power dissipated in the source resistor in the presence
> of reflected energy so your statement is obviously just
> false innuendo, something I have come to expect from
> you when you lose an argument.

Since it was a question, you were being invited to clarify
your position. But it begs the question:
When zero energy is being dissipated in the source resistor
in the presence of reflected energy, where does that reflected
energy go?

Recalling that by substitution
Ps(t) = Prs(t) + Pf.g(t) + Pr.g(t)
so that when the resistor dissipation is 0 for certain values of t
Ps(t) = 0 + Pf.g(t) + Pr.g(t)
= Pf.g(t) + Pr.g(t)
Pr.g(t) = Ps(t) - Pf.g(t)

Please provide equations that describe how the reflected energy is
split between the source and the forward wave.
For completeness, these equations should generalize to describe
the splitting of the energy for all values of t, not just those
where the dissipation in the source resistor is 0.

...Keith

3391. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 11:56:56 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <d1977e3a-68c6-4f7e-804d-91150c7ebe8b@13g2000hsb.googlegroups.com>
Source record: 26863

On Mar 18, 10:58 am, Roger Sparks <rspa...@elltel.net> wrote:
> Thanks for a comprehensive analysis Keith. It was helpful to me to see how you step by step analyzed the circuit.

You are most welcome.

...Keith

3392. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 11:57:16 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <28184d51-7789-4d76-b898-9c2aefe17d20@m34g2000hsc.googlegroups.com>
Source record: 26864

On Mar 18, 12:16 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> >>> Keith Dysart wrote:
> >>>> Pr.g(t) = -50 + 50 cos(2wt)
> >>>>   = -50 -50
> >>>>   = -100
> >>>> which would appear to be the 100 watts needed to
> >>>> heat the source resistor.
>
> > Thanks for a comprehensive analysis Keith. It was helpful to me to see how you step by step analyzed the circuit.
>
> Note that his analysis proves that destructive interference
> energy is indeed stored in the reactance of the network and
> dissipated later in the cycle as constructive interference
> in the source resistor at a time when the instantaneous
> source power equals zero.

I've made no claims about destructive or other interference
so I am intrigued by what you say my analysis proves.

Could you expand on how my analysis "proves" that
"destructive interference energy is indeed stored in the
reactance of the network and dissipated later in the cycle
as constructive interference in the source resistor at a
time when the instantaneous source power equals zero."

I am not sure why you focus on the infinitesimally small
times when "the instantaneous source power equals zero".
Are you saying that at other times, an explanation other
than interference is needed?
Or does interference explain the flows of the energy
in the reflected waves for all times?

It would be good if you could provide the equations that
describe these flows, especially the ones describing the
storage of some of the energy from the reflected wave in
the reactance of the network.

...Keith

3393. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 12:27:04 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frr0qo$163i$1@f04n12.cac.psu.edu>
Source record: 26865

Art Unwin wrote:
> On Mar 18, 12:26 pm, Michael Coslo <m...@psu.edu> wrote:
>> Roy Lewallen wrote:
>>> Mike Coslo wrote:
>>>> On Fri, 14 Mar 2008 11:57:41 -0700, Roy Lewallen wrote:
>>>>> Richard Harrison wrote:
>>>>>> Build a small scale model that can be tested indoors and report its
>>>>>> characteristics. Antennas are scaleable.
>>>>> That's more easily said than done. One of the critical characteristics
>>>>> of a small antenna is loss. And to correctly replicate loss in a scaled
>>>>> antenna requires scaling the conductivity of the conductors as the
>>>>> square root of the frequency. To scale to a higher frequency requires
>>>>> that the conductivity be better than the original. Unless the original
>>>>> is made from lead and the scale factor moderate, this wouldn't be
>>>>> possible.
>>>> If what I suspect is true, would not the coax also need to be scaled?
>>> Dunno. What do you suspect?
>> I suspect that the antenna is a tuned circuit on top of coax, and it
>> needs that coax to radiate effectively. So just scaling the antenna
>> wouldn't translate to the same results?
>>
>> - 73 de Mike N3LI -
>
> If you are familiar with computor programming then why not model it
> instead of repeating over and over again this transmission line
> radiation theory.?

It comes up in the conversation Art, I only rinse and repeat as necessary.

I'm still trying to wrap my mind around the antenna, I'm nowhere near ready to model it. So as to not make any ignorant mistakes, the antenna is counter-wound inductors, correct? and they are concurrently wound, as in they sort of weave against each other? And this is a full wave antenna? Do you use enameled wire, or what is the insulation? I'm assuming that this might be important in regards to VF.

- 73 de Mike N3LI -

3394. Re:coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 13:58:24 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <4_8Ej.73565$nw4.26774@fe1.news.blueyonder.co.uk>
Source record: 26866

I found some coax in the garage called RG58C/U E50032 AWM style 1354. It is silver coloured and not copper. Any one know if this coax is of good quality not?

I want to use some for the Cobwebb antenna and I want to make some coaxial traps for my wire antenna with it.

Thanks

3395. For those with antenna restrictions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 14:46:24 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <13301ae9-cd35-4109-906b-14aaf7a8ae40@a70g2000hsh.googlegroups.com>
Source record: 26867

Now small antennas can be made I would suggest to those encombered by
restrictions
to duplicate the following assembly so they may rejoin the hobby.
Obtain a 1/2 plastic pipe.
Purchase two reels of dog fence wire which is pre wound twin wire
Solder the wires of each reel such that it is now a continuos wire.I
used the 20 gauge form from E bay($24)
With the joint at the back of the plastic pipe turn the right hand
side one loop and then the other side one loop but in the opposite
direction.
Procede until you have a wrapped pipe of say a 6 foot length.
Obtain a hula hoop from a store and remove the joining plug.
Push the windings off of the plastic pipe and slide it on the hula
hoop
untill it is full.Replace the plug and connect the transmission lines
to one of each
of the wound wires and solder together
the remaining two wires. Locate resonant points for all bands and
connect to a rotary switch of your choice
for connection for future band use.This antenna will be useable for
all of the top band and upwards.
Each tap supplies enough coverage for any particular band so no
externerl tuning components are required.
As a simple hoola hoop this can be left anywhere in the yard or placed
easily into the attic
where it can only be seen as a childs toy which are always left around
in sight of nosy niebours.
Since it is a closed loop there is little danger of television
problems or high arcing voltage and you may now join the hams on any
band. If you require the loop to be smaller twist it into a figure
eight shape befor replacing the plug.As a listening antenna it can be
placed on top of the tower where it is situated away from ground
noise.
Regards
Art Unwin KB9MZ.....XG (uk)

3396. Re: For those with antenna restrictions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 15:19:19 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <a312368c-6e4b-4774-8ad3-0fdeecba498d@u72g2000hsf.googlegroups.com>
Source record: 26868

On Mar 19, 9:46 am, Art Unwin <ArthurUn...@gmail.com> wrote:
> Now small antennas can be made I would suggest to those encombered by
> restrictions
> to duplicate the following assembly so they may rejoin the hobby.
> Obtain a 1/2 plastic pipe.
> Purchase two reels of dog fence wire which is pre wound twin wire
> Solder the wires of each reel such that it is now a continuos wire.I
> used the 20 gauge form from E bay($24)
> With the joint at the back of the plastic pipe turn the right hand
> side one loop and then the other side one loop but in the opposite
> direction.
> Procede until you have a wrapped pipe of say a 6 foot length.
> Obtain a hula hoop from a store and remove the joining plug.
> Push the windings off of the plastic pipe and slide it on the hula
> hoop
> untill it is full.Replace the plug and connect the transmission lines
> to one of each
> of the wound wires and solder together
> the remaining two wires. Locate resonant points for all bands and
> connect to a rotary switch of your choice
> for connection for future band use.This antenna will be useable for
> all of the top band and upwards.
> Each tap supplies enough coverage for any particular band so no
> externerl tuning components are required.
> As a simple hoola hoop this can be left anywhere in the yard or placed
> easily into the attic
> where it can only be seen as a childs toy which are always left around
> in sight of nosy niebours.
> Since it is a closed loop there is little danger of television
> problems or high arcing voltage and you may now join the hams on any
> band. If you require the loop to be smaller twist it into a figure
> eight shape befor replacing the plug.As a listening antenna it can be
> placed on top of the tower where it is situated away from ground
> noise.
> Regards
> Art Unwin KB9MZ.....XG (uk)

This version is quite light and is an excellent candidate for use via
turning and tilting on a
security observation assemble which allows you to probe the polarity
of incoming signals as well as
cancelling noise that comes from different directions in the loft.
These are now becoming available as cameras get smaller where the
don't need heavy motors e.t.c Keep it as small as possible so it

doesn;t tip the mechanism and break it.
The antenna by the way can be twisted in different directions as long as one keeps it symetrical (in equilibrium)
One doesn't have to buy a hoola hoop. Common garden water pipe can be used which makes it more inconspicuious when left outside with the remaining water pipe.
Regards
Art

3397. Re: For those with antenna restrictions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 15:37:34 UTC
From: ltdoc@yahoo.com
Message-ID: <6e882eb9-a409-493d-88a6-327f5f65d22f@t54g2000hsg.googlegroups.com>
Source record: 26869

Art,
"Since it is a closed loop there is little danger of television
problems or high arcing voltage..."

That's news to me Art. I've found that closed loops can produce TVI/
RFI quite well.

And while an antenna of this sort might be capable of letting you
produce a signal on a particular band, it certainly won't be adequate
in most cases. A dummy-load can do the same thing, no switching
required.

None of this means that there aren't a few options available for those
with restrictions! Those options are not going to be 'good' ones,
just adequate,sort of. The root of the problem with living in a
restricted area is that you agreed to those restrictions when you
chose to live there. So, live with them, or move, or change those
restrictions.
- 'Doc

3398. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 15:47:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KAaEj.21163$Ej5.6353@newssvr29.news.prodigy.net>
Source record: 26870

Keith Dysart wrote:
> My claim is that "the energy in the reflected wave can not usually be
> accounted for in the source resistor dissipation, and that this is
> especially so for the example you have offerred".

The instantaneous example to which you are referring does
not meet my special case requirement of *ZERO INTERFERENCE*
so your above statement is just another straw man and is
thus irrelevant to my claim. But you already know that.

I agree with you that "the energy in the reflected wave can
not usually be accounted for in the source resistor dissipation."
I have stated over and over that the reflected energy
dissipation in the source resistor can range from 0% to 100%.

My claim is that when the special case of *ZERO INTERFERENCE*
exists between the two voltages superposed at the source resistor,
then 100% of the reflected energy is dissipated in the source
resistor. You have not provided a single example which proves
my claim false.

The test for *ZERO INTERFERENCE* is when, given the two
voltages, V1 and V2, superposed at the source resistor,

(V1^2 + V2^2) = (V1 + V2)^2

None of your examples have satisfied that special case
condition. My average reflected power example does NOT
satisfy that condition for instantaneous power!

Here's the procedure for proving my claim to be false.
Write the equations for V1(t) and V2(t), the two instantaneous
voltages superposed at the source resistor. Find the time
when [V1(t)^2 + V2(t)^2] = [V1(t) + V2(t)]^2. Calculate
the instantaneous powers *at that time*. You will find that,
just as I have asserted, 100% of the instantaneous reflected
energy is dissipated in the source resistor.

Until you satisfy my previously stated special case condition
of *ZERO INTERFERENCE*, you cannot prove my assertions to be
false.
--
73, Cecil http://www.w5dxp.com

3399. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 16:00:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xMaEj.21164$Ej5.10381@newssvr29.news.prodigy.net>
Source record: 26871

Keith Dysart wrote:
> I am not sure why you focus on the infinitesimally small
> times when "the instantaneous source power equals zero".

:-) :-) That was my exact reaction when you wanted to
focus on the infinitesimally small times associated
with instantaneous powers. :-) :-) You are to blame
for that focus, not I.

It only takes one example to prove your claims wrong.
I didn't want to focus on instantaneous power at all
but you insisted. Now that your own techniques are
being used to prove you wrong, you are objecting.

At the time when the instantaneous source power is zero,
the only other sources of energy in the entire network
is reflected energy and interference energy. That's
a fact of physics.

You have gotten caught superposing powers, something
that every sophomore EE knows not to do. I repeat:
The only time that power can be directly added is
when there is *ZERO INTERFERENCE*. The test for
zero interference is: (V1^2 + V2^2) = (V1 + V2)^2
--
73, Cecil http://www.w5dxp.com

3400. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 16:44:31 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frrftg$o9d$1@news.jpl.nasa.gov>
Source record: 26873

Jeff Liebermann wrote:
>
>>Ghosts are a big problem where I live. Or multipath and the resulting
>>dropouts the case of DTV broadcasts. That's why I like highly
>>directional designs (both horizontally as well as vertically). Other
>>than that, I can get all of our local stations with rabbit ears and a
>>UHF loop.
>
>
> I live too far away from the local digital TV xmitters to get reliable
> reception. My rule of thumb is that if OTA analog TV reception is
> marginal, digital TV will be worse.
>
> Highly directional antennas are the right way to eliminate ghosts
> (reflections). However, I keep running into problems with f/b (front
> to back) ratio problems, where the ghosts are reflected from behind
> the antenna. That's where the lower gain, but higher f/b ratio
> antennas, such as a barbeque grill backed bowtie array, makes more
> sense. My preference is to use single channel narrowband yagi's for
> maximum gain, but that gets really ugly as one per channel is
> required.
>

Actually, with modern high quality receivers (which may not include the
$40 DTV to NTSC converters), they use a rake receiver to coherently
combine the multiple paths, so it's very likely that you'd get a better
signal with digital (i.e. the receiver would lock and you'd get ANY
output) than with analog in a multipathy, but not faint signal environment.

One of the design goals for DTV was to be multipath immune.

Note that in Europe, they actually transmit the identical signal from
multiple transmitter sites, guaranteeing multiple arriving signals with
different timing. Different modulation scheme, but the same multipath
issues. The same has been proposed for use in the US

However, with DTV, signal strength is more of an issue,mostly because
there isn't a "degraded mode" like there is with analog. Most viewers
are willing to tolerate remarkably degraded signals on an analog
channel, so folks are used to being able to receive a TV signal well
beyond the nominal service boundary. With digital, either you got it or
you don't. Some gain in the antenna helps..

3401. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 16:58:17 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <674245cf-371f-40c7-a05d-02f49e69385a@u72g2000hsf.googlegroups.com>
Source record: 26872

On Mar 19, 7:27 am, Michael Coslo <m...@psu.edu> wrote:
> Art Unwin wrote:
> > On Mar 18, 12:26 pm, Michael Coslo <m...@psu.edu> wrote:
> >> Roy Lewallen wrote:
> >>> Mike Coslo wrote:
> >>>> On Fri, 14 Mar 2008 11:57:41 -0700, Roy Lewallen wrote:
> >>>>> Richard Harrison wrote:
> >>>>>> Build a small scale model that can be tested indoors and report its
> >>>>>> characteristics. Antennas are scaleable.
> >>>>> That's more easily said than done. One of the critical characteristics
> >>>>> of a small antenna is loss. And to correctly replicate loss in a scaled
> >>>>> antenna requires scaling the conductivity of the conductors as the
> >>>>> square root of the frequency. To scale to a higher frequency requires
> >>>>> that the conductivity be better than the original. Unless the original
> >>>>> is made from lead and the scale factor moderate, this wouldn't be
> >>>>> possible.
> >>>> If what I suspect is true, would not the coax also need to be scaled?
> >>> Dunno. What do you suspect?
> >> I suspect that the antenna is a tuned circuit on top of coax, and it
> >> needs that coax to radiate effectively. So just scaling the antenna
> >> wouldn't translate to the same results?
>
> >> - 73 de Mike N3LI -
>
> > If you are familiar with computor programming then why not model it
> > instead of repeating over and over again this transmission line
> > radiation theory.?
>
> It comes up in the conversation Art, I only rinse and repeat as necessary.
>
> I'm still trying to wrap my mind around the antenna, I'm nowhere near
> ready to model it. So as to not make any ignorant mistakes, the antenna
> is counter-wound inductors, correct? and they are concurrently wound, as
> in they sort of weave against each other? And this is a full wave
> antenna? Do you use enameled wire, or what is the insulation? I'm
> assuming that this might be important in regards to VF.
>
> - 73 de Mike N3LI -

I think you should forget the whole idea. We have another expert
on line that can voutch for the fact that it is just a dummy load.
He joins the majority and I am only one,.....who actually has one no
less.!
Art

3402. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 17:25:31 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <7da3e62f-544d-45a5-b146-7a9a876ac256@m36g2000hse.googlegroups.com>
Source record: 26874

On Mar 19, 11:44 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Jeff Liebermann wrote:
>
> >>Ghosts are a big problem where I live. Or multipath and the resulting
> >>dropouts the case of DTV broadcasts. That's why I like highly
> >>directional designs (both horizontally as well as vertically). Other
> >>than that, I can get all of our local stations with rabbit ears and a
> >>UHF loop.
>
> > I live too far away from the local digital TV xmitters to get reliable
> > reception. My rule of thumb is that if OTA analog TV reception is
> > marginal, digital TV will be worse.
>
> > Highly directional antennas are the right way to eliminate ghosts
> > (reflections). However, I keep running into problems with f/b (front
> > to back) ratio problems, where the ghosts are reflected from behind
> > the antenna. That's where the lower gain, but higher f/b ratio
> > antennas, such as a barbeque grill backed bowtie array, makes more
> > sense. My preference is to use single channel narrowband yagi's for
> > maximum gain, but that gets really ugly as one per channel is
> > required.
>
> Actually, with modern high quality receivers (which may not include the
> $40 DTV to NTSC converters), they use a rake receiver to coherently
> combine the multiple paths, so it's very likely that you'd get a better
> signal with digital (i.e. the receiver would lock and you'd get ANY
> output) than with analog in a multipathy, but not faint signal environment.
>
> One of the design goals for DTV was to be multipath immune.
>
> Note that in Europe, they actually transmit the identical signal from
> multiple transmitter sites, guaranteeing multiple arriving signals with
> different timing. Different modulation scheme, but the same multipath
> issues. The same has been proposed for use in the US
>
> However, with DTV, signal strength is more of an issue,mostly because
> there isn't a "degraded mode" like there is with analog. Most viewers
> are willing to tolerate remarkably degraded signals on an analog
> channel, so folks are used to being able to receive a TV signal well
> beyond the nominal service boundary. With digital, either you got it or
> you don't. Some gain in the antenna helps..

I am hoping that because of the narrow filter requirements of ham
radio

a fast acring multipath antenna switch would allow the dominant polarisation to over rule all otherssince the ear can only accept a few samples at a time.
Art

3403. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 18:50:59 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <frrnaj$1606$1@f04n12.cac.psu.edu>
Source record: 26875

Art Unwin wrote:
> On Mar 19, 7:27 am, Michael Coslo <m...@psu.edu> wrote:

>> I'm still trying to wrap my mind around the antenna, I'm nowhere near
>> ready to model it. So as to not make any ignorant mistakes, the antenna
>> is counter-wound inductors, correct? and they are concurrently wound, as
>> in they sort of weave against each other? And this is a full wave
>> antenna? Do you use enameled wire, or what is the insulation? I'm
>> assuming that this might be important in regards to VF.
>>
>> - 73 de Mike N3LI -
>
> I think you should forget the whole idea. We have another expert
> on line that can voutch for the fact that it is just a dummy load.
> He joins the majority and I am only one,.....who actually has one no
> less.!

What up Art? I'm trying to find out what the idea is behind this
antenna, not disrespect it.

- 73 de Mike N3LI -

3404. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 19:16:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uEdEj.21786$0o7.21064@newssvr13.news.prodigy.net>
Source record: 26876

Keith Dysart wrote:
> On Mar 17, 10:05 am, Cecil Moore <nos...@w5dxp.com> wrote:
>> My claim is what it has always been which is:
>> An amateur radio antenna system obeys the conservation
>> of energy principle and abides by the principles of
>> superposition (including interference) and the wave
>> reflection model.
>
> Well who could argue with that.

Well, of course, you do when you argue with me. For instance, you believe that reflections can occur when the reflections see a reflection coefficient of 0.0, i.e. a source resistance equal to the characteristic impedance of the transmission line. This obviously flies in the face of the wave reflection model. When you cannot balance the energy equations, you are arguing with the conservation of energy principle.
--
73, Cecil http://www.w5dxp.com

3405. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 19:41:41 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <a546a397-1209-45dc-a36a-e2c3b7c75b8f@m36g2000hse.googlegroups.com>
Source record: 26877

On Mar 19, 1:50 pm, Michael Coslo <m...@psu.edu> wrote:
> Art Unwin wrote:
> > On Mar 19, 7:27 am, Michael Coslo <m...@psu.edu> wrote:
> >> I'm still trying to wrap my mind around the antenna, I'm nowhere near
> >> ready to model it. So as to not make any ignorant mistakes, the antenna
> >> is counter-wound inductors, correct? and they are concurrently wound, as
> >> in they sort of weave against each other? And this is a full wave
> >> antenna? Do you use enameled wire, or what is the insulation? I'm
> >> assuming that this might be important in regards to VF.
>
> >> - 73 de Mike N3LI -
>
> > I think you should forget the whole idea. We have another expert
> > on line that can voutch for the fact that it is just a dummy load.
> > He joins the majority and I am only one,.....who actually has one no
> > less.!
>
> What up Art? I'm trying to find out what the idea is behind this
> antenna, not disrespect it.
>
> - 73 de Mike N3LI -

I have use std house wiring,enamelled magnet wire and simple buried
dog wire.
which I believe has the lowest insulation. Min wire I have used is #22
because the wire is not meant to support anything so 100%
of fused value seems to be o.k.
I have taken the windings off of the former but it is lacking in
strength.
I am using a wood lathe so that I can wind at 90 overlap of the wire
which will leave small holes
and will be stronger.
I made a machine to do this in the U.k. before I came over which had
no holes and was made of glass fibre tape.
I sold the machine which I used for lampshades before I came ove.
Prior to that shades were of monofiliament wound in single direction.
The machine was really for making an equivalent fuel containers on
the Atlas rocket so I made one for myself out of bycycle chain and
infra red heaters and mad some pocket money.
All of these I have tuned up with 100 watts

3406. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 19:50:31 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <344e03e0-c382-4a9a-9681-02a91f399c30@d62g2000hsf.googlegroups.com>
Source record: 26878

On Mar 19, 2:41 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Mar 19, 1:50 pm, Michael Coslo <m...@psu.edu> wrote:
>
>
>
> > Art Unwin wrote:
> > > On Mar 19, 7:27 am, Michael Coslo <m...@psu.edu> wrote:
> > >> I'm still trying to wrap my mind around the antenna, I'm nowhere near
> > >> ready to model it. So as to not make any ignorant mistakes, the antenna
> > >> is counter-wound inductors, correct? and they are concurrently wound, as
> > >> in they sort of weave against each other? And this is a full wave
> > >> antenna? Do you use enameled wire, or what is the insulation? I'm
> > >> assuming that this might be important in regards to VF.
>
> > >> - 73 de Mike N3LI -
>
> > > I think you should forget the whole idea. We have another expert
> > > on line that can voutch for the fact that it is just a dummy load.
> > > He joins the majority and I am only one,.....who actually has one no
> > > less.!
>
> > What up Art? I'm trying to find out what the idea is behind this
> > antenna, not disrespect it.
>
> > - 73 de Mike N3LI -
>
> I have use std house wiring,enamelled magnet wire and simple buried
> dog wire.
> which I believe has the lowest insulation. Min wire I have used is #22
> because the wire is not meant to support anything so 100%
> of fused value seems to be o.k.
> I have taken the windings off of the former but it is lacking in
> strength.
> I am using a wood lathe so that I can wind at 90 overlap of the wire
> which will leave small holes
> and will be stronger.
> I made a machine to do this in the U.k. before I came over which had
> no holes and was made of glass fibre tape.
> I sold the machine which I used for lampshades before I came ove.
> Prior to that shades were of monofiliament wound in single direction.
> The machine was really for making an equivalent fuel containers on
> the Atlas rocket so I made one for myself out of bycycle chain and
> infra red heaters and mad some pocket money.
> All of these I have tuned up with 100 watts

Why not just wind a mirror image on your wlky talky antenna:
That way you are not using your body as a heat sink!s

3407. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 20:04:18 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <6leEj.133$NU2.121@news01.roc.ny>
Source record: 26879

Owen Duffy wrote:
> Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
> news:XbpnyfEXA33HFAco@ifwtech.co.uk:
>
>> Alternatively, wind the wire onto a mandrill.
>
> Or would that be a mandrel?

The hard part of winding it on a mandrill is getting it to stand still.

Dave K8MN

3408. Re: Re:coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 21:35:24 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <LFfEj.21199$rC6.7469@bignews4.bellsouth.net>
Source record: 26880

It may be tinned copper - giving it the silver color - and making it easier
to solder..
here's what a ham normally does : TIAS (Try It And See)

If you can find the Manufacturer's name, you may be able to look up the
'loss per mft' for different freqs on their website.

> silver coloured and not copper. Any one know if this coax is of good
> quality not?
>
> I want to use some for the Cobwebb antenna and I want to make some coaxial
> traps for my wire antenna with it.
>
> Thanks
>

3409. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 22:06:47 UTC
From: Dave <noone@nowhere.com>
Message-ID: <X7gEj.7318$rR1.6419@trndny09>
Source record: 26881

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:344e03e0-c382-4a9a-9681-02a91f399c30@d62g2000hsf.googlegroups.com...
> On Mar 19, 2:41 pm, Art Unwin <ArthurUn...@gmail.com> wrote:

this must be the explanation for art's antenna design prowess, and probably
a bunch of the other less than coherent contributors in here.
http://science.slashdot.org/article.pl?sid=08/03/19/0211242&from=rss

3410. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 22:57:22 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <frs5oi$ja4$1@news.jpl.nasa.gov>
Source record: 26882

Dave Heil wrote:
> Owen Duffy wrote:
>
>> Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote in
>> news:XbpnyfEXA33HFAco@ifwtech.co.uk:
>>
>>> Alternatively, wind the wire onto a mandrill.
>>
>>
>> Or would that be a mandrel?
>
>
> The hard part of winding it on a mandrill is getting it to stand still.

That's why you need the mandrel.. you whack the mandrill over the head (pretty hard), then, while it's stunned, you quickly wind the wire on it.

Of course, you need to move fast to remove your winding before the mandrill regains consciousness. They're pretty big and strong, and have BIG teeth.

On the other hand, if you are winding on a Mandrell, they understand spoken language. You might be able to just explain what you're doing, and she (or he) might sit still for the process. Mandrells also have much smaller teeth than mandrills, and aren't nearly as strong, so if they do object during the winding process, your risk of injury is less.

3411. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 23:08:14 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <872f37f8-d579-4447-8d5d-5d27191151dd@c19g2000prf.googlegroups.com>
Source record: 26883

On Mar 19, 11:47 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > My claim is that "the energy in the reflected wave can not usually be
> > accounted for in the source resistor dissipation, and that this is
> > especially so for the example you have offerred".
>
> The instantaneous example to which you are referring does
> not meet my special case requirement of *ZERO INTERFERENCE*
> so your above statement is just another straw man and is
> thus irrelevant to my claim. But you already know that.
>
> I agree with you that "the energy in the reflected wave can
> not usually be accounted for in the source resistor dissipation."
> I have stated over and over that the reflected energy
> dissipation in the source resistor can range from 0% to 100%.
>
> My claim is that when the special case of *ZERO INTERFERENCE*
> exists between the two voltages superposed at the source resistor,
> then 100% of the reflected energy is dissipated in the source
> resistor. You have not provided a single example which proves
> my claim false.
>
> The test for *ZERO INTERFERENCE* is when, given the two
> voltages, V1 and V2, superposed at the source resistor,
>
> (V1^2 + V2^2) = (V1 + V2)^2
>
> None of your examples have satisfied that special case
> condition. My average reflected power example does NOT
> satisfy that condition for instantaneous power!
>
> Here's the procedure for proving my claim to be false.
> Write the equations for V1(t) and V2(t), the two instantaneous
> voltages superposed at the source resistor. Find the time
> when [V1(t)^2 + V2(t)^2] = [V1(t) + V2(t)]^2. Calculate
> the instantaneous powers *at that time*. You will find that,
> just as I have asserted, 100% of the instantaneous reflected
> energy is dissipated in the source resistor.
>
> Until you satisfy my previously stated special case condition
> of *ZERO INTERFERENCE*, you cannot prove my assertions to be
> false.
> --
> 73, Cecil http://www.w5dxp.com

In a previous iteration, I had accepted that your claim only
applied when there was zero interference. I converted that to
the particular values of wt for which your claim aaplied,
e.g. 90 degrees.

I then restated your claim as applying only at those particular
times and not at other points in the cycle, but you were
unhappy with that limitation.

So you have to choose...
Does it only apply at those particular points in the cycle
where wt is equal to 90 degrees or appropriate multiples?
(A restatement of only applying when there is no interference.)
or
Does it apply at all times in the cycle?

...Keith

3412. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 23:08:29 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <33c8aa49-b8c2-47d6-8426-26aad3839662@i7g2000prf.googlegroups.com>
Source record: 26884

On Mar 19, 12:00 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > I am not sure why you focus on the infinitesimally small
> > times when "the instantaneous source power equals zero".
>
> :-) :-) That was my exact reaction when you wanted to
> focus on the infinitesimally small times associated
> with instantaneous powers. :-) :-) You are to blame
> for that focus, not I.
>
> It only takes one example to prove your claims wrong.

Could you state the claim that you think you are proving
wrong?

> I didn't want to focus on instantaneous power at all
> but you insisted. Now that your own techniques are
> being used to prove you wrong, you are objecting.

If you wish to have your equalities apply at only selected
points within the cycle, that works for me.

It only fails when you make the assertion that
for the circuit under consideration, the energy in
the reflected wave is dissipated in the source
resistor.

> At the time when the instantaneous source power is zero,
> the only other sources of energy in the entire network
> is reflected energy and interference energy. That's
> a fact of physics.
>
> You have gotten caught superposing powers, something
> that every sophomore EE knows not to do.

Could you kindly show me where?

The two expressions in which I have summed power are
Ps(t) = Prs(t) + Pg(t)
and
Pg(t) = Pf.g(t) + Pr.g(t)

You have not previously indicated that either of these
are incorrect. Please take this opportunity.

> I repeat:
> The only time that power can be directly added is

> when there is *ZERO INTERFERENCE*. The test for
> zero interference is: (V1^2 + V2^2) = (V1 + V2)^2

Surely you overstate. Powers can be directly added whenever you have a system with ports adding and removing energy from the system. Conservation of energy says that the sum of the energy being stored in the system is equal to the sums of all the ins and outs at the ports. There are no conditions on the ports adding or removing energy.

...Keith

3413. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-19 23:08:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <23e07909-0733-4d1a-ab15-a72a649bbc54@s13g2000prd.googlegroups.com>
Source record: 26885

On Mar 19, 3:16 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > On Mar 17, 10:05 am, Cecil Moore <nos...@w5dxp.com> wrote:
> >> My claim is what it has always been which is:
> >> An amateur radio antenna system obeys the conservation
> >> of energy principle and abides by the principles of
> >> superposition (including interference) and the wave
> >> reflection model.
>
> > Well who could argue with that.
>
> Well, of course, you do when you argue with me.

Now there is an ego. Anyone arguing with you is
definitely against conservation of energy. Amusing.

> For
> instance, you believe that reflections can occur when
> the reflections see a reflection coefficient of 0.0,
> i.e. a source resistance equal to the characteristic
> impedance of the transmission line.

You won't find anywhere that I said that. In fact, I
was quite pleased that I had helped you relearn this
tidbit from your early education which previous posts
made clear you had forgotten. Did you eventually look up "reflection",
"lattice" or "bounce diagram"?

> This obviously
> flies in the face of the wave reflection model. When
> you cannot balance the energy equations, you are
> arguing with the conservation of energy principle.

But I notice that you have not yet indicated which
energy equation I may have written that was unbalanced.
You do have a nack with unfounded assertions, don't
you?

...Keith

3414. Re: Re:coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 03:22:53 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <XfudnRzZ0rr_V3zanZ2dnUVZ_o6knZ2d@giganews.com>
Source record: 26886

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:4_8Ej.73565$nw4.26774@fe1.news.blueyonder.co.uk...
> I found some coax in the garage called RG58C/U E50032 AWM style 1354. It
is
> silver coloured and not copper. Any one know if this coax is of good
quality
> not?
>
> I want to use some for the Cobwebb antenna and I want to make some coaxial
> traps for my wire antenna with it.
>
> Thanks
>
According to the Belden catalog
(http://www.belden.com/pdfs/03Belden_Master_Catalog/06Coaxial_Cables/06Coaxi
al_Cables.pdf page 77, Trade No 8262), it's a better grade of RG58/U:

20 AWG stranded (19x33) tinned-copper center conductor, solid polyethylene
dielectric, tinned-copper 95% braided shield, non-contaminating PVC jacket.
The last part is likely the most important factor for outdoor use. I
believe E50032 is a manufacturer's part number (apparently, not Belden).

73,
Bryan WA7PRC

3415. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 04:29:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <1LlEj.21269$Ej5.480@newssvr29.news.prodigy.net>
Source record: 26887

Keith Dysart wrote:
> I then restated your claim as applying only at those particular
> times and not at other points in the cycle, but you were
> unhappy with that limitation.

There are no limitations. If zero interference exists,
then 100% of the reflected energy is dissipated in
the source resistor.
--
73, Cecil http://www.w5dxp.com

3416. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 04:34:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <IPIEj.4481$qS5.2733@nlpi069.nbdc.sbc.com>
Source record: 26888

Keith Dysart wrote:
> If you wish to have your equalities apply at only selected
> points within the cycle, that works for me.

Not only at selected points within the cycle but
also for average values. If zero average interference
exists then 100% of the average reflected energy is
dissipated in the source resistor which is the subject
of my Part 1 article. If the instantaneous interference
is zero, 100% of the instantaneous reflected power is
dissipated in the source resistor.

I repeat: When zero interference exists, 100% of the
reflected energy is dissipated in the source resistor.
--
73, Cecil http://www.w5dxp.com

3417. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 04:50:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <62mEj.21271$Ej5.6466@newssvr29.news.prodigy.net>
Source record: 26889

Keith Dysart wrote:
> But I notice that you have not yet indicated which
> energy equation I may have written that was unbalanced.

Why should I waste my time finding your conservation of
energy violations?

I repeat: When there exists zero interference, 100%
of the reflected energy is dissipated in the source
resistor. Since you think you provided an example where
that statement is not true, your example violates the
conservation of energy principle.
--
73, Cecil http://www.w5dxp.com

3418. Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 05:44:50 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <mRmEj.7673$%Y2.2092@trnddc08>
Source record: 26890

Hi Folks:

I'm looking to make a directional antenna in the 215 to 218 MHz band (215 if that's too broad), used for location of dementia patients who have wandered away from their caregivers. I'm a volunteer with an organization that locates these people. They wear a tiny transmitter which emits a chirp that can be heard from 1-2 miles on the ground and 8-10 miles via helicopter.

I'm somewhat new to the program, and I'd like to do some investigation on my own regarding antenna types that would be useful, and I hope you'll all grant me a few questions.

My needs are this.... the antenna must be as directional as possible. It must be most efficient in the 215 to 218 MHz band 215 is what our patients are on right now, though after we fill up that range we have licensed through 218 MHz. It must be easy for an individual to carry, and portable enough to carry through any type of terrain. It must be shaped in such a way that it's relatively safe and easy to use in an enclosed area, either in a helicopter or a car. Currently the agency is using a 4 element Yagi, which works well, but has the drawback of being a real eye-poker when used in close quarters, and in fact the California Highway Patrol will not allow them to be used in their helicopters because of that reason.

One of our Search & Rescue guys built his own 4 element Quad Yagi out of some 1/2" PVC pipe and other parts that are readily available at any Home Depot. It has greater sensitivity than our stock antenna, and the CHP has said that it's OK to use in their helicopters. Rather than 4 horizontal straight beams it has 4 squarish beams, with no points to poke people's eyes out. I'm still waiting to get the plans from him for that antenna, and I though that in the meantime I'd ask in here if any of you had some interesting leads for me to follow.

Many thanks!

3419. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 05:47:03 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <rTmEj.7677$%Y2.3658@trnddc08>
Source record: 26891

Clarification:

216 MHz is what we're using now. We're getting away from 215 because of interference with digital TV.

3420. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 08:04:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jg64u31rra8js99af9hk9rgt2458i3a1f4@4ax.com>
Source record: 26892

On Thu, 20 Mar 2008 05:44:50 GMT, "usmcbrat"
<president@whitehouse.gov> wrote:

>My needs are this.... the antenna must be as directional as possible. It
>must be most efficient in the 215 to 218 MHz band 215 is what our patients
>are on right now, though after we fill up that range we have licensed
>through 218 MHz. It must be easy for an individual to carry, and portable
>enough to carry through any type of terrain. It must be shaped in such a
>way that it's relatively safe and easy to use in an enclosed area, either in
>a helicopter or a car. Currently the agency is using a 4 element Yagi,
>which works well, but has the drawback of being a real eye-poker when used
>in close quarters, and in fact the California Highway Patrol will not allow
>them to be used in their helicopters because of that reason.

Hi USMCbrat,

Research the Google newsgroups (for this newsgroup specifically)
archive with the keyword "foxhunt." There are more issues than just
directionality to be considered.

ARMYbrat Richard Clark, KB7QHC

3421. ⊡2.5 D

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 08:14:40 UTC
From: at3yulg2 <sle68o62n@gmail.com>
Message-ID: <0d02f319-65ca-485f-9f3b-3d88a79def02@m3g2000hsc.googlegroups.com>
Source record: 26893

Once I got over the generic user interface, which I will admit was more than a little intimidating, I really nailed some great results! I am going to try to find out if they are going to put up a user's gallery. This depth enhancement method is very strong and without messing up my backgrounds or skin textures. I'll have to see about the 25 cent save charge, I'm not sure if I can afford to do all my photos with it. I will definitely do the ones that process strongly/ well.http://dvnphoto.com/downloads

3422. Re: Re:coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 09:54:26 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <mvqEj.45523$M9.18477@fe3.news.blueyonder.co.uk>
Source record: 26894

Bryan, I don't fully understand what do you mean buy the last part is the
most important thing and why?

The link for Belden doesn't work for some reason.

Thanks

"Bryan" <bryan.swadenerNOSPAM@comcast.net> wrote in message
news:XfudnRzZ0rr_V3zanZ2dnUVZ_o6knZ2d@giganews.com...
>
> "Barrett" <barrett@blueyounder.co.uk> wrote in message
> news:4_8Ej.73565$nw4.26774@fe1.news.blueyonder.co.uk...
>> I found some coax in the garage called RG58C/U E50032 AWM style 1354. It
> is
>> silver coloured and not copper. Any one know if this coax is of good
> quality
>> not?
>>
>> I want to use some for the Cobwebb antenna and I want to make some
>> coaxial
>> traps for my wire antenna with it.
>>
>> Thanks
>>
> According to the Belden catalog
> (http://www.belden.com/pdfs/03Belden_Master_Catalog/06Coaxial_Cables/06Coaxi
> al_Cables.pdf page 77, Trade No 8262), it's a better grade of RG58/U:
>
> 20 AWG stranded (19x33) tinned-copper center conductor, solid polyethylene
> dielectric, tinned-copper 95% braided shield, non-contaminating PVC
> jacket.
> The last part is likely the most important factor for outdoor use. I
> believe E50032 is a manufacturer's part number (apparently, not Belden).
>
> 73,
> Bryan WA7PRC
>
>

3423. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 10:41:34 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b6100e54-df77-44bb-a3ee-60e5344f46d2@h11g2000prf.googlegroups.com>
Source record: 26895

I have consolidated three replies below...

On Mar 20, 12:29 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > I then restated your claim as applying only at those particular
> > times and not at other points in the cycle, but you were
> > unhappy with that limitation.
>
> There are no limitations. If zero interference exists,
> then 100% of the reflected energy is dissipated in
> the source resistor.

Sentence one says "no limitations". Sentence two specifies a
limitation. But your paper did provide that limitation and
indicated that circuit (Fig 1-1) with a 45 degree line was
an example which satisfied that limitation.

But in subsequent discussion you have waffled about whether,
for the circuit in Fig 1-1, "100% of the reflected energy is
dissipated in the source resistor" is applicable for all
time or only for those instances when the source voltage is
equal to 0.

Could you clarify whether your claim for the circuit of
Fig 1-1 applies to all time, or just to those instances
when the source voltage is 0.

On Mar 20, 12:34 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > If you wish to have your equalities apply at only selected
> > points within the cycle, that works for me.
>
> Not only at selected points within the cycle but
> also for average values. If zero average interference
> exists then 100% of the average reflected energy is
> dissipated in the source resistor which is the subject
> of my Part 1 article. If the instantaneous interference
> is zero, 100% of the instantaneous reflected power is
> dissipated in the source resistor.

Perhaps this has clarified. So you are only claiming that
reflected energy is dissipated in the source resistor at
those instances when the source voltage is zero. Good.

Now as to averages: Averaging is a mathematical operation
applied to the signal which reduces information. I do agree

that the increase in the average dissipation in the source
resistor is numerically equal to the average value of the
reflected power. But this is just numerical equivalency.
It does not prove that the energy in the reflected wave
is dissipated in the source resistor. To prove the latter,
one must show that the energy in the reflected wave, on
an instance by instance basis is dissipated in the source
resistor because conservation of energy applies at the
instantaneous level.

And I have shown in an evaluation of the instantaneous
energy flows that the energy dissipated in the source
resistor is not the energy from the reflected wave.

> I repeat: When zero interference exists, 100% of the
> reflected energy is dissipated in the source resistor.

But only at those instances where the source voltage is
zero.

On Mar 20, 12:50 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > But I notice that you have not yet indicated which
> > energy equation I may have written that was unbalanced.
>
> Why should I waste my time finding your conservation of
> energy violations?

Mostly to prove that my analysis has an error.

> I repeat: When there exists zero interference, 100%
> of the reflected energy is dissipated in the source
> resistor. Since you think you provided an example where
> that statement is not true, your example violates the
> conservation of energy principle.

But if there is no error in my analysis (and you have not
found one), then perhaps you should examine whether the
clause "When there exists zero interference, 100% of the
reflected energy is dissipated in the source resistor"
is in error. Sometimes one has to re-examine one's deeply
held beliefs in the light of new evidence. It is the only
rational thing to do.

...Keith

3424. Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 13:30:34 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <4jo4u3lj16tlh5rhkc253baa3vv21a92b7@4ax.com>
Source record: 26896

This is an interesting antenna. It is a mobile stealth magnetic loop
antenna.

http://stealth.ae/plugins/custompages/detinf.php?id=372&id_categories=136

I watched the video and checked out the details. The antenna is
basically a loop with the roof of the car (the bottom of the luggage
rack) as the ground side of the loop, the antenna goes up, folds over
the top and back down to the other side of the roof where it feeds
thru a high voltage vacuum variable capacitor back to ground.

```
---------------------------
| |
|_ |
| |( coax conx) = Capacitor
| -|_____________|
^ (roof)
^
(feed)
```

I am not as good an artist as some of you, but here is my graphic
The coax feeds with a gamma? and is tuned by a stepper motor tuning
the vacuum variable cap. Depending on which of the three models, it
operates from 1.5-10 MHz, 2.7-15.5 MHz, or 4.5-22 MHz at up to 150
watts.

The technical notes have more interesting details:
http://stealth.ae/plugins/custompages/articles.php?id=10

It seems to me a homebrew version could be made for base use such as
for those in restricted homes. Placed on the peak of the house, the
ground side could be a wire across the top of the peak and the loop
lift up during use so it would not attract too much attention to the
neighbors.

I wonder what the size and cost of the Vacuum variable is to make a
similar antenna??

Buck
N4PGW
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3425. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 14:02:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <78uEj.21283$Ej5.8928@newssvr29.news.prodigy.net>
Source record: 26897

Keith Dysart wrote:
> Sentence one says "no limitations". Sentence two specifies a
> limitation.

Semantic games. There are no limitations within the
stated boundary conditions just like any number of
other concepts.

> Could you clarify whether your claim for the circuit of
> Fig 1-1 applies to all time, or just to those instances
> when the source voltage is 0.

There are no claims regarding instantaneous power in
Fig 1-1 or anywhere else in my web article. All the
claims in my web article refer to *average* powers and
the article states exactly that. For the purpose and
subject of the web article, the subject of instantaneous
power is just an irrelevant diversion. No other author
on the subject has ever mentioned instantaneous power.
Given average values, time doesn't even appear in any
of their equations. Apparently, those authors agree
with Eugene Hecht that instantaneous power is "of
limited utility".

Here's my claim made in the article: When the *average*
interference at the source resistor is zero, the *average*
reflected power is 100% dissipated in the source resistor.
I gave enough examples to prove that claim to be true.
Since the instantaneous interference averages out to
zero, this claim about *average* power is valid.

When Tom, K7ITM, asserted that the same concepts work
for instantaneous power, I took a look and realized that
he was right. One can make the same claim about instantaneous
power although I do not make that claim in my web article.

When the instantaneous interference at the source resistor
is zero, the instantaneous reflected power is 100% dissipated
in the source resistor.

> Perhaps this has clarified. So you are only claiming that
> reflected energy is dissipated in the source resistor at
> those instances when the source voltage is zero. Good.

I am claiming no such thing. Please cease and desist with
the mind fornication, Keith. You cannot win the argument
by being unethical.

> Mostly to prove that my analysis has an error.

I have pointed out your error multiple times before, Keith,
and you simply ignore what I say. Why should I waste any
more time on someone who refuses to listen?

One more time:
Over and over, you use the equation Ptot = P1 + P2 even
though every sophomore EE student knows the equation is
(usually) invalid. The valid method for adding AC powers is:

Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(A)

The last term is called the interference term which you
have completely ignored in your analysis. Therefore, your
analysis is obviously in error. When you redo your math
to include the interference term, your conceptual blunders
will disappear. Until then, you are just blowing smoke.
--
73, Cecil http://www.w5dxp.com

3426. Re:Cobwebb feeder question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 14:05:39 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <TauEj.45538$M9.39388@fe3.news.blueyonder.co.uk>
Source record: 26898

I have some questions about the choke and feed line on the Cobwebb.

Does the co-axial choke balun work better if the cable is wound on top of each other into a tube shape rather than just winding it round and zip tying it together in a round bundle?

Can I attach a SO239 Chassis socket to the end of the box where the coax enters and then plug a PL259 into that for the feeder or will the socket allow current to bypass the choke balun and enter the feed line?

Thanks

3427. Re: Re:coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 14:07:36 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <IcuEj.45539$M9.39420@fe3.news.blueyonder.co.uk>
Source record: 26899

Do you mean that the pvc is not suitable for out door use?

Thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:mvqEj.45523$M9.18477@fe3.news.blueyonder.co.uk...
> Bryan, I don't fully understand what do you mean buy the last part is the
> most important thing and why?
>
> The link for Belden doesn't work for some reason.
>
> Thanks
>
>
> "Bryan" <bryan.swadenerNOSPAM@comcast.net> wrote in message
> news:XfudnRzZ0rr_V3zanZ2dnUVZ_o6knZ2d@giganews.com...
>>
>> "Barrett" <barrett@blueyounder.co.uk> wrote in message
>> news:4_8Ej.73565$nw4.26774@fe1.news.blueyonder.co.uk...
>>> I found some coax in the garage called RG58C/U E50032 AWM style 1354. It
>> is
>>> silver coloured and not copper. Any one know if this coax is of good
>> quality
>>> not?
>>>
>>> I want to use some for the Cobwebb antenna and I want to make some
>>> coaxial
>>> traps for my wire antenna with it.
>>>
>>> Thanks
>>>
>> According to the Belden catalog
>> (http://www.belden.com/pdfs/03Belden_Master_Catalog/06Coaxial_Cables/06Coaxi
>> al_Cables.pdf page 77, Trade No 8262), it's a better grade of RG58/U:
>>
>> 20 AWG stranded (19x33) tinned-copper center conductor, solid
>> polyethylene
>> dielectric, tinned-copper 95% braided shield, non-contaminating PVC
>> jacket.
>> The last part is likely the most important factor for outdoor use. I
>> believe E50032 is a manufacturer's part number (apparently, not Belden).
>>
>> 73,
>> Bryan WA7PRC
>>

>>
>
>

3428. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 17:07:44 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <MKadnRFLIfJ9BH_anZ2dnUVZ_sWdnZ2d@neonova.net>
Source record: 26900

Keith Dysart wrote:
> On Mar 16, 10:21 am, Cecil Moore <nos...@w5dxp.com> wrote:
snip
>> Would you please explain how energy is conserved in the
>> following example at the zero-crossing point for Vs?
>>
>> Rs Vg Vl
>> +----/\/\/-----+----------------------+
>> | 50 ohm |
>> | |
>> Vs 45 degrees | Shorted
>> 100v RMS 50 ohm line | Stub
>> | |
>> | |
>> +--------------+----------------------+
>> gnd
>>
>> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
>> is supplying zero watts at that time but Prs(t) = 100w.
>> Where is the 100 watts coming from?

For the first 90 degrees of time, the circuit can be represented as

>> Rs Vg Vl
>> +----/\/\/-----+----------------------+
>> | 50 ohm |
>> | /
>> Vs \ 50 ohm resistor
>> 100v RMS /
>> | \
>> | |
>> +--------------+----------------------+
>> gnd

After 90 degrees of time has passed, the circuit can be represented as

>> Rs Vg Vl
>> +----/\/\/-----+----------------------+
>> | 50 ohm |
>> | |
>> Vs ---
>> 100v RMS --- 50 ohm inductive
>> | |
>> | |
>> +--------------+----------------------+

>> gnd

The sudden switch in circuit design at time 90 degrees is not unique to start up, but is true for any adjustment made to Vs and any returning wave from the shorted stub,. As a result, a true stable circuit will never be found unless some voltage adjustment is allowed for the 90 timing shift caused by the shorted stub. Keith (in his analysis of the circuit) recognizes that Vs drives into a reactive circuit.

If we want to understand how constructive and destructive interference act to cause a 50 ohm resistor to evolve into a 50 ohm capacitor, then we need to examine how traveling waves might do this. It would be nice to have a formula or wave sequence that fully addressed this evolution.

From circuit theory, we have the inductive reactance of a short-circuited line less than 1/4 wavelength long is

XL = Zo * tan (length degrees)

= 50 * tan(45)

= 50 ohms

From traveling wave theory, we would have the applied wave from the source arriving 90 degrees late to the stub side of resistor Rs. This ignores the fact that current must already be passing through resistor Rs because voltage has been applied to Rs from the Vs side 90 degrees earlier. Whoa! Things are not adding up correctly this way!

We need to treat the wave going down the 50 ohm line as a single wave front. The wave reverses at the short-circuit, reversing both direction of travel and sign of voltage. When the wave front reaches the input end, 90 degrees after entering (for this case), the voltage/current ratio is identical to the starting ratio (the line was 45 degrees long, tan(45) = 1), and the returning voltage directly adds to the voltage applied from Vs. As a result, the current flowing through Rs will increase, and Vs will see a changed (decreased) impedance.

After 90 degrees of signal application, we should be able to express the voltage across Rs as

Vrs(t) = Vs(t) - Vg(t) + Vref(t)

Vs(t) = Vs(wt + 90), Vg(t) = Vs(wt + 90)/2, Vref(t) = Vs(wt)/2

Substitute so

Vrs(t) = Vs(wt + 90) - Vs(wt + 90)/2 + Vs(wt)/2

= Vs(wt + 90)/2 + Vs(wt)/2

Allow Vs to be represented by a sine wave, we have

2Vrs(t) = Vs*sin(wt + 90) + Vs*sin(wt)
= 2Vs*(sin(wt + 45)(cos(45))

Vrs(t) = Vs(sin(wt + 45)(cos(45))

Vs is defined as 100v RMS, which equals 100 * 1.414 = 141.4v Peak. The maximum voltage would occur when the sin term was 90 degrees and equals 1, which would occur at wt = 45 degrees. We would have

Vrs(45) = 141.42 * sin(90)(cos(45)
= 141.42 * 1 * 0.7071
= 100v

Now consider the current. After the same 90 degrees of signal application, we should be able to express the current through Rs as

Irs(t) = Is(t) + Iref(t)

Is(t) = Is(wt + 90), Iref(t) = Is(wt)

The reflected current has been shifted by 90 degrees due to the reflection so we must rewrite Iref(t) to read

Iref(t) = Is(wt + 90)

Substitute,

Irs(t) = Is(wt + 90) + Is(wt)

Allow Is to be represented by a sine wave, we have

Irs(t) = Is*sin(wt + 90) + Is*sin(wt)

= 2*Is(sin(wt + 45)(cos(45))

How do we find Is? Is is the initial current found by dividing the applied voltage at peak (141.42v) by the initial resistance (100 ohms).

Is = 141.42/100 = 1.4142a

The maximum current would occur when the sin term was 90 degrees and equals 1, which would occur at wt = 45 degrees. We would have

Irs(t) = 2*Is(sin(wt + 45)(cos(45))

= 2 * 1.4142 * 1 * 0.7071

= 2a

These results agree with the results from Keith and from circuit theory.

We have a theory and at least the peaks found from the theory agree with the results from others. How about Cecil's initial question which is
>> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
>> is supplying zero watts at that time but Prs(t) = 100w.
>> Where is the 100 watts coming from?

We will use the equation

Vrs(t) = Vs(t) - Vg(t) + Vref(t)

Vs(t) = Vs(wt + 90), Vg(t) = Vs(wt + 90)/2, Vref(t) = Vs(wt)/2

The challenge looks at the time when Vs(t) = Vs*sin(wt + 90) = 0, which occurs when wt = -90. When wt = -90, all the power to the source resistor Rs is from the reflected portion described as Vref(t) = Vs(wt)/2. The voltage across Rs would be

Vrs(-90) = Vref(-90)
= Vs*sin(-90)/2
= 141.4/2
= 70.7v

The power to Rs would be (Vrs^2)/50 = (70.7^2)/50 = 100w, all coming from the reflection.

In summary, power to the resistor Rs comes via two paths, one longer than the other by 90 degrees (in this example). The short path is the series path of two resistors composed of the source resistor Rs and the input to the 50 ohm transmission line measured by Vg. The long path is the series path of one resistor Rs and one capacitor composed of the shorted transmission line. Both paths are available at all times. Power flows through both paths to Rs at all times, but because of the time differential in arrival timing, at some point Rs will receive power only from Vs, and at another point, receive power only from Vref.

73, Roger, W7WKB

3429. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 17:09:10 UTC
From: Claude <claudec@cae.com>
Message-ID: <fru5qeour1@dns3.cae.ca>
Source record: 26902
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

Not sure about the higher frequencies but in the HF band we absolutely need
an antenna coupler that matches the impedance to the selected frequency. If
a coupler fails we can barely throw a signal a few miles whereas when the
coupler does it's job we can bounce a signal off of the ionosphere at night
for a few thousand miles.

Claude
Montreal

"billcalley" <billcalley@yahoo.com> wrote in message
news:e93d7a93-a8c1-4671-b830-3c33905405c6@u10g2000prn.googlegroups.com...
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

3430. Re: proposal for new group!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 17:27:36 UTC
From: Eric <englere_geo@yahoo.com>
Message-ID: <898bf4b7-463d-4136-b61d-4f5f542742a3@m36g2000hse.googlegroups.com>
Source record: 26903

On Mar 14, 7:50 am, "Dave" <no...@nowhere.com> wrote:
> i propose we create a rec.radio.amateur.no.useful.solutions group.
> r.r.a.n.u.s. kind of has a nice ring to it.

But remember this would have to be a usenet group, picking up the
missing u.

3431. Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 17:34:22 UTC
From: Eric <englere_geo@yahoo.com>
Message-ID: <e1f52241-73a3-4c74-8798-2989f2af21f1@u72g2000hsf.googlegroups.com>
Source record: 26904

I'm looking for suggestions for the Strange Antenna Challenge this Memorial Day week-end. One guy used a pair of back-to-back trucks to make a dipole, and one guy loaded up a sports stadium. A group in Atlanta used an Extension Ladder on 20M and that worked well, but that seems a little less strange than I'd like. It almost looks like a regular antenna when it's standing straight up.

I want something that doesn't look like an antenna (one guy suggested hoisting a BBQ grill into the trees, but I'm sure that wouldn't work well on 20M). I want something that can be adjusted to be somewhat near resonance without a tuner.

Ideas?

Eric

3432. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 18:07:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <1KxEj.21906$0o7.16074@newssvr13.news.prodigy.net>
Source record: 26906

Roger Sparks wrote:
> Vrs(t) = Vs(t) - Vg(t) + Vref(t)

Good job, Roger. Let's simplify the equation through
substitution.

Let V1(t) = [Vs(t) - Vg(t)]

Let V2(t) = Vref(t)

Vrs(t) = V1(t) + V2(t)

> The power to Rs would be (Vrs^2)/50 = (70.7^2)/50 = 100w, all coming
> from the reflection.

Yes, because when Vs(t)=0, there is zero instantaneous
interference.

> In summary, power to the resistor Rs comes via two paths, one longer
> than the other by 90 degrees (in this example). The short path is the
> series path of two resistors composed of the source resistor Rs and the
> input to the 50 ohm transmission line measured by Vg. The long path is
> the series path of one resistor Rs and one capacitor composed of the
> shorted transmission line. Both paths are available at all times. Power
> flows through both paths to Rs at all times, but because of the time
> differential in arrival timing, at some point Rs will receive power only
> from Vs, and at another point, receive power only from Vref.

What Keith is missing is that:

Vrs(t)^2 = [V1(t) + V2(t)]^2 NOT= V1(t)^2 + V2(t)^2

In his math, Keith is asserting that since

Prs(t) NOT= P1(t) + P2(t), then the reflected power is not
being dissipated in the source resistor. But every sophomore
EE knows NOT to try to superpose powers like that. Roger,
I'll bet you know not to try to superpose powers?

Since Keith doesn't listen to me, would you pass that
technical fact on to him?

When Keith uses the correct equation:

Prs(t) = P1(t) + P2(t) +/- 2*SQRT[P1(t)*P2(t)]

he will see that the equation balances and therefore
100% of the reflected energy is dissipated in the
source resistor since the interference term averages

out to zero over each cycle.
--
73, Cecil http://www.w5dxp.com

3433. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 18:10:15 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5895u31a8jt7k5pv8fo8gvhgn4m09f78jl@4ax.com>
Source record: 26901

On Thu, 20 Mar 2008 09:30:34 -0400, Buck <usenet01@lumpuckeroo.com>
wrote:

>I wonder what the size and cost of the Vacuum variable is to make a
>similar antenna??

Hi Buck,

Take your cue from the page. Multiply by Q and you have your ratings
(add a safety factor). Go to eBay and look at the prices. Place
order and wait for the mail. Assemble. Operate.

I suspect you already know that and are seeking solutions that border
on fantasy. Art has revealed the characteristics of his 160M antenna
(it takes only scaling to your favorite band) to obtain remarkable
results (he knows what they are, but hasn't actually tested one).

Fantasy publication is common enough here to satisfy any taste: You
can get at least 3dB more "efficiency" (emphasis due to its new,
tailored definition). You enjoy new equilibriums not formerly
available in common and ordinary antennas (such as those drab and
outdated models found at the web page you provided). You can discover
added signal strength from Gaussian principles (it's not just about
gain anymore). Find the hidden power of polarization unknown to the
general antenna marketplace. Size is of no consequence with
counterwound coupling. Q is no longer the irritating limitation it
once was. Marvel at hiding it in a hula hoop in the grass so the
neighbors don't suspect it as an antenna. No RFI either! Mount it on
a steerable camera mount so you can point it (and the camera) into
neighbor's windows.

Advantages galore to be found that were previously unthinkable with
those huge and cumbersome antennas that could only communicate with
half the world.

73's
Richard Clark, KB7QHC

3434. Re: Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 18:10:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <BMxEj.21907$0o7.5863@newssvr13.news.prodigy.net>
Source record: 26907

Eric wrote:
> Ideas?

Gamma match a tree.
--
73, Cecil http://www.w5dxp.com

3435. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 18:34:34 UTC
From: dplatt@radagast.org
Message-ID: <qanab5-f3j.ln1@radagast.org>
Source record: 26908
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

>Not sure about the higher frequencies but in the HF band we absolutely need
>an antenna coupler that matches the impedance to the selected frequency. If
>a coupler fails we can barely throw a signal a few miles whereas when the
>coupler does it's job we can bounce a signal off of the ionosphere at night
>for a few thousand miles.

That's certainly true at the transmitting end. A good impedance match is needed in order to enable the transmitter to deliver power effectively into the antenna, from whence it can be radiated.

It's rather less true at the receiving end, at least in the lower-frequency HF bands. In these bands, the ability to receive a usable signal is often dominated by the amount of natural and man-made noise in the band, and not by the receiver's own self-generated noise. Even with a serious impedance mismatch between the antenna and the receiver, enough signal reaches the receiver front-end to overcome the receiver's own internal noise.

If you happen to live in an area which is blessed by a very low background-noise level (e.g. out in the country, away from power lines) and you're DXing in the HF bands, then a good impedance-matched antenna will let your receiver take best advantage of the low noise level.

If you're SWLing in a city, surrounded by power lines and electric motors and neon lights and computers, the background noise level is going to be much higher, and the weak distant stations will be drowned out by the noise anyhow... and an inefficiently-matched antenna such as a whip or longwire will give you enough signal to hear the stations which are _not_ drowned out by the noise.

As an example - if your receiver has decent sensitivity, and a low internal noise level, you may find that you can hear a signal with decent audio quality all the way down to S0 or below (if there's no noise obscuring it). You then find that with an impedance-matched antenna the band's background noise is S6 or so. Assuming that you can make use of a signal which is somewhat below the broadband noise level, let's say that you decide you can copy stations whose own individual signals are S5 or better, and that lower-level signals are blanketed by the noise.

At this point, you realize that you can use an antenna which is 5 S-points (nominally, 30 dB) less efficient, and still receive the same set of stations. With a less efficient antenna, the stations' signals will be weaker... but so will the external band noise, by the same

ratio, and thus the signal-to-noise ratio of each station will remain unchanged.

As an example, my ARES/RACES group has a multiband HF setup in our city's police and fire admin building, which is downtown near the main commercial-and-restaurant street and the light-rail system. We have a trap-dipole antenna strung up above the building's roof. On the 80-meter band, the broadband noise level across the whole band is rarely less than S9! We could probably receive the same set of stations using an antenna consisting of two coat-hangers and some damp string!

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

3436. Re: Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 18:41:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <dsb5u3h4s2v9j7gl0kcudvfnprqbogrn71@4ax.com>
Source record: 26905

On Thu, 20 Mar 2008 10:34:22 -0700 (PDT), Eric <englere_geo@yahoo.com>
wrote:

>I want something that doesn't look like an antenna (one guy suggested
>hoisting a BBQ grill into the trees, but I'm sure that wouldn't work
>well on 20M).

The grill no, but the tree, probably (why skip the obvious in both
strange AND doable?).

>I want something that can be adjusted to be somewhat
>near resonance without a tuner.

Then it wouldn't be strange - would it?

73's
Richard Clark, KB7QHC

3437. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 19:58:02 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <9b9f8451-c293-4be2-ad02-8c6e606dc13d@e10g2000prf.googlegroups.com>
Source record: 26909
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 15, 12:28 am, K7ITM <k7...@msn.com> wrote:
> On Mar 14, 2:15 pm, Artem <artem.b...@gmail.com> wrote:
Yes...very good. That should help keep the loop nicely balanced,
> especially if you build it all very symmetrical. That one more tube

Hi. I have some problem. I can't receive nothing except noise And self
oscillation frequency.
I have some photos. Could any give me some suggestions?
Antenna:
http://artembond.no-ip.info/apache2-default/DSC_9427.JPG

Chematics:
http://artembond.no-ip.info/apache2-default/DSC_9431.JPG

Amplifier:
http://artembond.no-ip.info/apache2-default/DSC_9426.JPG

3438. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 20:07:43 UTC
From: zekfrivo@zekfrivolous.com
Message-ID: <frug6f$o8j$2@usenet01.srv.cis.pitt.edu>
Source record: 26910
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

In article <9b9f8451-c293-4be2-ad02-8c6e606dc13d@e10g2000prf.googlegroups.com>, Artem <artem.bond@gmail.com> wrote:
>On Mar 15, 12:28 am, K7ITM <k7...@msn.com> wrote:
>> On Mar 14, 2:15 pm, Artem <artem.b...@gmail.com> wrote:
>Yes...very good. That should help keep the loop nicely balanced,
>> especially if you build it all very symmetrical. That one more tube
>
>Hi. I have some problem. I can't receive nothing except noise And self
>oscillation frequency.
>I have some photos. Could any give me some suggestions?
>Antenna:
>http://artembond.no-ip.info/apache2-default/DSC_9427.JPG
>
>Chematics:
>http://artembond.no-ip.info/apache2-default/DSC_9431.JPG
>
>Amplifier:
>http://artembond.no-ip.info/apache2-default/DSC_9426.JPG

I think you need to narrow band those photos.

greg

3439. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 20:19:38 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <c01dcd14-cba5-44e8-8396-5f84e38eb477@i29g2000prf.googlegroups.com>
Source record: 26911
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 20, 10:07 pm, zekfr...@zekfrivolous.com (GregS) wrote:
> In article <9b9f8451-c293-4be2-ad02-8c6e606dc...@e10g2000prf.googlegroups.com>, Artem
<artem.b...@gmail.com> wrote:
>
>
> I think you need to narrow band those photos.
>
Sorry for hosting.

3440. "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 20:34:40 UTC
From: WB8YKH <lguyot2@gmail.com>
Message-ID: <90e29335-7c89-4f45-b9df-cd7ee8a4bbf8@n77g2000hse.googlegroups.com>
Source record: 26912

There is much literature on the inverted "V" antenna but I've found nothing on a "V" Dipole Antenna. Can someone help me with resources or information on installation and effects of a "V" Dipole? In my current location I am unable to raise my center point much more than 15 feet off ground. However I can raise the endpoints 30+ feet. Before I go through much effort on the install I'd like to know what kind of performance I can expect. Thank you for your insights!

73
WB8YKH

3441. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 20:47:41 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fruihd$13li$1@f04n12.cac.psu.edu>
Source record: 26913

WB8YKH wrote:
> There is much literature on the inverted "V" antenna but I've found
> nothing on a "V" Dipole Antenna. Can someone help me with resources
> or information on installation and effects of a "V" Dipole? In my
> current location I am unable to raise my center point much more than
> 15 feet off ground. However I can raise the endpoints 30+ feet.
> Before I go through much effort on the install I'd like to know what
> kind of performance I can expect. Thank you for your insights!

Most dipoles are of the V type, having that weight in the middle and
all. Your dipole will work okay, go for it.

What is the reason for the center being half as high as the ends? There
will be some droop always, unless you place too much tension on the
wires - don't do it. It looks nice and all, but that antenna's probably
going to come down before too long.

Technically, there will be some differences between it and a straight
dipole. Just not that huge, and hey, that is what your situation allows!
If you give me your lengths and frequencies you are using, I can model
it for you.

- 73 de Mike N3LI -

3442. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 20:58:54 UTC
From: Martin Griffith <mart_in_medina@yah00.es>
Message-ID: <dsj5u35dqs95p9og15c3hc2bernomn0cp6@4ax.com>
Source record: 26914
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Thu, 20 Mar 2008 20:07:43 GMT, in sci.electronics.design
zekfrivo@zekfrivolous.com (GregS) wrote:

>In article <9b9f8451-c293-4be2-ad02-8c6e606dc13d@e10g2000prf.googlegroups.com>, Artem
<artem.bond@gmail.com> wrote:
>>On Mar 15, 12:28 am, K7ITM <k7...@msn.com> wrote:
>>> On Mar 14, 2:15 pm, Artem <artem.b...@gmail.com> wrote:
>>Yes...very good. That should help keep the loop nicely balanced,
>>> especially if you build it all very symmetrical. That one more tube
>>
>>Hi. I have some problem. I can't receive nothing except noise And self
>>oscillation frequency.
>>I have some photos. Could any give me some suggestions?
>>Antenna:
>>http://artembond.no-ip.info/apache2-default/DSC_9427.JPG
>>
>>Chematics:
>>http://artembond.no-ip.info/apache2-default/DSC_9431.JPG
>>
>>Amplifier:
>>http://artembond.no-ip.info/apache2-default/DSC_9426.JPG
>
>I think you need to narrow band those photos.
>
>greg

Yes
www.irfanview.com has an excellent bit of software that does just that

martin

3443. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 21:05:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13u5kbsr8n1bec6@corp.supernews.com>
Source record: 26915

It will have a pattern very similar to a horizontal dipole at a height
equal to the height of your antenna 1/3 of the way out from the center.
If the center is at 15 feet and ends are at 30 feet, it'll have nearly
the same pattern as a horizontal dipole at 20 feet.

Impedance-wise, it'll act nearly the same as an inverted vee.

Roy Lewallen, W7EL

WB8YKH wrote:
> There is much literature on the inverted "V" antenna but I've found
> nothing on a "V" Dipole Antenna. Can someone help me with resources
> or information on installation and effects of a "V" Dipole? In my
> current location I am unable to raise my center point much more than
> 15 feet off ground. However I can raise the endpoints 30+ feet.
> Before I go through much effort on the install I'd like to know what
> kind of performance I can expect. Thank you for your insights!
>
> 73
> WB8YKH

3444. Re: Re:Cobwebb feeder question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 22:43:25 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <hMBEj.86141$nw4.9415@fe1.news.blueyonder.co.uk>
Source record: 26917

The reason for wanting to know the above is, I want to use RG58 inside the box and then run RG213 up to the box for the feeder from the radio. I don't want to do this if the S0239 socket is going to allow the feed line to radiate. Can any one please advise?

Many thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message news:TauEj.45538$M9.39388@fe3.news.blueyonder.co.uk...
>I have some questions about the choke and feed line on the Cobwebb.
>
>
>
> Does the co-axial choke balun work better if the cable is wound on top of
> each other into a tube shape rather than just winding it round and zip
> tying it together in a round bundle?
>
>
>
> Can I attach a SO239 Chassis socket to the end of the box where the coax
> enters and then plug a PL259 into that for the feeder or will the socket
> allow current to bypass the choke balun and enter the feed line?
>
>
>
> Thanks
>
>
>
>
>

3445. Re: Cobwebb feeder question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 23:03:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13u5r9lf9iavj27@corp.supernews.com>
Source record: 26919

Richard Clark wrote:
> On Thu, 20 Mar 2008 22:43:25 GMT, "Barrett"
> <barrett@blueyounder.co.uk> wrote:
>
>> I don't
>> want to do this if the S0239 socket is going to allow the feed line
>
> Feedline radiation is a consequence of common mode currents. Common
> mode currents are a consequence of unbalance. Coax systems are
> unbalanced. To correct this, you need to choke the coax line at the
> feed point, and probably again a quarterwave away from the feedpoint.

Coax feedlines are no more or less balanced than twinlead lines. Common mode current can occur on either, and for the same reasons, and either can be balanced by suppressing or avoiding creation of common mode current. The topic is discussed in more detail at http://eznec.com/Amateur/Articles/Baluns.pdf.

Roy Lewallen, W7EL

3446. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 23:35:29 UTC
From: Ken Fowler <ko6no@yahoo.com>
Message-ID: <foadnQVMS8lcaX_anZ2dnUVZ_tOtnZ2d@comcast.com>
Source record: 26920

On 20-Mar-2008, Buck <usenet01@lumpuckeroo.com> wrote:

> Path:
> border1.nntp.dca.giganews.com!border2.nntp.dca.giganews.com!nntp.giganews.com!bigfeed3.b
ellsouth.net!bigfeed.bellsouth.net!bignumber.bellsouth.net!news.bellsouth.net!bignews7.bel
lsouth.net.POSTED!b6d419e3!not-for-mail
> From: Buck <usenet01@lumpuckeroo.com>
> Newsgroups: rec.radio.amateur.antenna
> Subject: Stealth Loop antenna
> Message-ID: <4jo4u3lj16tlh5rhkc253baa3vv21a92b7@4ax.com>
> X-Newsreader: Forte Agent 1.93/32.576 English (American)
> MIME-Version: 1.0
> Content-Type: text/plain; charset=us-ascii
> Content-Transfer-Encoding: 7bit
> Lines: 48
> X-Complaints-To: abuse@bellsouth.net
> X-Abuse-Info: Please forward a copy of all headers for proper handling
> X-Trace:
> enggpaojkliedbjjdbdpiflmbcekedmfhojhikkbagflhcbopdpcindpodohfflilmehcadebpjbmnbeonldleme
kfihcohpppaimpifmkcegckdogcmapfnfkkinfaikccgicoleplfnlbfebeelhcnmdabofba
> NNTP-Posting-Date: Thu, 20 Mar 2008 09:30:13 EDT
> Organization: BellSouth Internet Group
> Date: Thu, 20 Mar 2008 09:30:34 -0400
> Bytes: 2671
> X-Original-Bytes: 2628
> Xref: number1.nntp.dca.giganews.com rec.radio.amateur.antenna:295507
>
> This is an interesting antenna. It is a mobile stealth magnetic loop
> antenna.
>
> http://stealth.ae/plugins/custompages/detinf.php?id=372&id_categories=136
>
> I watched the video and checked out the details. The antenna is
> basically a loop with the roof of the car (the bottom of the luggage
> rack) as the ground side of the loop, the antenna goes up, folds over
> the top and back down to the other side of the roof where it feeds
> thru a high voltage vacuum variable capacitor back to ground.
>
>
> ---------------------------
> | |
> |_ |
> | |(coax conx) = Capacitor
> | -|_____________|

> ^ (roof)
> ^
> (feed)
>
> I am not as good an artist as some of you, but here is my graphic
> The coax feeds with a gamma? and is tuned by a stepper motor tuning
> the vacuum variable cap. Depending on which of the three models, it
> operates from 1.5-10 MHz, 2.7-15.5 MHz, or 4.5-22 MHz at up to 150
> watts.
>
> The technical notes have more interesting details:
> http://stealth.ae/plugins/custompages/articles.php?id=10
>
> It seems to me a homebrew version could be made for base use such as
> for those in restricted homes. Placed on the peak of the house, the
> ground side could be a wire across the top of the peak and the loop
> lift up during use so it would not attract too much attention to the
> neighbors.
>
> I wonder what the size and cost of the Vacuum variable is to make a
> similar antenna??
>
> Buck
> N4PGW
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

Look up DDRR Antenna at ARRL. It works as a very short top-loaded vertical resonated with a capacitor.

Ken Fowler, KO6NO

3447. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 23:36:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <45t5u3d4b70h3nqf6h3ib9v3825sd9k032@4ax.com>
Source record: 26916
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Thu, 20 Mar 2008 12:58:02 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>Hi. I have some problem. I can't receive nothing except noise And self
>oscillation frequency.

Try choking both what are labeled "RF Out" and "Shield Cable."

73's
Richard Clark, KB7QHC

3448. Re: Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 23:38:00 UTC
From: Ken Fowler <ko6no@yahoo.com>
Message-ID: <vo2dnZ7ED8zKaH_anZ2dnUVZ_tWtnZ2d@comcast.com>
Source record: 26921

On 20-Mar-2008, Buck <usenet01@lumpuckeroo.com> wrote:

> Path:
> border1.nntp.dca.giganews.com!border2.nntp.dca.giganews.com!nntp.giganews.com!bigfeed3.b
ellsouth.net!bigfeed.bellsouth.net!bignumber.bellsouth.net!news.bellsouth.net!bignews7.bel
lsouth.net.POSTED!b6d419e3!not-for-mail
> From: Buck <usenet01@lumpuckeroo.com>
> Newsgroups: rec.radio.amateur.antenna
> Subject: Stealth Loop antenna
> Message-ID: <4jo4u3lj16tlh5rhkc253baa3vv21a92b7@4ax.com>
> X-Newsreader: Forte Agent 1.93/32.576 English (American)
> MIME-Version: 1.0
> Content-Type: text/plain; charset=us-ascii
> Content-Transfer-Encoding: 7bit
> Lines: 48
> X-Complaints-To: abuse@bellsouth.net
> X-Abuse-Info: Please forward a copy of all headers for proper handling
> X-Trace:
> enggpaojkliedbjjdbdpiflmbcekedmfhojhikkbagflhcbopdpcindpodohfflilmehcadebpjbmnbeonldleme
kfihcohpppaimpifmkcegckdogcmapfnfkkinfaikccgicoleplfnlbfebeelhcnmdabofba
> NNTP-Posting-Date: Thu, 20 Mar 2008 09:30:13 EDT
> Organization: BellSouth Internet Group
> Date: Thu, 20 Mar 2008 09:30:34 -0400
> Bytes: 2671
> X-Original-Bytes: 2628
> Xref: number1.nntp.dca.giganews.com rec.radio.amateur.antenna:295507
>
> This is an interesting antenna. It is a mobile stealth magnetic loop
> antenna.
>
> http://stealth.ae/plugins/custompages/detinf.php?id=372&id_categories=136
>
> I watched the video and checked out the details. The antenna is
> basically a loop with the roof of the car (the bottom of the luggage
> rack) as the ground side of the loop, the antenna goes up, folds over
> the top and back down to the other side of the roof where it feeds
> thru a high voltage vacuum variable capacitor back to ground.
>
>
> ---------------------------
> | |
> |_ |
> | |(coax conx) = Capacitor
> | -|_____________|

> ^ (roof)
> ^
> (feed)
>
> I am not as good an artist as some of you, but here is my graphic
> The coax feeds with a gamma? and is tuned by a stepper motor tuning
> the vacuum variable cap. Depending on which of the three models, it
> operates from 1.5-10 MHz, 2.7-15.5 MHz, or 4.5-22 MHz at up to 150
> watts.
>
> The technical notes have more interesting details:
> http://stealth.ae/plugins/custompages/articles.php?id=10
>
> It seems to me a homebrew version could be made for base use such as
> for those in restricted homes. Placed on the peak of the house, the
> ground side could be a wire across the top of the peak and the loop
> lift up during use so it would not attract too much attention to the
> neighbors.
>
> I wonder what the size and cost of the Vacuum variable is to make a
> similar antenna??
>
> Buck
> N4PGW
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

My antenna at NB6GC is an Aircraft Carrier.

Ken Fowler, KO6NO

3449. Re: Cobwebb feeder question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-20 23:45:45 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9mt5u3dq1srk3cm9m2sd3pl78jgbrvknr5@4ax.com>
Source record: 26918

On Thu, 20 Mar 2008 22:43:25 GMT, "Barrett"
<barrett@blueyounder.co.uk> wrote:

> I don't
>want to do this if the S0239 socket is going to allow the feed line

Feedline radiation is a consequence of common mode currents. Common
mode currents are a consequence of unbalance. Coax systems are
unbalanced. To correct this, you need to choke the coax line at the
feed point, and probably again a quarterwave away from the feedpoint.

73's
Richard Clark, KB7QHC

3450. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 00:14:10 UTC
From: Wayne <mygarbagecan@verizon.net>
Message-ID: <m5DEj.8722$Nr1.6494@trnddc01>
Source record: 26922

"Ken Fowler" <ko6no@yahoo.com> wrote in message
news:foadnQVMS8lcaX_anZ2dnUVZ_tOtnZ2d@comcast.com...
>
> On 20-Mar-2008, Buck <usenet01@lumpuckeroo.com> wrote:
>
>> Path:
>> border1.nntp.dca.giganews.com!border2.nntp.dca.giganews.com!nntp.giganews.com!bigfeed3.
bellsouth.net!bigfeed.bellsouth.net!bignumber.bellsouth.net!news.bellsouth.net!bignews7.be
llsouth.net.POSTED!b6d419e3!not-for-mail
>> From: Buck <usenet01@lumpuckeroo.com>
>> Newsgroups: rec.radio.amateur.antenna
>> Subject: Stealth Loop antenna
>> Message-ID: <4jo4u3lj16tlh5rhkc253baa3vv21a92b7@4ax.com>
>> X-Newsreader: Forte Agent 1.93/32.576 English (American)
>> MIME-Version: 1.0
>> Content-Type: text/plain; charset=us-ascii
>> Content-Transfer-Encoding: 7bit
>> Lines: 48
>> X-Complaints-To: abuse@bellsouth.net
>> X-Abuse-Info: Please forward a copy of all headers for proper handling
>> X-Trace:
>> enggpaojkliedbjjdbdpiflmbcekedmfhojhikkbagflhcbopdpcindpodohfflilmehcadebpjbmnbeonldlem
ekfihcohpppaimpifmkcegckdogcmapfnfkkinfaikccgicoleplfnlbfebeelhcnmdabofba
>> NNTP-Posting-Date: Thu, 20 Mar 2008 09:30:13 EDT
>> Organization: BellSouth Internet Group
>> Date: Thu, 20 Mar 2008 09:30:34 -0400
>> Bytes: 2671
>> X-Original-Bytes: 2628
>> Xref: number1.nntp.dca.giganews.com rec.radio.amateur.antenna:295507
>>
>> This is an interesting antenna. It is a mobile stealth magnetic loop
>> antenna.
>>
>> http://stealth.ae/plugins/custompages/detinf.php?id=372&id_categories=136
>>
>> I watched the video and checked out the details. The antenna is
>> basically a loop with the roof of the car (the bottom of the luggage
>> rack) as the ground side of the loop, the antenna goes up, folds over
>> the top and back down to the other side of the roof where it feeds
>> thru a high voltage vacuum variable capacitor back to ground.
>>
>>
>> ---------------------------
>> | |

>> |_ |
>> | |(coax conx) = Capacitor
>> | -|_____________|
>> ^ (roof)
>> ^
>> (feed)
>>
>> I am not as good an artist as some of you, but here is my graphic
>> The coax feeds with a gamma? and is tuned by a stepper motor tuning
>> the vacuum variable cap. Depending on which of the three models, it
>> operates from 1.5-10 MHz, 2.7-15.5 MHz, or 4.5-22 MHz at up to 150
>> watts.
>>
>> The technical notes have more interesting details:
>> http://stealth.ae/plugins/custompages/articles.php?id=10
>>
>> It seems to me a homebrew version could be made for base use such as
>> for those in restricted homes. Placed on the peak of the house, the
>> ground side could be a wire across the top of the peak and the loop
>> lift up during use so it would not attract too much attention to the
>> neighbors.
>>
>> I wonder what the size and cost of the Vacuum variable is to make a
>> similar antenna??
>>
>> Buck
>> N4PGW
>> --
>> 73 for now
>> Buck, N4PGW
>>
>> www.lumpuckeroo.com
>>
>> "Small - broadband - efficient: pick any two."
>
> Look up DDRR Antenna at ARRL. It works as a very short top-loaded
> vertical
> resonated with a capacitor.
>
> Ken Fowler, KO6NO
Yep, back in the stone age, Collins Radio put one of those on top of Lyndon
Johnson's election campaign train.

3451. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 00:22:51 UTC
From: Mark <makolber@yahoo.com>
Message-ID: <7fb33e78-af63-4ded-9464-d0728e495a4f@u69g2000hse.googlegroups.com>
Source record: 26923
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Mar 17, 4:06 am, Jeroen Belleman <jer...@nospam.please> wrote:
> Mark wrote:
> >> Note: For many LNA designs, the best signal/noise ratio occurs at an
> >> impedance that is close to, but not really, a perfect conjugate match.
> >> The signal is coupled to the amplifier best at the conjugate match
> >> impedance, but sometimes the noise is enhanced even more.
>
> > That brings up an intersting question I never did get a good answer
> > to...
>
> > It is my assertion that an LNA that is physically at room temperature
> > (290K) can have a noise figure no better than 3 dB (i.e. its effective
> > noise temperature is 290K) IF it is also conjugatly matched i.e.
> > looks like 50 Ohms.
>
> > Yes you can make the noise figure better than 3 dB, but then you must
> > either cool the device or MISMATCH it to the line.
>
> I make amplifiers with 50 Ohms input impedance and 300pV/rtHz input-
> referred noise. By your assertion, that should have been impossible.
> The trick is that the input impedance obtained by feedback: The
> cooled resistor trick. It works.
>
> Jeroen Belleman- Hide quoted text -
>
> - Show quoted text -

good point thanks
Mark

3452. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 00:56:40 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <5276db7f-bee3-4fa7-9b63-5436827c8fd6@p25g2000hsf.googlegroups.com>
Source record: 26924
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 20, 12:58 pm, Artem <artem.b...@gmail.com> wrote:
> On Mar 15, 12:28 am, K7ITM <k7...@msn.com> wrote:> On Mar 14, 2:15 pm, Artem
<artem.b...@gmail.com> wrote:
>
> Yes...very good. That should help keep the loop nicely balanced,
>
> > especially if you build it all very symmetrical. That one more tube
>
> Hi. I have some problem. I can't receive nothing except noise And self
> oscillation frequency.
> I have some photos. Could any give me some suggestions?
> Antenna:http://artembond.no-ip.info/apache2-default/DSC_9427.JPG
>
> Chematics:http://artembond.no-ip.info/apache2-default/DSC_9431.JPG
>
> Amplifier:http://artembond.no-ip.info/apache2-default/DSC_9426.JPG

:-) I saw the comment about "narrow-banding" the images. They were
perhaps a little more than we needed, but it was nice to have
something we could actually see. They did not take very long to
download here, but someone with a slow connection may have troubles.

One comment: usually you do not need much voltage gain. It is enough
to get power gain with the FETs. That is, the received signal voltage
across the gap of the loop, as resonated by the capacitors, should be
high enough to be used with a good receiver. The problem is that the
impedance is very high there. But that same high impedance makes for
easy oscillation. From what you posted, it sounds like maybe you have
identified an oscillation. If the AGC voltage is low enough, does the
oscillation stop? The amplifier I built used two stages, an FET input
stage and a buffer stage, and it had very low voltage gain--I am
remembering about 3:1 or only 10dB, and maybe only 1:1 or 0dB
including the output transformer, but quite a bit of power gain since
it transformed the high loop impedance down to 50 ohms for the
feedline.

Also, there should be no need for the RF chokes from the gate-1 to
source, if the loop is grounded at the bottom. If the loop is
grounded at the bottom, the loop plus the RF chokes will short out the
source-to-ground resistor. Maybe there is not a need to raise the
source voltage above DC ground potential anyway. Also, it may help to
NOT bypass the sources to ground, to allow some negative feedback.
That may help stabilize the amplifier.

If other things occur to me, I will post them...

Cheers,
Tom

3453. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 01:15:21 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <INOdnXHMYe21kX7anZ2dnUVZ_oKhnZ2d@neonova.net>
Source record: 26925

Cecil Moore wrote:
> Roger Sparks wrote:
>> Vrs(t) = Vs(t) - Vg(t) + Vref(t)
>
> Good job, Roger. Let's simplify the equation through
> substitution.
>
> Let V1(t) = [Vs(t) - Vg(t)]
>
> Let V2(t) = Vref(t)
>
> Vrs(t) = V1(t) + V2(t)

This works. It certainly helps to link my work with yours.
>
>> The power to Rs would be (Vrs^2)/50 = (70.7^2)/50 = 100w, all coming
>> from the reflection.
>
> Yes, because when Vs(t)=0, there is zero instantaneous
> interference.
>
>> In summary, power to the resistor Rs comes via two paths, one longer
>> than the other by 90 degrees (in this example). The short path is the
>> series path of two resistors composed of the source resistor Rs and
>> the input to the 50 ohm transmission line measured by Vg. The long
>> path is the series path of one resistor Rs and one capacitor composed
>> of the shorted transmission line. Both paths are available at all
>> times. Power flows through both paths to Rs at all times, but because
>> of the time differential in arrival timing, at some point Rs will
>> receive power only from Vs, and at another point, receive power only
>> from Vref.
>
> What Keith is missing is that:
>
> Vrs(t)^2 = [V1(t) + V2(t)]^2 NOT= V1(t)^2 + V2(t)^2
>
> In his math, Keith is asserting that since
>
> Prs(t) NOT= P1(t) + P2(t), then the reflected power is not
> being dissipated in the source resistor. But every sophomore
> EE knows NOT to try to superpose powers like that. Roger,
> I'll bet you know not to try to superpose powers?

Using circuit theory, at the peak under steady conditions, we have
141.4v applied to 70.7 ohms which gives a current of 2a. The 70.7 ohms

is sqrt(50^2 + 50^2). Two amps flowing through Rs = 50 ohms, the power to Rs is (2^2) * 50 = 4 * 50 = 200w.

Using your simplified equation for the voltage across Rsj

Vrs(t) = V1(t) + V2(t)

Vrs(t) = V1*sin(wt + 90) + V2*sin(wt)

In our case, V1 = V2 because both voltages are developed over a 50 ohm load. As a result, in our case, 100w will be delivered to Rs both at wt = 0 and wt = -90, two points 90 degrees apart. If we are looking for the total power delivered to Rs, then it seems to me like we SHOULD add the two powers in this case. This recognizes that power is delivered to Rs via two paths, each carrying 100w. Alternatively, we could add the two voltages together to find the peak voltage, and then square that number and divide by the resistance of Rs. Both methods should give the same result.

So it looks to me like Keith is right in his method, at least in this case.

>
> Since Keith doesn't listen to me, would you pass that
> technical fact on to him?
>
> When Keith uses the correct equation:
>
> Prs(t) = P1(t) + P2(t) +/- 2*SQRT[P1(t)*P2(t)]
>
> he will see that the equation balances and therefore
> 100% of the reflected energy is dissipated in the
> source resistor since the interference term averages
> out to zero over each cycle.

I am still uncomfortable with my summary statement that both paths, the long and short, are available and active at all times. On the other hand, it is consistent with your advice that the waves never reflect except at a discontinuity. The conclusion was that 100w is delivered to Rs via each path, with the path peaks occurring 90 degrees apart in time. Surprisingly, 100 percent of the reflected energy is ALWAYS absorbed by Rs. There is no further reflection from Vs or Rs.

This is counter intuitive to me. I like to resolve the circuit into one path, one wave form. We do that with circuit analysis. With traveling waves, we frequently have two or more paths the exist independently, so we must add the powers carried on each path, just like we add the voltages or currents. (But watch out and avoid using standing wave voltages or currents to calculate power!)

Most surprising to me is the observation that my beginning statement (from my previous post) about the circuit evolving from a circuit with two resistive loads, into a circuit with a resistive load and

capacitive load, is really incorrect. Once steady state is reached, BOTH circuits are active at the same time, forming the two paths bringing power to RS. Using that assumption, we can use the traveling waves to analyze the circuit.

73, Roger, W7WKB

3454. Re: Re:coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 02:25:46 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <de2dnZvIuoYIk37anZ2dnUVZ_v6rnZ2d@giganews.com>
Source record: 26926

Oops -- the link to the Belden PDF file wrapped and thus was incomplete.
This will work: http://tinyurl.com/2vqpxr
The "non contaminating" PVC outer jacket of that RG58C/U will last much
longer in an outdoor environment than ordinary PVC. Ordinary PVC will
breakdown much faster, from the ultraviolet rays from the sun.

73,
Bryan WA7PRC

Barrett wrote:
> Bryan, I don't fully understand what do you mean buy the last part is the
> most important thing and why?
>
> The link for Belden doesn't work for some reason.
>
> Thanks

3455. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 03:52:07 UTC
From: no@spam.net
Message-ID: <u1c6u3hftt7nodebdvjl85olq7m80e9lgu@4ax.com>
Source record: 26927

Do a search for "tape measure antenna". It is a simple to build yagi
antenna made of pvc pipe with elements made from a metal measuring
tape. You can rescale it to your frequency.

Kingfish

On Thu, 20 Mar 2008 05:44:50 GMT, "usmcbrat"
<president@whitehouse.gov> wrote:

>Hi Folks:
>
>I'm looking to make a directional antenna in the 215 to 218 MHz band (215 if
>that's too broad), used for location of dementia patients who have wandered
>away from their caregivers. I'm a volunteer with an organization that
>locates these people. They wear a tiny transmitter which emits a chirp that
>can be heard from 1-2 miles on the ground and 8-10 miles via helicopter.
>
>I'm somewhat new to the program, and I'd like to do some investigation on my
>own regarding antenna types that would be useful, and I hope you'll all
>grant me a few questions.
>
>My needs are this.... the antenna must be as directional as possible. It
>must be most efficient in the 215 to 218 MHz band 215 is what our patients
>are on right now, though after we fill up that range we have licensed
>through 218 MHz. It must be easy for an individual to carry, and portable
>enough to carry through any type of terrain. It must be shaped in such a
>way that it's relatively safe and easy to use in an enclosed area, either in
>a helicopter or a car. Currently the agency is using a 4 element Yagi,
>which works well, but has the drawback of being a real eye-poker when used
>in close quarters, and in fact the California Highway Patrol will not allow
>them to be used in their helicopters because of that reason.
>
>One of our Search & Rescue guys built his own 4 element Quad Yagi out of
>some 1/2" PVC pipe and other parts that are readily available at any Home
>Depot. It has greater sensitivity than our stock antenna, and the CHP has
>said that it's OK to use in their helicopters. Rather than 4 horizontal
>straight beams it has 4 squarish beams, with no points to poke people's eyes
>out. I'm still waiting to get the plans from him for that antenna, and I
>though that in the meantime I'd ask in here if any of you had some
>interesting leads for me to follow.
>
>Many thanks!
>

3456. Re: Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 04:38:06 UTC
From: Eric <englere_geo@yahoo.com>
Message-ID: <fb885a91-ba0c-4828-896f-27d5099df23e@d62g2000hsf.googlegroups.com>
Source record: 26928

On Mar 20, 7:38 pm, "Ken Fowler" <ko...@yahoo.com> wrote:

>
> My antenna at NB6GC is an Aircraft Carrier.
>

That sounds interesting but I don't think there are many of them in
Atlanta!

Are you in the Navy? Do you have a link for some pictures?

Eric

3457. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 10:08:29 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <4ad63984-c679-4ac2-92b2-00068dadb980@m34g2000hsc.googlegroups.com>
Source record: 26929
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 21, 2:56 am, K7ITM <k7...@msn.com> wrote:
> On Mar 20, 12:58 pm, Artem <artem.b...@gmail.com> wrote:
>
> :-) I saw the comment about "narrow-banding" the images. They were
> perhaps a little more than we needed, but it was nice to have
> something we could actually see. They did not take very long to
> download here, but someone with a slow connection may have troubles.

I'm move images to ImageShack
http://img524.imageshack.us/my.php?image=dsc9427ib7.jpg
http://img262.imageshack.us/my.php?image=dsc9431tv9.jpg

>
> One comment: usually you do not need much voltage gain. It is enough
> to get power gain with the FETs. That is, the received signal voltage
> across the gap of the loop, as resonated by the capacitors, should be
> high enough to be used with a good receiver. The problem is that the
> impedance is very high there. But that same high impedance makes for
> easy oscillation. From what you posted, it sounds like maybe you have
> identified an oscillation. If the AGC voltage is low enough, does the
> oscillation stop?

Yes. It's stop. my main reason for this antenna is make very narrow
antenna for city. I can't receive to my receiver almost nothing by big
nose from computers, lamps and other things. But looks like this
antenna did not help. Its amplify narrow-band noise. And even add more
noise when oscillated.

The amplifier I built used two stages, an FET input
> stage and a buffer stage, and it had very low voltage gain--I am
> remembering about 3:1 or only 10dB, and maybe only 1:1 or 0dB
> including the output transformer, but quite a bit of power gain since
> it transformed the high loop impedance down to 50 ohms for the
> feedline.
>
> Also, there should be no need for the RF chokes from the gate-1 to
> source, if the loop is grounded at the bottom.

Source is not grounded for DC. For better transistors matching and
overcurrent protection.

If the loop is
> grounded at the bottom, the loop plus the RF chokes will short out the
> source-to-ground resistor. Maybe there is not a need to raise the
> source voltage above DC ground potential anyway. Also, it may help to

> NOT bypass the sources to ground, to allow some negative feedback.
> That may help stabilize the amplifier.
>
Sources is not grounded.

3458. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 11:18:35 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <79f23872-ca72-4e1d-be8e-6847d8c763b2@p25g2000hsf.googlegroups.com>
Source record: 26930
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 21, 1:36 am, Richard Clark <kb7...@comcast.net> wrote:
> On Thu, 20 Mar 2008 12:58:02 -0700 (PDT), Artem <artem.b...@gmail.com>
> wrote:
>
> >Hi. I have some problem. I can't receive nothing except noise And self
> >oscillation frequency.
>
> Try choking both what are labeled "RF Out" and "Shield Cable."
>
Thank. It's good idea. I'll try.

3459. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 11:19:52 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <834b630b-9948-43bd-ae31-bc9eb1981ee1@u10g2000prn.googlegroups.com>
Source record: 26931

On Mar 20, 10:02 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Sentence one says "no limitations". Sentence two specifies a
> > limitation.
>
> Semantic games.

The whole question here revolves around the meaning of the
limitations on your claim. That is semantics. Not games.
And it is key to the discussion.

> There are no limitations within the
> stated boundary conditions just like any number of
> other concepts.

But you need to clearly state your limitations and stop
flip flopping.

> > Could you clarify whether your claim for the circuit of
> > Fig 1-1 applies to all time, or just to those instances
> > when the source voltage is 0.
>
> There are no claims regarding instantaneous power in
> Fig 1-1 or anywhere else in my web article. All the
> claims in my web article refer to *average* powers and
> the article states exactly that. For the purpose and
> subject of the web article, the subject of instantaneous
> power is just an irrelevant diversion. No other author
> on the subject has ever mentioned instantaneous power.

I am surprised, this being 2008, that I could actually be
offering a new way to study the question, but if you insist,
I accept the accolade.

> Given average values, time doesn't even appear in any
> of their equations. Apparently, those authors agree
> with Eugene Hecht that instantaneous power is "of
> limited utility".
>
> Here's my claim made in the article: When the *average*
> interference at the source resistor is zero, the *average*
> reflected power is 100% dissipated in the source resistor.
> I gave enough examples to prove that claim to be true.
> Since the instantaneous interference averages out to
> zero, this claim about *average* power is valid.

Without prejudice to the accuracy of the above, let us
explore a bit.

We know that conservation of energy requires that the
energy flows balance at all times, which means that at
any instance, the flows must account for all the energy.

Analysis has shown that when examined with fine granularity,
that for the circuit of Fig 1-1, the energy in the reflected
wave is not always dissipated in the source resistor. For
example, some of the time it is absorbed in the source.

Now when the instantaneous flows are averaged, it is true
that the increase in dissipation is numerically equal to
the average power for the reflected wave. But this does
not mean that the energy in the reflecte wave is dissipated
in the source resistor, merely that the averages are equal.

Now you qualify your claim with the term "*average* power".
You say "the *average* reflected power is 100% dissipated in
the source resistor."

But the actual energy in the reflected wave is not dissipated
in the source resistor. So what does it mean to say that the
average is?

> When Tom, K7ITM, asserted that the same concepts work
> for instantaneous power, I took a look and realized that
> he was right. One can make the same claim about instantaneous
> power although I do not make that claim in my web article.
>
> When the instantaneous interference at the source resistor
> is zero, the instantaneous reflected power is 100% dissipated
> in the source resistor.
>
> > Perhaps this has clarified. So you are only claiming that
> > reflected energy is dissipated in the source resistor at
> > those instances when the source voltage is zero. Good.
>
> I am claiming no such thing. Please cease and desist with
> the mind fornication, Keith. You cannot win the argument
> by being unethical.

Unfortunately you struck the sentence which I paraphrased
and then failed to explain which parts of it I may have
misinterpreted. That does not help. It would have been
more valuable for you to rewrite the original sentence
to increase its clarity.

> > Mostly to prove that my analysis has an error.
>
> I have pointed out your error multiple times before, Keith,
> and you simply ignore what I say. Why should I waste any
> more time on someone who refuses to listen?

>
> One more time:
> Over and over,

I only have two expression involving power.

> you use the equation Ptot = P1 + P2 even
> though every sophomore EE student knows the equation is
> (usually) invalid. The valid method for adding AC powers is:
>
> Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(A)

Which of the two needs the 'cos' term?

Ps(t) = Prs(t) + Pg(t)
or
Pg(t) = Pf.g(t) + Pr.g(t)

In fact neither do. They both stand quite well on their own.
Both are so correct, that they apply for any voltage function
provided by the source. What would you propose to use for cos(A)
when the source voltage function is aperiodic pulses? Fortunately,
the 'cos' term is not needed so the question is completely moot.

Non-the-less do feel free to offer corrected expression that include
the 'cos(A)' term.

> The last term is called the interference term which you
> have completely ignored in your analysis. Therefore, your
> analysis is obviously in error. When you redo your math
> to include the interference term, your conceptual blunders
> will disappear. Until then, you are just blowing smoke.

The math holds as it is. But I invite you to offer an alternative
analysis that includes cos(A) terms. We can see how it holds up.

If you can't, then you should definitely reconsider who is
'blowing smoke'.

...Keith

3460. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 12:10:01 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <89e595d1-0a09-41a4-bbf8-c487f92fcc4f@s19g2000prg.googlegroups.com>
Source record: 26932

```
On Mar 20, 1:07 pm, Roger Sparks <rspa...@elltel.net> wrote:
> Keith Dysart wrote:
> > On Mar 16, 10:21 am, Cecil Moore <nos...@w5dxp.com> wrote:
> snip
> >> Would you please explain how energy is conserved in the
> >> following example at the zero-crossing point for Vs?
>
> >>                Rs       Vg                     Vl
> >>          +----/\/\/-----+----------------------+
> >>          |    50 ohm                           |
> >>          |                                     |
> >>         Vs                 45 degrees          | Shorted
> >>      100v RMS              50 ohm line         | Stub
> >>          |                                     |
> >>          |                                     |
> >>          +--------------+----------------------+
> >>         gnd
>
> >> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
> >> is supplying zero watts at that time but Prs(t) = 100w.
> >> Where is the 100 watts coming from?
>
> For the first 90 degrees of time, the circuit can be represented as
>
>  >>                Rs       Vg                     Vl
>  >>          +----/\/\/-----+----------------------+
>  >>          |    50 ohm                           |
>  >>          |                                     /
>  >>         Vs                                     \ 50 ohm resistor
>  >>      100v RMS                                  /
>  >>          |                                     \
>  >>          |                                     |
>  >>          +--------------+----------------------+
>  >>         gnd
>
> After 90 degrees of time has passed, the circuit can be represented as
>
>  >>                Rs       Vg                     Vl
>  >>          +----/\/\/-----+----------------------+
>  >>          |    50 ohm                           |
>  >>          |                                     |
>  >>         Vs                                    ---
>  >>      100v RMS                                 --- 50 ohm inductive
>  >>          |                                     |
```

```
>  >>          |                                      |
>  >>          +--------------+-----------------------+
>  >>         gnd
>
> The sudden switch in circuit design at time 90 degrees is not unique to
> start up, but is true for any adjustment made to Vs and any returning
> wave from the shorted stub,.  As a result, a true stable circuit will
> never be found unless some voltage adjustment is allowed for the 90
> timing shift caused by the shorted stub.  Keith (in his analysis of the
> circuit) recognizes that Vs drives into a reactive circuit.
>
> If we want to understand how constructive and destructive interference
> act to cause a 50 ohm resistor to evolve into a 50 ohm capacitor, then
> we need to examine how traveling waves might do this.  It would be nice
> to have a formula or wave sequence that fully addressed this evolution.
>
>  From circuit theory, we have the inductive reactance of a
> short-circuited line less than 1/4 wavelength long is
>
>      XL = Zo * tan (length degrees)
>
>         = 50 * tan(45)
>
>         = 50 ohms
>
>  From traveling wave theory, we would have the applied wave from the
> source arriving 90 degrees late to the stub side of resistor Rs.  This
> ignores the fact that current must already be passing through resistor
> Rs because voltage has been applied to Rs from the Vs side 90 degrees
> earlier.  Whoa!  Things are not adding up correctly this way!
>
> We need to treat the wave going down the 50 ohm line as a single wave
> front.  The wave reverses at the short-circuit, reversing both direction
> of travel and sign of voltage.  When the wave front reaches the input
> end, 90 degrees after entering (for this case), the voltage/current
> ratio is identical to the starting ratio (the line was 45 degrees long,
> tan(45) = 1), and the returning voltage directly adds to the voltage
> applied from Vs.  As a result, the current flowing through Rs will
> increase, and Vs will see a changed (decreased) impedance.
>
> After 90 degrees of signal application, we should be able to express the
> voltage across Rs as
>
>      Vrs(t) = Vs(t) - Vg(t) + Vref(t)
```

Just to ensure clarity, you are using a different convention for terms
and
signs than I do.

For me, Vg(t) is the actual voltage at point Vg. In terms of forward
and

reverse: Vg(t) = Vf.g(t) = Vr.g(t), meaning the actual voltage at
point
g is sum of the forward and reverse voltage at point g.

In my terms, this leads to
Vrs(t) = Vs(t) - Vg(t)
= Vs(t) - Vf.g(t) - Vr.g(t)

Your Vg seems to be same as my Vf.g and you seem to be using a
different
sign for Vref than I do for Vr.

You must be carrying these differences through the equations correctly
because the final results seem to agree.

> Vs(t) = Vs(wt + 90), Vg(t) = Vs(wt + 90)/2, Vref(t) = Vs(wt)/2
>
> Substitute so
>
> Vrs(t) = Vs(wt + 90) - Vs(wt + 90)/2 + Vs(wt)/2
>
>   = Vs(wt + 90)/2 + Vs(wt)/2
>
> Allow Vs to be represented by a sine wave, we have

A small aside. It is conventional to use cos for sinusoidal waves
because
it maps more readily into phasor notation.

>   2Vrs(t) = Vs*sin(wt + 90) + Vs*sin(wt)
>   = 2Vs*(sin(wt + 45)(cos(45))
>   Vrs(t) = Vs(sin(wt + 45)(cos(45))
>
> Vs is defined as 100v RMS, which equals 100 * 1.414 = 141.4v Peak. The
> maximum voltage would occur when the sin term was 90 degrees and equals
> 1, which would occur at wt = 45 degrees.   We would have
>
>   Vrs(45) = 141.42 * sin(90)(cos(45)
>   = 141.42 * 1 * 0.7071
>   = 100v
>
> Now consider the current. After the same 90 degrees of signal
> application, we should be able to express the current through Rs as
>
>   Irs(t) = Is(t) + Iref(t)
>
> Is(t) = Is(wt + 90), Iref(t) = Is(wt)
>
> The reflected current has been shifted by 90 degrees due to the
> reflection so we must rewrite Iref(t) to read
>
>   Iref(t) = Is(wt + 90)

>
> Substitute,
>
>   Irs(t) = Is(wt + 90) + Is(wt)
>
> Allow Is to be represented by a sine wave, we have
>
>   Irs(t) = Is*sin(wt + 90) + Is*sin(wt)
>
>   = 2*Is(sin(wt + 45)(cos(45))
>
> How do we find Is? Is is the initial current found by dividing the
> applied voltage at peak (141.42v) by the initial resistance (100 ohms).
>
>   Is = 141.42/100 = 1.4142a
>
> The maximum current would occur when the sin term was 90 degrees and
> equals 1, which would occur at wt = 45 degrees.   We would have
>
>   Irs(t) = 2*Is(sin(wt + 45)(cos(45))
>
>   = 2 * 1.4142 * 1 * 0.7071
>
>   = 2a
>
> These results agree with the results from Keith and from circuit theory.
>
> We have a theory and at least the peaks found from the theory agree with
> the results from others.   How about Cecil's initial question which is
> >> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
> >> is supplying zero watts at that time but Prs(t) = 100w.
> >> Where is the 100 watts coming from?
>
> We will use the equation
>
>   Vrs(t) = Vs(t) - Vg(t) + Vref(t)
>
> Vs(t) = Vs(wt + 90), Vg(t) = Vs(wt + 90)/2, Vref(t) = Vs(wt)/2
>
> The challenge looks at the time when Vs(t) = Vs*sin(wt + 90) = 0, which
> occurs when wt = -90. When wt = -90, all the power to the source
> resistor Rs is from the reflected portion described as Vref(t) =
> Vs(wt)/2. The voltage across Rs would be
>
>   Vrs(-90) = Vref(-90)
>   = Vs*sin(-90)/2
>   = 141.4/2
>   = 70.7v
>
> The power to Rs would be (Vrs^2)/50 = (70.7^2)/50 = 100w, all coming

> from the reflection.
>
> In summary, power to the resistor Rs comes via two paths, one longer
> than the other by 90 degrees (in this example).

This is not quite complete. The power to Rs does come from two places
but they are the voltage source and the line.

Ps(t) = Prs(t) + Pg(t)

where Pg(t) is the power at point g flowing out of the generator into
the line and Ps(t) is the power flowing from the source to the source
resistor and the line.

The power into the line can be seaparated into a forward component and
a reflected component:

Pg(t) = Pf(t) + Pr(t)

(Sometimes this is written as P = Pf - Pr, but that is just a question
of how the sign is used to represent the direction of energy flow.)

Substituting we have

Ps(t) = Prs(t) + Pf.g(t) + Pr.g(t)
or
Prs = Ps(t) - Pf.g(t) - Pr.g(t)

Whenever Ps(t) equal 0, then Pf.g(t) also equals 0 so at those times,
this simplifies to
Prs = - Pr.g(t)
which is the same conclusion you came to.

But it is wise not to forget the Pf.g(t) term because at times when
Ps(t) is not equal to zero, the Pf.g(t) term will be needed to
balance the energy flows.

> The short path is the
> series path of two resistors composed of the source resistor Rs and the
> input to the 50 ohm transmission line measured by Vg. The long path is
> the series path of one resistor Rs and one capacitor composed of the
> shorted transmission line. Both paths are available at all times.
> Power flows through both paths to Rs at all times, but because of the
> time differential in arrival timing, at some point Rs will receive power
> only from Vs, and at another point, receive power only from Vref.

And at still other times, the power in the source resistor will depend
on
all of Ps(t), Pf.g(t) and Pr.g(t), or, more simply, it will depend on
Ps(t) and Pg(t).

...Keith

3461. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 12:14:08 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <3406eec1-d4dd-44c6-adf6-5fd016a17f95@d4g2000prg.googlegroups.com>
Source record: 26933

On Mar 20, 2:07 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > Vrs(t) = Vs(t) - Vg(t) + Vref(t)
>
> Good job, Roger. Let's simplify the equation through
> substitution.
>
> Let V1(t) = [Vs(t) - Vg(t)]
>
> Let V2(t) = Vref(t)
>
> Vrs(t) = V1(t) + V2(t)
>
> > The power to Rs would be (Vrs^2)/50 = (70.7^2)/50 = 100w, all coming
> > from the reflection.
>
> Yes, because when Vs(t)=0, there is zero instantaneous
> interference.
>
> > In summary, power to the resistor Rs comes via two paths, one longer
> > than the other by 90 degrees (in this example). The short path is the
> > series path of two resistors composed of the source resistor Rs and the
> > input to the 50 ohm transmission line measured by Vg. The long path is
> > the series path of one resistor Rs and one capacitor composed of the
> > shorted transmission line. Both paths are available at all times. Power
> > flows through both paths to Rs at all times, but because of the time
> > differential in arrival timing, at some point Rs will receive power only
> > from Vs, and at another point, receive power only from Vref.
>
> What Keith is missing is that:
>
> Vrs(t)^2 = [V1(t) + V2(t)]^2 NOT= V1(t)^2 + V2(t)^2
>
> In his math, Keith is asserting that since
>
> Prs(t) NOT= P1(t) + P2(t), then the reflected power is not
> being dissipated in the source resistor. But every sophomore
> EE knows NOT to try to superpose powers like that. Roger,
> I'll bet you know not to try to superpose powers?
>
> Since Keith doesn't listen to me, would you pass that
> technical fact on to him?
>
> When Keith uses the correct equation:

>
> Prs(t) = P1(t) + P2(t) +/- 2*SQRT[P1(t)*P2(t)]
>
> he will see that the equation balances and therefore
> 100% of the reflected energy is dissipated in the
> source resistor since the interference term averages
> out to zero over each cycle.

It would be excellent if you would correct my exposition using the correct formulae. We could then see if your proposal actually provides accurate results.

...Keith

PS. It won't.

3462. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 12:15:36 UTC
From: Denny <k8do@mailblocks.com>
Message-ID: <562c1fe6-86c6-422e-8bf1-b8eef5d60856@8g2000hsu.googlegroups.com>
Source record: 26934

>
> Impedance-wise, it'll act nearly the same as an inverted vee.
>

Yeah but, there wil be a 20 dB loss due to 180 degree inversion of
polarity!

denny / k8do

3463. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 12:25:15 UTC
From: WB8YKH <lguyot2@gmail.com>
Message-ID: <08591fac-b39d-4e00-b30a-49b2ab23ff99@f63g2000hsf.googlegroups.com>
Source record: 26935

On Mar 20, 4:47 pm, Michael Coslo <m...@psu.edu> wrote:
> WB8YKH wrote:
> > There is much literature on the inverted "V" antenna but I've found
> > nothing on a "V" Dipole Antenna. Can someone help me with resources
> > or information on installation and effects of a "V" Dipole? In my
> > current location I am unable to raise my center point much more than
> > 15 feet off ground. However I can raise the endpoints 30+ feet.
> > Before I go through much effort on the install I'd like to know what
> > kind of performance I can expect. Thank you for your insights!
>
> Most dipoles are of the V type, having that weight in the middle and
> all. Your dipole will work okay, go for it.
>
>   What is the reason for the center being half as high as the ends? There
> will be some droop always, unless you place too much tension on the
> wires - don't do it. It looks nice and all, but that antenna's probably
> going to come down before too long.
>
> Technically, there will be some differences between it and a straight
> dipole. Just not that huge, and hey, that is what your situation allows!
> If you give me your lengths and frequencies you are using, I can model
> it for you.
>
>   - 73 de Mike N3LI -

The reason for the center being half as high as the ends is that I
have trees on both ends but nothing in the center for support other
than one old short dead tree. Thank you for the insights and
encouragement. I'll begin the attempt to install once the weather
cooperates here in Michigan. WB8YKH

3464. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 13:12:58 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080321061258.bfe624b6.rsparks@elltel.net>
Source record: 26937

On Fri, 21 Mar 2008 05:10:01 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 20, 1:07 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > Keith Dysart wrote:
> > > On Mar 16, 10:21 am, Cecil Moore <nos...@w5dxp.com> wrote:
> > snip
> > >> Would you please explain how energy is conserved in the
> > >> following example at the zero-crossing point for Vs?
> >
> > >>   Rs   Vg   Vl
> > >>   +----/\/\/-----+---------------------+
> > >> | 50 ohm |
> > >> | |
> > >>   Vs   45 degrees | Shorted
> > >>   100v RMS   50 ohm line | Stub
> > >> | |
> > >> | |
> > >>   +--------------+---------------------+
> > >>   gnd
> >
> > > >> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
> > > >> is supplying zero watts at that time but Prs(t) = 100w.
> > > >> Where is the 100 watts coming from?
> >
> > > For the first 90 degrees of time, the circuit can be represented as
> >
> > > >>   Rs   Vg   Vl
> > > >>   +----/\/\/-----+---------------------+
> > > >> | 50 ohm |
> > > >> | /
> > > >>   Vs   \ 50 ohm resistor
> > > >>   100v RMS   /
> > > >> | \
> > > >> | |
> > > >>   +--------------+---------------------+
> > > >>   gnd
> >
> > > After 90 degrees of time has passed, the circuit can be represented as
> >
> > > >>   Rs   Vg   Vl
> > > >>   +----/\/\/-----+---------------------+
> > > >> | 50 ohm |
> > > >> | |

```
> >  >>         Vs                                      ---
> >  >>       100v RMS                                  --- 50 ohm inductive
> >  >>           |                                      |
> >  >>           |                                      |
> >  >>           +--------------+----------------------+
> >  >>          gnd
> >
> > The sudden switch in circuit design at time 90 degrees is not unique to
> > start up, but is true for any adjustment made to Vs and any returning
> > wave from the shorted stub,.  As a result, a true stable circuit will
> > never be found unless some voltage adjustment is allowed for the 90
> > timing shift caused by the shorted stub.  Keith (in his analysis of the
> > circuit) recognizes that Vs drives into a reactive circuit.
> >
> > If we want to understand how constructive and destructive interference
> > act to cause a 50 ohm resistor to evolve into a 50 ohm capacitor, then
> > we need to examine how traveling waves might do this.  It would be nice
> > to have a formula or wave sequence that fully addressed this evolution.
> >
> >  From circuit theory, we have the inductive reactance of a
> > short-circuited line less than 1/4 wavelength long is
> >
> >      XL = Zo * tan (length degrees)
> >
> >         = 50 * tan(45)
> >
> >         = 50 ohms
> >
> >  From traveling wave theory, we would have the applied wave from the
> > source arriving 90 degrees late to the stub side of resistor Rs.  This
> > ignores the fact that current must already be passing through resistor
> > Rs because voltage has been applied to Rs from the Vs side 90 degrees
> > earlier.  Whoa!  Things are not adding up correctly this way!
> >
> > We need to treat the wave going down the 50 ohm line as a single wave
> > front.  The wave reverses at the short-circuit, reversing both direction
> > of travel and sign of voltage.  When the wave front reaches the input
> > end, 90 degrees after entering (for this case), the voltage/current
> > ratio is identical to the starting ratio (the line was 45 degrees long,
> > tan(45) = 1), and the returning voltage directly adds to the voltage
> > applied from Vs.  As a result, the current flowing through Rs will
> > increase, and Vs will see a changed (decreased) impedance.
> >
> > After 90 degrees of signal application, we should be able to express the
> > voltage across Rs as
> >
> >      Vrs(t) = Vs(t) - Vg(t) + Vref(t)
>
> Just to ensure clarity, you are using a different convention for terms
> and
```

> signs than I do.
>
> For me, Vg(t) is the actual voltage at point Vg. In terms of forward
> and
> reverse: Vg(t) = Vf.g(t) = Vr.g(t), meaning the actual voltage at
> point
> g is sum of the forward and reverse voltage at point g.
>
> In my terms, this leads to
> Vrs(t) = Vs(t) - Vg(t)
> = Vs(t) - Vf.g(t) - Vr.g(t)
>
> Your Vg seems to be same as my Vf.g and you seem to be using a
> different
> sign for Vref than I do for Vr.
>
> You must be carrying these differences through the equations correctly
> because the final results seem to agree.

Thanks for looking at my posting very carefully, because I think you are drawing the same conclusions as I, at least so far.

I think you are correct in saying that
> For me, Vg(t) is the actual voltage at point Vg. In terms of forward
> and
> reverse: Vg(t) = Vf.g(t) = Vr.g(t), meaning the actual voltage at
> point
> g is sum of the forward and reverse voltage at point g.
>
but doesn't this describe the standing wave?

At point g, the forward wave has passed through resistor Rs, loosing part of the original wave energy, and is inroute beginning the long path to the resistor Rs. The reflected wave has arrived back to one side of Rs and the voltage is already in series with the source voltage acting on Rs. I think we need to subtract the two terms so that we can separate the apples and oranges.

> > Vs(t) = Vs(wt + 90), Vg(t) = Vs(wt + 90)/2, Vref(t) = Vs(wt)/2
> >
> > Substitute so
> >
> > Vrs(t) = Vs(wt + 90) - Vs(wt + 90)/2 + Vs(wt)/2
> >
> >   = Vs(wt + 90)/2 + Vs(wt)/2
> >
> > Allow Vs to be represented by a sine wave, we have
>
> A small aside. It is conventional to use cos for sinusoidal waves
> because
> it maps more readily into phasor notation.

This is an important observation. cos(0) is 1 so to me it seems like we are saying that we begin at time zero with peak voltage or peak current. I wanted to begin with zero current at time zero so I used the sine. Am I missing something important here?

>
> >   2Vrs(t) = Vs*sin(wt + 90) + Vs*sin(wt)
> >   = 2Vs*(sin(wt + 45)(cos(45))
> >   Vrs(t) = Vs(sin(wt + 45)(cos(45))
> >
> > Vs is defined as 100v RMS, which equals 100 * 1.414 = 141.4v Peak. The
> > maximum voltage would occur when the sin term was 90 degrees and equals
> > 1, which would occur at wt = 45 degrees.   We would have
> >
> >   Vrs(45) = 141.42 * sin(90)(cos(45)
> >   = 141.42 * 1 * 0.7071
> >   = 100v
> >
> > Now consider the current. After the same 90 degrees of signal
> > application, we should be able to express the current through Rs as
> >
> >   Irs(t) = Is(t) + Iref(t)
> >
> > Is(t) = Is(wt + 90), Iref(t) = Is(wt)
> >
> > The reflected current has been shifted by 90 degrees due to the
> > reflection so we must rewrite Iref(t) to read
> >
> >   Iref(t) = Is(wt + 90)
> >
> > Substitute,
> >
> >   Irs(t) = Is(wt + 90) + Is(wt)
> >
> > Allow Is to be represented by a sine wave, we have
> >
> >   Irs(t) = Is*sin(wt + 90) + Is*sin(wt)
> >
> >   = 2*Is(sin(wt + 45)(cos(45))
> >
> > How do we find Is? Is is the initial current found by dividing the
> > applied voltage at peak (141.42v) by the initial resistance (100 ohms).
> >
> >   Is = 141.42/100 = 1.4142a
> >
> > The maximum current would occur when the sin term was 90 degrees and
> > equals 1, which would occur at wt = 45 degrees.   We would have
> >
> >   Irs(t) = 2*Is(sin(wt + 45)(cos(45))
> >
> >   = 2 * 1.4142 * 1 * 0.7071
> >

> >   = 2a
> >
> > These results agree with the results from Keith and from circuit theory.
> >
> > We have a theory and at least the peaks found from the theory agree with
> > the results from others.   How about Cecil's initial question which is
> > >> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
> > >> is supplying zero watts at that time but Prs(t) = 100w.
> > >> Where is the 100 watts coming from?
> >
> > We will use the equation
> >
> >   Vrs(t) = Vs(t) - Vg(t) + Vref(t)
> >
> > Vs(t) = Vs(wt + 90), Vg(t) = Vs(wt + 90)/2, Vref(t) = Vs(wt)/2
> >
> > The challenge looks at the time when Vs(t) = Vs*sin(wt + 90) = 0, which
> > occurs when wt = -90. When wt = -90, all the power to the source
> > resistor Rs is from the reflected portion described as Vref(t) =
> > Vs(wt)/2. The voltage across Rs would be
> >
> >   Vrs(-90) = Vref(-90)
> >   = Vs*sin(-90)/2
> >   = 141.4/2
> >   = 70.7v
> >
> > The power to Rs would be (Vrs^2)/50 = (70.7^2)/50 = 100w, all coming
> > from the reflection.
> >
> > In summary, power to the resistor Rs comes via two paths, one longer
> > than the other by 90 degrees (in this example).
>
> This is not quite complete. The power to Rs does come from two places
> but they are the voltage source and the line.
>
> Ps(t) = Prs(t) + Pg(t)
>
> where Pg(t) is the power at point g flowing out of the generator into
> the line and Ps(t) is the power flowing from the source to the source
> resistor and the line.
>
> The power into the line can be seaparated into a forward component and
> a reflected component:
>
> Pg(t) = Pf(t) + Pr(t)
>
> (Sometimes this is written as P = Pf - Pr, but that is just a question
> of how the sign is used to represent the direction of energy flow.)
>
> Substituting we have

>
> Ps(t) = Prs(t) + Pf.g(t) + Pr.g(t)
> or
> Prs = Ps(t) - Pf.g(t) - Pr.g(t)
>
> Whenever Ps(t) equal 0, then Pf.g(t) also equals 0 so at those times,
> this simplifies to
> Prs = - Pr.g(t)
> which is the same conclusion you came to.

No, I think my Pr.g(t) was positive, not negative. The difference is important because of the timing of the energy flows. Here is where it is important to observe that the forward wave entering the transmission line will have no further effect on resistor Rs until it has traveled 90 degrees of time. On the other hand, the reflected wave Pr.g(t) is only an instant of time away from entering the resistor Rs, but has not actually entered it because you are measuring it as being present at Vg, not as voltage Vrs.

>
> But it is wise not to forget the Pf.g(t) term because at times when
> Ps(t) is not equal to zero, the Pf.g(t) term will be needed to
> balance the energy flows.

Pf.g(t) is the remaining power after the wave generated by Ps(t) has passed through Rs and left behind Prs(t). Another Prs(t + x) will be generated by the returning reflected wave.

>
> > The short path is the
> > series path of two resistors composed of the source resistor Rs and the
> > input to the 50 ohm transmission line measured by Vg. The long path is
> > the series path of one resistor Rs and one capacitor composed of the
> > shorted transmission line. Both paths are available at all times.
> > Power flows through both paths to Rs at all times, but because of the
> > time differential in arrival timing, at some point Rs will receive power
> > only from Vs, and at another point, receive power only from Vref.
>
> And at still other times, the power in the source resistor will depend
> on
> all of Ps(t), Pf.g(t) and Pr.g(t), or, more simply, it will depend on
> Ps(t) and Pg(t).
>
> ...Keith

We differ on how to utilize the term Pg(t). I think it describes the standing wave, not the voltage across Rs.
--
73, Roger, W7WKB

3465. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 14:12:52 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <47e3b2ee$0$4944$4c368faf@roadrunner.com>
Source record: 26936

>
>
> The reason for the center being half as high as the ends is that I
> have trees on both ends but nothing in the center for support other
> than one old short dead tree. Thank you for the insights and
> encouragement. I'll begin the attempt to install once the weather
> cooperates here in Michigan. WB8YKH

Just an idea, how about a end fed zep?

Gain should be the same without the mechanical problem of trying to feed
the antenna in the center.

Chris

3466. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 14:33:09 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fs0gv5$157e$1@f04n12.cac.psu.edu>
Source record: 26938

WB8YKH wrote:
> On Mar 20, 4:47 pm, Michael Coslo <m...@psu.edu> wrote:
>> WB8YKH wrote:
>>> There is much literature on the inverted "V" antenna but I've found
>>> nothing on a "V" Dipole Antenna. Can someone help me with resources
>>> or information on installation and effects of a "V" Dipole? In my
>>> current location I am unable to raise my center point much more than
>>> 15 feet off ground. However I can raise the endpoints 30+ feet.
>>> Before I go through much effort on the install I'd like to know what
>>> kind of performance I can expect. Thank you for your insights!
>> Most dipoles are of the V type, having that weight in the middle and
>> all. Your dipole will work okay, go for it.
>>
>> What is the reason for the center being half as high as the ends? There
>> will be some droop always, unless you place too much tension on the
>> wires - don't do it. It looks nice and all, but that antenna's probably
>> going to come down before too long.
>>
>> Technically, there will be some differences between it and a straight
>> dipole. Just not that huge, and hey, that is what your situation allows!
>> If you give me your lengths and frequencies you are using, I can model
>> it for you.
>>
>> - 73 de Mike N3LI -
>
> The reason for the center being half as high as the ends is that I
> have trees on both ends but nothing in the center for support other
> than one old short dead tree. Thank you for the insights and
> encouragement. I'll begin the attempt to install once the weather
> cooperates here in Michigan. WB8YKH

You should be able to get it a little higher in the middle. Enough
tension on the ends and you could have maybe 10 feet of droop instead of 20.

Another option I've seen used is to use a messenger rope that runs the
entire length of the antenna. With a sturdy rope, you can relieve the
tension on the antenna wires by having the tension on the rope

- 73 de Mike N3LI -

3467. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 14:46:44 UTC
From: WB8YKH <lguyot2@gmail.com>
Message-ID: <49ca7df6-0029-48fd-8b0f-095e3809e0e7@d62g2000hsf.googlegroups.com>
Source record: 26939

On Mar 21, 10:12 am, Christopher Cox
<chrisTOPHER...@coboxincORORATED.com> wrote:
> > The reason for the center being half as high as the ends is that I
> > have trees on both ends but nothing in the center for support other
> > than one old short dead tree. Thank you for the insights and
> > encouragement. I'll begin the attempt to install once the weather
> > cooperates here in Michigan. WB8YKH
>
> Just an idea, how about a end fed zep?
>
> Gain should be the same without the mechanical problem of trying to feed
>   the antenna in the center.
>
> Chris

Your idea to use an end fed zep sounds interesting however I am
attempting to raise a double bazooka coaxial dipole I purchased at the
Dayton Hamvention two years ago. WB8YKH

3468. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 15:16:49 UTC
From: WB8YKH <lguyot2@gmail.com>
Message-ID: <25db1784-c126-4148-9d46-820e82da3044@d62g2000hsf.googlegroups.com>
Source record: 26940

On Mar 21, 10:33 am, Michael Coslo <m...@psu.edu> wrote:
> WB8YKH wrote:
> > On Mar 20, 4:47 pm, Michael Coslo <m...@psu.edu> wrote:
> >> WB8YKH wrote:
> >>> There is much literature on the inverted "V" antenna but I've found
> >>> nothing on a "V" Dipole Antenna. Can someone help me with resources
> >>> or information on installation and effects of a "V" Dipole? In my
> >>> current location I am unable to raise my center point much more than
> >>> 15 feet off ground. However I can raise the endpoints 30+ feet.
> >>> Before I go through much effort on the install I'd like to know what
> >>> kind of performance I can expect. Thank you for your insights!
> >> Most dipoles are of the V type, having that weight in the middle and
> >> all. Your dipole will work okay, go for it.
>
> >>   What is the reason for the center being half as high as the ends? There
> >> will be some droop always, unless you place too much tension on the
> >> wires - don't do it. It looks nice and all, but that antenna's probably
> >> going to come down before too long.
>
> >> Technically, there will be some differences between it and a straight
> >> dipole. Just not that huge, and hey, that is what your situation allows!
> >> If you give me your lengths and frequencies you are using, I can model
> >> it for you.
>
> >>   - 73 de Mike N3LI -
>
> > The reason for the center being half as high as the ends is that I
> > have trees on both ends but nothing in the center for support other
> > than one old short dead tree. Thank you for the insights and
> > encouragement. I'll begin the attempt to install once the weather
> > cooperates here in Michigan. WB8YKH
>
> You should be able to get it a little higher in the middle. Enough
> tension on the ends and you could have maybe 10 feet of droop instead of 20.
>
> Another option I've seen used is to use a messenger rope that runs the
> entire length of the antenna. With a sturdy rope, you can relieve the
> tension on the antenna wires by having the tension on the rope
>
>   - 73 de Mike N3LI -- Hide quoted text -
>
> - Show quoted text -

I'd never heard of a messenger rope. Sounds interesting. How is the messenger rope secured to the antenna line? WB8YKH

3469. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 16:22:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%gREj.6406$Rq1.3660@nlpi068.nbdc.sbc.com>
Source record: 26941

Roger Sparks wrote:
> So it looks to me like Keith is right in his method, at least in this case.

Roger, do you understand why EE201 professors admonish
their students not to try to superpose powers?
--
73, Cecil http://www.w5dxp.com

3470. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 16:26:25 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <1d7a0e65-3683-4fed-a5b1-7be292e03f73@i12g2000prf.googlegroups.com>
Source record: 26942
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 21, 3:08 am, Artem <artem.b...@gmail.com> wrote:
> On Mar 21, 2:56 am, K7ITM <k7...@msn.com> wrote:
>
> > On Mar 20, 12:58 pm, Artem <artem.b...@gmail.com> wrote:
>
> > :-) I saw the comment about "narrow-banding" the images. They were
> > perhaps a little more than we needed, but it was nice to have
> > something we could actually see. They did not take very long to
> > download here, but someone with a slow connection may have troubles.
>
> I'm move images to ImageShackhttp://img524.imageshack.us/my.php?image=dsc9427ib7.jpghttp
://img262.imageshack.us/my.php?image=dsc9431tv9.jpg
>
>
>
> > One comment: usually you do not need much voltage gain. It is enough
> > to get power gain with the FETs. That is, the received signal voltage
> > across the gap of the loop, as resonated by the capacitors, should be
> > high enough to be used with a good receiver. The problem is that the
> > impedance is very high there. But that same high impedance makes for
> > easy oscillation. From what you posted, it sounds like maybe you have
> > identified an oscillation. If the AGC voltage is low enough, does the
> > oscillation stop?
>
> Yes. It's stop. my main reason for this antenna is make very narrow
> antenna for city. I can't receive to my receiver almost nothing by big
> nose from computers, lamps and other things. But looks like this
> antenna did not help. Its amplify narrow-band noise. And even add more
> noise when oscillated.
>
> The amplifier I built used two stages, an FET input
>
> > stage and a buffer stage, and it had very low voltage gain--I am
> > remembering about 3:1 or only 10dB, and maybe only 1:1 or 0dB
> > including the output transformer, but quite a bit of power gain since
> > it transformed the high loop impedance down to 50 ohms for the
> > feedline.
>
> > Also, there should be no need for the RF chokes from the gate-1 to
> > source, if the loop is grounded at the bottom.
>
> Source is not grounded for DC. For better transistors matching and
> overcurrent protection.

>
> If the loop is> grounded at the bottom, the loop plus the RF chokes will short out the
> > source-to-ground resistor. Maybe there is not a need to raise the
> > source voltage above DC ground potential anyway. Also, it may help to
> > NOT bypass the sources to ground, to allow some negative feedback.
> > That may help stabilize the amplifier.
>
> Sources is not grounded.

Yes, unfortunately noise that is generated more than one or two wavelengths away from your antenna will be almost entirely electromagnetic by the time it reaches your antenna. Antennas do not differentiate between "electrically generated" and "magnetically generated" noise, when you are far enough that the electromagnetic field dominates over any near-field electric or magnetic field. The balanced small loop is good for rejecting electric-field noise only if (1) the noise is generated close to the antenna and (2) the antenna is close to the ground (so the electric field is guaranteed to be nearly vertical) -- -- where "close" means relative to a wavelength. So the small balanced loop is especially good for LF and VLF work.

Perhaps someone else will have suggestions about what else you might try.

Cheers,
Tom

3471. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 16:34:51 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <hjm7u350k167geeg20hm2tnpfafv5p91jt@4ax.com>
Source record: 26943

>
>I'd never heard of a messenger rope. Sounds interesting. How is the
>messenger rope secured to the antenna line? WB8YKH

More properly "messenger line".

This seems to be a difficult item to search so I will attempt to an
explanation...

When two ships meet at sea and wish to transfer items from one ship to
another (think mail, movies, etc.) they must keep a safe distance
between them. The accepted procedure is to throw or otherwise launch a
small rope or line from one to the other. Then a larger line is
attached to the small line and pulled back to the originating ship.
There may be several iterations of this until a line strong enough to
carry the ultimate load is in place. The first line (and may be the
interim lines) that were used to get the final line in place are
refferred to as messenger lines.

I sometimes use a weighted piece of fishing line as the meesenger and
tie the string/rope/wire in place to hang an antenna. It saves a lot
of snagging if you streamline the attaching knot with a bit of tape.

If anyone manages to figure out a search that provides useful results
for "messenger line" I would appreciate the enlightenment!

John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

3472. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 16:37:52 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xvREj.6408$Rq1.98@nlpi068.nbdc.sbc.com>
Source record: 26944

Keith Dysart wrote:
> But you need to clearly state your limitations and stop
> flip flopping.

What you are calling "flip flopping" is me correcting
my errors. Once I correct an error, I don't flip-flop
back. My error was in assuming that the power-density
(irradiance) equation only works on average powers.
K7ITM convinced me that it works on instantaneous powers
also.

> I am surprised, this being 2008, that I could actually be
> offering a new way to study the question, but if you insist,
> I accept the accolade.

I'm sure you are not the first, just the first to think
there is anything valid to be learned by considering
instantaneous power to be important. Everyone except
you discarded that notion a long time ago.

> Analysis has shown that when examined with fine granularity,
> that for the circuit of Fig 1-1, the energy in the reflected
> wave is not always dissipated in the source resistor.

Yes, yes, yes, now you are starting to get it. When
interference is present, the energy in the reflected
wave is NOT dissipated in the source resistor. Those
facts will be covered in Part 2 & 3 of my web article.

>> Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(A)
>
> Which of the two needs the 'cos' term?
>
> Ps(t) = Prs(t) + Pg(t)
> or
> Pg(t) = Pf.g(t) + Pr.g(t)
>
> In fact neither do.

For instantaneous values of voltage, the phase angle is
either 0 or 180 degrees so the cosine term is either +1
or -1. The math is perfectly consistent. That you don't
recognize the sign of the instantaneous interference term
as the cosine of 0 or 180 is amazing.

> Non-the-less do feel free to offer corrected expression that include
> the 'cos(A)' term.

I did and you ignored it. There is no negative sign in the
power equation yet you come up with negative signs. That
you don't recognize your negative sign as cos(180) is
unbelievable.

> The math holds as it is. But I invite you to offer an alternative
> analysis that includes cos(A) terms. We can see how it holds up.

It it unfortunate that you don't comprehend that the cos(0) is
+1 and the cos(180) is -1. The sign of the instantaneous
interference term is the cosine term. The math certainly does
hold as it is - you are just ignorant of the "is" part.
--
73, Cecil http://www.w5dxp.com

3473. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 16:53:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0KREj.6410$Rq1.3412@nlpi068.nbdc.sbc.com>
Source record: 26945

Keith Dysart wrote:
> In my terms, this leads to
> Vrs(t) = Vs(t) - Vg(t)
> = Vs(t) - Vf.g(t) - Vr.g(t)

How about expanding those equations for us?

Vs(t) = 141.4*cos(wt) ????
Vg(t) = ____*cos(wt+/-____) ????
Vf.g(t) = ____*cos(wt+/-____) ????
Vr.g(t) = ____*cos(wt+/-____) ????

If you ever did this before, I missed it.

Given the correct voltage equations, I can
prove what I am saying about destructive and
constructive interference averaging out to zero
over one cycle is a fact.
--
73, Cecil http://www.w5dxp.com

3474. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 17:00:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kQREj.24910$R84.24102@newssvr25.news.prodigy.net>
Source record: 26947

Keith Dysart wrote:
> It would be excellent if you would correct my exposition
> using the correct formulae. We could then see if your
> proposal actually provides accurate results.

Roger didn't understand your terms and subscripts and
neither do I. I doubt that anyone understands your
formulas well enough to discuss them.

What is the equation for the forward voltage component
dropped across Rs?

What is the equation for the reflected voltage
component dropped across Rs?

Given valid equations for those two voltages, I can
prove everything I have been saying.
--
73, Cecil http://www.w5dxp.com

3475. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 17:02:43 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <6e0458b4-a0f4-4eef-aafb-1511a303323b@x41g2000hsb.googlegroups.com>
Source record: 26948
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 21, 6:26 pm, K7ITM <k7...@msn.com> wrote:
> On Mar 21, 3:08 am, Artem <artem.b...@gmail.com> wrote:
>
> > Sources is not grounded.
>
> Yes, unfortunately noise that is generated more than one or two
> wavelengths away from your antenna will be almost entirely
> electromagnetic by the time it reaches your antenna. Antennas do not
> differentiate between "electrically generated" and "magnetically
> generated" noise, when you are far enough that the electromagnetic

I did not hear nothing about electrically or magnetically photons.
It's just photons.

> field dominates over any near-field electric or magnetic field. The
> balanced small loop is good for rejecting electric-field noise only if
> (1) the noise is generated close to the antenna and

Yes. Computer, lamps etc close to antenna.

> (2) the antenna is
> close to the ground (so the electric field is guaranteed to be nearly

15 floor of 16-floor building. But I think that in this case "ground"
are building walls.

> vertical) -- -- where "close" means relative to a wavelength. So the
> small balanced loop is especially good for LF and VLF work.

my reason was make narrow-band antenna. For reject all out of band
noise.

>
> Perhaps someone else will have suggestions about what else you might
> try.
>
> Cheers,
> Tom

3476. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 17:30:00 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080321103000.f30b040e.rsparks@elltel.net>
Source record: 26949

On Fri, 21 Mar 2008 11:22:22 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > So it looks to me like Keith is right in his method, at least in this case.
>
> Roger, do you understand why EE201 professors admonish
> their students not to try to superpose powers?
> --
> 73, Cecil http://www.w5dxp.com

No, I really don't.

I do understand that you had better not try to find the power flowing from superposed voltages because they may be the sum of apples and oranges. That is, the superposed voltages may be flowing in opposite directions so they will each be carrying power but the power will be available/reachable only for the direction toward which the wave is traveling. An SWR meter comes to mind here.

--
73, Roger, W7WKB

3477. Re: Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 17:41:36 UTC
From: Ken Fowler <ko6no@yahoo.com>
Message-ID: <l9ydnaMu_ofSbn7anZ2dnUVZ_gednZ2d@comcast.com>
Source record: 26950

On 20-Mar-2008, Eric <englere_geo@yahoo.com> wrote:

> Path:
> border1.nntp.dca.giganews.com!nntp.giganews.com!postnews.google.com!d62g2000hsf.googlegr
oups.com!not-for-mail
> From: Eric <englere_geo@yahoo.com>
> Newsgroups: rec.radio.amateur.antenna
> Subject: Re: Strange Antenna challenge Memorial Day - need suggestions
> Date: Thu, 20 Mar 2008 21:38:06 -0700 (PDT)
> Organization: http://groups.google.com
> Lines: 12
> Message-ID:
> <fb885a91-ba0c-4828-896f-27d5099df23e@d62g2000hsf.googlegroups.com>
> References:
> <e1f52241-73a3-4c74-8798-2989f2af21f1@u72g2000hsf.googlegroups.com>
> <vo2dnZ7ED8zKaH_anZ2dnUVZ_tWtnZ2d@comcast.com>
> NNTP-Posting-Host: 24.98.128.174
> Mime-Version: 1.0
> Content-Type: text/plain; charset=ISO-8859-1
> Content-Transfer-Encoding: 7bit
> X-Trace: posting.google.com 1206074286 21644 127.0.0.1 (21 Mar 2008
> 04:38:06 GMT)
> X-Complaints-To: groups-abuse@google.com
> NNTP-Posting-Date: Fri, 21 Mar 2008 04:38:06 +0000 (UTC)
> Complaints-To: groups-abuse@google.com
> Injection-Info: d62g2000hsf.googlegroups.com; posting-host=24.98.128.174;
>
> posting-account=QOYPGwoAAACUkIyf4nCRirViFssPwprQ
> User-Agent: G2/1.0
> X-HTTP-UserAgent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US;
> rv:1.8.1.12)
> Gecko/20080201 Firefox/2.0.0.12,gzip(gfe),gzip(gfe)
> Bytes: 1532
> Xref: number1.nntp.dca.giganews.com rec.radio.amateur.antenna:295539
>
> On Mar 20, 7:38 pm, "Ken Fowler" <ko...@yahoo.com> wrote:
>
> >
> > My antenna at NB6GC is an Aircraft Carrier.
> >
>
> That sounds interesting but I don't think there are many of them in
> Atlanta!
>

> Are you in the Navy? Do you have a link for some pictures?
>
> Eric

http://www.qsl.net/nb6gc/index.html

3478. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 17:58:41 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <13u7q9usmrlqc78@corp.supernews.com>
Source record: 26946

"John Ferrell" <johnferrell@sprintmail.com> wrote in message
news:hjm7u350k167geeg20hm2tnpfafv5p91jt@4ax.com...
>
>>
>>I'd never heard of a messenger rope. Sounds interesting. How is the
>>messenger rope secured to the antenna line? WB8YKH
>
> More properly "messenger line".
>
> This seems to be a difficult item to search so I will attempt to an
> explanation...
>
> When two ships meet at sea and wish to transfer items from one ship to
> another (think mail, movies, etc.) they must keep a safe distance
> between them. The accepted procedure is to throw or otherwise launch a
> small rope or line from one to the other. Then a larger line is
> attached to the small line and pulled back to the originating ship.
> There may be several iterations of this until a line strong enough to
> carry the ultimate load is in place. The first line (and may be the
> interim lines) that were used to get the final line in place are
> refferred to as messenger lines.
>
> I sometimes use a weighted piece of fishing line as the meesenger and
> tie the string/rope/wire in place to hang an antenna. It saves a lot
> of snagging if you streamline the attaching knot with a bit of tape.
>
> If anyone manages to figure out a search that provides useful results
> for "messenger line" I would appreciate the enlightenment!
>
> John Ferrell W8CCW

John while what you describe is correct, it is not the type of messanger
rope, line, or cable that is being thought of.

In the antenna case, it is a strong rope that is streached between two
supports. To this rope is attached a lighter antenna. Say you only have
some number 20 wire and want to make an 80 meter dipole. If you string the
20 wire and attach some rg-8 type coax to the middle of it, it would
probalby not stay up very long. Also you would have to have a large drop in
the middle as you can not streachit very tight without breaking.
If you have a strong rope you can tape and use some ultraviolet resistant
wire ties to attach the antenna wire to the rope and then pull it up
tighter.

I have a tower up 60 feet with several beams on it. While it may not be the recommended practice, I came off the tower around the 40 foot level and ran the coax (4 coax +rotor cable) to the house about 50 feet away. I used a piece of guy wire and taped and ty wrapped the cable to the the guy wire. I pulled this guy wire tight enough to keep the cable off the ground. This particular guy wire is not one of the supporting guys, but just a 'messanger wire' to hold up the coax with out strssing the coax.

3479. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 18:24:29 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A68740DF7003Huckleberrybigvalley@198.186.192.196>
Source record: 26801

>>
>>I'm looking to make a directional antenna in the 215 to 218 MHz band
>>(215 if that's too broad), used for location of dementia patients who
>>have wandered away from their caregivers. I'm a volunteer with an
>>organization that locates these people. They wear a tiny transmitter
>>which emits a chirp that can be heard from 1-2 miles on the ground and
>>8-10 miles via helicopter.

You might do a bit of research on the equipment that various animal tracking organizations use. They tend to use the 215 - 218 MHz band for tracking various animal species, and the equipment should suit your needs also.

Ed K7AAT

3480. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 18:25:57 UTC
From: Bob Miller <NOSPAM@neosoft.com>
Message-ID: <gav7u35re8t53ivdgs3ls813800paju7jf@4ax.com>
Source record: 26802

On Fri, 21 Mar 2008 07:46:44 -0700 (PDT), WB8YKH <lguyot2@gmail.com>
wrote:

>On Mar 21, 10:12ï¿½am, Christopher Cox
><chrisTOPHER...@coboxincORORATED.com> wrote:
>> > The reason for the center being half as high as the ends is that I
>> > have trees on both ends but nothing in the center for support other
>> > than one old short dead tree. ï¿½Thank you for the insights and
>> > encouragement. ï¿½I'll begin the attempt to install once the weather
>> > cooperates here in Michigan. ï¿½WB8YKH
>>
>> Just an idea, how about a end fed zep?
>>
>> Gain should be the same without the mechanical problem of trying to feed
>> ï¿½ the antenna in the center.
>>
>> Chris
>
>Your idea to use an end fed zep sounds interesting however I am
>attempting to raise a double bazooka coaxial dipole I purchased at the
>Dayton Hamvention two years ago. WB8YKH

Maybe the center tree could support a taller support pole for the
bazooka.

bob
k5qwg

3481. Re: Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 18:50:34 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <avH30IB6NA5HFwPp@b-howie.demon.co.uk>
Source record: 26803

In message
<e1f52241-73a3-4c74-8798-2989f2af21f1@u72g2000hsf.googlegroups.com>,
Eric <englere_geo@yahoo.com> writes
>I'm looking for suggestions for the Strange Antenna Challenge this
>Memorial Day week-end. One guy used a pair of back-to-back trucks to
>make a dipole, and one guy loaded up a sports stadium. A group in
>Atlanta used an Extension Ladder on 20M and that worked well, but that
>seems a little less strange than I'd like. It almost looks like a
>regular antenna when it's standing straight up.
>
>I want something that doesn't look like an antenna (one guy suggested
>hoisting a BBQ grill into the trees, but I'm sure that wouldn't work
>well on 20M). I want something that can be adjusted to be somewhat
>near resonance without a tuner.

I've always wondered how well this would get out loaded up on Top Band

http://www.firstcity.force9.co.uk/newgallery/out1.htm

73 Brian GM4DIJ
--
Brian Howie

3482. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 19:43:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kdUEj.22450$Ej5.11675@newssvr29.news.prodigy.net>
Source record: 26804

Roger Sparks wrote:

> Cecil Moore <nospam@w5dxp.com> wrote:
>> Roger, do you understand why EE201 professors admonish
>> their students not to try to superpose powers?
>
> No, I really don't.

It is because (V1 + V2)^2 usually doesn't equal V1^2+V2^2
because of interference. Keith's addition of powers
without taking interference into account is exactly
the mistake that the EE201 professors were talking about.
One cannot validly just willy-nilly add powers. It is
an ignorant/sophomoric thing to do.

If we add two one watt coherent waves, do we get a two
watt wave? Only in a very special case. For the great
majority of cases, we do *NOT* get a two watt wave. In
fact, the resultant wave can be anywhere between zero
watts and four watts. The concepts behind Keith's
calculations are invalid. If you are also trying to
willy-nilly add powers associated with coherent waves,
your calculations are also invalid.
--
73, Cecil http://www.w5dxp.com

3483. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 21:03:52 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080321140352.ac7b7a4a.rsparks@elltel.net>
Source record: 26805

On Fri, 21 Mar 2008 19:43:12 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
>
> > Cecil Moore <nospam@w5dxp.com> wrote:
> >> Roger, do you understand why EE201 professors admonish
> >> their students not to try to superpose powers?
> >
> > No, I really don't.
>
> It is because (V1 + V2)^2 usually doesn't equal V1^2+V2^2
> because of interference. Keith's addition of powers
> without taking interference into account is exactly
> the mistake that the EE201 professors were talking about.
> One cannot validly just willy-nilly add powers. It is
> an ignorant/sophomoric thing to do.
>
> If we add two one watt coherent waves, do we get a two
> watt wave? Only in a very special case. For the great
> majority of cases, we do *NOT* get a two watt wave. In
> fact, the resultant wave can be anywhere between zero
> watts and four watts. The concepts behind Keith's
> calculations are invalid. If you are also trying to
> willy-nilly add powers associated with coherent waves,
> your calculations are also invalid.
> --
> 73, Cecil http://www.w5dxp.com

OK, yes, I agree. It is OK to add powers when you are adding the power used by light bulbs. It is not OK to willy nilly multiply the voltage or current by the number of bulbs to learn the power used. You must carefully consider the circuit that connects the bulbs before selecting the proper method of calculating power, especially the possibility that the bulbs may be connected to phased power as in 3 phase or in traveling waves.

--
73, Roger, W7WKB

3484. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 21:17:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13u89fspbet7s6f@corp.supernews.com>
Source record: 26806

I've also seen "messenger line" or more often "messenger wire" used to
describe the steel wire that supports such things as telephone cables
between poles and mains power service drops from the pole to a building.

Roy Lewallen, W7EL

John Ferrell wrote:
>> I'd never heard of a messenger rope. Sounds interesting. How is the
>> messenger rope secured to the antenna line? WB8YKH
>
> More properly "messenger line".
>
> This seems to be a difficult item to search so I will attempt to an
> explanation...
>
> When two ships meet at sea and wish to transfer items from one ship to
> another (think mail, movies, etc.) they must keep a safe distance
> between them. The accepted procedure is to throw or otherwise launch a
> small rope or line from one to the other. Then a larger line is
> attached to the small line and pulled back to the originating ship.
> There may be several iterations of this until a line strong enough to
> carry the ultimate load is in place. The first line (and may be the
> interim lines) that were used to get the final line in place are
> refferred to as messenger lines.
>
> I sometimes use a weighted piece of fishing line as the meesenger and
> tie the string/rope/wire in place to hang an antenna. It saves a lot
> of snagging if you streamline the attaching knot with a bit of tape.
>
> If anyone manages to figure out a search that provides useful results
> for "messenger line" I would appreciate the enlightenment!
>
> John Ferrell W8CCW
> Beware of the dopeler effect (pronounced dope-ler).
> That's where bad ideas seem good if they come at you
> fast enough.

3485. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 21:40:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KXVEj.19197$xq2.14982@newssvr21.news.prodigy.net>
Source record: 26807

Roy Lewallen wrote:
> I've also seen "messenger line" or more often "messenger wire" used to
> describe the steel wire that supports such things as telephone cables
> between poles and mains power service drops from the pole to a building.

I got a bunch of free 75 ohm coax from the TV cable
company that has a messenger wire. It seems to me to
be for strain relief to keep the coax from breaking
from wind or ice.
--
73, Cecil http://www.w5dxp.com

3486. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 21:41:46 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <4ha8u3dgjt7erh3e9rbu6e13rnu8ddk2p6@4ax.com>
Source record: 26808

>
>John while what you describe is correct, it is not the type of messanger
>rope, line, or cable that is being thought of.
>
>In the antenna case, it is a strong rope that is streached between two
>supports. To this rope is attached a lighter antenna. Say you only have
>some number 20 wire and want to make an 80 meter dipole. If you string the
># 20 wire and attach some rg-8 type coax to the middle of it, it would
>probalby not stay up very long. Also you would have to have a large drop in
>the middle as you can not streachit very tight without breaking.
>If you have a strong rope you can tape and use some ultraviolet resistant
>wire ties to attach the antenna wire to the rope and then pull it up
>tighter.
>
>I have a tower up 60 feet with several beams on it. While it may not be the
>recommended practice, I came off the tower around the 40 foot level and ran
>the coax (4 coax +rotor cable) to the house about 50 feet away. I used a
>piece of guy wire and taped and ty wrapped the cable to the the guy wire. I
>pulled this guy wire tight enough to keep the cable off the ground. This
>particular guy wire is not one of the supporting guys, but just a 'messanger
>wire' to hold up the coax with out strssing the coax.
>
>
OK, I got it!
I usually use Nylon line (home improvement store, about 150 pound
test) for that purpose. You can sure do a lot of experimenting for
very little money that way.

Antennas can be a lot of fun....
John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

3487. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 21:51:45 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <h2b8u3d3f7enj8tiafhj2ma28br34lafj6@4ax.com>
Source record: 26809

On Thu, 20 Mar 2008 23:52:07 -0400, no@spam.net wrote:

>Do a search for "tape measure antenna". It is a simple to build yagi
>antenna made of pvc pipe with elements made from a metal measuring
>tape. You can rescale it to your frequency.
>
>Kingfish
>
Rumor has it that this antenna will be in the next ARRL Antenna
Handbook. Our club had an antenna party here recently where we built a
bunch of these. I chose to not glue mine together so it will store in
a very small package. You can also leave off elements at will to
reduce the physical size if needed.

Unfortunately, recent knee replacement has left me sidelined for a
while.

John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

3488. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 21:57:55 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <7ib8u399eb6n57fhb87c0m5gti77ik74bo@4ax.com>
Source record: 26810
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

>
>my reason was make narrow-band antenna. For reject all out of band
>noise.
>
That is a very worthwhile objective. All that noise adds to the
intermod noise and the sooner you can stop it, the better.

In my youth I recall calling CQ on 42 mhz for a couple of weeks.
Fortunately, a very sharp yagi and very low power saved me from a
violation.

John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

3489. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-21 22:50:45 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fs1e44$5i8$1@news.jpl.nasa.gov>
Source record: 26811

Buck wrote:
> This is an interesting antenna. It is a mobile stealth magnetic loop
> antenna.
>
> http://stealth.ae/plugins/custompages/detinf.php?id=372&id_categories=136
>
> I watched the video and checked out the details. The antenna is
> basically a loop with the roof of the car (the bottom of the luggage
> rack) as the ground side of the loop, the antenna goes up, folds over
> the top and back down to the other side of the roof where it feeds
> thru a high voltage vacuum variable capacitor back to ground.

Isn't this like the Q-Mac antenna sold in Australia?
http://www.qmac.com/mobile_antennas.html

>
>
> ---------------------------
> | |
> |_ |
> | |(coax conx) = Capacitor
> | -|_____________|
> ^ (roof)
> ^
> (feed)
>
> I am not as good an artist as some of you, but here is my graphic
> The coax feeds with a gamma? and is tuned by a stepper motor tuning
> the vacuum variable cap. Depending on which of the three models, it
> operates from 1.5-10 MHz, 2.7-15.5 MHz, or 4.5-22 MHz at up to 150
> watts.
>
> The technical notes have more interesting details:
> http://stealth.ae/plugins/custompages/articles.php?id=10
>
> It seems to me a homebrew version could be made for base use such as
> for those in restricted homes. Placed on the peak of the house, the
> ground side could be a wire across the top of the peak and the loop
> lift up during use so it would not attract too much attention to the
> neighbors.

Since the roof of a house is fairly large, a more conventional random
length loop tuned with something like a LDG or SGC autotuner at the
feedpoint might be a good approach. Icom IC-AH4 could probably also work.

>
> I wonder what the size and cost of the Vacuum variable is to make a
> similar antenna??
>

size of a pickle jar
Several hundred dollars, depending on size, power handling, and source..

http://www.surplussales.com/VaccumVarCaps/VVC5.html
http://www.mgs4u.com/RF-Microwave/vacuum-variable-capacitors-500.htm

plus you'll need to cobble up a motor and drive system.

the $300 or so for a autotuner starts to look like a good deal.
http://www.hamradio.com/web/newcat/hrocat7.pdf

> Buck
> N4PGW

3490. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 00:03:12 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fs1ic0$g7s$1@news.jpl.nasa.gov>
Source record: 26816

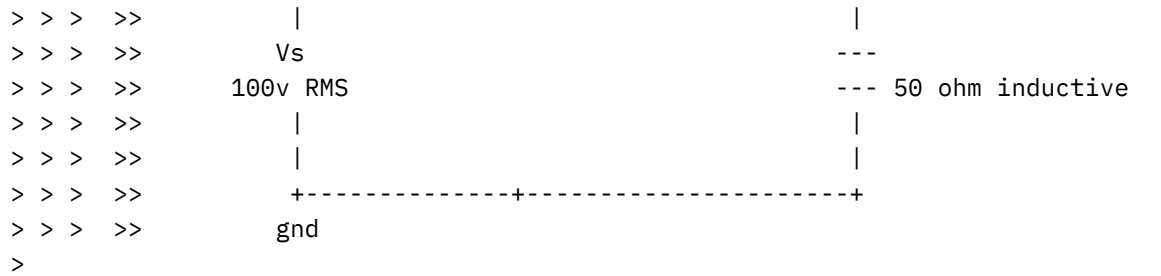
Jim Lux wrote:
> Buck wrote:
>
>> This is an interesting antenna. It is a mobile stealth magnetic loop
>> antenna.
>>
>> http://stealth.ae/plugins/custompages/detinf.php?id=372&id_categories=136
>>
>> I watched the video and checked out the details. The antenna is
>> basically a loop with the roof of the car (the bottom of the luggage
>> rack) as the ground side of the loop, the antenna goes up, folds over
>> the top and back down to the other side of the roof where it feeds
>> thru a high voltage vacuum variable capacitor back to ground.
>
>

Actually, at 150W, it might not be using a vacuum variable, just a
suitable air variable with big spacing. Electrically, this is much the
same as the AEA isoloop or MFJ-1782 type antenna. The ARRL antenna book
has a whole chapter on them, generically.

3491. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 00:08:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <9198abcd-22db-4b38-a628-6dbe1055ef3b@i12g2000prf.googlegroups.com>
Source record: 26812

```
On Mar 21, 9:12 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Fri, 21 Mar 2008 05:10:01 -0700 (PDT)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Mar 20, 1:07 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > Keith Dysart wrote:
> > > > On Mar 16, 10:21 am, Cecil Moore <nos...@w5dxp.com> wrote:
> > > snip
> > > >> Would you please explain how energy is conserved in the
> > > >> following example at the zero-crossing point for Vs?
>
> > > >>                Rs       Vg                     Vl
> > > >>          +----/\/\/-----+----------------------+
> > > >>          |    50 ohm                           |
> > > >>          |                                     |
> > > >>         Vs                 45 degrees          | Shorted
> > > >>      100v RMS              50 ohm line         | Stub
> > > >>          |                                     |
> > > >>          |                                     |
> > > >>          +--------------+----------------------+
> > > >>         gnd
>
> > > >> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
> > > >> is supplying zero watts at that time but Prs(t) = 100w.
> > > >> Where is the 100 watts coming from?
>
> > > For the first 90 degrees of time, the circuit can be represented as
>
> > >  >>                Rs       Vg                     Vl
> > >  >>          +----/\/\/-----+----------------------+
> > >  >>          |    50 ohm                           |
> > >  >>          |                                     /
> > >  >>         Vs                                     \ 50 ohm resistor
> > >  >>      100v RMS                                  /
> > >  >>          |                                     \
> > >  >>          |                                     |
> > >  >>          +--------------+----------------------+
> > >  >>         gnd
>
> > > After 90 degrees of time has passed, the circuit can be represented as
>
> > >  >>                Rs       Vg                     Vl
> > >  >>          +----/\/\/-----+----------------------+
> > >  >>          |    50 ohm                           |
```



> > > The sudden switch in circuit design at time 90 degrees is not unique to
> > > start up, but is true for any adjustment made to Vs and any returning
> > > wave from the shorted stub,. As a result, a true stable circuit will
> > > never be found unless some voltage adjustment is allowed for the 90
> > > timing shift caused by the shorted stub. Keith (in his analysis of the
> > > circuit) recognizes that Vs drives into a reactive circuit.
>
> > > If we want to understand how constructive and destructive interference
> > > act to cause a 50 ohm resistor to evolve into a 50 ohm capacitor, then
> > > we need to examine how traveling waves might do this. It would be nice
> > > to have a formula or wave sequence that fully addressed this evolution.
>
> > > From circuit theory, we have the inductive reactance of a
> > > short-circuited line less than 1/4 wavelength long is
> > > XL = Zo * tan (length degrees)
> > > = 50 * tan(45)
> > > = 50 ohms
> > > From traveling wave theory, we would have the applied wave from the
> > > source arriving 90 degrees late to the stub side of resistor Rs. This
> > > ignores the fact that current must already be passing through resistor
> > > Rs because voltage has been applied to Rs from the Vs side 90 degrees
> > > earlier. Whoa! Things are not adding up correctly this way!
>
> > > We need to treat the wave going down the 50 ohm line as a single wave
> > > front. The wave reverses at the short-circuit, reversing both direction
> > > of travel and sign of voltage. When the wave front reaches the input
> > > end, 90 degrees after entering (for this case), the voltage/current
> > > ratio is identical to the starting ratio (the line was 45 degrees long,
> > > tan(45) = 1), and the returning voltage directly adds to the voltage
> > > applied from Vs. As a result, the current flowing through Rs will
> > > increase, and Vs will see a changed (decreased) impedance.
>
> > > After 90 degrees of signal application, we should be able to express the
> > > voltage across Rs as
>
> > Vrs(t) = Vs(t) - Vg(t) + Vref(t)
>
> > Just to ensure clarity, you are using a different convention for terms
> > and signs than I do.
>
> > For me, Vg(t) is the actual voltage at point Vg. In terms of forward and
> > reverse: Vg(t) = Vf.g(t) = Vr.g(t), meaning the actual voltage at point

> > g is sum of the forward and reverse voltage at point g.
>
> > In my terms, this leads to
> >   Vrs(t) = Vs(t) - Vg(t)
> >   = Vs(t) - Vf.g(t) - Vr.g(t)
>
> > Your Vg seems to be same as my Vf.g and you seem to be using a
> > different nsign for Vref than I do for Vr.
>
> > You must be carrying these differences through the equations correctly
> > because the final results seem to agree.
>
> Thanks for looking at my posting very carefully, because I think you are drawing the same conclusions as I, at least so far.
>
> I think you are correct in saying that> For me, Vg(t) is the actual voltage at point Vg. In terms of forward
> > and
> > reverse: Vg(t) = Vf.g(t) = Vr.g(t), meaning the actual voltage at
> > point g is sum of the forward and reverse voltage at point g.

Ooooppps. That should have been Vg(t) = Vf.g(t) + Vr.g(t)

> but doesn't this describe the standing wave?

Not by itself. It is simply the function describing the voltage at
point g.

If you were to compute Vx(g) = Vf.x(t) + Vr.x(t) for many points
x, then you might end up with something akin to a standing wave.
Note that Vg(t) = Vf.g(t) + Vr.g(t) holds true for any function
while standing waves only really appear when the excitation
function is sinusoidal.

> At point g, the forward wave has passed through resistor Rs,

This is not a way that I would recommend thinking about what is
happening. The voltage source and source resistor are lumped
circuit elements and thinking that wave is passing through
them is likely to lead to confusion.

It might be valuable to study the circuit completely with a
lumped voltage source, source resistor and reactance. Once
that circuit is understood, replace the reactance with the
transmission line. When studying the circuit with the
transmission line instead of the reactance, always check
to see whether you would use the same words if the TL were
replaced with the reactance. If not, question why.

> loosing part of the original wave energy, and is inroute beginning the long path to the resistor Rs. The reflected wave has arrived back to one side of Rs and the voltage is already in series with the source voltage acting on Rs. I think we need to subtract the two terms so that we can separate the apples and oranges.

>
> > > Vs(t) = Vs(wt + 90), Vg(t) = Vs(wt + 90)/2, Vref(t) = Vs(wt)/2
>
> > > Substitute so
>
> > > Vrs(t) = Vs(wt + 90) - Vs(wt + 90)/2 + Vs(wt)/2
>
> > >   = Vs(wt + 90)/2 + Vs(wt)/2
>
> > > Allow Vs to be represented by a sine wave, we have
>
> > A small aside. It is conventional to use cos for sinusoidal waves
> > because
> > it maps more readily into phasor notation.
>
> This is an important observation. cos(0) is 1 so to me it seems like we are saying that we begin at time zero with peak voltage or peak current. I wanted to begin with zero current at time zero so I used the sine. Am I missing something important here?

It does not alter the outcome, so is not that important.

> > >   2Vrs(t) = Vs*sin(wt + 90) + Vs*sin(wt)
> > >   = 2Vs*(sin(wt + 45)(cos(45))
> > >   Vrs(t) = Vs(sin(wt + 45)(cos(45))
>
> > > Vs is defined as 100v RMS, which equals 100 * 1.414 = 141.4v Peak. The
> > > maximum voltage would occur when the sin term was 90 degrees and equals
> > > 1, which would occur at wt = 45 degrees.   We would have
>
> > >   Vrs(45) = 141.42 * sin(90)(cos(45)
> > >   = 141.42 * 1 * 0.7071
> > >   = 100v
>
> > > Now consider the current. After the same 90 degrees of signal
> > > application, we should be able to express the current through Rs as
>
> > >   Irs(t) = Is(t) + Iref(t)
>
> > > Is(t) = Is(wt + 90), Iref(t) = Is(wt)
>
> > > The reflected current has been shifted by 90 degrees due to the
> > > reflection so we must rewrite Iref(t) to read
>
> > >   Iref(t) = Is(wt + 90)
>
> > > Substitute,
>
> > >   Irs(t) = Is(wt + 90) + Is(wt)
>
> > > Allow Is to be represented by a sine wave, we have
>

> > >   Irs(t) = Is*sin(wt + 90) + Is*sin(wt)
>
> > >   = 2*Is(sin(wt + 45)(cos(45))
>
> > > How do we find Is? Is is the initial current found by dividing the
> > > applied voltage at peak (141.42v) by the initial resistance (100 ohms).
>
> > >   Is = 141.42/100 = 1.4142a
>
> > > The maximum current would occur when the sin term was 90 degrees and
> > > equals 1, which would occur at wt = 45 degrees.   We would have
>
> > >   Irs(t) = 2*Is(sin(wt + 45)(cos(45))
>
> > >   = 2 * 1.4142 * 1 * 0.7071
>
> > >   = 2a
>
> > > These results agree with the results from Keith and from circuit theory.
>
> > > We have a theory and at least the peaks found from the theory agree with
> > > the results from others.   How about Cecil's initial question which is
> > > >> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
> > > >> is supplying zero watts at that time but Prs(t) = 100w.
> > > >> Where is the 100 watts coming from?
>
> > > We will use the equation
>
> > >   Vrs(t) = Vs(t) - Vg(t) + Vref(t)
>
> > > Vs(t) = Vs(wt + 90), Vg(t) = Vs(wt + 90)/2, Vref(t) = Vs(wt)/2
>
> > > The challenge looks at the time when Vs(t) = Vs*sin(wt + 90) = 0, which
> > > occurs when wt = -90. When wt = -90, all the power to the source
> > > resistor Rs is from the reflected portion described as Vref(t) =
> > > Vs(wt)/2. The voltage across Rs would be
>
> > >   Vrs(-90) = Vref(-90)
> > >   = Vs*sin(-90)/2
> > >   = 141.4/2
> > >   = 70.7v
>
> > > The power to Rs would be (Vrs^2)/50 = (70.7^2)/50 = 100w, all coming
> > > from the reflection.
>
> > > In summary, power to the resistor Rs comes via two paths, one longer
> > > than the other by 90 degrees (in this example).
>
> > This is not quite complete. The power to Rs does come from two places
> > but they are the voltage source and the line.

>
> >   Ps(t) = Prs(t) + Pg(t)
>
> > where Pg(t) is the power at point g flowing out of the generator into
> > the line and Ps(t) is the power flowing from the source to the source
> > resistor and the line.
>
> > The power into the line can be seaparated into a forward component and
> > a reflected component:
>
> >   Pg(t) = Pf(t) + Pr(t)
>
> > (Sometimes this is written as P = Pf - Pr, but that is just a question
> > of how the sign is used to represent the direction of energy flow.)
>
> > Substituting we have
>
> >   Ps(t) = Prs(t) + Pf.g(t) + Pr.g(t)
> > or
> >   Prs = Ps(t) - Pf.g(t) - Pr.g(t)
>
> > Whenever Ps(t) equal 0, then Pf.g(t) also equals 0 so at those times,
> > this simplifies to
> >   Prs = - Pr.g(t)
> > which is the same conclusion you came to.
>
> No, I think my Pr.g(t) was positive, not negative.

I think that is just because your reference direction was different.
I use the same reference direction for both Pf and Pr. It is often
done that the reference direction is different for Pf and Pr.

> The difference is important because of the timing of the energy flows. Here is where it is important to observe that the forward wave entering the transmission line will have no further effect on resistor Rs until it has traveled 90 degrees of time. On the other hand, the reflected wave Pr.g(t) is only an instant of time away from entering the resistor Rs, but has not actually entered it because you are measuring it as being present at Vg, not as voltage Vrs.
>
> > But it is wise not to forget the Pf.g(t) term because at times when
> > Ps(t) is not equal to zero, the Pf.g(t) term will be needed to
> > balance the energy flows.
>
> Pf.g(t) is the remaining power after the wave generated by Ps(t) has passed through Rs and left behind Prs(t). Another Prs(t + x) will be generated by the returning reflected wave.
>
Again, I don't think it wise to think of the wave as passing through
Rs.
>
> > > The short path is the

> > > series path of two resistors composed of the source resistor Rs and the
> > > input to the 50 ohm transmission line measured by Vg. The long path is
> > > the series path of one resistor Rs and one capacitor composed of the
> > > shorted transmission line. Both paths are available at all times.
> > > Power flows through both paths to Rs at all times, but because of the
> > > time differential in arrival timing, at some point Rs will receive power
> > > only from Vs, and at another point, receive power only from Vref.
>
> > And at still other times, the power in the source resistor will depend
> > on
> > all of Ps(t), Pf.g(t) and Pr.g(t), or, more simply, it will depend on
> > Ps(t) and Pg(t).
>
> > ...Keith
>
> We differ on how to utilize the term Pg(t). I think it describes the standing wave, not the voltage across Rs.

I describe Vg(t) as the actual voltage that would be measured by an
oscilloscope at the point g; i.e. the beginning of the transmission
line. It is certainly not the voltage across Rs. Perhaps it IS what
you mean by standing wave. In any case the voltage across the resistor
is
Vs(t) = Vrs(t) + Vg(t)
Vrs(t) = Vs(t) - Vg(t)

Pg(t) is the power being delivered to the transmission line at any
instance t.
Pg(t) = Vg(t) * Ig(t)

...Keith

3492. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 00:27:24 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <5d2a8185-67ef-4959-939c-c78ce428fc68@e10g2000prf.googlegroups.com>
Source record: 26813

On Mar 21, 12:37 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > But you need to clearly state your limitations and stop
> > flip flopping.
>
> What you are calling "flip flopping" is me correcting
> my errors. Once I correct an error, I don't flip-flop
> back.

Actually the flip-flopping I was referring to was the
constant changes in your view of the limitations that
apply to your claim.

> > I am surprised, this being 2008, that I could actually be
> > offering a new way to study the question, but if you insist,
> > I accept the accolade.
>
> I'm sure you are not the first, just the first to think
> there is anything valid to be learned by considering
> instantaneous power to be important. Everyone except
> you discarded that notion a long time ago.
>
> > Analysis has shown that when examined with fine granularity,
> > that for the circuit of Fig 1-1, the energy in the reflected
> > wave is not always dissipated in the source resistor.
>
> Yes, yes, yes, now you are starting to get it.

Is this a flop or a flip? Are you now agreeing that the
energy in the reflected wave is only dissipated in the
source resistor for those instances when Vs is 0?

> When
> interference is present, the energy in the reflected
> wave is NOT dissipated in the source resistor. Those
> facts will be covered in Part 2 & 3 of my web article.
>
> >> Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(A)
>
> > Which of the two needs the 'cos' term?
>
> > Ps(t) = Prs(t) + Pg(t)
> > or
> > Pg(t) = Pf.g(t) + Pr.g(t)
>

> > In fact neither do.
>
> For instantaneous values of voltage, the phase angle is
> either 0 or 180 degrees so the cosine term is either +1
> or -1. The math is perfectly consistent.
[gratuitous insult snipped]

> > Non-the-less do feel free to offer corrected expression that include
> > the 'cos(A)' term.
>
> I did and you ignored it.

I could not find them in the archive. Could you kindly provide
them again, showing where the 'cos(A)' term fits in the
equations:
Ps(t) = Prs(t) + Pg(t)
and
Pg(t) = Pf.g(t) + Pr.g(t)

> There is no negative sign in the
> power equation yet you come up with negative signs.
[gratuitous insult snipped]

Negative signs also arise when one rearranges equations.

> > The math holds as it is. But I invite you to offer an alternative
> > analysis that includes cos(A) terms. We can see how it holds up.
[gratuitous insult snipped]

...Keith

3493. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 00:48:06 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <ddf4f973-45f9-4632-b1ff-2b6bdf145a02@d21g2000prf.googlegroups.com>
Source record: 26814

On Mar 21, 12:53 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > In my terms, this leads to
> > Vrs(t) = Vs(t) - Vg(t)
> > = Vs(t) - Vf.g(t) - Vr.g(t)
>
> How about expanding those equations for us?
>
> Vs(t) = 141.4*cos(wt) ????
> Vg(t) = ____*cos(wt+/-____) ????
> Vf.g(t) = ____*cos(wt+/-____) ????
> Vr.g(t) = ____*cos(wt+/-____) ????
>
> If you ever did this before, I missed it.

I did. And they are also conveniently in the spreadsheet at
http://keith.dysart.googlepages.com/generator,line,load,reflection

For your convenience, in the example of Fig 1-1, 100 Vrms
sinusoidal source, 50 ohm source resistor, 45 degrees of
50 ohm line, 12.5 ohm load, after the reflection returns...

Vs(t) = 141.42135623731*cos(wt)
Vg(t) = 82.46211251*cos(wt+30.96375653)
Vf.g(t) = 70.71067812*cos(wt)
Vr.g(t) = 42.42640687*cos(wt+90)

And for completeness...

Ps(t) = 100 + 116.6190379cos(2wt-30.96375653)
Prs(t) = 68 + 68cos(2wt-61.92751306)
Pg(t) = 32 + 68cos(2wt)
Pf.g(t) = 50 + 50cos(2wt)
Pr.g(t) = -18 + 18cos(2wt)

> Given the correct voltage equations, I can
> prove what I am saying about destructive and
> constructive interference averaging out to zero
> over one cycle is a fact.

Not that anyone has disputed that. But it would
be good to see anyway.

...Keith

3494. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 00:52:54 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <48af751b-491b-4831-beb3-539d974776e9@s37g2000prg.googlegroups.com>
Source record: 26815

On Mar 21, 1:00 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > It would be excellent if you would correct my exposition
> > using the correct formulae. We could then see if your
> > proposal actually provides accurate results.
>
> Roger didn't understand your terms and subscripts and
> neither do I. I doubt that anyone understands your
> formulas well enough to discuss them.
>
> What is the equation for the forward voltage component
> dropped across Rs?
>
> What is the equation for the reflected voltage
> component dropped across Rs?
>
> Given valid equations for those two voltages, I can
> prove everything I have been saying.

Since I am not sure exactly what your are looking for,
and you could not be sure that I did them right,
it would probably be best if you were to compute these
equations which you need.

...Keith

3495. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 01:12:54 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <7b187d13-2b01-498f-a629-d4aa6361e41d@s37g2000prg.googlegroups.com>
Source record: 26817

On Mar 21, 5:03 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Fri, 21 Mar 2008 19:43:12 GMT
>
> Cecil Moore <nos...@w5dxp.com> wrote:
> > Roger Sparks wrote:
>
> > > Cecil Moore <nos...@w5dxp.com> wrote:
> > >> Roger, do you understand why EE201 professors admonish
> > >> their students not to try to superpose powers?
>
> > > No, I really don't.
>
> > It is because (V1 + V2)^2 usually doesn't equal V1^2+V2^2
> > because of interference. Keith's addition of powers
> > without taking interference into account is exactly
> > the mistake that the EE201 professors were talking about.
> > One cannot validly just willy-nilly add powers. It is
> > an ignorant/sophomoric thing to do.
>
> > If we add two one watt coherent waves, do we get a two
> > watt wave? Only in a very special case. For the great
> > majority of cases, we do *NOT* get a two watt wave. In
> > fact, the resultant wave can be anywhere between zero
> > watts and four watts. The concepts behind Keith's
> > calculations are invalid. If you are also trying to
> > willy-nilly add powers associated with coherent waves,
> > your calculations are also invalid.
> > --
> > 73, Cecil http://www.w5dxp.com
>
> OK, yes, I agree. It is OK to add powers when you are adding the power used by light bulbs. It is not OK to willy nilly multiply the voltage or current by the number of bulbs to learn the power used. You must carefully consider the circuit that connects the bulbs before selecting the proper method of calculating power, especially the possibility that the bulbs may be connected to phased power as in 3 phase or in traveling waves.

My analysis used voltages, currents and impedances to compute
all the voltages and currents within the circuit. Some were
derived using superposition of voltages and currents but most
were derived using basic circuit theory (E=IR, Ztot=Z1+Z2, etc.)

Having done that, the powers for the three components (the
voltage source, resistor, and entrance to the transmission line)
in the circuit were computed. These powers were not derived using
superposition but by multiplying the current through the component

by the voltage across it. This is universally accepted as a valid operation.

Having the power functions for each of the component, we can then turn to the conservation of energy principle: The energy in a closed system is conserved.

This is the basis for the equation
Ps(t) = Prs(t) + Pg(t)
This equation says that for the system under consideration (Fig 1-1), the energy delivered by the source is equal to the energy dissipated in the resistor plus the energy delivered to the line. This is extremely basic and satisfies the conservation of energy principle. This is not superposition and any inclusion of cos(theta) terms would be incorrect.

The equation
Pg(t) = Pf.g(t) + Pr.g(t)
is more interesting. The basis for this is superposition. The forward and reverse voltage and current are superposed to derive the actual voltage and current. It would seem invalid to also sum the powers. To me it was a complete surprise that summing the voltages produces the correct total voltages and, at the same time, summing the powers (which are a squared function of the voltage) also produce the correct result.

But by starting with the equations used to derive forward and reverse voltage and current, it can be easily shown with appropriate substitution that Ptot is always equal to Pforward + Preverse (Or Pf - Pr if you use the other convention for the direction of the energy flow)s. It simply falls out from the way that Vf and Vr are derived from Vactual and Iactual.

So
Pg(t) = Pf.g(t) + Pr.g(t)
is always true. For any arbitrary waveforms. Inclusion of cos(theta) terms would be incorrect.

...Keith

3496. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 01:32:11 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13u8ocrp1e4grd4@corp.supernews.com>
Source record: 26818

Keith Dysart wrote:
> . . .
> The equation
> Pg(t) = Pf.g(t) + Pr.g(t)
> is more interesting. The basis for this is superposition.
> The forward and reverse voltage and current are superposed
> to derive the actual voltage and current. It would seem
> invalid to also sum the powers. To me it was a complete
> surprise that summing the voltages produces the correct
> total voltages and, at the same time, summing the powers
> (which are a squared function of the voltage) also
> produce the correct result.
>
> But by starting with the equations used to derive forward
> and reverse voltage and current, it can be easily shown
> with appropriate substitution that Ptot is always equal
> to Pforward + Preverse (Or Pf - Pr if you use the other
> convention for the direction of the energy flow)s. It
> simply falls out from the way that Vf and Vr are derived
> from Vactual and Iactual.

It only holds true when Z0 is purely real. Of course, when it isn't, time domain analysis becomes very much more cumbersome. But it's not hard to show the problem using steady state sinusoidal analysis, and that's where the cos term appears and is appropriate.

>
> So
> Pg(t) = Pf.g(t) + Pr.g(t)
> is always true. For any arbitrary waveforms. Inclusion
> of cos(theta) terms would be incorrect.
>
> ...Keith

Roy Lewallen, W7EL

3497. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 06:28:50 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <qj99u35ai0bs99lgmbqc41qh3k7alhb90r@4ax.com>
Source record: 26819

>
>Look up DDRR Antenna at ARRL. It works as a very short top-loaded vertical
>resonated with a capacitor.
>
>Ken Fowler, KO6NO

I hadn't associated it with the DDRR antenna. I am familiar with it a
little. Is this a variation of that?

I recognize that any small, and most stealth antennas will be
compromise antennas, but then, isn't any antenna a compromise to some
degree.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3498. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 06:42:48 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <kv99u3pbq7m1ba077rmin5anr1705vjs04@4ax.com>
Source record: 26820

On Fri, 21 Mar 2008 15:50:45 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
wrote:

>Buck wrote:
>> This is an interesting antenna. It is a mobile stealth magnetic loop
>> antenna.
>>
>> http://stealth.ae/plugins/custompages/detinf.php?id=372&id_categories=136

>Isn't this like the Q-Mac antenna sold in Australia?
>http://www.qmac.com/mobile_antennas.html

They sure look the same.

>Since the roof of a house is fairly large, a more conventional random
>length loop tuned with something like a LDG or SGC autotuner at the
>feedpoint might be a good approach. Icom IC-AH4 could probably also work.
>
That is certainly an idea I hadn't thought of. It sounds cheaper and
easier to build. The same concept could be used with raising and
lowering the antenna, but instead of a 'loop', it could be a wire.

Thought: let's assume one puts up a loop on the roof. The ground side
is a single wire running over the peak of the house roof, folds up at
90 degrees for 3-6 feet, back across the roof 6 foot above the peak
and back down to the hot lead of the autotuner. Would that not
circumvent the need for the capacitor at the far end? and would the
loop have to be trimmed to a particular size to operate the various
bands, or could the tuner actually operate with most any size loop.

Disclaimer: I know from experience that some random lengths might not
work on all bands, but some do appear to. I recognize that there
could be inefficiencies...

>
>>
>> I wonder what the size and cost of the Vacuum variable is to make a
>> similar antenna??
>>
>
>size of a pickle jar
>Several hundred dollars, depending on size, power handling, and source..
>
>http://www.surplussales.com/VaccumVarCaps/VVC5.html
>http://www.mgs4u.com/RF-Microwave/vacuum-variable-capacitors-500.htm
>

>plus you'll need to cobble up a motor and drive system.
>
>the $300 or so for a autotuner starts to look like a good deal.
>http://www.hamradio.com/web/newcat/hrocat7.pdf
>
>

I tend to agree with you here :)

>
>
>> Buck
>> N4PGW

This is what I was fishing for. Maybe the antenna design isn't the best, but the discussion is introducing variations of thinking that could be useful.

Thank you
Buck
--
73 for now
Buck, N4PGW

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3499. Re: "V" Dipole Antenna

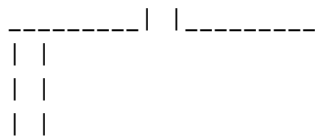
Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 06:53:29 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <sqa9u3pa1v009eb5m2jj95v5t47d08jvqq@4ax.com>
Source record: 26821

On Thu, 20 Mar 2008 13:34:40 -0700 (PDT), WB8YKH <lguyot2@gmail.com>
wrote:

>There is much literature on the inverted "V" antenna but I've found
>nothing on a "V" Dipole Antenna. Can someone help me with resources
>or information on installation and effects of a "V" Dipole? In my
>current location I am unable to raise my center point much more than
>15 feet off ground. However I can raise the endpoints 30+ feet.
>Before I go through much effort on the install I'd like to know what
>kind of performance I can expect. Thank you for your insights!
>
>73
>WB8YKH

My first thoughts are that instead of a 75 ohm antenna, you will now
have one closer to 50 ohms. It may have an unnoticeable loss figure
due to the shortened length between the ends of the antenna, and if
you tune it to a higher frequency (tune, not trimmed in length) you
may find it more of NVIS, for example, a 40 meter v-pole might be
almost equivalent to a dipole, but on 15 meters, it would point strait
up.

Question: can you pull the legs through an insulator or something so
you have hanging legs instead of a drooping center?



--
73 for now
Buck, N4PGW

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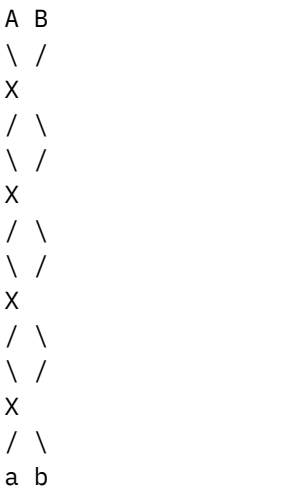
"Small - broadband - efficient: pick any two."

3500. Wrapped Antenna Feeding

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 09:46:51 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <j9k9u3ptl65h0mjujjlr0641gld26ol7at@4ax.com>
Source record: 26822



The above diagram represents a piece of material with two wires wrapped around it. One is wrapped clockwise and the other is counter clockwise. The first wire is a to A and the second is b to B.

For the sake of discussion I am going to assume the piece of material is a 1" diameter pvc pipe and the wire lengths are each 16 feet or the equivalent of a 1/4 wave for 20 meters.

I realize that the inductance will create a variation, but since this is hypothetical, I am assuming this is a 20 meter antenna. Also assume it is 20 feet or more above the ground with no ground plane radials.

There are several scenarios for feeding this antenna. My question is what kind of performance could I expect by each of the variations below?

1) Feed ab - This is like a dipole with the elements intertwined.

2) Short AB and feed ab - a closed loop

3) feed Ab - this would require additional wire to reach the ends

4) feed Ab - using bending the pvc like a hula loop.

Thank you

--
73 for now
Buck, N4PGW

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"Small - broadband - efficient: pick any two."

3501. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 10:48:51 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c88ed7e3-d047-45e7-8739-5696fb9d06ae@i7g2000prf.googlegroups.com>
Source record: 26823

On Mar 21, 9:32 pm, Roy Lewallen <w...@eznec.com> wrote:
> Keith Dysart wrote:
> > . . .
> > The equation
> > Pg(t) = Pf.g(t) + Pr.g(t)
> > is more interesting. The basis for this is superposition.
> > The forward and reverse voltage and current are superposed
> > to derive the actual voltage and current. It would seem
> > invalid to also sum the powers. To me it was a complete
> > surprise that summing the voltages produces the correct
> > total voltages and, at the same time, summing the powers
> > (which are a squared function of the voltage) also
> > produce the correct result.
>
> > But by starting with the equations used to derive forward
> > and reverse voltage and current, it can be easily shown
> > with appropriate substitution that Ptot is always equal
> > to Pforward + Preverse (Or Pf - Pr if you use the other
> > convention for the direction of the energy flow)s. It
> > simply falls out from the way that Vf and Vr are derived
> > from Vactual and Iactual.
>
> It only holds true when Z0 is purely real. Of course, when it isn't,
> time domain analysis becomes very much more cumbersome. But it's not
> hard to show the problem using steady state sinusoidal analysis, and
> that's where the cos term appears and is appropriate.
>
> >
> > So
> > Pg(t) = Pf.g(t) + Pr.g(t)
> > is always true. For any arbitrary waveforms. Inclusion
> > of cos(theta) terms would be incorrect.

Thanks for providing the limitation.

But I am having difficulty articulating where the math in the
following
derivation fails.

Starting by measuring the actual voltage and current at a single
point on the line, and wishing to derive Vf and Vr we have the
following four equations:

V = Vf + Vr
I = If - Ir

```
Zo = Vf / If
Zo = Vr / Ir

rearranging and substituting
Vf = V - Vr
= V - Zo * Ir
= V - Zo * (If - I)
= V - Zo * (Vf/Zo - I)
= V - Vf + Zo * I
= (V + Zo * I)/2
similarly
Vr = (V - Zo * I)/2

Pf = Vf * If
= Vf**2 / Zo
= ((V + Zo * I)(V + Zo * I)/4)/Zo
= (V**2 + 2(V * Zo * I) + Zo**2 * I**2) / (4 * Zo)

Pr = Vr * Ir
= (V**2 - 2(V * Zo * I) + Zo**2 * I**2) / (4 * Zo)

So, comtemplating that
P = Pf - Pr
and substituting
P = (V**2 + 2(V * Zo * I) + Zo**2 * I**2) / (4 * Zo)
- (V**2 - 2(V * Zo * I) + Zo**2 * I**2) / (4 * Zo)
= 4(V * Zo * I) / (4 * Zo)
= V * I
as required.

So when Zo is real, i.e. can be represented by R, it is
clear that P always equals Pf - Pr. And it does not even
matter which value of R is used for R. It does not have
to be the characteristic impedance of the transmission
line, the subtraction of powers still produces the correct
answer.

But when Zo has a reactive component, it still cancels
out of the equations. So why is this not a proof that
also holds for complex Zo.

I suspect it has to do with complex Zo being a concept
that only works for single frequency sinusoids, but am
having difficulty discovering exactly where it fails.

And if it is related to Zo and single frequency sinusoids,
does that mean that P = Pf - Pr also always works for
single frequency sinusoids?

...Keith
```

3502. Re: Wrapped Antenna Feeding

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 12:41:54 UTC
From: Dave <noone@nowhere.com>
Message-ID: <m87Fj.50$sR1.35@trndny08>
Source record: 26824

"Buck" <usenet01@lumpuckeroo.com> wrote in message
news:j9k9u3ptl65h0mjujjlr0641gld26ol7at@4ax.com...
>
> A B
> \ /
> X
> / \
> \ /
> X
> / \
> \ /
> X
> / \
> \ /
> X
> / \
> a b
>
> The above diagram represents a piece of material with two wires
> wrapped around it. One is wrapped clockwise and the other is counter
> clockwise. The first wire is a to A and the second is b to B.
>
> For the sake of discussion I am going to assume the piece of material
> is a 1" diameter pvc pipe and the wire lengths are each 16 feet or the
> equivalent of a 1/4 wave for 20 meters.
>
> I realize that the inductance will create a variation, but since this
> is hypothetical, I am assuming this is a 20 meter antenna. Also
> assume it is 20 feet or more above the ground with no ground plane
> radials.
>
> There are several scenarios for feeding this antenna. My question is
> what kind of performance could I expect by each of the variations
> below?
>
> 1) Feed ab - This is like a dipole with the elements intertwined.
>
> 2) Short AB and feed ab - a closed loop
>
> 3) feed Ab - this would require additional wire to reach the ends
>
> 4) feed Ab - using bending the pvc like a hula loop.
>
> Thank you

>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

results will be bad, better than a dummy load but not by much. google for
ctha and stop listening to art.

http://www.antennex.com/preview/Folder03/Nov5/ctha.htm
http://www.cira.wvu.edu/index.php?/maincira/projects/ctha
http://ieeexplore.ieee.org/Xplore/login.jsp?url=/iel3/4198/12335/00569433.pdf?arnumber=569
433

3503. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 13:36:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <PX7Fj.20658$Ch6.18343@newssvr11.news.prodigy.net>
Source record: 26825

Keith Dysart wrote:
> Roger Sparks <rspa...@elltel.net> wrote:

> Ooooppps. That should have been Vg(t) = Vf.g(t) + Vr.g(t)
>
>> but doesn't this describe the standing wave?
>
> Not by itself. It is simply the function describing the voltage at
> point g.

The net total voltage at point g is the standing wave
voltage that is present at that point.
--
73, Cecil http://www.w5dxp.com

3504. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 13:58:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tg8Fj.7488$Rq1.996@nlpi068.nbdc.sbc.com>
Source record: 26826

Keith Dysart wrote:
> Actually the flip-flopping I was referring to was the
> constant changes in your view of the limitations that
> apply to your claim.

As I said, I corrected an error in my thinking. You
are free to consider that to be a flip-flop, I consider
it to be a step forward.

> Are you now agreeing that the
> energy in the reflected wave is only dissipated in the
> source resistor for those instances when Vs is 0?

Yes, for instantaneous reflected energy exactly as I
previously stated, but not true for average reflected
energy. 100% of the average reflected energy is
dissipated in the source resistor when the transmission
line is 45 degrees long. That intra-cycle interference
exists, thus delaying the dissipation by 90 degrees,
is irrelevant to where the net energy winds up going.

Your conservation of power principle would have you
demanding that the power sourced by a battery charger
must be instantaneously dissipated. Everyone except
you seems to realize that is an invalid concept. The
dissipation of energy can be delayed by a battery
or a reactance. In the present example, the dissipation
of the instantaneous reflected energy is delayed by
90 degrees by the reactance.

> I could not find them in the archive. Could you kindly provide
> them again, showing where the 'cos(A)' term fits in the
> equations:

Go back and read the part where I said cos(0)=+1 and
cos(180)=-1. There is no such thing as conservation of
power. Your equations assume a conservation of power
principle that doesn't exist in reality. The forward
power is positive power. The reflected power is positive
power. The only negative power is destructive interference
which must be offset by an equal magnitude of constructive
interference. When the instantaneous interference power is
negative, the two voltages are 180 degrees out of phase and
that is your cos(180)=-1. When the instantaneous interference
power is positive, the two voltages are in phase and that
is your cos(0)=+1. Why don't you already know all this

elementary stuff?
--
73, Cecil http://www.w5dxp.com

3505. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 14:04:35 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <ff1c1a44-8257-4aca-b969-bfbe6a17f3d2@d4g2000prg.googlegroups.com>
Source record: 26827

On Mar 22, 9:36 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Roger Sparks <rspa...@elltel.net> wrote:
> > Oooopppps. That should have been Vg(t) = Vf.g(t) + Vr.g(t)
>
> >> but doesn't this describe the standing wave?
>
> > Not by itself. It is simply the function describing the voltage at
> > point g.
>
> The net total voltage at point g is the standing wave
> voltage that is present at that point.

I suppose that is a name you could use, but do you still
call it "standing wave voltage" when there is no
reflected wave, i.e. Vr is 0 for all time. There is
no standing wave when Vr is always 0.

...Keith

3506. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 14:14:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fv8Fj.27642$R84.23594@newssvr25.news.prodigy.net>
Source record: 26828

Keith Dysart wrote:
> Ps(t) = 100 + 116.6190379cos(2wt-30.96375653)
> Prs(t) = 68 + 68cos(2wt-61.92751306)
> Pg(t) = 32 + 68cos(2wt)
> Pf.g(t) = 50 + 50cos(2wt)
> Pr.g(t) = -18 + 18cos(2wt)

Now it is time for you to explain exactly why you
believe in a conservation of power principle. Do
you demand that the instantaneous power delivered
by a battery charger be instantaneously dissipated
in the battery being charged? If not, why do you
require such for the example under discussion?

The correct equation for adding the powers above is?

Prs(t) = Pf.g(t) + Pr.g(t) +/- 2*SQRT[Pf.g(t)*Pr.g(t)]

The last term is the interference term. The sign of
the interference term is negative if Vf.g(t) and
Vr.g(t) are out of phase. The sign of the interference
term is positive if Vf.g(t) and Vr.g(t) are in phase.
Vf.g(t) and Vr.g(t) are in phase for half of the cycle.
Vf.g(t) and Vr.g(t) are out of phase for the other half
of the cycle. The "excess" energy from the destructive
interference is dissipated in the source resistor as
constructive interference after being delayed by 90
degrees.
--
73, Cecil http://www.w5dxp.com

3507. Re: Wrapped Antenna Feeding

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 14:18:27 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <72f17b72-b85a-46c2-9a22-0e2b88c17e35@s8g2000prg.googlegroups.com>
Source record: 26829

On 22 mar, 10:46, Buck <usene...@lumpuckeroo.com> wrote:
> A B
> \ /
> X
> / \
> \ /
> X
> / \
> \ /
> X
> / \
> \ /
> X
> / \
> a b
>
> The above diagram represents a piece of material with two wires
> wrapped around it. One is wrapped clockwise and the other is counter
> clockwise. The first wire is a to A and the second is b to B.
>
> For the sake of discussion I am going to assume the piece of material
> is a 1" diameter pvc pipe and the wire lengths are each 16 feet or the
> equivalent of a 1/4 wave for 20 meters.
>
> I realize that the inductance will create a variation, but since this
> is hypothetical, I am assuming this is a 20 meter antenna. Also
> assume it is 20 feet or more above the ground with no ground plane
> radials.
>
> There are several scenarios for feeding this antenna. My question is
> what kind of performance could I expect by each of the variations
> below?
>
> 1) Feed ab - This is like a dipole with the elements intertwined.
>
> 2) Short AB and feed ab - a closed loop
>
> 3) feed Ab - this would require additional wire to reach the ends
>
> 4) feed Ab - using bending the pvc like a hula loop.
>
> Thank you
>
> --

> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

Hello Buck,

Assuming real world materials are used:

Both AB, ab (situations 1 and 2) whether shorted or not will be a very, very bad radiator (you made a twisted pair as distance between wires << Wave Length). It is an electrically small structure; you don't get end-fire (upwards) radiation.

Your situation 3 depends on the routing of the return wire, so this one cannot be answered

Situation 4 will radiate as a loop (assuming symmetrical feed so that feed line does not contribute to radiation).

Best will be connect ab and feed over ground or counterpoise (running horizontally or downwards).

Best regards,

Wim
PA3DJS
www.tetech.nl
remove abc from the mail address.

3508. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 14:38:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hR8Fj.27753$R84.3276@newssvr25.news.prodigy.net>
Source record: 26830

Keith Dysart wrote:
> To me it was a complete
> surprise that summing the voltages produces the correct
> total voltages and, at the same time, summing the powers
> (which are a squared function of the voltage) also
> produce the correct result.

Why is that a surprise to you? I have been telling you
for many days about that special case where:

(V1^2 + V2^2) = (V1 + V2)^2 for zero interference

This applies equally well to phasors or instantaneous
values of voltage. The above special case is what my
Part 1 article is all about.

Since a 45 degree long transmission line forces the
above RMS voltage equation to be true for all values of
resistive loads, the *average* reflected power based on
RMS voltage values is *always* dissipated in the source
resistor. Since a conservation of power principle does
not exist, it is perfectly acceptable for destructive
interference energy to be stored for part of the cycle
and be dissipated later in the cycle.

> So
> Pg(t) = Pf.g(t) + Pr.g(t)
> is always true.

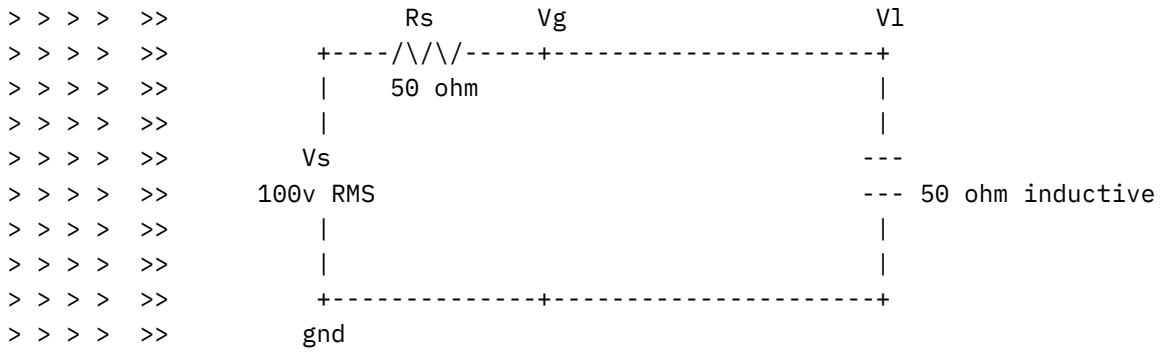
Of course it is true but it says absolutely nothing about
the dissipation of the reflected power in the source resistor
which is the subject of the discussion. The above equation
remains always true while the dissipation of the reflected
power in the source resistor varies from 0% to 100%.
--
73, Cecil http://www.w5dxp.com

3509. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 14:50:36 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080322075036.8b0c6350.rsparks@elltel.net>
Source record: 26831

On Fri, 21 Mar 2008 17:08:39 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 21, 9:12 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Fri, 21 Mar 2008 05:10:01 -0700 (PDT)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Mar 20, 1:07 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > > Keith Dysart wrote:
> > > > > On Mar 16, 10:21 am, Cecil Moore <nos...@w5dxp.com> wrote:
> > > > snip
> > > > >> Would you please explain how energy is conserved in the
> > > > >> following example at the zero-crossing point for Vs?
> >
> > > > >>   Rs   Vg   Vl
> > > > >>   +----/\/\/-----+----------------------+
> > > > >> | 50 ohm |
> > > > >> | |
> > > > >>   Vs   45 degrees | Shorted
> > > > >>   100v RMS   50 ohm line | Stub
> > > > >> | |
> > > > >> | |
> > > > >>   +--------------+----------------------+
> > > > >>   gnd
> >
> > > > >> At the zero-crossing of Vs, Ps(t) = 0, i.e. the source
> > > > >> is supplying zero watts at that time but Prs(t) = 100w.
> > > > >> Where is the 100 watts coming from?
> >
> > > > For the first 90 degrees of time, the circuit can be represented as
> >
> > > > >>   Rs   Vg   Vl
> > > > >>   +----/\/\/-----+----------------------+
> > > > >> | 50 ohm |
> > > > >> | /
> > > > >>   Vs   \ 50 ohm resistor
> > > > >>   100v RMS   /
> > > > >> | \
> > > > >> | |
> > > > >>   +--------------+----------------------+
> > > > >>   gnd
> >
> > > > After 90 degrees of time has passed, the circuit can be represented as
> >



HEAVILY CLIPPED

> > We differ on how to utilize the term Pg(t). I think it describes the standing wave, not the voltage across Rs.
>
> I describe Vg(t) as the actual voltage that would be measured by an
> oscilloscope at the point g; i.e. the beginning of the transmission
> line. It is certainly not the voltage across Rs. Perhaps it IS what
> you mean by standing wave. In any case the voltage across the resistor
> is
> Vs(t) = Vrs(t) + Vg(t)
> Vrs(t) = Vs(t) - Vg(t)
>
> Pg(t) is the power being delivered to the transmission line at any
> instance t.
> Pg(t) = Vg(t) * Ig(t)
>
> ...Keith

You gave a very thoughtful reply Keith. It looks to me like two perspectives, both right so far as the analysis has proceeded.

--

73, Roger, W7WKB

3510. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 14:55:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <859Fj.27754$R84.14365@newssvr25.news.prodigy.net>
Source record: 26832

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> The net total voltage at point g is the standing wave
>> voltage that is present at that point.
>
> I suppose that is a name you could use, but do you still
> call it "standing wave voltage" when there is no
> reflected wave, i.e. Vr is 0 for all time. There is
> no standing wave when Vr is always 0.

We are not discussing matched systems. If the total
RMS voltage differs from the RMS forward voltage,
then Vr is NOT zero.
--
73, Cecil http://www.w5dxp.com

3511. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 15:17:00 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080322081700.db3f00aa.rsparks@elltel.net>
Source record: 26833

On Sat, 22 Mar 2008 03:48:51 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 21, 9:32 pm, Roy Lewallen <w...@eznec.com> wrote:
> > Keith Dysart wrote:
> > > . . .
> > > The equation
> > > Pg(t) = Pf.g(t) + Pr.g(t)
> > > is more interesting. The basis for this is superposition.
> > > The forward and reverse voltage and current are superposed
> > > to derive the actual voltage and current. It would seem
> > > invalid to also sum the powers. To me it was a complete
> > > surprise that summing the voltages produces the correct
> > > total voltages and, at the same time, summing the powers
> > > (which are a squared function of the voltage) also
> > > produce the correct result.
> >
> > > But by starting with the equations used to derive forward
> > > and reverse voltage and current, it can be easily shown
> > > with appropriate substitution that Ptot is always equal
> > > to Pforward + Preverse (Or Pf - Pr if you use the other
> > > convention for the direction of the energy flow)s. It
> > > simply falls out from the way that Vf and Vr are derived
> > > from Vactual and Iactual.
> >
> > It only holds true when Z0 is purely real. Of course, when it isn't,
> > time domain analysis becomes very much more cumbersome. But it's not
> > hard to show the problem using steady state sinusoidal analysis, and
> > that's where the cos term appears and is appropriate.
> >
> > >
> > > So
> > > Pg(t) = Pf.g(t) + Pr.g(t)
> > > is always true. For any arbitrary waveforms. Inclusion
> > > of cos(theta) terms would be incorrect.
>
> Thanks for providing the limitation.
>
> But I am having difficulty articulating where the math in the
> following
> derivation fails.
>
> Starting by measuring the actual voltage and current at a single
> point on the line, and wishing to derive Vf and Vr we have the

> following four equations:
>
> V = Vf + Vr
> I = If - Ir
> Zo = Vf / If
> Zo = Vr / Ir
>
> rearranging and substituting
> Vf = V - Vr
> = V - Zo * Ir
> = V - Zo * (If - I)
> = V - Zo * (Vf/Zo - I)
> = V - Vf + Zo * I
> = (V + Zo * I)/2
> similarly
> Vr = (V - Zo * I)/2
>
> Pf = Vf * If
> = Vf**2 / Zo
> = ((V + Zo * I)(V + Zo * I)/4)/Zo
> = (V**2 + 2(V * Zo * I) + Zo**2 * I**2) / (4 * Zo)
>
> Pr = Vr * Ir
> = (V**2 - 2(V * Zo * I) + Zo**2 * I**2) / (4 * Zo)
>
> So, comtemplating that
> P = Pf - Pr
> and substituting
> P = (V**2 + 2(V * Zo * I) + Zo**2 * I**2) / (4 * Zo)
> - (V**2 - 2(V * Zo * I) + Zo**2 * I**2) / (4 * Zo)
> = 4(V * Zo * I) / (4 * Zo)
> = V * I
> as required.
>
> So when Zo is real, i.e. can be represented by R, it is
> clear that P always equals Pf - Pr. And it does not even
> matter which value of R is used for R. It does not have
> to be the characteristic impedance of the transmission
> line, the subtraction of powers still produces the correct
> answer.
>
> But when Zo has a reactive component, it still cancels
> out of the equations. So why is this not a proof that
> also holds for complex Zo.
>
> I suspect it has to do with complex Zo being a concept
> that only works for single frequency sinusoids, but am
> having difficulty discovering exactly where it fails.
>
> And if it is related to Zo and single frequency sinusoids,

> does that mean that P = Pf - Pr also always works for
> single frequency sinusoids?
>
> ...Keith

I am very impressed with this series of equations/relationships. These equations clarify your previous postings and provide a basis for future enrichment.

I think that a complex Zo would not be a transmission line, but would be an end point. Any complex end point could be represented by a length of transmission line with a resistive termination. Once that substitution was made, the problem should come back to the basic equations you presented here.
--
73, Roger, W7WKB

3512. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 15:29:31 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <Zs2dnQy2ncpHuHjanZ2dnUVZ_oimnZ2d@comcast.com>
Source record: 26834

"Buck" <usenet01@lumpuckeroo.com> wrote in message
news:sqa9u3pa1v009eb5m2jj95v5t47d08jvqq@4ax.com...
> On Thu, 20 Mar 2008 13:34:40 -0700 (PDT), WB8YKH <lguyot2@gmail.com>
> wrote:
>
>>There is much literature on the inverted "V" antenna but I've found
>>nothing on a "V" Dipole Antenna. Can someone help me with resources
>>or information on installation and effects of a "V" Dipole? In my
>>current location I am unable to raise my center point much more than
>>15 feet off ground. However I can raise the endpoints 30+ feet.
>>Before I go through much effort on the install I'd like to know what
>>kind of performance I can expect. Thank you for your insights!
>>
>>73
>>WB8YKH
>
> My first thoughts are that instead of a 75 ohm antenna, you will now
> have one closer to 50 ohms. It may have an unnoticeable loss figure
> due to the shortened length between the ends of the antenna, and if
> you tune it to a higher frequency (tune, not trimmed in length) you
> may find it more of NVIS, for example, a 40 meter v-pole might be
> almost equivalent to a dipole, but on 15 meters, it would point strait
> up.
>
> Question: can you pull the legs through an insulator or something so
> you have hanging legs instead of a drooping center?
>
>
> _________| |_________
> | |
> | |
> | |
>
>
>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

If you have horizontal room, you can do somewhat better. Put insulators on the ends, and pull out the ends so they go down at 45 degrees, or something, rather than hanging straight down. I am doing this on a 75 meter dipole that is supported by two 80 foot trees that are 60 feet apart. The antenna looks somethging like an upside down W.

Tam/WB2TT

3513. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 18:48:16 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <5a6bffd5-b85d-4bdd-80d9-10fce944eddd@s13g2000prd.googlegroups.com>
Source record: 26835
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 21, 10:02 am, Artem <artem.b...@gmail.com> wrote:
> On Mar 21, 6:26 pm, K7ITM <k7...@msn.com> wrote:
>
> > On Mar 21, 3:08 am, Artem <artem.b...@gmail.com> wrote:
>
> > > Sources is not grounded.
>
> > Yes, unfortunately noise that is generated more than one or two
> > wavelengths away from your antenna will be almost entirely
> > electromagnetic by the time it reaches your antenna. Antennas do not
> > differentiate between "electrically generated" and "magnetically
> > generated" noise, when you are far enough that the electromagnetic
>
> I did not hear nothing about electrically or magnetically photons.
> It's just photons.

:-) Oh, no, not photons again! When you are near to a source -- to a
transmitting antenna or to a computer radiating noise -- the fields in
general have not developed fully into electromagnetic waves -- photons
if you wish. It is quite usual that, close to the source, either the
electric or the magnetic field will dominate. Often from noise
sources, the near field is predominantly electric, and a properly done
loop antenna will reject that, responding only to the, um, photons.
>
> > field dominates over any near-field electric or magnetic field. The
> > balanced small loop is good for rejecting electric-field noise only if
> > (1) the noise is generated close to the antenna and
>
> Yes. Computer, lamps etc close to antenna.
>
> > (2) the antenna is
> > close to the ground (so the electric field is guaranteed to be nearly
>
> 15 floor of 16-floor building. But I think that in this case "ground"
> are building walls.

There is a hint here: it is common that tall buildings incorporate a
lot of steel, and that will likely act as a shield. I hope this
antenna is not mounted inside!
>
> > vertical) -- -- where "close" means relative to a wavelength. So the
> > small balanced loop is especially good for LF and VLF work.
>
> my reason was make narrow-band antenna. For reject all out of band

> noise.

A reasonable thing to do, though a good receiver with a low-distortion and fairly narrow-band front end should not have trouble with out-of-band signals (noise). Do you have a quantitative measure of just how strong this out of band noise is? I'd personally much rather use a preselection filter separate from the antenna, and close to my operating position, to reject out-of-band signals. Even though the antenna you have described has very high Q, I believe I could do better with a two or three resonator filter running at lower Q, since the slope of the attenuation versus frequency is much greater. Unless there was some especially strong signal in the band, I would at least consider a fixed-tuned bandpass filter that covered my band of interest, assuming that band is fairly narrow such as 7.0-7.1MHz.

Can you tell that you are getting the expected antenna bandwidth, about 3kHz at the 3dB points at 7MHz?

If the amplifier at the antenna has a tendency to oscillate, it very likely also has poor intermodulation performance. Be careful that it doesn't destroy the benefits you are trying to obtain.

Cheers,
Tom

3514. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 19:20:33 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <5_cFj.256$rb6.211@trnddc01>
Source record: 26836

<no@spam.net> wrote in message
news:u1c6u3hftt7nodebdvjl85olq7m80e9lgu@4ax.com...
> Do a search for "tape measure antenna". It is a simple to build yagi
> antenna made of pvc pipe with elements made from a metal measuring
> tape. You can rescale it to your frequency.
>
> Kingfish

Thanks Kingfish. That's pretty cool! It's actually much like what we're
using now... A 4 element Yagi, though ours don't have the flexible elements
like one made of tape measure.

3515. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 19:20:33 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <5_cFj.257$rb6.143@trnddc01>
Source record: 26837

"Richard Clark" <kb7qhc@comcast.net> wrote in message > Research the Google newsgroups (for this newsgroup specifically)
> archive with the keyword "foxhunt." There are more issues than just
> directionality to be considered.
>
> ARMYbrat Richard Clark, KB7QHC

Thanks ARMYbrat. This USMCbrat appreciates it, and everything else! :)

Most of what I've found thus far is about the same as what we're currently using, which is a flat 4 element Yagi. I may not be versed enough to describe the plans I'm looking for, but when I find them I'll post here.

The antenna I'm looking for is perhaps better described as a 4 element Box or Cube Yagi where the frame is built of 1/2 inch PCV and the elements are fairly heavy guage wire. There's no sharp points to hurt someone's eye, which is frowned upon by the California Highway Patrol for use in their helicopters. There's a guy that I trained with who has the plans and hasn't yet gotten back to me with them, but I'll be persistent and let people here know when I get the plans.

3516. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 19:35:04 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <IbdFj.210$N_5.100@trnddc05>
Source record: 26838

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in message
> You might do a bit of research on the equipment that various animal
> tracking organizations use. They tend to use the 215 - 218 MHz band for
> tracking various animal species, and the equipment should suit your needs
> also.

Thanks Ed. That's a good idea, and you're exactly right... what we're doing looks just like what you'd see on a television nature show where someone had a radio collar on a lion or something like that. We're applying the same technology to Alzheimer's patients who are at risk of wandering.

3517. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 20:18:39 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <64l7t9F2anqplU1@mid.individual.net>
Source record: 26839

[several references to]
... "messenger line"...

Hotwire fencing. The stuff that we put around horse
pastures. For intended use, it connects to a hi volt,
low current, pulsed source.

There is a version of the 'wire' that is very fine gauge wire,
perhaps 28 ga or smaller, woven into nylon webbing.
You can tie it in knots, put a lot of tension
on it, without bothering the conductor.

Built in messenger line with the element.

Lumpy n0eq

You Played on Lawrence Welk?
Yes but no blue notes. Just blue hairs.

www.LumpyGuitar.net

3518. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 20:38:43 UTC
From: WB8YKH <lguyot2@gmail.com>
Message-ID: <48db1c65-f2b2-4be9-8902-00f287b60930@e60g2000hsh.googlegroups.com>
Source record: 26840

On Mar 22, 11:29 am, "Tam" <t-tamm...@comcast.net> wrote:
> "Buck" <usene...@lumpuckeroo.com> wrote in message
>
> news:sqa9u3pa1v009eb5m2jj95v5t47d08jvqq@4ax.com...
>
>
>
>
>
> > On Thu, 20 Mar 2008 13:34:40 -0700 (PDT), WB8YKH <lguy...@gmail.com>
> > wrote:
>
> >>There is much literature on the inverted "V" antenna but I've found
> >>nothing on a "V" Dipole Antenna. Can someone help me with resources
> >>or information on installation and effects of a "V" Dipole? In my
> >>current location I am unable to raise my center point much more than
> >>15 feet off ground. However I can raise the endpoints 30+ feet.
> >>Before I go through much effort on the install I'd like to know what
> >>kind of performance I can expect. Thank you for your insights!
>
> >>73
> >>WB8YKH
>
> > My first thoughts are that instead of a 75 ohm antenna, you will now
> > have one closer to 50 ohms. It may have an unnoticeable loss figure
> > due to the shortened length between the ends of the antenna, and if
> > you tune it to a higher frequency (tune, not trimmed in length) you
> > may find it more of NVIS, for example, a 40 meter v-pole might be
> > almost equivalent to a dipole, but on 15 meters, it would point strait
> > up.
>
> > Question: can you pull the legs through an insulator or something so
> > you have hanging legs instead of a drooping center?
>
> >   _________| |_________
> > | |
> > | |
> > | |
>
> > --
> > 73 for now
> > Buck, N4PGW
>
> >www.lumpuckeroo.com

>
> > "Small - broadband - efficient: pick any two."
>
> If you have horizontal room, you can do somewhat better. Put insulators on
> the ends, and pull out the ends so they go down at 45 degrees, or something,
> rather than hanging straight down. I am doing this on a 75 meter dipole that
> is supported by two 80 foot trees that are 60 feet apart. The antenna looks
> somethging like an upside down W.
>
> Tam/WB2TT- Hide quoted text -
>
> - Show quoted text -

N4PGW and WB2TT - Your responses were very interesting to me and certainly worth my try. Yes, with my low center feed on the bazooka coax dipole I can drop the ends to form an "M" shape. Do you know how the radiation pattern would be effected? WB8YKH

3519. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 22:57:18 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080322155718.190b8855.rsparks@elltel.net>
Source record: 26841

On Sat, 22 Mar 2008 14:14:35 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Keith Dysart wrote:
> > Ps(t) = 100 + 116.6190379cos(2wt-30.96375653)
> > Prs(t) = 68 + 68cos(2wt-61.92751306)
> > Pg(t) = 32 + 68cos(2wt)
> > Pf.g(t) = 50 + 50cos(2wt)
> > Pr.g(t) = -18 + 18cos(2wt)
>
> Now it is time for you to explain exactly why you
> believe in a conservation of power principle. Do
> you demand that the instantaneous power delivered
> by a battery charger be instantaneously dissipated
> in the battery being charged? If not, why do you
> require such for the example under discussion?
>
> The correct equation for adding the powers above is?
>
> Prs(t) = Pf.g(t) + Pr.g(t) +/- 2*SQRT[Pf.g(t)*Pr.g(t)]
>
Prs(t) = Pf.g(t) + Pr.g(t) +/- 2*SQRT[Pf.g(t)*Pr.g(t)]

= [SQRT(pf.g(t) + SQRT(pr.g(t)]^2

and/or= [SQRT(pf.g(t) - SQRT(pr.g(t)]^2

How can we justify calling the +/- 2*SQRT[Pf.g(t)*Pr.g(t) term the "interference term"?

Am I correct in assuming that this equation describes the instantaneous power delivered to Rs?

> The last term is the interference term. The sign of
> the interference term is negative if Vf.g(t) and
> Vr.g(t) are out of phase. The sign of the interference
> term is positive if Vf.g(t) and Vr.g(t) are in phase.
> Vf.g(t) and Vr.g(t) are in phase for half of the cycle.
> Vf.g(t) and Vr.g(t) are out of phase for the other half
> of the cycle. The "excess" energy from the destructive
> interference is dissipated in the source resistor as
> constructive interference after being delayed by 90
> degrees.
> --
> 73, Cecil http://www.w5dxp.com

--
73, Roger, W7WKB

3520. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-22 23:22:28 UTC
From: John KD5YI <groups1.jocjo@xoxy.net>
Message-ID: <UwgFj.534$Ew5.9@trnddc04>
Source record: 26842

"usmcbrat" <president@whitehouse.gov> wrote in message
news:5_cFj.257$rb6.143@trnddc01...
>
> "Richard Clark" <kb7qhc@comcast.net> wrote in message > Research the
> Google newsgroups (for this newsgroup specifically)
>> archive with the keyword "foxhunt." There are more issues than just
>> directionality to be considered.
>>
>> ARMYbrat Richard Clark, KB7QHC
>
> Thanks ARMYbrat. This USMCbrat appreciates it, and everything else! :)
>
> Most of what I've found thus far is about the same as what we're currently
> using, which is a flat 4 element Yagi. I may not be versed enough to
> describe the plans I'm looking for, but when I find them I'll post here.
>
> The antenna I'm looking for is perhaps better described as a 4 element Box
> or Cube Yagi where the frame is built of 1/2 inch PCV and the elements are
> fairly heavy guage wire. There's no sharp points to hurt someone's eye,
> which is frowned upon by the California Highway Patrol for use in their
> helicopters. There's a guy that I trained with who has the plans and
> hasn't yet gotten back to me with them, but I'll be persistent and let
> people here know when I get the plans.

Search Google with "cubical quad" and you'll find what you want, I think.
There are even some calculators for this type antenna listed.

http://en.wikipedia.org/wiki/Quad_antenna

73,
John

3521. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 02:06:04 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <cdKdnYYwPOeXJnjanZ2dnUVZ_g2dnZ2d@comcast.com>
Source record: 26843

"WB8YKH" <lguyot2@gmail.com> wrote in message
news:48db1c65-f2b2-4be9-8902-00f287b60930@e60g2000hsh.googlegroups.com...
On Mar 22, 11:29 am, "Tam" <t-tamm...@comcast.net> wrote:
> "Buck" <usene...@lumpuckeroo.com> wrote in message
>
> news:sqa9u3pa1v009eb5m2jj95v5t47d08jvqq@4ax.com...
>
>
>
>
>
> > On Thu, 20 Mar 2008 13:34:40 -0700 (PDT), WB8YKH <lguy...@gmail.com>
> > wrote:
>
> >>There is much literature on the inverted "V" antenna but I've found
> >>nothing on a "V" Dipole Antenna. Can someone help me with resources
> >>or information on installation and effects of a "V" Dipole? In my
> >>current location I am unable to raise my center point much more than
> >>15 feet off ground. However I can raise the endpoints 30+ feet.
> >>Before I go through much effort on the install I'd like to know what
> >>kind of performance I can expect. Thank you for your insights!
>
> >>73
> >>WB8YKH
>
> > My first thoughts are that instead of a 75 ohm antenna, you will now
> > have one closer to 50 ohms. It may have an unnoticeable loss figure
> > due to the shortened length between the ends of the antenna, and if
> > you tune it to a higher frequency (tune, not trimmed in length) you
> > may find it more of NVIS, for example, a 40 meter v-pole might be
> > almost equivalent to a dipole, but on 15 meters, it would point strait
> > up.
>
> > Question: can you pull the legs through an insulator or something so
> > you have hanging legs instead of a drooping center?
>
> > _________| |_________
> > | |
> > | |
> > | |
>
> > --
> > 73 for now
> > Buck, N4PGW

>
> >www.lumpuckeroo.com
>
> > "Small - broadband - efficient: pick any two."
>
> If you have horizontal room, you can do somewhat better. Put insulators on
> the ends, and pull out the ends so they go down at 45 degrees, or
> something,
> rather than hanging straight down. I am doing this on a 75 meter dipole
> that
> is supported by two 80 foot trees that are 60 feet apart. The antenna
> looks
> somethging like an upside down W.
>
> Tam/WB2TT- Hide quoted text -
>
> - Show quoted text -

N4PGW and WB2TT - Your responses were very interesting to me and
certainly worth my try. Yes, with my low center feed on the bazooka
coax dipole I can drop the ends to form an "M" shape. Do you know how
the radiation pattern would be effected? WB8YKH

I haven't tried it with the ends hanging straight down, but mine is the same
length as a regular dipole. EZNEC plot looks like a dipoles.

Tam

3522. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 02:27:44 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A69C5FCF7E61Huckleberrybigvalley@198.186.192.196>
Source record: 26844

> Thanks Ed. That's a good idea, and you're exactly right... what we're
> doing looks just like what you'd see on a television nature show where
> someone had a radio collar on a lion or something like that. We're
> applying the same technology to Alzheimer's patients who are at risk
> of wandering.
>
>
>

You're welcome. You might also consider some of the new GPS
products.... often made for tracking cars... but some small enough to place
on a person. You could sit at the comfort of a computer and track them!

Ed :^)

3523. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 10:32:57 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <90544a2d-eef5-47a8-898c-a74d933f8fd8@s13g2000prd.googlegroups.com>
Source record: 26845

On Mar 22, 10:14 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Ps(t) = 100 + 116.6190379cos(2wt-30.96375653)
> > Prs(t) = 68 + 68cos(2wt-61.92751306)
> > Pg(t) = 32 + 68cos(2wt)
> > Pf.g(t) = 50 + 50cos(2wt)
> > Pr.g(t) = -18 + 18cos(2wt)
>
> Now it is time for you to explain exactly why you
> believe in a conservation of power principle. Do
> you demand that the instantaneous power delivered
> by a battery charger be instantaneously dissipated
> in the battery being charged?

Are you making this a trick question by using the
word "dissipated"?

If not, then yes. Consider my laptop which has an
external power supply connected by a cord to the
laptop.

Conservation of energy means that the instantaneous
energy flow (i.e. power) along this cord into the
laptop is always exactly equal to the sum of
- the sum of energy being dissipated as heat
in each individual component
- the increase in energy being stored in
components such as capacitors, inductors
and batteries, minus any stored energy
being returned from components such as
capacitors, inductors and batteries
- energy being emitted such as
- light (e.g. display)
- sound (e.g. fans, speakers)
- RF (e.g. Wifi antennas, RFI)
- etc.

So yes, the phrase "conservation of power" is
appropriately descriptive and follows from
conservation of energy.

> If not, why do you
> require such for the example under discussion?

I require it for both.

> The correct equation for adding the powers above is?
>
> Prs(t) = Pf.g(t) + Pr.g(t) +/- 2*SQRT[Pf.g(t)*Pr.g(t)]
>
> The last term is the interference term. The sign of
> the interference term is negative if Vf.g(t) and
> Vr.g(t) are out of phase. The sign of the interference
> term is positive if Vf.g(t) and Vr.g(t) are in phase.
> Vf.g(t) and Vr.g(t) are in phase for half of the cycle.
> Vf.g(t) and Vr.g(t) are out of phase for the other half
> of the cycle. The "excess" energy from the destructive
> interference is dissipated in the source resistor as
> constructive interference after being delayed by 90
> degrees.

Where is "cos(theta)" in this?
And what "theta" is to be used?
Is it the same theta that was used to conclude that
this was a "no interference" example?
See "A Simple Voltage Source - No Interference" at
http://www.w5dxp.com/intfr.htm

So the plus/minus in the equation aboves means that
for part of the cycle we should add and part of the
cycle we should subtract.
This equation is ambiguous and is therefore incomplete
since it does not tell us when we should add and when
we should subtract.
Could you provide a mathematically precise description
of when we should do each?

Where is this destructive interference energy stored
while waiting to be dissipated constructively later?
If it is in a capacitance, which one? Does the
voltage on the capacitance increase appropriately
to account for the energy being stored?
Similarly if it is stored in an inductance.

...Keith

3524. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 10:33:47 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <41e6c570-4465-48ca-9ae2-5c794722112b@i7g2000prf.googlegroups.com>
Source record: 26846

On Mar 22, 10:55 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
> >> The net total voltage at point g is the standing wave
> >> voltage that is present at that point.
>
> > I suppose that is a name you could use, but do you still
> > call it "standing wave voltage" when there is no
> > reflected wave, i.e. Vr is 0 for all time. There is
> > no standing wave when Vr is always 0.
>
> We are not discussing matched systems. If the total
> RMS voltage differs from the RMS forward voltage,
> then Vr is NOT zero.

True for this example. But it is generally unwise to pick
names or descriptions that will have to change when
the component values are changed.

...Keith

3525. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 10:42:36 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a2ceebe3-5eeb-49ba-a4ae-db7883a34e30@e6g2000prf.googlegroups.com>
Source record: 26847

On Mar 22, 11:17 am, Roger Sparks <rspa...@elltel.net> wrote:
> I think that a complex Zo would not be a transmission line, but would be an end point.
 Any complex end point could be represented by a length of transmission line with a
resistive termination. Once that substitution was made, the problem should come back to
the basic equations you presented here.

The characteristic impedance for a transmission line is
Zo = sqrt((R + jwL) / (G + jwC))

For a lossline (no resistance in the conductors, and no
conductance between the conductors), this simplifies to
Zo = sqrt(L / C)

So real lines actually have complex impedances. But the
math is simpler for ideal (lossless) lines and there is
much to be learned from studying the simplified examples.

But caution is needed when taking these results to
the real world of lines with loss.

...Keith

3526. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 12:10:26 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080323051026.b2b5da1e.rsparks@elltel.net>
Source record: 26848

On Sun, 23 Mar 2008 03:42:36 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 22, 11:17 am, Roger Sparks <rspa...@elltel.net> wrote:
> > I think that a complex Zo would not be a transmission line, but would be an end point. Any complex end point could be represented by a length of transmission line with a resistive termination. Once that substitution was made, the problem should come back to the basic equations you presented here.
>
> The characteristic impedance for a transmission line is
> Zo = sqrt((R + jwL) / (G + jwC))
>
> For a lossline (no resistance in the conductors, and no
> conductance between the conductors), this simplifies to
> Zo = sqrt(L / C)
>
> So real lines actually have complex impedances. But the
> math is simpler for ideal (lossless) lines and there is
> much to be learned from studying the simplified examples.
>
> But caution is needed when taking these results to
> the real world of lines with loss.
>
> ...Keith

Yes, I concur with these comments.

The characteristic impedance can also be found from

Zo = 1/(C*Vel)

where C is the capacitance of the line per unit distance and Vel is the velocity of the wave.

This second solution for Zo demonstrates the power storage capabilities of the transmission line over time.

But as you say, real lines also have resistance losses and other losses so use great care when taking these results into the real world

--
73, Roger, W7WKB

3527. 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 12:51:52 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk>
Source record: 26849

I have up a half size G5RV and want to add 80 metres it. I don't have the space for a full size.

What is best to go for a 80m inductor kit or a pair of 80m traps?

Thanks

3528. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 13:09:43 UTC
From: Dave <noone@nowhere.com>
Message-ID: <rEsFj.101$sR1.28@trndny08>
Source record: 26850

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk...
>I have up a half size G5RV and want to add 80 metres it. I don't have the
>space for a full size.
>
> What is best to go for a 80m inductor kit or a pair of 80m traps?
>
> Thanks
>

well, 'traps' are usually used to cut off an antenna that is too long for
the band in question, so that is probably not what you want. simple
inductors are used to make an antenna look longer so that is what you would
want... but expect it to affect tuning on all bands, not just add 80m
capability.

3529. Re: The N8WWM archives

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 13:16:17 UTC
From: keydowns-r-us <justgotdown@maul.com>
Message-ID: <uLsFj.100$0Z4.11@fe091.usenetserver.com>
Source record: 26751
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.policy

AKC property! N8 just got down!

http://img177.imageshack.us/my.php?image=n8wwmpetroad2ok2.jpg

Liten to Douglas the fool on the air:

http://media.putfile.com/dougayactsafooloncb

http://media.putfile.com/dougay-whines-again

http://media.putfile.com/dougay-whines

3530. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 13:21:59 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <R7E290W3ll5HFwff@g3ohx.demon.co.uk>
Source record: 26752

In message <rEsFj.101$sR1.28@trndny08>, Dave <noone@nowhere.com> writes
>
>"Barrett" <barrett@blueyounder.co.uk> wrote in message
>news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk...
>>I have up a half size G5RV and want to add 80 metres it. I don't have the
>>space for a full size.
>>
>> What is best to go for a 80m inductor kit or a pair of 80m traps?
>>
>> Thanks
>>
>
>well, 'traps' are usually used to cut off an antenna that is too long for
>the band in question, so that is probably not what you want. simple
>inductors are used to make an antenna look longer so that is what you would
>want... but expect it to affect tuning on all bands, not just add 80m
>capability.
>
>
Do a Google search on 'G5RV+extend'.
There seems to be a lot of information available.
--
Ian

3531. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 13:32:32 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <QZsFj.12$w51.7@fe2.news.blueyonder.co.uk>
Source record: 26753

Dave, I have just put a Cowebb for 20 through to 10m. Its just 80 and 40 I'm interested for the time being. Is it hard to make a pair of inductors and how would I go about making a pair?

Thanks

"Dave" <noone@nowhere.com> wrote in message news:rEsFj.101$sR1.28@trndny08...
>
> "Barrett" <barrett@blueyounder.co.uk> wrote in message
> news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk...
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> well, 'traps' are usually used to cut off an antenna that is too long for
> the band in question, so that is probably not what you want. simple
> inductors are used to make an antenna look longer so that is what you
> would want... but expect it to affect tuning on all bands, not just add
> 80m capability.
>

3532. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 13:36:41 UTC
From: Dave <noone@nowhere.com>
Message-ID: <J1tFj.1921$7y3.986@trndny02>
Source record: 26754

"making" them is easy, just wind some wire around some kind of form, like a piece of pvc pipe. figuring out how much wire, how many turns, and the diameter is the hard part. I would use one of the antenna modeling programs to figure that out given your current design and picking a point where you think you can insert them. from that you could get a value of inductance needed, then pick a likely form size and use one of the inductance calculators on line to figure out how many turns of wire it would take.

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:QZsFj.12$w51.7@fe2.news.blueyonder.co.uk...
> Dave, I have just put a Cowebb for 20 through to 10m. Its just 80 and 40
> I'm interested for the time being. Is it hard to make a pair of inductors
> and how would I go about making a pair?
>
> Thanks
>
>
> "Dave" <noone@nowhere.com> wrote in message
> news:rEsFj.101$sR1.28@trndny08...
>>
>> "Barrett" <barrett@blueyounder.co.uk> wrote in message
>> news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk...
>>>I have up a half size G5RV and want to add 80 metres it. I don't have
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>>>
>>> What is best to go for a 80m inductor kit or a pair of 80m traps?
>>>
>>> Thanks
>>>
>>
>> well, 'traps' are usually used to cut off an antenna that is too long for
>> the band in question, so that is probably not what you want. simple
>> inductors are used to make an antenna look longer so that is what you
>> would want... but expect it to affect tuning on all bands, not just add
>> 80m capability.
>>
>
>

3533. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 13:47:03 UTC
From: ltdoc@yahoo.com
Message-ID: <05192c1f-6876-4517-a98f-1de8d833ac40@m44g2000hsc.googlegroups.com>
Source record: 26755

"Is it hard to make a pair of inductors and how would I go about
making a pair?"

It's a coil. So, make a couple of coils of wire, typically on a form
of some kind cuz just wire tends to unravel if not held together some
way. That form ought to be non-conductive, PVC pipe for instance.
'Fatter' coils tend to be shorter than 'skinny' coils, and more
efficient sort of (to some ridiculous point), take up less room. How
long/diameter? Beats me. Make them what you think is too big and
then try shorting out turns of each coil till you get to where you
wanna go. That'll work for one band, probably not too well for two
bands, ain't gonna work for all bands at one time unless you make
those coils adjustable (coil taps).
Expect compromises. Won't be the 'best' in the world, but it'll work.
- 'Doc

3534. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 14:03:07 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <vqtFj.42$w51.19@fe2.news.blueyonder.co.uk>
Source record: 26756

I will have a look for a antenna modelling program that I can get on with.
Also I'm using pvc covered flexweave wire for my G5RV. Is it all right to
make the inductors up from flexweave or should I get some enamelled copper
wire, or doesn't it really matters?

Thanks

"Dave" <noone@nowhere.com> wrote in message
news:J1tFj.1921$7y3.986@trndny02...
> "making" them is easy, just wind some wire around some kind of form, like
> a piece of pvc pipe. figuring out how much wire, how many turns, and the
> diameter is the hard part. I would use one of the antenna modeling
> programs to figure that out given your current design and picking a point
> where you think you can insert them. from that you could get a value of
> inductance needed, then pick a likely form size and use one of the
> inductance calculators on line to figure out how many turns of wire it
> would take.
>
> "Barrett" <barrett@blueyounder.co.uk> wrote in message
> news:QZsFj.12$w51.7@fe2.news.blueyonder.co.uk...
>> Dave, I have just put a Cowebb for 20 through to 10m. Its just 80 and 40
>> I'm interested for the time being. Is it hard to make a pair of inductors
>> and how would I go about making a pair?
>>
>> Thanks
>>
>>
>> "Dave" <noone@nowhere.com> wrote in message
>> news:rEsFj.101$sR1.28@trndny08...
>>>
>>> "Barrett" <barrett@blueyounder.co.uk> wrote in message
>>> news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk...
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>>>>the space for a full size.
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>>>> What is best to go for a 80m inductor kit or a pair of 80m traps?
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>>>> Thanks
>>>>
>>>
>>> well, 'traps' are usually used to cut off an antenna that is too long
>>> for the band in question, so that is probably not what you want. simple
>>> inductors are used to make an antenna look longer so that is what you
>>> would want... but expect it to affect tuning on all bands, not just add
>>> 80m capability.

>>>
>>
>>
>
>

3535. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 14:03:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RqtFj.1643$p24.1579@nlpi061.nbdc.sbc.com>
Source record: 26757

Roger Sparks wrote:
> How can we justify calling the +/- 2*SQRT[Pf.g(t)*Pr.g(t) term the "interference term"?

Page 388, "Optics", by Eugene Hecht, 4th edition:
"The interference term becomes I12 = 2*SQRT(I1*I2)cos(A)"
where 'I' is the Irradiance (power density)[NOT Current]
Later Hecht says +2*SQRT(I1*I2) is the total constructive
interference term and -2*SQRT(I1*I2) is the total
destructive interference term. Chapter 9 is titled
"Interference" - recommended reading.

> Am I correct in assuming that this equation describes the instantaneous power delivered to Rs?

Yes, if Tom, K7ITM, is correct about the equation working
for instantaneous power densities, not just for average
power densities as I had first assumed.

Let's say the instantaneous forward voltage dropped across
the source resistor is +50 volts and the instantaneous
reflected voltage across the source resistor is -30 volts.
The source resistor is 50 ohms.
Pf.rs(t) = (+50v)^2/50 = 50w
Pr.rs(t) = (-30v)^2/50 = 18w
Prs(t) = Pf.rs(t) + Pr.rs(t) - interference
Prs(t) = 50w + 18w - 2*SQRT(50*18) = 8 watts

If Tom is correct, that should be the actual dissipation
in the source resistor at that time which includes 60 watts
of destructive interference that will be dissipated 90 degrees
later when 2*SQRT(50*18) = +60 watts.
--
73, Cecil http://www.w5dxp.com

3536. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 14:31:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <oRtFj.1645$p24.232@nlpi061.nbdc.sbc.com>
Source record: 26758

Keith Dysart wrote:
> So yes, the phrase "conservation of power" is
> appropriately descriptive and follows from
> conservation of energy.

You have a contradiction built into your concepts.
You have argued that the instantaneous power dissipated
in the source resistor is not equal to the instantaneous
forward power component plus the instantaneous reflected
power because power must be conserved at each instant of
time. That is simply not true.

I'm telling that energy must be conserved at each instant
of time but power does not have to be conserved at each
instant of time. Energy can obviously be stored in a
battery or network reactance for dissipation later in
time.

Do you require that the power used to charge a battery
be instantaneously dissipated in the battery? Of course
not! That's true for a dummy load but NOT for a battery.
There is no reason to require dissipation of power at
each instant of time to balance. Since energy can be
stored, there is no such thing as conservation of
instantaneous power, only of instantaneous energy.

> Where is "cos(theta)" in this?
> And what "theta" is to be used?

How many times do I have to explain this? For instantaneous
values of voltage, if the sign of the two interfering voltages
are the same, theta is zero degrees and the cosine of theta is
+1.0. If the sign of the two interfering voltages are opposite,
theta is 180 degrees and the cosine of theta is -1.0.

> Is it the same theta that was used to conclude that
> this was a "no interference" example?
> See "A Simple Voltage Source - No Interference" at
> http://www.w5dxp.com/intfr.htm

That theta is the phase angle of the phasor. If you
would switch over to phasor notation for your values
of instantaneous voltages, it might make things clearer
for you. You have been dealing only with real part of
the phasors which limits theta to either zero or 180
degrees.

> So the plus/minus in the equation aboves means that
> for part of the cycle we should add and part of the
> cycle we should subtract.
> This equation is ambiguous and is therefore incomplete
> since it does not tell us when we should add and when
> we should subtract.

I have told you about five times now. If the sign of the two interfering voltages are the same, the interference term has a positive sign (constructive). If the sign of the two interfering voltages are opposite, the interference term has a negative sign (destructive). Instead of me having to keep posting this over and over how about you keep reading it over and over until you understand it?

> Could you provide a mathematically precise description
> of when we should do each?

See above. If we deal with phasors, theta is the phase angle between the two interfering voltages. If we deal only with real values, theta is limited to either zero (cosine = +1.0) or 180 degrees (cosine = -1.0).

> Where is this destructive interference energy stored
> while waiting to be dissipated constructively later?

In our 45 degree shorted stub example, it is stored in the equivalent inductive reactance of the stub. For each instant in which destructive interference energy is stored, there is an instant in time 90 degrees later when that same energy is dissipated as constructive interference power in the source resistor. That's why 100% of the average reflected power is dissipated in the source resistor for these special cases of zero average interference.
--
73, Cecil http://www.w5dxp.com

3537. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 14:34:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xTtFj.1646$p24.1089@nlpi061.nbdc.sbc.com>
Source record: 26759

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> We are not discussing matched systems. If the total
>> RMS voltage differs from the RMS forward voltage,
>> then Vr is NOT zero.
>
> True for this example. But it is generally unwise to pick
> names or descriptions that will have to change when
> the component values are changed.

Picking nits won't change the laws of physics.
--
73, Cecil http://www.w5dxp.com

3538. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 15:52:22 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080323085222.ad92312d.rsparks@elltel.net>
Source record: 26760

On Sun, 23 Mar 2008 09:03:31 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > How can we justify calling the +/- 2*SQRT[Pf.g(t)*Pr.g(t) term the "interference term"?
>
> Page 388, "Optics", by Eugene Hecht, 4th edition:
> "The interference term becomes I12 = 2*SQRT(I1*I2)cos(A)"
> where 'I' is the Irradiance (power density)[NOT Current]
> Later Hecht says +2*SQRT(I1*I2) is the total constructive
> interference term and -2*SQRT(I1*I2) is the total
> destructive interference term. Chapter 9 is titled
> "Interference" - recommended reading.
>
> > Am I correct in assuming that this equation describes the instantaneous power delivered to Rs?
>
> Yes, if Tom, K7ITM, is correct about the equation working
> for instantaneous power densities, not just for average
> power densities as I had first assumed.
>
> Let's say the instantaneous forward voltage dropped across
> the source resistor is +50 volts and the instantaneous
> reflected voltage across the source resistor is -30 volts.
> The source resistor is 50 ohms.
> Pf.rs(t) = (+50v)^2/50 = 50w
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> Prs(t) = Pf.rs(t) + Pr.rs(t) - interference
> Prs(t) = 50w + 18w - 2*SQRT(50*18) = 8 watts
>
> If Tom is correct, that should be the actual dissipation
> in the source resistor at that time which includes 60 watts
> of destructive interference that will be dissipated 90 degrees
> later when 2*SQRT(50*18) = +60 watts.
> --
> 73, Cecil http://www.w5dxp.com

Thanks for your thoughtful reply.

TanH(30/50) = 30.96 degrees. This takes us back to the 12.5 ohm load example.

Is it possible that in your example here, the reflected voltage acts in series with Rs but arrives 90 degrees out of phase with the forward voltage? If so, then

Vrs = sqrt(50^2 + 30^2) (the reflected voltage should ADD to the source voltage)

= sqrt(3400) = 58.31v

The power to Rs would be

Prs = (V^2)/50 = 3400/50 = 68w

We previously found that 32w was used at the 12.5 ohm load, so 32 + 68 = 100w. The entire output from the source is accounted for.

If this is the case, we have here an example of constructive interference, and complete accounting for the power.

You might wonder why I would consider this alternative. If the destructive interference included a 90 degree delay, how would I know whether the 30v was the delayed voltage or exactly in phase with the source? It must be delayed by 90 degrees because the forward voltage is always 90 degrees ahead of the reflected wave (in 45 degree line length example).

Your example certainly works as written, but it also introduces a dilemma. Where is the power stored for 90 degrees?

To answer that question, I see two possiblities: The source voltage causes a reflection so the 60w is stored as an additional reflected wave on the transmission line.

Or second, the 60w is stored in the source.

--
73, Roger, W7WKB

3539. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 17:06:49 UTC
From: Dave <noone@nowhere.com>
Message-ID: <J6wFj.4064$Yy2.2281@trndny04>
Source record: 26762

whatever you can wind with. solid copper will stay in place better by
itself being a bit springy, flexweave you would probably have to glue down
to the form to keep it from sliding around.

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:vqtFj.42$w51.19@fe2.news.blueyonder.co.uk...
>I will have a look for a antenna modelling program that I can get on with.
>Also I'm using pvc covered flexweave wire for my G5RV. Is it all right to
>make the inductors up from flexweave or should I get some enamelled copper
>wire, or doesn't it really matters?
>
> Thanks
>
>
> "Dave" <noone@nowhere.com> wrote in message
> news:J1tFj.1921$7y3.986@trndny02...
>> "making" them is easy, just wind some wire around some kind of form, like
>> a piece of pvc pipe. figuring out how much wire, how many turns, and the
>> diameter is the hard part. I would use one of the antenna modeling
>> programs to figure that out given your current design and picking a point
>> where you think you can insert them. from that you could get a value of
>> inductance needed, then pick a likely form size and use one of the
>> inductance calculators on line to figure out how many turns of wire it
>> would take.
>>
>> "Barrett" <barrett@blueyounder.co.uk> wrote in message
>> news:QZsFj.12$w51.7@fe2.news.blueyonder.co.uk...
>>> Dave, I have just put a Cowebb for 20 through to 10m. Its just 80 and 40
>>> I'm interested for the time being. Is it hard to make a pair of
>>> inductors and how would I go about making a pair?
>>>
>>> Thanks
>>>
>>>
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>>> news:rEsFj.101$sR1.28@trndny08...
>>>>
>>>> "Barrett" <barrett@blueyounder.co.uk> wrote in message
>>>> news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk...
>>>>>I have up a half size G5RV and want to add 80 metres it. I don't have
>>>>>the space for a full size.
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>>>>> What is best to go for a 80m inductor kit or a pair of 80m traps?
>>>>>

>>>>> Thanks
>>>>>
>>>>
>>>> well, 'traps' are usually used to cut off an antenna that is too long
>>>> for the band in question, so that is probably not what you want.
>>>> simple inductors are used to make an antenna look longer so that is
>>>> what you would want... but expect it to affect tuning on all bands, not
>>>> just add 80m capability.
>>>>
>>>
>>>
>>
>>
>
>

3540. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 17:16:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rb3du39cfda88f1lo6slf23gncmfqeb2hs@4ax.com>
Source record: 26761

On Sun, 23 Mar 2008 05:10:26 -0700, Roger Sparks <rsparks@elltel.net>
wrote:

> Zo =3D 1/(C*Vel)
>
>where C is the capacitance of the line per unit distance and Vel is the vel=
>ocity of the wave.
>
>This second solution for Zo demonstrates the power storage capabilities of =
>the transmission line over time.

What is old is new again.

Hasn't this "formula" been put in the ground once before? For one,
what is velocity but something that has to be computed first only to
find us refilling all the terms back into this shortcut? For two,
"power storage capabilities... over time?" Apparently the stake
missed the heart of this one.

= A0 =A 0 = A0 = A 0 Vs = A 0 =A 0 = A0 = A0 =A 0 = A0 = A 0

73's
Richard Clark, KB7QHC

3541. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 17:52:54 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A6A6EB39422DHuckleberrybigvalley@198.186.192.196>
Source record: 26763

>>I will have a look for a antenna modelling program that I can get on
>>with. Also I'm using pvc covered flexweave wire for my G5RV. Is it all
>>right to make the inductors up from flexweave or should I get some
>>enamelled copper wire, or doesn't it really matters?

If you would like to build air inductors very similar to B&W AirDux
coils, I highly suggest you go to: http://www.qsl.net/n1lo/antenna.htm
and download the instructional PDF found at the bottom of that page titled
"80-10M mobile vertical." It includes excellent instructions and parts
locations to do this.

Ed K7AAT

3542. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 18:00:08 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <X8udnao7GK84B3vanZ2dnUVZ_o-mnZ2d@comcast.com>
Source record: 26764

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk...
>I have up a half size G5RV and want to add 80 metres it. I don't have the
>space for a full size.
>
> What is best to go for a 80m inductor kit or a pair of 80m traps?
>
> Thanks
>
If you add inductors to a G5RV, it will no longer be a G5RV. You might be
better off with an 80 - 10 m trap dipole. It will be shortert than an 80
meter dipole.

Tam/WB2TT

3543. Double dipole better than YAGI 5 elements??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 18:56:27 UTC
From: user <dag@allemaale.be>
Message-ID: <fs694s$r2l$1@registered.motzarella.org>
Source record: 26765

That is what I experienced.

I've constructed this:

Double dipole, vertical polarisation.

```
| | }
| | }lenght=75 cm = 1/4 wavelength
____A____ <--width 1,5 meter = 1/2 wavelength
---------
| |
| |
```

I have a 20Kw tx at 1800meter/2000yard. That gives me probs with
interference. The double dipole is better than the Yagi.

Also directivity is good (all be it I do not have Forward/backward ratio).

I have taken pictures of the 2-dipole and the yagi:
http://users.fulladsl.be/spb13810/loop/yagivs2dipool/

And here how the wiring is done: red and green represent solid copper wires:
http://users.fulladsl.be/spb13810/loop/yagivs2dipool/imag0030edit.jpg

Would it be an idea to use copper tubes?? And would that make the reception
better?? 1/4 inch / 1 cm copper tubing or even smaller??

Thanks !

--
--
Shortwave transmissions in English, Francais, Nederlands, Deutsch,
Suid-Afrikaans, Chinese, Dansk, Urdu, Cantonese, Greek, Spanish,
Portuguese, ...
http://users.fulladsl.be/spb13810/swlist/ Updated every month or so ....

3544. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 19:39:35 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <e6ea676c-bfd0-44ae-bf9f-cbc9ae9fcc74@m3g2000hsc.googlegroups.com>
Source record: 26766
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 22, 8:48 pm, K7ITM <k7...@msn.com> wrote:

>
> > 15 floor of 16-floor building. But I think that in this case "ground"
> > are building walls.
>
> There is a hint here: it is common that tall buildings incorporate a
> lot of steel, and that will likely act as a shield. I hope this
> antenna is not mounted inside!

It's not mounted at all. But for tests I'm put this antenna outside.

>
>
>
> > > vertical) -- -- where "close" means relative to a wavelength. So the
> > > small balanced loop is especially good for LF and VLF work.
>
> > my reason was make narrow-band antenna. For reject all out of band
> > noise.
>
> A reasonable thing to do, though a good receiver with a low-distortion
> and fairly narrow-band front end should not have trouble with out-of-
> band signals (noise). Do you have a quantitative measure of just how
> strong this out of band noise is?
Not. Just not received.

I'd personally much rather use a
> preselection filter separate from the antenna, and close to my
> operating position, to reject out-of-band signals. Even though the
> antenna you have described has very high Q, I believe I could do
> better with a two or three resonator filter running at lower Q, since
> the slope of the attenuation versus frequency is much greater.

I will receive QRSS at all. And I think that it would be best way is
using
narrow-band antenna -> filter -> synchronous detector.

> there was some especially strong signal in the band, I would at least
> consider a fixed-tuned bandpass filter that covered my band of
> interest, assuming that band is fairly narrow such as 7.0-7.1MHz.
>
> Can you tell that you are getting the expected antenna bandwidth,
> about 3kHz at the 3dB points at 7MHz?

I'm just testing. I will purchase RF generator in next week and test.
Now I have only self-oscillation frequency.

Antenna looks like working. I'm receiving a lots of Morse signals at
7.000 - 7050 Mhz. But I cant recognize any voice signal.

This is receiving signal. Looks like narrow-band enough. This is not
self oscillation. In self oscillation voltage a few volts.
http://img148.imageshack.us/my.php?image=ds0000bu6.png

This is schematics. I'm not sure that I'm correct use gual gate
transistors.
http://img210.imageshack.us/my.php?image=schbr1.jpg

I'm not sure that using shielded cable and ferrite chocks is good
idea.
http://img171.imageshack.us/my.php?image=hwak2.jpg

np0 caps.
http://img370.imageshack.us/my.php?image=capsnf8.jpg

3545. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 19:57:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ECyFj.22413$0o7.7267@newssvr13.news.prodigy.net>
Source record: 26767

Roger Sparks wrote:
>(the reflected voltage should ADD to the source voltage)

If you graph the two voltages you will find that half the time
the reflected voltage adds to the source voltage and half the
time the reflected voltage subtracts from the source voltage.
Both are true half the time. You can point out either case on
the graph. That's why the average interference term is zero
for this special case and therefore why 100% of the average
reflected power is dissipated in the source resistor for
this special case.

> You might wonder why I would consider this alternative.
> If the destructive interference included a 90 degree delay,
> how would I know whether the 30v was the delayed voltage or
> exactly in phase with the source?

By looking at the graphs?

> Where is the power stored for 90 degrees?

In the equivalent reactance of the transmission line.

That's what reactances do in AC circuits. They store
energy and deliver it back to the system some time
later.
--
73, Cecil http://www.w5dxp.com

3546. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 20:14:29 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <u6ddu3pre913b1j8ivffchev2kkfch5m07@4ax.com>
Source record: 26768

On Thu, 20 Mar 2008 05:44:50 GMT, "usmcbrat"
<president@whitehouse.gov> wrote:

>Hi Folks:
>
>I'm looking to make a directional antenna in the 215 to 218 MHz band (215 if
>that's too broad), used for location of dementia patients who have wandered
>away from their caregivers. I'm a volunteer with an organization that
>locates these people. They wear a tiny transmitter which emits a chirp that
>can be heard from 1-2 miles on the ground and 8-10 miles via helicopter.
>
>I'm somewhat new to the program, and I'd like to do some investigation on my
>own regarding antenna types that would be useful, and I hope you'll all
>grant me a few questions.
>
>My needs are this.... the antenna must be as directional as possible. It
>must be most efficient in the 215 to 218 MHz band 215 is what our patients
>are on right now, though after we fill up that range we have licensed
>through 218 MHz. It must be easy for an individual to carry, and portable
>enough to carry through any type of terrain. It must be shaped in such a
>way that it's relatively safe and easy to use in an enclosed area, either in
>a helicopter or a car. Currently the agency is using a 4 element Yagi,
>which works well, but has the drawback of being a real eye-poker when used
>in close quarters, and in fact the California Highway Patrol will not allow
>them to be used in their helicopters because of that reason.
>
>One of our Search & Rescue guys built his own 4 element Quad Yagi out of
>some 1/2" PVC pipe and other parts that are readily available at any Home
>Depot. It has greater sensitivity than our stock antenna, and the CHP has
>said that it's OK to use in their helicopters. Rather than 4 horizontal
>straight beams it has 4 squarish beams, with no points to poke people's eyes
>out. I'm still waiting to get the plans from him for that antenna, and I
>though that in the meantime I'd ask in here if any of you had some
>interesting leads for me to follow.
>
>Many thanks!
>
I just did a quick simulation on EZNEC of your proposed Quad. At 215
mhz the element spacing on the boom is about 1 foot. That means a 4
element yagi or quad should come out to 3 feet long. Similarly, the
element loops will be about 1 foot square.

With no matching attempted 2:1 Swr is easily achieved.

If you are so inclined you could model this antenna with the Demo version of EZNEC. You could also prototype one or more on the kitchen table with masking tape and sticks!

I would think the additional gain of the Quad would make it desirable to drop back to three elements to reduce the size.

John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

3547. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 20:18:19 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A6B4A275FA64nonenowhere@61.9.191.5>
Source record: 26769

"Barrett" <barrett@blueyounder.co.uk> wrote in
news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk:

> I have up a half size G5RV and want to add 80 metres it. I don't have
> the space for a full size.
>
> What is best to go for a 80m inductor kit or a pair of 80m traps?
>
> Thanks
>
>

Reading through the responses, it seems that your requirement is actually for a shortened wire antenna for 80 and 40.

The starting materials are a half sized G5RV (which is not a G5RV, but one of the many variants).

You could salvage materials from the G5RV to make a trapped 80/40 dipole.

(The traps do not simply work as an on/off switch to disconnect the end sections as implied by some. They might be seen to work that way if they were resonant at the operating frequency, but they need not be, and there is good reason for them to not be resonant at any operating frequency.)

Google around for designs for an 80/40 trapped dipole, there are plenty. Decent articles will include details of the physical construction of the traps.

There is a design on my web site, but it is probably too long for you (we don't know your length requirements other than less than a G5RV, you chose to not share that). Nevertheless, it might be an interesting read, see http://www.vk1od.net/coaxtrap/8040.htm .

These type of antennas are affected by their environment, so you should expect to need to fine tune the configuration. Be wary of varying specific trap designs, you might dig a hole for yourself.

Owen

3548. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 20:28:55 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <b4zFj.259$w51.197@fe2.news.blueyonder.co.uk>
Source record: 26770

I found a good site on how to make some air spaced coaxial traps for each band but that's all I could find.

Can traps be made up with enamelled copper wire as I have just ordered a real of 20 swg?

I've found some good information on inductors but is there any good sites on making traps with copper wire?

Thanks

"Tam" <t-tammaru@comcast.net> wrote in message news:X8udnao7GK84B3vanZ2dnUVZ_o-mnZ2d@comcast.com...
>
> "Barrett" <barrett@blueyounder.co.uk> wrote in message
> news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk...
>>I have up a half size G5RV and want to add 80 metres it. I don't have the
>>space for a full size.
>>
>> What is best to go for a 80m inductor kit or a pair of 80m traps?
>>
>> Thanks
>>
> If you add inductors to a G5RV, it will no longer be a G5RV. You might be
> better off with an 80 - 10 m trap dipole. It will be shortert than an 80
> meter dipole.
>
> Tam/WB2TT
>

3549. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 20:40:30 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <2fzFj.261$w51.110@fe2.news.blueyonder.co.uk>
Source record: 26771

Sorry about that, I should of said the length of my garden.
From the bottom of the garden up to the wall of the house it is 60 feet and I do not have any chimney stacks to run wires from. My neighbours are happy with a 20 foot pole at the bottom of the garden. Any higher and there not happy about it so that's it for the height. At least there ok with a 20' pole. I am limited on length of wire and unfortunately the height as well. So any help is welcome.

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A6B4A275FA64nonenowhere@61.9.191.5...
> "Barrett" <barrett@blueyounder.co.uk> wrote in
> news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk:
>
>> I have up a half size G5RV and want to add 80 metres it. I don't have
>> the space for a full size.
>>
>> What is best to go for a 80m inductor kit or a pair of 80m traps?
>>
>> Thanks
>>
>>
>
> Reading through the responses, it seems that your requirement is actually
> for a shortened wire antenna for 80 and 40.
>
> The starting materials are a half sized G5RV (which is not a G5RV, but
> one of the many variants).
>
> You could salvage materials from the G5RV to make a trapped 80/40 dipole.
>
> (The traps do not simply work as an on/off switch to disconnect the end
> sections as implied by some. They might be seen to work that way if they
> were resonant at the operating frequency, but they need not be, and there
> is good reason for them to not be resonant at any operating frequency.)
>
> Google around for designs for an 80/40 trapped dipole, there are plenty.
> Decent articles will include details of the physical construction of the
> traps.
>
> There is a design on my web site, but it is probably too long for you (we
> don't know your length requirements other than less than a G5RV, you
> chose to not share that). Nevertheless, it might be an interesting read,
> see http://www.vk1od.net/coaxtrap/8040.htm .
>

> These type of antennas are affected by their environment, so you should
> expect to need to fine tune the configuration. Be wary of varying
> specific trap designs, you might dig a hole for yourself.
>
> Owen

3550. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 20:52:04 UTC
From: William O'Hara <whoohara@yahoo.com>
Message-ID: <Xns9A6AAB97845C0KB1IUB223223n1eyLOCK@216.196.97.136>
Source record: 26773

Sum Ting Wong <sumtingwong@privacy.net> wrote in
news:00o0r3hq8bq5utlskec4se1ehjd2376m19@4ax.com:

> On Mon, 11 Feb 2008 07:41:38 -0600, "William O'Hara"
> <whoohara@yahoo.com> wrote:
>
>>I would like to point out as a former Assistant RACES Officer for a
>>local community in Massachusetts, that Mr. Romney is absolutely
>>correct.
>
> Sort of dropped the ball, huh?
>
> S.T.W.
>

Wake up and smell the coffee.

--

William O'Hara
www.N1ey.com - Amateur Radio and Railfan Blog
www.yahoogroups.com/group/illinoiscentral - premier discussion list re:
ICRR

3551. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 20:53:48 UTC
From: William O'Hara <whoohara@yahoo.com>
Message-ID: <Xns9A6AABE321AD9KB1IUB223223n1eyLOCK@216.196.97.136>
Source record: 26774
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

"Ed Cregger" <ecregger@bellsouff.net> wrote in news:gDluj.74327$vt2.44983
@bignews8.bellsouth.net:

> And 'We The People' dismissed Guvna Romney. Now we're even.
>
> Ed, NM2K
>
>
>

Unforunately, you have no idea of the situation on the ground here. It is
petty to vote for someone other than Mr. Romney soley since he said that we
do not need the hams. He is quite correct. He never made a disparaging
remark about any hams. The Chronicle interviewer was unable to make any
concrete point to challenge Mr. Romney's assertation.

--

William O'Hara
www.N1ey.com - Amateur Radio and Railfan Blog
www.yahoogroups.com/group/illinoiscentral - premier discussion list re:
ICRR

3552. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 20:54:47 UTC
From: William O'Hara <whoohara@yahoo.com>
Message-ID: <Xns9A6AAC0D6302DKB1IUB223223n1eyLOCK@216.196.97.136>
Source record: 26775
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

Mr. Romney never engaged in such vitrol.

I would caution you to refrain from making such statements.

"Eric Gordon" <egordon@mho.net> wrote in
news:-62dnf5mEoR3KV7anZ2dnUVZ_uyinZ2d@mho.net:

> WHAT A JACKASS. OOOPPPSSSSS SORRY, HE'S A REPUBLICAN. SORRY, NO
> OFFENSE TO THE JACKASSES OF THE WORLD. HE'S AN INSULT TO HUMANITY,
> BUT NOT TOTALLY UNEXPECTED FROM A REPUBLICAN
> "laborkei" <laborkeiNOSPAM@hotmail.com> wrote in message
> news:I6sjj.51910$Mu4.41373@bignews7.bellsouth.net...
>> Attention all Amateur Operators.
>> Please Read, and send your comments to the ARRL and Romney Website.
>>
>>
>> Wednesday 16 November 2005 @ 15:48:10 | Eastern Massachusetts ARRL
>> Romney 'Disses' Amateur Radio In
>> Televised Town Meeting Posted on Wednesday16 November 2005 @
>> 15:48:10
>>
>> Governor Mitt Romney dismissed the role of Amateur Radio operators
>> in emergency communications
>> during a televised 'town meeting' program last night on WCVB's 'When
>> Disaster Strikes: Segment Two.'
>> The program featured public safety and volunteer organization
>> officials from
>> across Massachusetts
>> among its audience.
>>
>> Host and moderator Natalie Jacobson asked an increasingly-agitated
>> Governor
>> Romney questions about
>> communications interoperability, and communication without
>> commercial power.
>> Romney was next asked
>> by Jacobson, '...so does it come down to ham radio?...'
>>
>> The Governor replied in a disgusted tone, 'No, we don't need to deal
>> with ham radio operators...'
>>
>> Embarrassed public safety officials later tried to put in a good

>> word for Amateur Radio. National
>> Weather Service Warning Coordination Meteorologist Glenn Field was
>> prepared
>> to state the importance
>> of Amateur Radio, when Salvation Army Colonel Fred Van Brunt was
>> called upon. Van Brunt remarked
>> about his organization's quest to improve its communications
>> capabilities and how Amateur Radio has
>> aided his organization. 'The ham radio situation helps a great
>> deal,' he stated.
>>
>> 'I have already written and submitted a letter to the Governor's
>> Office,' wrote Eastern MA Section
>> Emergency Coordinator Rob Macedo, KD1CY. 'I have also written an
>> email to Natalie Jacobson.'
>>
>> ARRL Section Manager Mike Neilsen, W1MPN sent a section-wide email
>> today to
>> all Eastern MA ARRL
>> members describing the incident along with actions he and his staff
>> were taking to mitigate the
>> situation.
>>
>> '[Romney's] attitude about us sets an unfortunate tone within the
>> state's executive branch,' wrote
>> Neilsen. 'As a former military officer, I see this as a failure in
>> leadership. My immediate concern
>> is our working relationship within the [Massachusetts Emergency
>> Management
>> Team] environment.'
>> Neilsen intends to address the Governor's comments as 'an urgent
>> matter' at
>> a meeting on November 17
>> with Don Carlton from the Massachusetts Emergency Management Agency.
>>
>> 'I was very disturbed about what the Governor stated on the
>> program,' wrote
>> Ron Wood, W1PLW, the
>> section's Public Information Coordinator. 'It does show that more
>> work is needed by all hams in the
>> section. It's a great idea to write letters explaining the good we
>> do.' Wood
>> is attempting to
>> schedule a meeting with the Governor's office tomorrow so that EMA
>> ARRL staffers might discuss the
>> matter further.
>>
>> Tom Kinahan, N1CPE wrote that Governor Romney's comment has made 'a
>> PR problem' for Kinahan in his
>> role as MA State RACES Officer.

>>
>> 'I've got a roster of over 150 Amateur Radio operators that support
>> local communities, and those of
>> us that directly support the state government. There are at least
>> double that in terms of people
>> that are actually out there that I don't have formal paperwork on
>> that support Amateur Radio
>> emergency communications in some organized manner... The Governor has
>> said
>> that he 'certainly
>> doesn't need to rely on ham radio' -- where does that leave the
>> RACES program now?'
>>
>> 'I am ashamed tonight that I am a Republican!' remarked one ham
>> radio viewer. '[Romney] speaks in
>> derogatory tones about hams. He certainly shows an ignorance as to
>> what we
>> do and are capable of. I
>> suggest a grass roots campaign of local hams calling the State House
>> and The
>> Governor's Office to
>> protest.'
>>
>>
>> --
>>
>>
>>
>
>
>

--

William O'Hara
www.N1ey.com - Amateur Radio and Railfan Blog
www.yahoogroups.com/group/illinoiscentral - premier discussion list re:
ICRR

3553. stop the lies dloyd

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 21:08:08 UTC
From: an_old_friend <kb9rqz@gmail.com>
Message-ID: <e4b79b30-2479-4c40-8a33-d74eab4a19a7@u69g2000hse.googlegroups.com>
Source record: 26776
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Mar 23, 9:16 am, "keydowns-r-us" <justgotd...@maul.com> wrote:
>
stop the spam

3554. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 21:13:27 UTC
From: an_old_friend <konstans@hotmail.com>
Message-ID: <a39db2d2-a8aa-453e-9212-846b53889ca8@e67g2000hsa.googlegroups.com>
Source record: 26777
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc

On Mar 23, 4:54 pm, "William O'Hara" <whooh...@yahoo.com> wrote:
> Mr. Romney never engaged in such vitrol.
>
> I would caution you to refrain from making such statements.
>

play such games with redirects is normal the at of a poor USENET poster

3555. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 21:27:49 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <307a032c-6b8b-4838-9ff2-9b3886f0b818@8g2000hsu.googlegroups.com>
Source record: 26778
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

COOL! All worked!

3556. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 21:42:22 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <66bfe7de-474e-4b75-806e-e03501de30bf@e39g2000hsf.googlegroups.com>
Source record: 26779
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 23, 11:48 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Sun, 23 Mar 2008 12:39:35 -0700 (PDT), Artem <artem.b...@gmail.com>
> wrote:
>
> >Antenna looks like working. I'm receiving a lots of Morse signals at
> >7.000 - 7050 Mhz. But I cant recognize any voice signal.
>
> Side Band?

No. Out of band. I'm now add varicaps and all working! Antenna really
very narrow.

>
> >I'm not sure that using shielded cable and ferrite chocks is good
> >idea.
>
> Not enough choking and needs to be repeated a quarter wave down the
> choked wire(s).

It's 7Mhz. quarter wave is 10 miters.

I'm use choking:
between amplifier and antenna
between transformer and coax cable.
For amplifier power wires and gain control.

3557. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 21:48:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <otjdu3dc9oog3m8e28kqcqtv6v8rjjpopr@4ax.com>
Source record: 26772
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Sun, 23 Mar 2008 12:39:35 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>Antenna looks like working. I'm receiving a lots of Morse signals at
>7.000 - 7050 Mhz. But I cant recognize any voice signal.

Side Band?

>I'm not sure that using shielded cable and ferrite chocks is good
>idea.

Not enough choking and needs to be repeated a quarter wave down the
choked wire(s).

73's
Richard Clark, KB7QHC

3558. Re: Double dipole better than YAGI 5 elements??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-23 22:08:42 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <4093c5e4-c2fc-41c7-a5e6-4e43f733a80d@s8g2000prg.googlegroups.com>
Source record: 26780

On 23 mar, 19:56, user <d...@allemaale.be> wrote:
> That is what I experienced.
>
> I've constructed this:
>
> Double dipole, vertical polarisation.
>
> | | }
> | | }lenght=75 cm = 1/4 wavelength
> ____A____ <--width 1,5 meter = 1/2 wavelength
> ---------
> | |
> | |
>
> I have a 20Kw tx at 1800meter/2000yard. That gives me probs with
> interference. The double dipole is better than the Yagi.
>
> Also directivity is good (all be it I do not have Forward/backward ratio).
>
> I have taken pictures of the 2-dipole and the
yagi:http://users.fulladsl.be/spb13810/loop/yagivs2dipool/
>
> And here how the wiring is done: red and green represent solid copper
wires:http://users.fulladsl.be/spb13810/loop/yagivs2dipool/imag0030edit.jpg
>
> Would it be an idea to use copper tubes?? And would that make the reception
> better?? 1/4 inch / 1 cm copper tubing or even smaller??
>
> Thanks !
>
> --
> --
> Shortwave transmissions in English, Francais, Nederlands, Deutsch,
> Suid-Afrikaans, Chinese, Dansk, Urdu, Cantonese, Greek, Spanish,
> Portuguese, ...http://users.fulladsl.be/spb13810/swlist/ Updated every month or so ....

Hello "user"

Making the elements thicker will increase the bandwidth somewhat, so
it may give better reception at off-center frequencies. It will not
give better performance at the centerfrequency.

I have doubts about whether it will perform better then a good 5
element beam on the center frequency. Did you run some simulations?

Best regards,

Wim
PA3DJS
www.tetech.nl
Don't forget to remove abc from the mail address

3559. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 01:24:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <prudu3l9ui6udtotl56ig3te3p5ni4gvvf@4ax.com>
Source record: 26781
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Sun, 23 Mar 2008 14:42:22 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>> >I'm not sure that using shielded cable and ferrite chocks is good
>> >idea.
>>
>> Not enough choking and needs to be repeated a quarter wave down the
>> choked wire(s).
>
>It's 7Mhz. quarter wave is 10 miters.

Then again at the far end of the wire(s).

>I'm use choking:
>between amplifier and antenna
>between transformer and coax cable.
>For amplifier power wires and gain control.

I've observed that, and I have observed it is not enough from your
photo - if you still have self-oscillation. Your pictures do not
reveal any choking of the RF Out cable.

As for the diagonal arm for "ground." This is fine insofar as it
being placed in the electrical middle of the antenna loop (a ground),
but all this rat's nest of wiring throws the concept of balance out
the window. I see in earlier pictures where you clean that up with
careful routing, but it seems much too busy. This leads me into the
comments following:

On another note, the AGC seems overly elaborate, especially when all
that wire could be introducing the self-oscillation. Further, wiring
in power seems another invitation to problems when a 9V battery would
solve that too. Local power would discard the need for the ground
coming from the loop's perimeter, eliminate unnecessary AGC, reduce
the complexity of choking, lower gain (it obviously has too much), and
give you only one coax coming from the antenna.

You need to solve the self-oscillation through removing complexity.
When you accomplish that, THEN that is the time to add it back in, one
thing at a time. You will probably discover all those features and
design gimmicks are not worth it.

73's
Richard Clark, KB7QHC

3560. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 01:27:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mo0eu3ln6hmkv8dudr7ji67m5jchjlsld9@4ax.com>
Source record: 26782
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Sun, 23 Mar 2008 14:27:49 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>COOL! All worked!

It would seem no further advice is necessary, much less my last bit of
wisdom on the topic.

It would help if you were to elaborate as to what actually killed the
oscillation.

73's
Richard Clark, KB7QHC

3561. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 03:28:19 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <ndFFj.1270$Qv5.782@trnddc03>
Source record: 26783

"John Ferrell" <johnferrell@sprintmail.com> wrote in message
> I just did a quick simulation on EZNEC of your proposed Quad. At 215
> mhz the element spacing on the boom is about 1 foot. That means a 4
> element yagi or quad should come out to 3 feet long. Similarly, the
> element loops will be about 1 foot square.

That sounds *exactly* like the one that we used in our training. The guy
who made it said that he used an antenna design calculator on the internet
to come up with the layout. I'm still awaiting plans from him, and in the
meantime I'm interested in seeing if I can do it myself for the technical
exercise.

>> If you are so inclined you could model this antenna with the Demo
>> version of EZNEC. You could also prototype one or more on the kitchen
>> table with masking tape and sticks!

I'm going to take a look at EZNEC and also google around for "Cubical Quad"
as suggested upthread by John KD5YI. So far this looks like exactly what
I'm looking for.

Thanks!

3562. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 03:28:19 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <ndFFj.1269$Qv5.1009@trnddc03>
Source record: 26784

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in message
> You're welcome. You might also consider some of the new GPS
> products.... often made for tracking cars... but some small enough to
> place
> on a person. You could sit at the comfort of a computer and track them!

GPS was discussed in our training, with the main drawback being that if the patient was in a building or under a canopy of trees, etc, there would be no signal.

3563. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 07:40:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <4lkeu3d200tvbpqlup0h729md6b1m9hete@4ax.com>
Source record: 26785

On Mon, 24 Mar 2008 03:28:19 GMT, "usmcbrat"
<president@whitehouse.gov> wrote:

>"John Ferrell" <johnferrell@sprintmail.com> wrote in message
>> I just did a quick simulation on EZNEC of your proposed Quad. At 215
>> mhz the element spacing on the boom is about 1 foot. That means a 4
>> element yagi or quad should come out to 3 feet long. Similarly, the
>> element loops will be about 1 foot square.
>
>That sounds *exactly* like the one that we used in our training. The guy
>who made it said that he used an antenna design calculator on the internet
>to come up with the layout. I'm still awaiting plans from him, and in the
>meantime I'm interested in seeing if I can do it myself for the technical
>exercise.

Again, I would suggest a search of the Google archives in research of
the term "Foxhunting." Antennas with such gain may appear the obvious
choice by graphics of their radiation characteristics, but there are
more matters to location than putting a signal in the peak of a lobe.

I have a friend who has lead many Search and Rescue operation in the
city looking for patients who have "wandered away." Quite frequently
they passed by their quarry (quite closely) simply because of the
urban clutter that presents antennas with these characteristics very
confusing results.

On the other hand, and as many sailors may attest, sharp nulls are
often more compelling location indicators. Such an antenna as the
W8JK with variable phasing can give you both sharp nulls and general
gain (through careful selection of the drive point) on a shorter boom
(and could be designed in the way of a quad).

73's
Richard Clark, KB7QHC

3564. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 11:32:39 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <87fa467b-cc3d-43be-8b70-6e5441e9bd53@z38g2000hsc.googlegroups.com>
Source record: 26786
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 24, 3:24 am, Richard Clark <kb7...@comcast.net> wrote:
> On Sun, 23 Mar 2008 14:42:22 -0700 (PDT), Artem <artem.b...@gmail.com>
> wrote:
>
> >> >I'm not sure that using shielded cable and ferrite chocks is good
> >> >idea.
>
> >> Not enough choking and needs to be repeated a quarter wave down the
> >> choked wire(s).
>
> >It's 7Mhz. quarter wave is 10 miters.
>
> Then again at the far end of the wire(s).
>
> >I'm use choking:
> >between amplifier and antenna
> >between transformer and coax cable.
> >For amplifier power wires and gain control.
>
> I've observed that, and I have observed it is not enough from your
> photo - if you still have self-oscillation. Your pictures do not
> reveal any choking of the RF Out cable.

It's inside. Nearby BNC socket.

>
> As for the diagonal arm for "ground." This is fine insofar as it
> being placed in the electrical middle of the antenna loop (a ground),
> but all this rat's nest of wiring throws the concept of balance out
> the window.

I think that some disbalance should compensate differencial amplifier
on transistors.

> I see in earlier pictures where you clean that up with
> careful routing, but it seems much too busy. This leads me into the
> comments following:
>
> On another note, the AGC seems overly elaborate, especially when all
> that wire could be introducing the self-oscillation. Further, wiring
> in power seems another invitation to problems when a 9V battery would
> solve that too. Local power would discard the need for the ground

Yes. But FETs draw more that 10ma each.

> coming from the loop's perimeter, eliminate unnecessary AGC, reduce
> the complexity of choking, lower gain (it obviously has too much), and
> give you only one coax coming from the antenna.

Cable length is not problem. I'm living in apartment. I can put
antenna outside the window. But not on the roof.

I can make power supply over coax cable. I can put Atmega8 (en
example) to amplifier and add DACs for operate varicaps, AGC. I can
add rectifier and filter for detect self-oscillation and automatics
reduce AGC. But it's not necessary.

3565. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 11:56:05 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a6d8837b-deb1-4027-a131-9db1c58b98ff@i12g2000prf.googlegroups.com>
Source record: 26787

On Mar 23, 10:31 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > So yes, the phrase "conservation of power" is
> > appropriately descriptive and follows from
> > conservation of energy.
>
> You have a contradiction built into your concepts.
> You have argued that the instantaneous power dissipated
> in the source resistor is not equal to the instantaneous
> forward power component plus the instantaneous reflected
> power because power must be conserved at each instant of
> time.
> That is simply not true.

Bzzzzzzzzzzzzt.

> I'm telling that energy must be conserved at each instant
> of time but power does not have to be conserved at each
> instant of time.

Bzzzzzzzzzzzzt.

> Energy can obviously be stored in a
> battery or network reactance for dissipation later in
> time.

Indeed. And forgetting to include such flows in the summation
would be a serious error.

For example, from the example,
Ps(t) = Prs(t) + Pg(t)
includes Pg(t) which accounts for the energy stored in the
line and later returned. There are no missing flows in
this equation. And Ps(t) also accounts for energy absorbed
in the voltage source. Only the source resistor has a
unidirectional energy flow.

> Do you require that the power used to charge a battery
> be instantaneously dissipated in the battery?

The energy flow into the battery is exactly and always
accounted for by the energy flow that heats the battery
and the energy flow consumed in the reversable chemical
reaction.

The instantaneous flows always sum appropriately to
satisfy conservation of energy. Of course, if one forgets

a flow, then the sum will not balance.

> Of course
> not! That's true for a dummy load but NOT for a battery.
> There is no reason to require dissipation of power at
> each instant of time to balance. Since energy can be
> stored, there is no such thing as conservation of
> instantaneous power,

Of course there is, but you must include the flows into
the elements that store energy as I have done.

> only of instantaneous energy.
>
> > Where is "cos(theta)" in this?
> > And what "theta" is to be used?
>
> How many times do I have to explain this? For instantaneous
> values of voltage, if the sign of the two interfering voltages
> are the same, theta is zero degrees and the cosine of theta is
> +1.0. If the sign of the two interfering voltages are opposite,
> theta is 180 degrees and the cosine of theta is -1.0.

A strange of way of looking at it. It seems easier just
to say that there is no theta. And add the voltages.

But no matter, I have figured out where your extra term
comes from.

Let us a consider a simple circuit with two voltage sources
(V.s1 and V.s2) in series, connected to a resistor R.

Using superposition we have
V.s1 = R * Ir.s1
and
V.s2 = R * Ir.s2

So
Vr.tot = V.s1 + V.s2
and
Ir.tot = I.s1 + I.s2
This is superposition, and all is well.

The power dissipated in the resistor is
Pr = (Vr.tot)**2 / R
but we could also derive Pr in terms of V.s1 and V.s2
Pr = (V.s1 + V.s2) (V.s1 + V.s2) / R
= ((V.s1)**2 + (V.s2)**2 + (2 * V.s1 * V.s2)) / R
= (V.s1)**2 / R + (V.s2)**2 / R + (2 * V.s1 * V.s2) / R

Now some people attempt to compute a power for each of
the contributing voltages across the resistor and obtain
Pr.s1 = (V.s1)**2 / R

Pr.s2 = (V.s1)**2 / R
When these are added one obtains
Pr.false = (V.s1)**2 / R + (V.s2)**2 / R
which, by comparison with Pr above can easily be seen not to be the power dissipated in the resistor. Pr.false is missing the term ((2 * V.s1 * V.s2) / R) from Pr. It is for this reason that it is said that one can not superpose powers. Simply stated, when powers are dervived from the constituent voltages that are superposed, it is not valid to add the powers together to derive the total power.

Of course for the most part, powers being added are not powers derived from the constituent voltages of a total voltage, so in most cases it is quite valid to add powers and expect them to sum to the total power.

But what do you do if a circuit is superposing two voltages and you are presented with information about the circuit in terms of powers. Well then you can add the powers and include a correction term.

Assume
Pr = Pr.false + Pr.correction
= Pr.s1 + Pr.s2 + Pr.correction
But can we find a Pr.correction? It has to correct for the term missing from Pr.false but present in Pr, i.e. ((2 * V.s1 * V.s2) / R).

Restated in terms of power, ((2 * V.s1 * V.s2) / R) becomes
2 * sqrt(P.s1 * P.s2)
But sqrt has two solutions so we have to write
Pr = Pr.s1 + Pr.s2 +/- 2 * sqrt(P.s1 * P.s2)
which should look very familiar.

As you have correctly pointed out, the sign of Pr.correction is negative when the signs of the constituent voltages are different and positive when they are the same. The reason for this can easily be seen from the derivation of Pr.correction.

This Pr.correction term has nothing to do with interference, it is the correction required when it is desired to add two powers computed from the superposing constituent voltages of an actual total voltage across an element and derive the energy flow into the element.

Note that there is no hint that Pr.correction needs to be stored when it is negative nor come from somewhere when it is positive. It is, after all, just a correction that

needs to be applied when one wants to compute the total power given two powers derived from the constituent voltages of superposition.

Since one needs to know the constituent voltages to determine the sign of Pr.correction, why not just use superposition to compute the total voltage and then derive the power? It would be much simpler. With no need for Pr.correction, interference, storage and release of interference 'energy', ...
(Of course, over in optics land it is difficult to measure the voltage, so suffering the pain of using powers is probably appropriate).

This analysis also makes clear the nature of powers computed from the constituent voltages of superposition. These powers do not represent real energy flows. As discussed far above, real energy flows can be summed to test for conservation of energy. When energy flows do not sum appropriately, then either an energy flow is missing, or one is attempting to sum powers which are not real, for example, having been computed from the constituent voltages of superposition (e.g. Pfor and Pref in a transmission line).

...Keith

3566. Re: Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 13:10:02 UTC
From: Eric <englere_geo@yahoo.com>
Message-ID: <ff346328-a520-43c9-86e3-4afdac0c4f49@n75g2000hsh.googlegroups.com>
Source record: 26788
Body handling: HTML body converted to readable text

On Mar 21, 2:50 pm, Brian Howie wrote:

> I've always wondered how well this would get out loaded up on Top Band
>
> http://www.firstcity.force9.co.uk/newgallery/out1.htm

I'm afraid the homeland security people would want to talk to you
about that! They tend to get excitied about wires and electronic
equipment near bridges.

But it certainly does have an impressive array of vertical radiators.
It would be quite directional, so hopefully there are some good DX
stations off the ends of this.

Eric

3567. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 13:35:10 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080324063510.47710a09.rsparks@elltel.net>
Source record: 26789

On Sun, 23 Mar 2008 19:57:24 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> >(the reflected voltage should ADD to the source voltage)
>
> If you graph the two voltages you will find that half the time
> the reflected voltage adds to the source voltage and half the
> time the reflected voltage subtracts from the source voltage.
> Both are true half the time. You can point out either case on
> the graph. That's why the average interference term is zero
> for this special case and therefore why 100% of the average
> reflected power is dissipated in the source resistor for
> this special case.
>
> > You might wonder why I would consider this alternative.
> > If the destructive interference included a 90 degree delay,
> > how would I know whether the 30v was the delayed voltage or
> > exactly in phase with the source?
>
> By looking at the graphs?
>
> > Where is the power stored for 90 degrees?
>
> In the equivalent reactance of the transmission line.
>
> That's what reactances do in AC circuits. They store
> energy and deliver it back to the system some time
> later.
> --
> 73, Cecil http://www.w5dxp.com

I did not use a graph, but created a spreadsheet that calculated Vrs for the short circuit, 45 degree long line. It shows the 90 degree transfer of power that you described. I posted the spreadsheet in PDF format at http://www.fairpoint.net/~rsparks/Reflect_short.pdf.

To me, this shows that my traveling wave analysis on an instant basis is not correct because the energy can not be located precisely on a degree-by-degree scale. Yes, it is correct on the average over 360 degrees, but not instantaneously. We are missing something.

Central to traveling waves is the assumption that the wave is not compressable. The energy is assumed to flow in a consistantly predictable mannor that is linear and described by a sine wave. That assumption is violated when energy is delayed for reasons other than distance of travel, which is demonstrated in this example.

I am not ready to suggest a cure for my traveling wave analysis. I only see that it does not work to my expectations.

Thanks for providing the examples and comments.
--
73, Roger, W7WKB

3568. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 14:46:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <x9PFj.5353$LV5.2497@newssvr19.news.prodigy.net>
Source record: 26790

Keith Dysart wrote:
> The energy flow into the battery is exactly and always
> accounted for by the energy flow that heats the battery
> and the energy flow consumed in the reversable chemical
> reaction.

Point is, energy can be stored and released at a
later time. You earlier said that reactances do not
store energy for release at a later time yet that
is exactly what reactances do.

> A strange of way of looking at it. It seems easier just
> to say that there is no theta. And add the voltages.

Saying there is no theta is a shortcut that can get
one into trouble as it did with you. Since there is
no such thing as negative energy, there is also no
such thing as negative power. Note there are no
negative power signs in the power density equation
where 'theta' is the phase angle between the two
interfering voltages:

Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(theta)

The last term is known as the "interference term",
page 388 of "Optics" by Hecht, 4th edition. When
90 < theta < 180, the sign of the last term is negative
indicating destructive interference. When
0 <= theta < 90, the sign of the last term is positive
indicating constructive interference. When theta = 90,
there is zero interference which is what Part 1 of my
web articles is based upon.

> This Pr.correction term has nothing to do with
> interference, ...

Your argument is not with me but rather is with
Eugene Hecht who defined that term as the "interference
term" in "Optics". Have you even read his chapter on
interference? If not, I would suggest that you do so.
Two other enlightening chapters are on "Superposition"
and "Coherency".

> Note that there is no hint that Pr.correction needs to be
> stored when it is negative nor come from somewhere when
> it is positive.

You're correct, there's no hint. It is spelled out in
detail in "Optics". The possibilities are listed below.

Your above statement is a conceptual violation of the
conservation of energy principle. In the absence of
any other energy source or energy sink, localized
destructive interference must exactly match the
localized constructive interference magnitude in
order to avoid a violation of the conservation of
energy principle. This is why a Z0-match works.

> Since one needs to know the constituent voltages to
> determine the sign of Pr.correction, why not just use
> superposition to compute the total voltage and then
> derive the power?

That is what has extended this discussion to arguments
over the past quarter century. That 30,000 foot method
says nothing about where the ExH energy in the reflected
wave goes. The irradiance (power density) equation with
its defined "interference term" tells us exactly where
all the energy goes and answers the question: What happens
to the ExH energy in the reflected wave?

Here are the basic principles:

When destructive interference occurs, there is "extra"
energy left over from that isolated event. That energy
must go somewhere. Here are the possibilities in a
typical lossless RF transmitting system.

1. The source can throttle back on its energy output
to compensate for the destructive interference energy.

2. Reactive components can store the destructive
interference energy and return it to the network at
a later time.

3. In the absence of (1) and (2) above, an RF energy
wave is launched in a direction that allows the
"extra" energy to leave the destructive event area.

The last possibility is why we can observe reflected
energy being redistributed back toward the load in
the complete absence of single-wave reflections.

When constructive interference occurs, there is "missing"
energy needed to be supplied into that isolated event. That
energy must come from somewhere. Here are the possibilities
in a typical lossless RF transmitting system.

1. The source can simply supply the energy needed by
the constructive interference event.

2. Reactive components can return stored energy to
the network.

3. In the absence of (1) and (2) above, constructive
interference energy *must* be supplied in real time
by destructive interference between two other waves.

****
* The last possibility is how a Z0-match redistributes *
* all of the reflected energy back toward the load when *
* the physical reflection coefficient is not 1.0. *
****

The two-step process of redistributing 100% of the ExH reflected
wave energy back toward the load is covered in my other energy
analysis article on my web page at:

http://www.w5dxp.com/energy.htm

> This analysis also makes clear the nature of powers
> computed from the constituent voltages of superposition.
> These powers do not represent real energy flows. As
> discussed far above, real energy flows can be summed
> to test for conservation of energy.

Translation: Don't bother trying to ascertain where the
ExH component wave energy goes. Since the conservation
of energy principle cannot be violated in reality, it
is OK to violate it conceptually. Now where have I
heard that argument before? :-)

"I personally don't have a compulsion to understand where
this power 'goes'."

Do you really think that the ExH energy in a reflection
from a mirror does not represent real energy flow?
--
73, Cecil http://www.w5dxp.com

3569. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 14:59:50 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <be574705-d981-4297-8aa1-6aeab253c5ff@q78g2000hsh.googlegroups.com>
Source record: 26792
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 24, 5:45 pm, Richard Clark <kb7...@comcast.net> wrote:
>> As for the diagonal arm for "ground." This is fine insofar as it
> >> being placed in the electrical middle of the antenna loop (a ground),
> >> but all this rat's nest of wiring throws the concept of balance out
> >> the window.
>
> >I think that some disbalance should compensate differencial amplifier
> >on transistors.
>
> That makes no sense whatever.

Disbalance mean in-phase signal on gate 1 FETs. differencial will not
amplify this signal.

> Sounds like a lot of unnecessary complexity. The one thing you repeat
> is varicaps, but I don't see them.

I have. I just did now how them because this is trivial.

3570. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 15:15:34 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <7385c109-5ebe-405d-9c28-086786b43f8c@k13g2000hse.googlegroups.com>
Source record: 26793
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 24, 5:45 pm, Richard Clark <kb7...@comcast.net> wrote:
>> As for the diagonal arm for "ground." This is fine insofar as it
> >> being placed in the electrical middle of the antenna loop (a ground),
> >> but all this rat's nest of wiring throws the concept of balance out
> >> the window.
>
> >I think that some disbalance should compensate differencial amplifier
> >on transistors.
>
> That makes no sense whatever.

Disbalance mean in-phase signal on gate 1 FETs. differencial will not
amplify this signal.

> Sounds like a lot of unnecessary complexity. The one thing you repeat
> is varicaps, but I don't see them.

I have. I just did now how them because this is trivial.

3571. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 15:18:16 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <639a51e3-e546-4c38-a917-9532c668a9ac@8g2000hsu.googlegroups.com>
Source record: 26794
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 24, 4:59 pm, Artem <artem.b...@gmail.com> wrote:
>I just did now how them because this is trivial.
I did not show varicaps because this is trivial.
Sorry.

3572. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 15:29:42 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <34d59558-041f-4fb1-9c00-6f2fba7cbb36@t54g2000hsg.googlegroups.com>
Source record: 26795
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 24, 4:59 pm, Artem <artem.b...@gmail.com> wrote:
>I just did now how them because this is trivial.
I did not show varicaps because this is trivial.
Sorry.

3573. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 15:33:01 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <4d290f5e-52c3-4a14-8012-d71228734b13@b64g2000hsa.googlegroups.com>
Source record: 26796
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 24, 4:59 pm, Artem <artem.b...@gmail.com> wrote:
>I just did now how them because this is trivial.
I did not show varicaps because this is trivial.
Sorry.

3574. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 15:45:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jtifu3hdbku85fsmn2nq1arrn9d8u6k84r@4ax.com>
Source record: 26791
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mon, 24 Mar 2008 04:32:39 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>> I've observed that, and I have observed it is not enough from your
>> photo - if you still have self-oscillation. Your pictures do not
>> reveal any choking of the RF Out cable.
>
>It's inside. Nearby BNC socket.

Which defeats the choking.

>> As for the diagonal arm for "ground." This is fine insofar as it
>> being placed in the electrical middle of the antenna loop (a ground),
>> but all this rat's nest of wiring throws the concept of balance out
>> the window.
>
>I think that some disbalance should compensate differencial amplifier
>on transistors.

That makes no sense whatever.

>>another invitation to problems when a 9V battery would
>> solve that too. Local power would discard the need for the ground
>
>Yes. But FETs draw more that 10ma each.

That is trivial. However, you can bias for less because you don't
need that much drain current.

>> coming from the loop's perimeter, eliminate unnecessary AGC, reduce
>> the complexity of choking, lower gain (it obviously has too much), and
>> give you only one coax coming from the antenna.
>
>Cable length is not problem. I'm living in apartment. I can put
>antenna outside the window. But not on the roof.
>
>I can make power supply over coax cable. I can put Atmega8 (en
>example) to amplifier and add DACs for operate varicaps, AGC. I can
>add rectifier and filter for detect self-oscillation and automatics
>reduce AGC. But it's not necessary.

Sounds like a lot of unnecessary complexity. The one thing you repeat
is varicaps, but I don't see them.

73's
Richard Clark, KB7QHC

3575. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 15:49:49 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fs8iitutb1@news.jpl.nasa.gov>
Source record: 26797

Buck wrote:
> On Fri, 21 Mar 2008 15:50:45 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
> wrote:
>
>
>
>>Since the roof of a house is fairly large, a more conventional random
>>length loop tuned with something like a LDG or SGC autotuner at the
>>feedpoint might be a good approach. Icom IC-AH4 could probably also work.
>>
>
> That is certainly an idea I hadn't thought of. It sounds cheaper and
> easier to build. The same concept could be used with raising and
> lowering the antenna, but instead of a 'loop', it could be a wire.
>
> Thought: let's assume one puts up a loop on the roof. The ground side
> is a single wire running over the peak of the house roof, folds up at
> 90 degrees for 3-6 feet, back across the roof 6 foot above the peak
> and back down to the hot lead of the autotuner. Would that not
> circumvent the need for the capacitor at the far end? and would the
> loop have to be trimmed to a particular size to operate the various
> bands, or could the tuner actually operate with most any size loop.

Probably would work ok. The other approach would be a more conventional dipole looking thing, with the tuner in the middle. To a first order, they'll work the same. A long skinny (much << wavelength wide) loop looks a lot like a folded dipole. So, how well it works will probably be determined more by what impedance happens to appear at the feedline, and how well the tuner matches it. If the tuner's at the end (either of the skinny loop or a long random wire) then the impedance tends to be high (close to resonance). If it's in the middle, it's low.

In your situation, I might be tempted to try hanging a vertical wire down the side of the house, hooked to one side of the tuner, and the other horizontalish wire 6 ft off the roof. RFI/EMI might be an issue..

You could also do something like run a couple wires on the roof at right angles to the ridge line, hook those to one terminal of the tuner, then hook your wire running along the ridge to the other terminal.

I've fooled around a lot with various "throw the wire on the roof" situations (out of laziness, more than anything), and, in general, it seems to work better (no quantititive results) when it looks more like a fan dipole (feedpoint in the middle-ish) than a loop (feedpoint on the edge).

3576. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 16:15:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tsQFj.22611$Ch6.2698@newssvr11.news.prodigy.net>
Source record: 26798

Roger Sparks wrote:
> To me, this shows that my traveling wave analysis on an instant basis
> is not correct because the energy can not be located precisely on a
> degree-by-degree scale. Yes, it is correct on the average over 360
> degrees, but not instantaneously. We are missing something.

What you are missing is the localized interference patterns
within the individual cycles. The interference changes from
destructive to constructive every 90 degrees. For every
negative (destructive) interference term, there is an equal
magnitude positive (constructive) interference term 90 degrees
later. These, of course, average out to zero. Exactly the
same thing happens when a coil or capacitor is present in
a circuit. When the instantaneous voltage of a source is
zero and thus delivering zero instantaneous power, a
circuit capacitor is delivering energy back into the
circuit that can be dissipated by a resistor.

> Central to traveling waves is the assumption that the wave is not
> compressable. The energy is assumed to flow in a consistantly
> predictable mannor that is linear and described by a sine wave.
> That assumption is violated when energy is delayed for reasons
> other than distance of travel, which is demonstrated in this example.

Power is certainly compressible. One can stuff 100 amphere-
hours into a battery in 2 hours and take 20 hours to remove it.
Why can't 60 watts of instantaneous power be stuffed into
a reactance and be removed 90 degrees later?

> I am not ready to suggest a cure for my traveling wave analysis. I
> only see that it does not work to my expectations.

Your expectations seem to be based on a conservation of
power principle which doesn't exist. There is no violation
of linearity if the energy dissipation is delayed by 90
degrees or by ten billion years.

I don't recall any published material where anyone tried
to explain where the instantaneous energy goes while at
the same time denying the possibility of interference.
--
73, Cecil http://www.w5dxp.com

3577. 160m vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 18:53:50 UTC
From: rb <rbig@bellsouth.net>
Message-ID: <DMSFj.9501$Q52.249@bignews9.bellsouth.net>
Source record: 26799

Got about 60' for a vertical. Using 160'm, any length close to this better
for 160 (up or down)? Idea is to bottom feed it with an antenna tuner.
Yes, radials will be run. Also, will top loading help or hurt?

3578. CHECK THIS OUT! (Superb)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 19:17:40 UTC
From: gherlymanton@gmail.com
Message-ID: <69bd5573-7cbb-4d73-9e24-1a0dc223afd7@s8g2000prg.googlegroups.com>
Source record: 26652

get the action n0w!!! http://www.getaction4ever.com

3579. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 20:02:52 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <4h0gu350nkbpuf2q5ndpra5a9qttab4v3c@4ax.com>
Source record: 26800
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mon, 24 Mar 2008 07:59:50 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>> >I think that some disbalance should compensate differencial amplifier
>> >on transistors.
>>
>> That makes no sense whatever.
>
>Disbalance mean in-phase signal on gate 1 FETs. differencial will not
>amplify this signal.

This is still a strain in language as you have done nothing to
describe what the "compensation" is for. The circuit of your
schematic is fully differential in a bridge configuration, so saying
it will not amplify still makes no sense. To offer a deliberate
imbalance to a balanced circuit gives rise to astability which is the
first hallmark of oscillation - especially in an amplifier with too
much gain, and too much current drain - or a lockdown.

I get every impression that this bridge configuration arrived from
some sense of "ground" that then drove the need for the cross piece to
the midpoint of the loop. That point is "ground", but only as an
electrical neutral to the loop. It carries no other "ground"
distinction and you could have as easily built a single MOSFET
amplifier rather than a bridge configuration. A split shield around
the loop (or integrating it into the design) would have simplified AGC
and control lines too.

You tried to incorporate some of the split shield design into this
when you enclosed the amplifier and made a socket connection, but you
defeated the benefit of the choke at the same time with a zero net
gain (the choke, as built, has no use).

>> Sounds like a lot of unnecessary complexity. The one thing you repeat
>> is varicaps, but I don't see them.
>
>I have. I just did now how them because this is trivial.

They are not shown in your schematic. I don't see them in your
photos. Making them operational is adding yet more lines, although I
can see they would be necessary for your purposes.

Providing the decoupled varicap bias into a balanced circuit is not
trivial at all, and offers the prospects of returning to that self
oscillation. There will be something like half a dozen components for

that alone.

HOWEVER, this is all beside the point unless your design breaks into oscillation again. You haven't informed us how you cured that since you announced you had solve all your problems.

73's
Richard Clark, KB7QHC

3580. Re: Double dipole better than YAGI 5 elements??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 20:03:01 UTC
From: user <dag@allemaale.be>
Message-ID: <fs91dk$r6d$1@registered.motzarella.org>
Source record: 26653

Take a look here too:
http://cordis.europa.eu/ictresults/index.cfm/section/news/tpl/article/BrowsingType/Features/ID/89327

Double antennas deliver double the signal

The wireless shadows of tall buildings are a challenge for transmission.
PhotoDisc
Digital TV transmission techniques that deliver most benefit in the worst reception environments have been developed by a consortium of European researchers. The technologies promise to reduce the network infrastructure needed for mobile TV, while minimising the power demands and complexity of mobile TV receivers of the future.

In a typical broadcast transmission, radio signals bounce off objects in the environment, reaching the receiver over multiple paths. Distortion from ‘multi-path’ signals can produce fading, resulting in temporary failure of reception. Most of us have experienced this, moving a mobile phone around a room to get the strongest signal.

Modern broadband wireless technologies like wimax, DAB for audio, and DVB-T and DVB-H for video, use a modulation scheme called Orthogonal Frequency-Division Multiplexing (OFDM).

An OFDM transmission is spread across thousands of different sub-carriers, each carefully organised at slightly different frequencies within the channel. Spreading the transmission across a high number of sub-carriers increases the probability of maintaining error-free transmission.

Researchers have demonstrated that splitting the transmit power between multiple antennas can provide substantially more effective coverage than using a single antenna. Signal simulations carried out for project Pluto show a gain of up to 5 decibels could be achieved. The Physical Layer DVB Transmission Optimisation (PLUTO) project comprises a consortium of academics, equipment manufacturers, propagation experts and broadcasters from Finland, France, Germany and the UK, co-funded by the European Commission.
Best in worst environments

The transmission-splitting technique under development by PLUTO, known as ‘transmit diversity’, benefits the worst environments most. Reception can be spectacularly improved indoors, or whilst walking or driving in cities. Fewer transmitters and less power are required to achieve economical coverage.

“This technique does not require revision of any WiMAX, DVB or DAB standards,” says Maurice Bard of UK company Broadreach Systems, the

technical leader of PLUTO. “The great advantage is that it can be exploited by existing in-service receivers without modification. All you need is an additional box that can split the signal.”

“The transmit antennas need to be spatially separated by between 10 and 20 wavelengths and a delay applied to one antenna to achieve effective de-correlation. The amount of separation and delay depends on the type of environment to be covered,” says Bard.

Coverage can be further improved if there are two or more antennas at the reception end, he explains: “For receive diversity, you need to separate the receive antennas by at least half a wavelength which is approximately 25 centimetres at UHF frequencies. If this can be achieved, then transmit and receive diversity can work together to deliver even greater benefits. The benefits of receive diversity, however, can only be exploited in terms of network design if all receivers in the network have diversity implemented.”

Filling in black holes

Even with the reception improvements promised by transmit diversity, there will be reception black spots, particularly indoors, where on-channel repeaters will be needed. An on-channel repeater receives a signal from a distant transmitter and re-transmits it at the same frequency. The repeaters are prone to instability caused by the feedback of echoes from the transmitter to the receiver. Here, the academics at Brunel University, led by PLUTO project coordinator Professor John Cosmas, have developed an innovative method to remove these echoes.

A pseudo-random sequence is buried deep in the re-transmitted DVB-H signal,” explains Cosmas. “The sequence acts as a signature, allowing the repeater to differentiate the unwanted echoes from the wanted original signal and remove them from the re-transmission.”

“The method can work for repeaters of any OFDM based network.”

Broadreach Systems has provided equipment to process signals at the transmitter and monitoring stations that intercept and measure transmitted DVB signals. The monitor stations are networked to a control centre, developed by Brunel, enabling the effects of diversity to be evaluated in real time.”

There are still some hurdles to be overcome before PLUTO’s transmit diversity solution is suitable for all types of broadcast networks. Transmit diversity actually results in a degradation in reception where the receiver is in clear line-of-sight with the transmitter and the signals from each antenna are received at exactly the same power level.

The line-of-sight reception loss may not prove to be a problem for many networks. In a mobile TV network, all receivers will be in a non- or near-line-of-sight situation, very few will have rooftop antennas. But ‘good enough’ is not a position that the PLUTO consortium is prepared to stop at if they are to change traditional thinking.

“We need to show that the performance we saw in the lab can be achieved in all real situations, rain, snow, cities …” says Cosmas.

“And, we have to convince the broadcasters who designed traditional analogue networks, where multi-paths had to be avoided, that multi-paths are good.”

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Shortwave transmissions in English, Francais, Nederlands, Deutsch,
Suid-Afrikaans, Chinese, Dansk, Urdu, Cantonese, Greek, Spanish,
Portuguese, ...
http://users.fulladsl.be/spb13810/swlist/ Updated every month or so ....

3581. Re: 160m vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 20:07:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <s92gu3tsfkhpgkj7mc120ng34aer6sapmo@4ax.com>
Source record: 26651

On Mon, 24 Mar 2008 13:53:50 -0500, "rb" <rbig@bellsouth.net> wrote:

>Got about 60' for a vertical. Using 160'm, any length close to this better
>for 160 (up or down)? Idea is to bottom feed it with an antenna tuner.
>Yes, radials will be run. Also, will top loading help or hurt?

Leave it planted in the ground with all the radials for lightning
protection. Put a big top hat up there and gamma match it (the line
will probably run the full height). Press key to transmit.

73's
Richard Clark, KB7QHC

3582. Re: Double dipole better than YAGI 5 elements??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 20:42:10 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <27abd228-e3bf-4270-9f18-9a79cc194cd6@a70g2000hsh.googlegroups.com>
Source record: 26654

On Mar 24, 3:03 pm, user <d...@allemaale.be> wrote:
> Take a look here
too:http://cordis.europa.eu/ictresults/index.cfm/section/news/tpl/article...
>
> Double antennas deliver double the signal
>
> The wireless shadows of tall buildings are a challenge for transmission.
> PhotoDisc
> Digital TV transmission techniques that deliver most benefit in the worst
> reception environments have been developed by a consortium of European
> researchers. The technologies promise to reduce the network infrastructure
> needed for mobile TV, while minimising the power demands and complexity of
> mobile TV receivers of the future.
>
> In a typical broadcast transmission, radio signals bounce off objects in the
> environment, reaching the receiver over multiple paths. Distortion
> from 'multi-path' signals can produce fading, resulting in temporary
> failure of reception. Most of us have experienced this, moving a mobile
> phone around a room to get the strongest signal.
>
> Modern broadband wireless technologies like wimax, DAB for audio, and DVB-T
> and DVB-H for video, use a modulation scheme called Orthogonal
> Frequency-Division Multiplexing (OFDM).
>
> An OFDM transmission is spread across thousands of different sub-carriers,
> each carefully organised at slightly different frequencies within the
> channel. Spreading the transmission across a high number of sub-carriers
> increases the probability of maintaining error-free transmission.
>
> Researchers have demonstrated that splitting the transmit power between
> multiple antennas can provide substantially more effective coverage than
> using a single antenna. Signal simulations carried out for project Pluto
> show a gain of up to 5 decibels could be achieved. The Physical Layer DVB
> Transmission Optimisation (PLUTO) project comprises a consortium of
> academics, equipment manufacturers, propagation experts and broadcasters
> from Finland, France, Germany and the UK, co-funded by the European
> Commission.
> Best in worst environments
>
> The transmission-splitting technique under development by PLUTO, known
> as 'transmit diversity', benefits the worst environments most. Reception
> can be spectacularly improved indoors, or whilst walking or driving in
> cities. Fewer transmitters and less power are required to achieve
> economical coverage.

>
> "This technique does not require revision of any WiMAX, DVB or DAB
> standards," says Maurice Bard of UK company Broadreach Systems, the
> technical leader of PLUTO. "The great advantage is that it can be exploited
> by existing in-service receivers without modification. All you need is an
> additional box that can split the signal."
>
> "The transmit antennas need to be spatially separated by between 10 and 20
> wavelengths and a delay applied to one antenna to achieve effective
> de-correlation. The amount of separation and delay depends on the type of
> environment to be covered," says Bard.
>
> Coverage can be further improved if there are two or more antennas at the
> reception end, he explains: "For receive diversity, you need to separate
> the receive antennas by at least half a wavelength which is approximately
> 25 centimetres at UHF frequencies. If this can be achieved, then transmit
> and receive diversity can work together to deliver even greater benefits.
> The benefits of receive diversity, however, can only be exploited in terms
> of network design if all receivers in the network have diversity
> implemented."
> Filling in black holes
>
> Even with the reception improvements promised by transmit diversity, there
> will be reception black spots, particularly indoors, where on-channel
> repeaters will be needed. An on-channel repeater receives a signal from a
> distant transmitter and re-transmits it at the same frequency. The
> repeaters are prone to instability caused by the feedback of echoes from
> the transmitter to the receiver. Here, the academics at Brunel University,
> led by PLUTO project coordinator Professor John Cosmas, have developed an
> innovative method to remove these echoes.
>
> A pseudo-random sequence is buried deep in the re-transmitted DVB-H signal,"
> explains Cosmas. "The sequence acts as a signature, allowing the repeater
> to differentiate the unwanted echoes from the wanted original signal and
> remove them from the re-transmission."
>
> "The method can work for repeaters of any OFDM based network."
>
> Broadreach Systems has provided equipment to process signals at the
> transmitter and monitoring stations that intercept and measure transmitted
> DVB signals. The monitor stations are networked to a control centre,
> developed by Brunel, enabling the effects of diversity to be evaluated in
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> There are still some hurdles to be overcome before PLUTO's transmit
> diversity solution is suitable for all types of broadcast networks.
> Transmit diversity actually results in a degradation in reception where the
> receiver is in clear line-of-sight with the transmitter and the signals
> from each antenna are received at exactly the same power level.
>

> The line-of-sight reception loss may not prove to be a problem for many
> networks. In a mobile TV network, all receivers will be in a non- or near-
> line-of-sight situation, very few will have rooftop antennas. But 'good
> enough' is not a position that the PLUTO consortium is prepared to stop at
> if they are to change traditional thinking.
>
> "We need to show that the performance we saw in the lab can be achieved in
> all real situations, rain, snow, cities ..." says Cosmas.
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> "And, we have to convince the broadcasters who designed traditional analogue
> networks, where multi-paths had to be avoided, that multi-paths are good."
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> --
> --
> Shortwave transmissions in English, Francais, Nederlands, Deutsch,
> Suid-Afrikaans, Chinese, Dansk, Urdu, Cantonese, Greek, Spanish,
> Portuguese, ...http://users.fulladsl.be/spb13810/swlist/ Updated every month or so ....

I believe a better aproach is to not have the antennas separated by
half a WL
but to put them on the same axis i.e. altenate polarity selective.With
splitting based on
signal level it would be more ambidextrious.In a couple of weeks I
will be
situated to check this out!

3583. Re: 160m vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 21:02:48 UTC
From: Dave <noone@nowhere.com>
Message-ID: <YFUFj.4406$vD1.1384@trndny09>
Source record: 26655

"rb" <rbig@bellsouth.net> wrote in message
news:DMSFj.9501$Q52.249@bignews9.bellsouth.net...
> Got about 60' for a vertical. Using 160'm, any length close to this
> better for 160 (up or down)? Idea is to bottom feed it with an antenna
> tuner. Yes, radials will be run. Also, will top loading help or hurt?
>
>
>

add a top hat to it to help make it more efficient, that will definately help. base loading or tuner will be needed to make most radios happy with it, if you are going to use a tuner and the coax run isn't extremely long i wouldn't bother with base loading... unless you want to run high power where the swr on the cable may damage it, or your tuner just can't handle the mismatch.

3584. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 21:04:01 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <63a0a1dd-b21c-4337-81fc-7ec445a908ef@8g2000hsu.googlegroups.com>
Source record: 26656

On Mar 11, 10:29 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Art Unwin wrote:
> > If Kraus said "The radiation is perpendicular to the accelleration"
> > then the book is worthless.
>
> Balanis says, speaking of an infinitesimal dipole:
> "Integrating the complex Poynting vector over a closed
> sphere, ... results in the power (real and imaginary)
> directed in the radial direction. Any transverse
> components of power density, ... will not be captured by
> the integration even though they are part of the overall
> power."
>
> Apparently, Kraus' assertion is a result of the integration
> math and does not necessarily correspond to reality.
> --
> 73, Cecil http://www.w5dxp.com

Another point to reckon with is the tilted folded dipole
The experiment the Naval departgment under took when comparing
antennas.
The results showed that antennas tipped away from parallelism to the
ground
provided best results for their use which concentrated on receiving.
All existing antennas were removed and replaced by tilted radiators.
Thus their tests showed that tipped radiators was not a "myth" as
stated by this group
and also radiationis not primarily at right angles to a radiator.Is
the Navy at fault by not conforming
to Kraus's and other expert teachings and aligning themselves to
facts attained in the field.
As Reagan stated "Trust but verify" The same goes for students who
suck up what the experts
and professors state without verifying from first principles. Choice
of answers will
allow memorisation to pass the exam but not to arrive at the cusp of
new discoveries!
Art Unwin...KB9MZ..xg (uk)

3585. Re: 160m vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 21:35:54 UTC
From: Sum Ting Wong <sumtingwong@privacy.net>
Message-ID: <a37gu39v5q6so5g7b0km3fm0rpm9q224ra@4ax.com>
Source record: 26657

On Mon, 24 Mar 2008 13:53:50 -0500, "rb" <rbig@bellsouth.net> wrote:

>Got about 60' for a vertical. Using 160'm, any length close to this better
>for 160 (up or down)? Idea is to bottom feed it with an antenna tuner.
>Yes, radials will be run. Also, will top loading help or hurt?

Go here and check out what the recent Clipperton Island DXpedition was
using on 160M: http://www.clipperton2008.org/dxpedition/antennas.htm

The photo of the 160M antenna is at the bottom of the web page.

It's basically your 60' vertical with a top hat consisting of four 46'
wires and a four 132' radials.

They had a good signal here in SoCal. The antenna inventory also
listed a balloon lifted vertical, but the operators were almost always
talking about the high winds and rain they experienced. I'll be
interested to find out if they were able to use the balloon at all
under those conditions.

S.T.W.

3586. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-24 22:40:53 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <e3754e93-1a30-4b7a-b037-4ceca12639eb@i7g2000prf.googlegroups.com>
Source record: 26658
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 24, 10:02 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Mon, 24 Mar 2008 07:59:50 -0700 (PDT), Artem <artem.b...@gmail.com>
> wrote:
>
> >> >I think that some disbalance should compensate differencial amplifier
> >> >on transistors.
>
> >> That makes no sense whatever.
>
> >Disbalance mean in-phase signal on gate 1 FETs. differencial will not
> >amplify this signal.
>
> This is still a strain in language as you have done nothing to
> describe what the "compensation" is for. The circuit of your
> schematic is fully differential in a bridge configuration, so saying
> it will not amplify still makes no sense. To offer a deliberate

It will not amplify signal in-phase signal. It's same like
differential amplifier.

> I get every impression that this bridge configuration arrived from
> some sense of "ground" that then drove the need for the cross piece to
> the midpoint of the loop. That point is "ground", but only as an
> electrical neutral to the loop. It carries no other "ground"

Yes. It's "Ground" only for bridge amplifier.

> distinction and you could have as easily built a single MOSFET
> amplifier rather than a bridge configuration. A split shield around

It's more difficult for me. It's looks more simply for me to build
fully symmetrical amplifier.

> the loop (or integrating it into the design) would have simplified AGC
> and control lines too.
>
> You tried to incorporate some of the split shield design into this
> when you enclosed the amplifier and made a socket connection, but you
> defeated the benefit of the choke at the same time with a zero net
> gain (the choke, as built, has no use).

I have.

>
> >> Sounds like a lot of unnecessary complexity. The one thing you repeat
> >> is varicaps, but I don't see them.

>
> >I have. I just did now how them because this is trivial.
>
> They are not shown in your schematic. I don't see them in your
> photos. Making them operational is adding yet more lines, although I
> can see they would be necessary for your purposes.

http://img245.imageshack.us/my.php?image=d3du5.jpg

3587. vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 00:22:34 UTC
From: Patrick <patrick.mcgillan@gmail.com>
Message-ID: <caa91d59-e562-4419-a7be-35a903677ac8@8g2000hse.googlegroups.com>
Source record: 26659

Hi,
Back at the start of the 80's, I had an article on how to build a
multi-band vertical from 4 inch pvc and 1/2 emt. I actually made one
and
it worked quite well, but one to many moves and 25 years later and it
and
the article are gone. I also remember that one of the amateur antenna
companies even made a version to sell. Anyways, if someone, could
remember the name or come up with a link, it would be greatly
appreciated.

73s
Patrick, KA9PDK

3588. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 02:39:28 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <jvngu3pp5ac30a3uua4u65ub8n7uvb4tia@4ax.com>
Source record: 26660

On Mon, 24 Mar 2008 08:49:49 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
wrote:

>I've fooled around a lot with various "throw the wire on the roof"
>situations (out of laziness, more than anything), and, in general, it
>seems to work better (no quantititive results) when it looks more like a
>fan dipole (feedpoint in the middle-ish) than a loop (feedpoint on the
>edge).

My original post was to generate topics on the antenna design and/or
equivalent or better stealth alternatives. I don't really need to
drop the wire, but that too is a good idea.

As for the 'fan dipole' you like, I have been using the horizontal
version throughout my 30 years of ham radio. I learned about the
two-wire version as a novice when I was first licensed. 80 meters cut
for the Novice frequencies also doubled as a 10 meter dipole. 40
meters cut at the lower end of the Novice frequencies doubled as a 15
meter antenna.

As a General Class operator, I discovered I not only had to add an
element for 20 meters, but the 75 meter dipole didn't work on 10 and
the 40 meter dipole didn't work on 15 meters ??? Then I learned about
where the harmonics fell.

By the time I became Advanced class, we had three new WARC bands.
Along with 75, 80, 40, 30, 20, 17, 15, 12, & 10 meters comes 9 wires
or an antenna tuner. I never did like antenna tuners. I always
wanted one antenna to do it all. It is amazing how quickly I fell in
love with my tuner, though, when I hung a 130 foot dipole about 100
feet high center fed with 300 ohm twin lead. I learned to tune the
antenna almost as quickly as I could throw an antenna switch a couple
of times.

Now that auto-tuners are about as inexpensive as the manual tuners, I
am awfully tempted to wander over to the SGC shelf at one of the ham
stores and try it out.

I am moving to a new house soon. We will be restricted in antennas
only to the extent that we don't make the yard look too ugly. It
isn't terribly well suited for many antennas, but I do hope to put up
at least one decent fan-dipole, more accurately parallel dipole. I
don't think I can fit a full-wave loop, due to lack of supports, but
it looks like I'll have a place outside my window where a row of trees
can support a 60 foot or so high dipole.... I still have a 100 foot
roll of 300 or 450 ohm window line :)

I guess I digressed.
73 for now
Buck
N4PGW

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3589. Re: 160m vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 02:57:01 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <edqgu39p9drmfbip3eoisl44ig0qkn4lle@4ax.com>
Source record: 26661

On Mon, 24 Mar 2008 13:53:50 -0500, "rb" <rbig@bellsouth.net> wrote:

>Got about 60' for a vertical. Using 160'm, any length close to this better
>for 160 (up or down)? Idea is to bottom feed it with an antenna tuner.
>Yes, radials will be run. Also, will top loading help or hurt?
>
>

A capacity hat will help, center loading may be easier to deal with
than top loading and the general rule is the more the better. (or
taller the better in your case.)

Good luck :)

Buck
N4PGW
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3590. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 05:29:18 UTC
From: JosephKK <quiettechblue@yahoo.com>
Message-ID: <ud3hu39i8rmudtssrlhi35m3ko70m8fdqd@4ax.com>
Source record: 26662
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Sun, 23 Mar 2008 12:39:35 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>On Mar 22, 8:48 pm, K7ITM <k7...@msn.com> wrote:
>
>>
>> > 15 floor of 16-floor building. But I think that in this case "ground"
>> > are building walls.
>>
>> There is a hint here: it is common that tall buildings incorporate a
>> lot of steel, and that will likely act as a shield. I hope this
>> antenna is not mounted inside!
>
>It's not mounted at all. But for tests I'm put this antenna outside.
>
>>
>>
>>
>> > > vertical) -- -- where "close" means relative to a wavelength. So the
>> > > small balanced loop is especially good for LF and VLF work.
>>
>> > my reason was make narrow-band antenna. For reject all out of band
>> > noise.
>>
>> A reasonable thing to do, though a good receiver with a low-distortion
>> and fairly narrow-band front end should not have trouble with out-of-
>> band signals (noise). Do you have a quantitative measure of just how
>> strong this out of band noise is?
>Not. Just not received.
>
> I'd personally much rather use a
>> preselection filter separate from the antenna, and close to my
>> operating position, to reject out-of-band signals. Even though the
>> antenna you have described has very high Q, I believe I could do
>> better with a two or three resonator filter running at lower Q, since
>> the slope of the attenuation versus frequency is much greater.
>
>I will receive QRSS at all. And I think that it would be best way is
>using
>narrow-band antenna -> filter -> synchronous detector.
>
>> there was some especially strong signal in the band, I would at least
>> consider a fixed-tuned bandpass filter that covered my band of

>> interest, assuming that band is fairly narrow such as 7.0-7.1MHz.
>>
>> Can you tell that you are getting the expected antenna bandwidth,
>> about 3kHz at the 3dB points at 7MHz?
>
>I'm just testing. I will purchase RF generator in next week and test.
>Now I have only self-oscillation frequency.
>
>Antenna looks like working. I'm receiving a lots of Morse signals at
>7.000 - 7050 Mhz. But I cant recognize any voice signal.
>
>This is receiving signal. Looks like narrow-band enough. This is not
>self oscillation. In self oscillation voltage a few volts.
>http://img148.imageshack.us/my.php?image=ds0000bu6.png
>
>This is schematics. I'm not sure that I'm correct use gual gate
>transistors.
>http://img210.imageshack.us/my.php?image=schbr1.jpg
>
>I'm not sure that using shielded cable and ferrite chocks is good
>idea.
>http://img171.imageshack.us/my.php?image=hwak2.jpg
>
>np0 caps.
>http://img370.imageshack.us/my.php?image=capsnf8.jpg

Please see the US ARRL frequency chart here:

http://www.arrl.org/FandES/field/regulations/Hambands_color.pdf

7000 to 7050 MHz is RTTY and Morse code only. If you want voice,
probably SSB try 7125 to 7300 MHz.

3591. Re: 160m vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 05:43:38 UTC
From: nm5k@wt.net
Message-ID: <2a07ce57-0a3d-4cb2-9c7a-5ebd0e5eb262@s12g2000prg.googlegroups.com>
Source record: 26663

On Mar 24, 12:53 pm, "rb" <r...@bellsouth.net> wrote:
> Got about 60' for a vertical. Using 160'm, any length close to this better
> for 160 (up or down)? Idea is to bottom feed it with an antenna tuner.
> Yes, radials will be run. Also, will top loading help or hurt?

If you have a 60 ft mast, I'd add a "T" top hat using two wires
that are about 60-70+ feet long each. That would load the
mast with no other coil loading needed. The top wires can
angle down a bit like an inv vee if the supports for the ends
are low. It's possible you may need some matching to the line.
But that can be a simple tapped coil like they use on mobile
whips. Top loading will make a large difference, not only to
reduce the coil loading needed, but it also improves current
distribution. Two wires for a hat are plenty. You will still see
a nearly perfect omni pattern from the antenna.

3592. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 09:48:50 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <5fb91168-0933-491f-b004-a79b3aa56189@b64g2000hsa.googlegroups.com>
Source record: 26664
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 25, 7:29 am, JosephKK <quiettechb...@yahoo.com> wrote:

> Please see the US ARRL frequency chart here:
>
> http://www.arrl.org/FandES/field/regulations/Hambands_color.pdf
>
> 7000 to 7050 MHz is RTTY and Morse code only. If you want voice,
> probably SSB try 7125 to 7300 MHz.

I'm in Europe. We have only 7000....7100.

3593. Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 12:05:13 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <47e8e5d4$0$23840$9b536df3@news.fv.fi>
Source record: 26665

Hamsticks and their clones are for US 75m (4MHz) and not directly tunable to 80m (3,5 MHz)

I plan a Hamstick dipole for Digimodes and CW for say 3560 kHz.

What is the best way to lower the resonance frequency
Some type of capasitive loading at the end of base(coil) section
or an inductance at center wich could maybe also function as impedance transformer?
What is the feedpoint resistance of Hamstick dipole?

Any ideas or experiences?

73 Jouko OH5RM

3594. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 12:11:38 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <675e9a25-d577-4d22-af31-471813c75b48@s13g2000prd.googlegroups.com>
Source record: 26666

On Mar 24, 10:46 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > The energy flow into the battery is exactly and always
> > accounted for by the energy flow that heats the battery
> > and the energy flow consumed in the reversable chemical
> > reaction.
>
> Point is, energy can be stored and released at a
> later time. You earlier said that reactances do not
> store energy for release at a later time yet that
> is exactly what reactances do.

Yes indeed. And what I have said, is that when this is
happening it is always possible to identify the element
which is storing the energy and provide the function
that describes the energy flow in and out of the
element. It is this identification and function that
I keep asking for to back up the handwaving claim that
you have been making.

> > A strange of way of looking at it. It seems easier just
> > to say that there is no theta. And add the voltages.
>
> Saying there is no theta is a shortcut that can get
> one into trouble as it did with you. Since there is
> no such thing as negative energy, there is also no
> such thing as negative power.

Bzzt. Power is the rate of change of energy. The
quantity of energy can be dropping (i.e. negative power),
without the quantity of energy ever going below zero.

> Note there are no
> negative power signs in the power density equation
> where 'theta' is the phase angle between the two
> interfering voltages:
>
> Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(theta)

Unfortunately, I took a small shortcut in my last
post and left out the "(t)" from all the functions.
You immediately jumped to an RMS interpretation.

Please re-read all the equations with "(t)". There
is no "cos(theta)" factor when "(t)" is present.

> The last term is known as the "interference term",
> page 388 of "Optics" by Hecht, 4th edition. When
> 90 < theta < 180, the sign of the last term is negative
> indicating destructive interference. When
> 0 <= theta < 90, the sign of the last term is positive
> indicating constructive interference. When theta = 90,
> there is zero interference which is what Part 1 of my
> web articles is based upon.

But this applies to RMS voltages and average powers.
You have extended this to instantaneous, for which a
"cos(theta)" factor is inappropriate.

> > This Pr.correction term has nothing to do with
> > interference, ...
>
> Your argument is not with me but rather is with
> Eugene Hecht who defined that term as the "interference
> term" in "Optics". Have you even read his chapter on
> interference? If not, I would suggest that you do so.
> Two other enlightening chapters are on "Superposition"
> and "Coherency".

Read it as Pr.correction(t) to emphasize that it is not
average power of which I am writing. Then it is not
interference.

> > Note that there is no hint that Pr.correction needs to be
> > stored when it is negative nor come from somewhere when
> > it is positive.
>
> You're correct, there's no hint. It is spelled out in
> detail in "Optics". The possibilities are listed below.
> Your above statement is a conceptual violation of the
> conservation of energy principle.

Of course not. Because the powers imputed to the
constituent voltages of superposition do not represent
actual energy flows. Conservation of energy only
applies to powers that represent actual energy flows.

> In the absence of
> any other energy source or energy sink, localized
> destructive interference must exactly match the
> localized constructive interference magnitude in
> order to avoid a violation of the conservation of
> energy principle. This is why a Z0-match works.

But you have to be cautious that you are applying
conservation to powers that represent actual energy
flows.

> > Since one needs to know the constituent voltages to
> > determine the sign of Pr.correction, why not just use

> > superposition to compute the total voltage and then
> > derive the power?
>
> That is what has extended this discussion to arguments
> over the past quarter century. That 30,000 foot method
> says nothing about where the ExH energy in the reflected
> wave goes. The irradiance (power density) equation with
> its defined "interference term" tells us exactly where
> all the energy goes and answers the question: What happens
> to the ExH energy in the reflected wave?

It would be more valuable were you to thoroughly study
and understand what is happening in a transmission line
and then apply those learnings to ExH. The transmission
line is easier to understand. The voltages, currents and
time relationships can easily be precisely computed and
measured. Once you have gained a full understanding of
what power means in this easier to follow environment,
extend that understanding to the meaning of power in
an ExH, or optics environment where calculation and
measurement is much more difficult.

> Here are the basic principles:
>
> When destructive interference occurs, there is "extra"
> energy left over from that isolated event. That energy
> must go somewhere. Here are the possibilities in a
> typical lossless RF transmitting system.
>
> 1. The source can throttle back on its energy output
> to compensate for the destructive interference energy.
>
> 2. Reactive components can store the destructive
> interference energy and return it to the network at
> a later time.
>
> 3. In the absence of (1) and (2) above, an RF energy
> wave is launched in a direction that allows the
> "extra" energy to leave the destructive event area.

Or perhaps, these powers of which you speak do not
represent actual energy flows and therefore your
requirement that they need accounting is incorrect
and all of your attempts to explain them, unnecessary.

The difficulty of accounting for these powers is entirely
consistent with them not representing the actual flow
of energy.

> The last possibility is why we can observe reflected
> energy being redistributed back toward the load in
> the complete absence of single-wave reflections.

>
> When constructive interference occurs, there is "missing"
> energy needed to be supplied into that isolated event. That
> energy must come from somewhere. Here are the possibilities
> in a typical lossless RF transmitting system.
>
> 1. The source can simply supply the energy needed by
> the constructive interference event.
>
> 2. Reactive components can return stored energy to
> the network.
>
> 3. In the absence of (1) and (2) above, constructive
> interference energy *must* be supplied in real time
> by destructive interference between two other waves.

Or possibly, the premise that these powers represent
actual energy flows is flawed.

> **
> * The last possibility is how a Z0-match redistributes *
> * all of the reflected energy back toward the load when *
> * the physical reflection coefficient is not 1.0. *
> **
>
> The two-step process of redistributing 100% of the ExH reflected
> wave energy back toward the load is covered in my other energy
> analysis article on my web page at:
>
> http://www.w5dxp.com/energy.htm

This turns out, however, just to be an ideosyncracy of the math,
much like the way Pf-Pr is the actual energy flow in the transmission
line because of the way that Vf and Vr are derived from Vactual
and Iactual.

> > This analysis also makes clear the nature of powers
> > computed from the constituent voltages of superposition.
> > These powers do not represent real energy flows. As
> > discussed far above, real energy flows can be summed
> > to test for conservation of energy.
>
> Translation: Don't bother trying to ascertain where the
> ExH component wave energy goes. Since the conservation
> of energy principle cannot be violated in reality, it
> is OK to violate it conceptually. Now where have I
> heard that argument before? :-)
>
> "I personally don't have a compulsion to understand where
> this power 'goes'."
>

> Do you really think that the ExH energy in a reflection
> from a mirror does not represent real energy flow?

What can I say? That is what the math proves. The reflected power is a power computed from partial E and H fields that are being superposed, and we know that when you superpose, you need to compute the total voltage and current (or E and H) and then use that to compute the actual energy flow.

It would be good, if just for a day, you let go of the idea that Preflected represents an actual energy flow. Explore the actual measureable behaviour of transmission lines without using the idea that Preflected represents an actual energy flow.

Everything works. There is no violation of conservation of energy or any other fundamental physical law.

And the explanations are much simpler. You will no longer find the question "where does the reflected power go?" relevant. You can terminate your quest.

And as for "2*SQRT(P1*P2)cos(theta)", this will just be an idiosyncracy of the math that allows you to compute the total power, if you are presented with P1 and P2 (not being actual powers) that were computed from the constituent voltages of superposition; a useful tool when you can not measure the voltages (e.g. in optics), but not to be confused with reality.

...Keith

3595. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 12:54:01 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080325055401.6357f11b.rsparks@elltel.net>
Source record: 26667

On Mon, 24 Mar 2008 16:15:21 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > To me, this shows that my traveling wave analysis on an instant basis
> > is not correct because the energy can not be located precisely on a
> > degree-by-degree scale. Yes, it is correct on the average over 360
> > degrees, but not instantaneously. We are missing something.
>
> What you are missing is the localized interference patterns
> within the individual cycles. The interference changes from
> destructive to constructive every 90 degrees. For every
> negative (destructive) interference term, there is an equal
> magnitude positive (constructive) interference term 90 degrees
> later. These, of course, average out to zero. Exactly the
> same thing happens when a coil or capacitor is present in
> a circuit. When the instantaneous voltage of a source is
> zero and thus delivering zero instantaneous power, a
> circuit capacitor is delivering energy back into the
> circuit that can be dissipated by a resistor.
>
> > Central to traveling waves is the assumption that the wave is not
> > compressable. The energy is assumed to flow in a consistantly
> > predictable mannor that is linear and described by a sine wave.
> > That assumption is violated when energy is delayed for reasons
> > other than distance of travel, which is demonstrated in this example.
>
> Power is certainly compressible. One can stuff 100 amphere-
> hours into a battery in 2 hours and take 20 hours to remove it.
> Why can't 60 watts of instantaneous power be stuffed into
> a reactance and be removed 90 degrees later?
>
> > I am not ready to suggest a cure for my traveling wave analysis. I
> > only see that it does not work to my expectations.
>
> Your expectations seem to be based on a conservation of
> power principle which doesn't exist. There is no violation
> of linearity if the energy dissipation is delayed by 90
> degrees or by ten billion years.
>
> I don't recall any published material where anyone tried
> to explain where the instantaneous energy goes while at
> the same time denying the possibility of interference.
> --

> 73, Cecil http://www.w5dxp.com

Hi Cecil,

I feel better today. I think I have connected the dots and now have the spreadsheet showing that we really can use the traveling waves to solve the shorted transmission line problem on a instantaneous basis without the delay of energy into the next half cycle.

Here is a link to the new spreadsheet.

http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf

I used the logic and formula presented in my post "Subject: Re: The Rest of the Story
Date: Thu, 20 Mar 2008 10:07:44 -0700"

You called it interference. Keith used your power equation and called the interference term a mathematical correction. It looks to me like the correction can be avoided by choosing the correct sin wave offset.

Ultimately, the waves can be resolved into one more powerful wave carrying the power described by Keith's "false power" equation. This is demonstrated in a spreadsheet found at

http://www.fairpoint.net/~rsparks/Reflect%20System%20Power.pdf

You need to take a look at the spreadsheets. I think they support the theory that we can track the power on an instant basis using traveling waves.
--
73, Roger, W7WKB

3596. Re: vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 13:04:32 UTC
From: Eskay <siebklaas@hotmail.com>
Message-ID: <1u36u69gfqwkn.1rkavmv8m8fu5.dlg@40tude.net>
Source record: 26668

On Mon, 24 Mar 2008 17:22:34 -0700 (PDT), Patrick wrote:

> Hi,
> Back at the start of the 80's, I had an article on how to build a
> multi-band vertical from 4 inch pvc and 1/2 emt. I actually made one
> and
> it worked quite well, but one to many moves and 25 years later and it
> and
> the article are gone. I also remember that one of the amateur antenna
> companies even made a version to sell. Anyways, if someone, could
> remember the name or come up with a link, it would be greatly
> appreciated.
>
> 73s
> Patrick, KA9PDK

Was that the antenna with four vertical elements in a circle with the
four inch PVC for insulators and spacers?
If so it was in CQ magazine and I would have that in my collection
somewhere and could copy and email that to you.
Let me know..73 de VE3JUA

3597. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 13:35:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Yc7Gj.8296$Rq1.1458@nlpi068.nbdc.sbc.com>
Source record: 26669

JN wrote:
> Hamsticks and their clones are for US 75m (4MHz) and not directly tunable to
> 80m (3,5 MHz)
>
> I plan a Hamstick dipole for Digimodes and CW for say 3560 kHz.
>
> What is the best way to lower the resonance frequency
> Some type of capasitive loading at the end of base(coil) section
> or an inductance at center wich could maybe also function as impedance
> transformer?
> What is the feedpoint resistance of Hamstick dipole?
>
> Any ideas or experiences?

A hamstick has measured 12 dB down from a screwdriver
during 75m mobile CA antenna shootouts. That screwdriver
was about 10 dB down from a 1/2WL dipole. A 75m hamstick
is little better than a dummy load having a radiation
resistance of maybe 0.5 ohm and an efficiency in the
ballpark of 1%, i.e. 100 watts in, 1 watt out.

That said, the best way to accomplish what you are trying
to do is to use extenders on the bottom sections. The
longer the section underneath the coil, the greater the
radiation efficiency. I have extenders in 1, 2, 3, 4, 5,
and 6 foot lengths. They really come in handy for antenna
experiments.

If you could use 6 foot base extenders, that would make
the dipole 8+6+6+8 = ~28 feet long overall. Assuming you
could get that antenna up at a decent height (50+ feet),
I think the performance might be "not bad".
--
73, Cecil http://www.w5dxp.com

3598. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 14:08:12 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A6C679B08967jxp16psuedu@128.118.141.40>
Source record: 26670

"JN" <jnxx@vfemail.net> wrote in
news:47e8e5d4$0$23840$9b536df3@news.fv.fi:

> Hamsticks and their clones are for US 75m (4MHz) and not directly
> tunable to 80m (3,5 MHz)
>
> I plan a Hamstick dipole for Digimodes and CW for say 3560 kHz.
>
> What is the best way to lower the resonance frequency
> Some type of capasitive loading at the end of base(coil) section
> or an inductance at center wich could maybe also function as
> impedance
> transformer?
> What is the feedpoint resistance of Hamstick dipole?
>
> Any ideas or experiences?
>
> 73 Jouko OH5RM
>
>
Hi Jouko:

I ran a ham stick dipole for a while and was able to compare it to a full size dipole when I put one up. To compare the two antennas, a ham stick dipole at 25 verses a full size dipole at 35. On 80/75m the ham stick was down about 20db from the dipole. The 2:1 SWR bandwidth was about 65KHz for the ham stick verses about 200+Khz for the dipole. The way to get a ham stick down the bottom of 80m is to lengthen the whip that sticks out the top. I can't remember how much but it was not much. The Z of a whip of the length of a ham stick should be only a few ohms, but they are close to 50 Ohms when used as a dipole. The difference between 50 Ohms and the modeled 2 to 3 Ohms is the loss in the coils. The long, small diameter coils made with small gage wire cause most of the loss. The ham stick dipole is better than no antenna but not by much on 80m. As you go up in frequency the performance of dipoles made out mobile antennas improve. On 40m my ham stick dipole was 12db down from a full size dipole and on 20m and above it was less than an S-unit down. Note that I'm talking about dipoles made out ham sticks made for the respective bands, not using a tuner. Using a turner is a waste of time as you move farther away from the center frequency the loss goes way up and your signal goes away! I still use my 80m ham sticks but not as dipole. I have them ground mounted with 4 10 radials each, spaced 1/16 wavelength apart and feed 90 deg. out of phase. This makes a directional receive antenna for the DX window on 80m that rivals a beverage antenna.

It makes DXing on 80m fun. The only disadvantage is that unlike a beverage it only works over about a 65Khz chunk of the band.

John Passaneau, W3JXP

3599. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 14:28:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <q_7Gj.2478$p24.1119@nlpi061.nbdc.sbc.com>
Source record: 26671

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> Point is, energy can be stored and released at a
>> later time. You earlier said that reactances do not
>> store energy for release at a later time yet that
>> is exactly what reactances do.
>
> Yes indeed. And what I have said, is that when this is
> happening it is always possible to identify the element
> which is storing the energy and provide the function
> that describes the energy flow in and out of the
> element. It is this identification and function that
> I keep asking for to back up the handwaving claim that
> you have been making.

Good grief, Keith, do you not know how to track the
energy flow into and out of a reactance during an RF
cycle? Isn't that covered in EE201, "Alternating
Current Circuits", by Kerchner and Corcoran, 3rd
edition (c)1951? Quoting page 19:

"The implication is that the inductive element
receives energy from the source during one-quarter
of a cycle of the applied voltage and returns exactly
the same amount of energy to the driving source during
the next one-quarter of a cycle."

The equations are provided if you really need them.
Hint: A shorted 1/8WL stub is inductive.

> Bzzt. Power is the rate of change of energy.

Sorry, you are wrong about that.
From the IEEE Dictionary: "power - the rate of
generating, transferring, or using energy".

Power is a rate, not a rate of change. The
energy flow can be constant, i.e. rate of change
equal zero.

> Please re-read all the equations with "(t)". There
> is no "cos(theta)" factor when "(t)" is present.

I assume that exponential (phasor) notation for the
instantaneous values of the interfering voltages could
be used in which case there would indeed be a cos(theta)
present.

> But this applies to RMS voltages and average powers.
> You have extended this to instantaneous, for which a
> "cos(theta)" factor is inappropriate.

Nope, it's not. See above. Your same argument could
extend to the real part of phasors in which case you
could argue that the irradiance equation is bogus.
Good luck on that one. If the math didn't work, it
would have been discarded long ago and Hecht wouldn't
have an entire chapter devoted to "Interference".

> Read it as Pr.correction(t) to emphasize that it is not
> average power of which I am writing. Then it is not
> interference.

That statement makes it obvious that you don't understand
interference. When instantaneous values are being used,
if [V1(t)^2 + V2(t)^2] NOT= [V1(t) + V2(t)]^2, then
interference is present. Did you miss Physics 201?

> Because the powers imputed to the
> constituent voltages of superposition do not represent
> actual energy flows.

That statement is a violation of the wave reflection
model. Do you really believe that when you look
yourself in the mirror that those reflections are
devoid of energy? If so, please feel free to prove
your assertion.

> But you have to be cautious that you are applying
> conservation to powers that represent actual energy
> flows.

Reflected waves contain energy whether from your mirror
or from a mismatched load at the end of a transmission
line. You are arguing that the wave reflection model
is wrong. Please prove it.

> Or perhaps, these powers of which you speak do not
> represent actual energy flows and therefore your
> requirement that they need accounting is incorrect
> and all of your attempts to explain them, unnecessary.

Yes, perhaps the wave reflection model is wrong but
that makes your argument not with me, but with Ramo,
Whinnery, Johnson, Chipman, Slater, Hecht, and Walter
Maxwell. Good luck on winning that one.

> The difficulty of accounting for these powers is entirely
> consistent with them not representing the actual flow
> of energy.

No, it is perfectly consistent with a large degree
of ignorance which few people desire to alleviate.

Ignoring the role of interference and lumping all the
energy components into a mashed potato salad is one
method of sweeping everything under the rug so you
can ignore the problem instead of solving it.

> Or possibly, the premise that these powers represent
> actual energy flows is flawed.

Feel free to prove the wave reflection model wrong.

> This turns out, however, just to be an ideosyncracy of the math,
> much like the way Pf-Pr is the actual energy flow in the transmission
> line because of the way that Vf and Vr are derived from Vactual

Feel free to prove the math wrong.

> It would be good, if just for a day, you let go of the
> idea that Preflected represents an actual energy flow.

I will do that the day that you prove those reflections
from your mirror, that allow you to see yourself each
morning, contain zero energy. Your concepts seem more
like a religion than anything associated with reality.
Your mantra seems to be: "If I don't understand it,
it doesn't exist."
--
73, Cecil http://www.w5dxp.com

3600. Re: Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 14:57:30 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <c216bd5f-caba-4b74-af67-154c300d2d08@h11g2000prf.googlegroups.com>
Source record: 26672

On Mar 20, 1:34 pm, Eric <englere_...@yahoo.com> wrote:
> I'm looking for suggestions for the Strange Antenna Challenge this
> Memorial Day week-end. One guy used a pair of back-to-back trucks to
> make a dipole, and one guy loaded up a sports stadium. A group in
> Atlanta used an Extension Ladder on 20M and that worked well, but that
> seems a little less strange than I'd like. It almost looks like a
> regular antenna when it's standing straight up.
>
> I want something that doesn't look like an antenna (one guy suggested
> hoisting a BBQ grill into the trees, but I'm sure that wouldn't work
> well on 20M). I want something that can be adjusted to be somewhat
> near resonance without a tuner.
>
> Ideas?
>
> Eric

Things automotive seem to be favored. How about an exhaust system for
a radiator and a coil spring for a loading coil.

Jimmie

3601. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 15:46:33 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <ev6iu39mfn6hfd0p9p3qfble7ui0mugac1@4ax.com>
Source record: 26673

On Tue, 25 Mar 2008 14:05:13 +0200, "JN" <jnxx@vfemail.net> wrote:

>Hamsticks and their clones are for US 75m (4MHz) and not directly tunable to
>80m (3,5 MHz)
>
>I plan a Hamstick dipole for Digimodes and CW for say 3560 kHz.
>
>What is the best way to lower the resonance frequency
>Some type of capasitive loading at the end of base(coil) section
> or an inductance at center wich could maybe also function as impedance
>transformer?
>What is the feedpoint resistance of Hamstick dipole?
>
>Any ideas or experiences?
>
>73 Jouko OH5RM
>

The ham stick dipole isn't very great for 80 meters. I know from
experience that the hustler mobile antenna works better than the ham
stick on 75 meters. I have used the ham stick on 80 meters mobile
with an antenna tuner. The antenna tuner gave me a much broader
bandwidth as far as SWR is concerned without having to retune.

On the other hand, you are not operating mobile. I don't know how
this compares. I know when I did it, it gave me a very weak, but
readable signal. I had a ground rod in the ground below my window. I
connected the shield side of my coax to the ground stake and the
center to one end of a long spool of wire. I stretched the wire out
about 1/4 wave on the ground and checked the SWR. It was flat on the
frequency I wanted (I got lucky) so I checked into the then GA SSB Net
on 3975. I was weak, but readable and could pass my traffic.

If you can make loading coils, make a couple with large diameters.
The larger the better. Center load each element and make them so you
can tap to the coil. This will work better than the ham stick. You
may find that tapping at two different points works better for you so
you have a bit of an offset in the electrical lengths of the antennas
on either side of the coax. This is because the impedance of a
shortened dipole antenna is lower than 50 ohms. The offset finds a
better match.

Hope this helps.

Buck
N4PGW

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3602. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 15:50:52 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <wb9Gj.24633$Ch6.13768@newssvr11.news.prodigy.net>
Source record: 26674

Roger Sparks wrote:
> You need to take a look at the spreadsheets.

Roger, in a nutshell, what is the bottom line?
--
73, Cecil http://www.w5dxp.com

3603. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 16:32:51 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fsb9fj$3r5$1@news.jpl.nasa.gov>
Source record: 26676

Buck wrote:

>
> Now that auto-tuners are about as inexpensive as the manual tuners, I
> am awfully tempted to wander over to the SGC shelf at one of the ham
> stores and try it out.
>
> I am moving to a new house soon. We will be restricted in antennas
> only to the extent that we don't make the yard look too ugly. It
> isn't terribly well suited for many antennas, but I do hope to put up
> at least one decent fan-dipole, more accurately parallel dipole. I
> don't think I can fit a full-wave loop, due to lack of supports, but
> it looks like I'll have a place outside my window where a row of trees
> can support a 60 foot or so high dipole.... I still have a 100 foot
> roll of 300 or 450 ohm window line :)

The advantage of the tuner with a "fan" or "parallel wire" dipole is that if you put it at the feedpoint, the incredibly tedious pruning process is eliminated. You just have to get a couple wires "about right", and the tuner does the rest (who cares if the resonance is at 13.5 MHz.. that's not a huge change). And, in the "thrown on the roof" sort of scenario, as the roof grunge and moisture changes or the trees grow up or get leaves on them, changing the native Z of the antenna, the tuner automatically compensates.

It's a coax feedline, so it's easy to route. The matching is at the antenna, so the loss in the feedline is less of an issue.

In this sort of thing it *is* useful to have some way to see if the antenna has fallen apart or shorted out or is covered with wet leaves. The tuner will happily tune almost anything, but you have no real way to know if it's actually radiating. I've used a couple techniques.. a monitor receiver with a whip antenna is one; looking at NCDXF beacons or WWV is another.

3604. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 16:40:03 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <DV9Gj.78792$cQ1.35891@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26675

Cecil Moore wrote:

[snip]

>
> That statement is a violation of the wave reflection
> model. Do you really believe that when you look
> yourself in the mirror that those reflections are
> devoid of energy? If so, please feel free to prove
> your assertion.
>

[snip]

>
> Yes, perhaps the wave reflection model is wrong but
> that makes your argument not with me, but with Ramo,
> Whinnery, Johnson, Chipman, Slater, Hecht, and Walter
> Maxwell. Good luck on winning that one.

Cecil,

I have completely stayed away from any comments in this thread, but one thing has caught my attention. You repeatedly refer to the "wave reflection model" almost as if it was the equivalent of the Grand Unified Theory.

I did a little bit of the cheap modern day replacement for research by Googling "wave reflection model". Some 455 references came back. Of course many of those references are irrelevant to the topic at hand, but of the ones that seemed to be related to transmission lines and/or RF, it appears that all of the references come back to you.

I tried adding Ramo, Whinnery, Johnson, Chipman, Slater, Hecht, and Walter Maxwell to the search (one at a time) and came up with no hits, other than your references.

Perhaps your specific interpretation of the writings of the masters to form your "wave reflection model" is part of the source of the disagreement.

Do you have a concise reference to exactly what you mean by "wave reflection model"?

There is no need to explain reflection, interference, conservation of energy, or any other standard wave phenomenon. I am merely seeking the definition of "wave reflection model" or a lead to any other reference that uses that terminology.

73,
Gene
W4SZ

3605. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 17:36:50 UTC
From: richardharrison@webtv.net
Message-ID: <1153-47E93832-1749@storefull-3256.bay.webtv.net>
Source record: 26677

Art wrote:
"If Kraus said "The radiation is perpendicular to the acceleration" then the book is worthless."

Art scoffs at Kraus and Art scoffs at experience with antenna orientation for best reception. So that readers aren`t mislead, olease refer to page one of Terman`s 1955 opus:

"---radio waves. travel with the velocity of light and consist of magnetic and electric fields at right angles to each other and also at right angles to the direction of travel." Then check page 923:

"--- E is the field strength of the wave in volts per meter, Psi is the angle between the plane of polarization and the wire in which the voltage is induced" ---It will be observed that the quantity E cos Psi cos theta is the component of the field strength which has a wavefront parallel to the antenna and is polarized in the same plane as the antenna."

He who scoffs at Terman is at great peril.

Best regards, Richard Harrison, KB5WZI

3606. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 17:44:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0SaGj.5061$qT6.1529@nlpi070.nbdc.sbc.com>
Source record: 26678

Gene Fuller wrote:
> I am merely seeking the
> definition of "wave reflection model" or a lead to any other reference
> that uses that terminology.

The wave reflection model is, of course, the body of
mathematics encompassing the reflection mechanics for
EM waves. Everywhere except on r.r.a.a, it is a subset
of the distributed network model.
--
73, Cecil http://www.w5dxp.com

3607. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 18:08:34 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <7dba2bfc-112b-4734-8e3b-2eac79b931f3@m44g2000hsc.googlegroups.com>
Source record: 26679

On Mar 25, 12:36 pm, richardharri...@webtv.net (Richard Harrison)
wrote:
> Art wrote:
>
> "If Kraus said "The radiation is perpendicular to the acceleration" then
> the book is worthless."
>
> Art scoffs at Kraus and Art scoffs at experience with antenna
> orientation for best reception. So that readers aren`t mislead, olease
> refer to page one of Terman`s 1955 opus:
>
> "---radio waves. travel with the velocity of light and consist of
> magnetic and electric fields at right angles to each other and also at
> right angles to the direction of travel." Then check page 923:
>
> "--- E is the field strength of the wave in volts per meter, Psi is the
> angle between the plane of polarization and the wire in which the
> voltage is induced" ---It will be observed that the quantity E cos Psi
> cos theta is the component of the field strength which has a wavefront
> parallel to the antenna and is polarized in the same plane as the
> antenna."
>
> He who scoffs at Terman is at great peril.
>
> Best regards, Richard Harrison, KB5WZI

But ham radio and the Navy have proved him wrong with the T2FD
testing !
Computor programs designed around Maxwell's laws also prove him wrong.
I suggest you study the under pinnings, if any, by Terman of that
particular point
and then share the "proof" with all of us. Again, you have two vectors
for the
electric and magnetic field at right angles to each other. Using your
own brain
please tell as where the curl vector MUST be to prove your case.
Ofcourse you can
read a lot of books and select a diagram of the vectors involved that
solidifies your position
but I don't think you will find one anywhere. Your HIT and MYTH
aproaches just doesn't work out.

3608. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 18:31:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <4ybGj.20066$xq2.14591@newssvr21.news.prodigy.net>
Source record: 26680

Richard Harrison wrote:
> He who scoffs at Terman is at great peril.

If radiation was *only* perpendicular to the antenna,
wouldn't the beam width be fixed to the length of
the antenna? Wouldn't cloverleaf patterns be
impossible? What am I missing?
--
73, Cecil http://www.w5dxp.com

3609. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 18:36:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xCbGj.20067$xq2.15448@newssvr21.news.prodigy.net>
Source record: 26682

Gene Fuller wrote:
> I did a little bit of the cheap modern day replacement for research by
> Googling "wave reflection model". Some 455 references came back.

That's strange. When I did the identical thing, 1,970,000
references came back. Wonder what is wrong with your computer?
--
73, Cecil http://www.w5dxp.com

3610. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 19:33:18 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <f5kiu3hfaoqi3kfh12kcrcu7rd9ovohlq2@4ax.com>
Source record: 26681
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mon, 24 Mar 2008 15:40:53 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>> This is still a strain in language as you have done nothing to
>> describe what the "compensation" is for. The circuit of your
>> schematic is fully differential in a bridge configuration, so saying
>> it will not amplify still makes no sense. To offer a deliberate
>
>It will not amplify signal in-phase signal. It's same like
>differential amplifier.

This still makes no sense. You have not described what you are
"compensating" for, and differential amplifiers amplify without
distinction to "in-phase" or "out-of-phase." If it did, you are not
using the right topology because you are using operational amplifier
terminology - the circuit is not an operational amplifier, even by
discrete components.

>> They are not shown in your schematic. I don't see them in your
>> photos. Making them operational is adding yet more lines, although I
>> can see they would be necessary for your purposes.
>
>http://img245.imageshack.us/my.php?image=d3du5.jpg

Nice close-up. Choking of some of the lines seems OK, but not the
coax. So, now where is the schematic of the biasing for these
varicaps? If those two clear insulation lines are going to the loop,
it is going to be hard to apply DC to a dead short - or does that
black shroud cover more than the varicaps?

73's
Richard Clark, KB7QHC

3611. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 19:40:21 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <47e95082$0$23844$9b536df3@news.fv.fi>
Source record: 26683

Thanks for everybody for good comments,
They are quite in balance with the information I have red from net.

The antenna which I am planning is for portable use and should be
easy to erect and transport.

Your remarks led me to some comments:

- Yes the efficiency on 80m may be too low, because of small size.
- Adding center extenders could help but then 75m hamsticks are out of 80m
band
- By using 40m hamsticks and maybe center loading coil and extenders tuning
to 80m possible?
- Then also operating on 40m without extenders OK
- 80 operation only needed for domestic qsos, no DX
- On 30m and 20m hamstick dipole would work OK

Any comments on these?

73 Jouko OH5RM

3612. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 19:42:23 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A6C8143E4021Huckleberrybigvalley@198.186.192.196>
Source record: 26684

>
> If you could use 6 foot base extenders, that would make
> the dipole 8+6+6+8 = ~28 feet long overall. Assuming you
> could get that antenna up at a decent height (50+ feet),
> I think the performance might be "not bad".

Cecil, I would be interested in finding out what you are using for
base extenders..... varying lengths of ? with 3/8"-24 female one end, male
another. You make something, or is something commercially available?

Ed K7AAT

3613. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 19:43:49 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <32600645-4392-4009-9115-dba2760bfb46@p25g2000hsf.googlegroups.com>
Source record: 26685

On Mar 25, 1:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Richard Harrison wrote:
> > He who scoffs at Terman is at great peril.
>
> If radiation was *only* perpendicular to the antenna,
> wouldn't the beam width be fixed to the length of
> the antenna? Wouldn't cloverleaf patterns be
> impossible? What am I missing?
> --
> 73, Cecil http://www.w5dxp.com

Cecil, he is not interested in finding the new,
he is more comfortable of staying with the old
people of his era. He doesn,t need proof and
doesn.t know how to handle it. Terman is the one thing left in life
he has, maybe we should leave him alone for eventual sainthood
ceremonies for Terman when they get to the milky way.
If he is looking for the Proof at the present time then we may
never hear from him again. No one has come to his aid with
a computor analysis realising that he is firmly set in his ways.
Heck, he won't even try our a computor and probably doesn't
have a new fangled television

3614. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 19:49:23 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <bd35bd7d-e86c-4f2e-992c-64eeed6e7a6a@m36g2000hse.googlegroups.com>
Source record: 26686

On Mar 25, 11:32 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Buck wrote:
>
> > Now that auto-tuners are about as inexpensive as the manual tuners, I
> > am awfully tempted to wander over to the SGC shelf at one of the ham
> > stores and try it out.
>
> > I am moving to a new house soon. We will be restricted in antennas
> > only to the extent that we don't make the yard look too ugly. It
> > isn't terribly well suited for many antennas, but I do hope to put up
> > at least one decent fan-dipole, more accurately parallel dipole. I
> > don't think I can fit a full-wave loop, due to lack of supports, but
> > it looks like I'll have a place outside my window where a row of trees
> > can support a 60 foot or so high dipole.... I still have a 100 foot
> > roll of 300 or 450 ohm window line :)
>
> The advantage of the tuner with a "fan" or "parallel wire" dipole is
> that if you put it at the feedpoint, the incredibly tedious pruning
> process is eliminated. You just have to get a couple wires "about
> right", and the tuner does the rest (who cares if the resonance is at
> 13.5 MHz.. that's not a huge change). And, in the "thrown on the roof"
> sort of scenario, as the roof grunge and moisture changes or the trees
> grow up or get leaves on them, changing the native Z of the antenna, the
> tuner automatically compensates.
>
> It's a coax feedline, so it's easy to route. The matching is at the
> antenna, so the loss in the feedline is less of an issue.
>
> In this sort of thing it *is* useful to have some way to see if the
> antenna has fallen apart or shorted out or is covered with wet leaves.
> The tuner will happily tune almost anything, but you have no real way to
> know if it's actually radiating. I've used a couple techniques.. a
> monitor receiver with a whip antenna is one; looking at NCDXF beacons or
> WWV is another.

You can put your radio in a hand carry wire shopping basket and
dispense with the transmission line. Wireless shopping no less.

3615. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 20:55:16 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <5a45ef4e-ae63-402b-986b-e911eb48dbb2@d21g2000prf.googlegroups.com>
Source record: 26687
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 25, 9:33 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Mon, 24 Mar 2008 15:40:53 -0700 (PDT), Artem <artem.b...@gmail.com>
> wrote:
>
> >> This is still a strain in language as you have done nothing to
> >> describe what the "compensation" is for. The circuit of your
> >> schematic is fully differential in a bridge configuration, so saying
> >> it will not amplify still makes no sense. To offer a deliberate
>
> >It will not amplify signal in-phase signal. It's same like
> >differential amplifier.
>
> This still makes no sense. You have not described what you are
> "compensating" for, and differential amplifiers amplify without
> distinction to "in-phase" or "out-of-phase." If it did, you are not
> using the right topology because you are using operational amplifier
> terminology - the circuit is not an operational amplifier, even by
> discrete components.
>
> >> They are not shown in your schematic. I don't see them in your
> >> photos. Making them operational is adding yet more lines, although I
> >> can see they would be necessary for your purposes.
>
> >http://img245.imageshack.us/my.php?image=d3du5.jpg
>
> Nice close-up. Choking of some of the lines seems OK, but not the
> coax.
http://img370.imageshack.us/my.php?image=d2eb0.jpg

Could you find in this picture choke?

> So, now where is the schematic of the biasing for these
> varicaps? If those two clear insulation lines are going to the loop,

It's lines from resonance loop to amplifier.

> it is going to be hard to apply DC to a dead short - or does that
> black shroud cover more than the varicaps?

Now my Antenna in broken. I will fix my antenna mad make a web for
schematics, software for calculation? etc.

PS: Could anyone know, What I can receive in QRSS, 7 MHz in Europe on
this
http://www.radiointel.com/review-degende1103.htm

receiver?

3616. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 21:42:08 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <QkeGj.79929$cQ1.35893@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26690

Cecil Moore wrote:
> Gene Fuller wrote:
>> I did a little bit of the cheap modern day replacement for research by
>> Googling "wave reflection model". Some 455 references came back.
>
> That's strange. When I did the identical thing, 1,970,000
> references came back. Wonder what is wrong with your computer?

When quotes are used, I get 455. Without quotes, I get about 297,000.
Since I am looking for the exact expression, not just the three words
somewhere in a web page, I use the quotes.

I am using Firefox with plain 'ol Google. No special setups.

In any case, you answered my question. "Wave reflection model" means
nothing beyond ordinary electromagnetic theory. Big deal.

73,
Gene
W4SZ

3617. Re: Double dipole better than YAGI 5 elements??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 21:50:59 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <e1bab147-4912-40f2-8e72-d90ee53d6c22@s8g2000prg.googlegroups.com>
Source record: 26691

On 24 mar, 21:03, user <d...@allemaale.be> wrote:
> Take a look here
too:http://cordis.europa.eu/ictresults/index.cfm/section/news/tpl/article...
>
> Double antennas deliver double the signal
>
> The wireless shadows of tall buildings are a challenge for transmission.
> PhotoDisc
> Digital TV transmission techniques that deliver most benefit in the worst
> reception environments have been developed by a consortium of European
> researchers. The technologies promise to reduce the network infrastructure
> needed for mobile TV, while minimising the power demands and complexity of
> mobile TV receivers of the future.
>
> In a typical broadcast transmission, radio signals bounce off objects in the
> environment, reaching the receiver over multiple paths. Distortion
> from 'multi-path' signals can produce fading, resulting in temporary
> failure of reception. Most of us have experienced this, moving a mobile
> phone around a room to get the strongest signal.
>
> Modern broadband wireless technologies like wimax, DAB for audio, and DVB-T
> and DVB-H for video, use a modulation scheme called Orthogonal
> Frequency-Division Multiplexing (OFDM).
>
> An OFDM transmission is spread across thousands of different sub-carriers,
> each carefully organised at slightly different frequencies within the
> channel. Spreading the transmission across a high number of sub-carriers
> increases the probability of maintaining error-free transmission.
>
> Researchers have demonstrated that splitting the transmit power between
> multiple antennas can provide substantially more effective coverage than
> using a single antenna. Signal simulations carried out for project Pluto
> show a gain of up to 5 decibels could be achieved. The Physical Layer DVB
> Transmission Optimisation (PLUTO) project comprises a consortium of
> academics, equipment manufacturers, propagation experts and broadcasters
> from Finland, France, Germany and the UK, co-funded by the European
> Commission.
> Best in worst environments
>
> The transmission-splitting technique under development by PLUTO, known
> as 'transmit diversity', benefits the worst environments most. Reception
> can be spectacularly improved indoors, or whilst walking or driving in
> cities. Fewer transmitters and less power are required to achieve
> economical coverage.

>
> "This technique does not require revision of any WiMAX, DVB or DAB
> standards," says Maurice Bard of UK company Broadreach Systems, the
> technical leader of PLUTO. "The great advantage is that it can be exploited
> by existing in-service receivers without modification. All you need is an
> additional box that can split the signal."
>
> "The transmit antennas need to be spatially separated by between 10 and 20
> wavelengths and a delay applied to one antenna to achieve effective
> de-correlation. The amount of separation and delay depends on the type of
> environment to be covered," says Bard.
>
> Coverage can be further improved if there are two or more antennas at the
> reception end, he explains: "For receive diversity, you need to separate
> the receive antennas by at least half a wavelength which is approximately
> 25 centimetres at UHF frequencies. If this can be achieved, then transmit
> and receive diversity can work together to deliver even greater benefits.
> The benefits of receive diversity, however, can only be exploited in terms
> of network design if all receivers in the network have diversity
> implemented."
> Filling in black holes
>
> Even with the reception improvements promised by transmit diversity, there
> will be reception black spots, particularly indoors, where on-channel
> repeaters will be needed. An on-channel repeater receives a signal from a
> distant transmitter and re-transmits it at the same frequency. The
> repeaters are prone to instability caused by the feedback of echoes from
> the transmitter to the receiver. Here, the academics at Brunel University,
> led by PLUTO project coordinator Professor John Cosmas, have developed an
> innovative method to remove these echoes.
>
> A pseudo-random sequence is buried deep in the re-transmitted DVB-H signal,"
> explains Cosmas. "The sequence acts as a signature, allowing the repeater
> to differentiate the unwanted echoes from the wanted original signal and
> remove them from the re-transmission."
>
> "The method can work for repeaters of any OFDM based network."
>
> Broadreach Systems has provided equipment to process signals at the
> transmitter and monitoring stations that intercept and measure transmitted
> DVB signals. The monitor stations are networked to a control centre,
> developed by Brunel, enabling the effects of diversity to be evaluated in
> real time."
>
> There are still some hurdles to be overcome before PLUTO's transmit
> diversity solution is suitable for all types of broadcast networks.
> Transmit diversity actually results in a degradation in reception where the
> receiver is in clear line-of-sight with the transmitter and the signals
> from each antenna are received at exactly the same power level.
>

> The line-of-sight reception loss may not prove to be a problem for many
> networks. In a mobile TV network, all receivers will be in a non- or near-
> line-of-sight situation, very few will have rooftop antennas. But 'good
> enough' is not a position that the PLUTO consortium is prepared to stop at
> if they are to change traditional thinking.
>
> "We need to show that the performance we saw in the lab can be achieved in
> all real situations, rain, snow, cities ..." says Cosmas.
>
> "And, we have to convince the broadcasters who designed traditional analogue
> networks, where multi-paths had to be avoided, that multi-paths are good."
>
> --
> --
> Shortwave transmissions in English, Francais, Nederlands, Deutsch,
> Suid-Afrikaans, Chinese, Dansk, Urdu, Cantonese, Greek, Spanish,
> Portuguese, ...http://users.fulladsl.be/spb13810/swlist/ Updated every month or so ....

Hello,

I think OFDM SFN is not applicable to your frequency band. In addition
they speak about decorrelation. With "distance" between antenna
elements of about 5ns, received signals in FM BC band on your single
antenna with 2 elements are fully correlated.

About 3 dB gain increaser over single HW dipole; OK.

Best regards,

Wim

3618. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 22:16:53 UTC
From: richardharrison@webtv.net
Message-ID: <21227-47E979D5-1651@storefull-3258.bay.webtv.net>
Source record: 26692

Cecil Moore wrote:
"What am I missing?"

Radio waves spread during propagation. Huygens` principle is a cause.

Huygens says:
Each point on a primary wave front can be considered as a new source of a secondary spherical wave and that a secondary spherical wave front can be constructed as the envelope of these secondary waves. This is illustrated in Fig. 5-37 on page 144 of the 3rd edition of Kraus` "Antennas".

Best regards, Richard Harrison, KB5WZI

3619. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 22:26:01 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3quiu35i70ijp8gmq9ehtvaq0209ofmn22@4ax.com>
Source record: 26688
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Tue, 25 Mar 2008 13:55:16 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>> Nice close-up. Choking of some of the lines seems OK, but not the
>> coax.
>http://img370.imageshack.us/my.php?image=d2eb0.jpg
>
>Could you find in this picture choke?

What material is used in the ferrite?

>> So, now where is the schematic of the biasing for these
>> varicaps? If those two clear insulation lines are going to the loop,
>
>It's lines from resonance loop to amplifier.

Does this mean the varicaps are across the loop?

If so:
>> it is going to be hard to apply DC to a dead short - or does that
>> black shroud cover more than the varicaps?
>
>Now my Antenna in broken. I will fix my antenna mad make a web for
>schematics, software for calculation? etc.

You've done it by parts already, so, sure.

73's
Richard Clark, KB7QHC

3620. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 22:28:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <41viu3t5ggiaf88g3h0grir6adcmqdvu05@4ax.com>
Source record: 26689

On Tue, 25 Mar 2008 12:43:49 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>a new fangled television

TV as the hallmark of the new age?

More like a silver plated drool cup in the age of the Internet.

73's
Richard Clark, KB7QHC

3621. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 22:56:26 UTC
From: HRBE <hrbe@bigpond.net.au>
Message-ID: <uqfGj.2717$n8.1821@news-server.bigpond.net.au>
Source record: 26693

Jouko,
I had the same problem, despite assurances from the wholesaler in the USA where I bought the the two Hamsticks, they were resonant at their lowest at 3750 kHz. I needed to operate them at a lower frequency of no more than 3650 kHz

I tried extending the stainless steel "stinger" but I couldn't find anything long enough.

Then I tried a disk of aluminium 1.6mm x 75 mm in diameter, fitted between the stainless whip and the antenna proper, and that reduced the resonanant frequency to 3575 kHz, adjusting the stinger length was necessary of course.

You may have to make the diameter of the disk slightly larger to get it to resonate at the lower frequency, just a matter of cut and try.

Using my MFJ Analyser, the feedpoint resistance was close to 50 ohms.

It was a very simple fix!

73
John VK2KCE

"JN" <jnxx@vfemail.net> wrote in message
news:47e8e5d4$0$23840$9b536df3@news.fv.fi...
> Hamsticks and their clones are for US 75m (4MHz) and not directly tunable
> to 80m (3,5 MHz)
>
> I plan a Hamstick dipole for Digimodes and CW for say 3560 kHz.
>
> What is the best way to lower the resonance frequency
> Some type of capasitive loading at the end of base(coil) section
> or an inductance at center wich could maybe also function as impedance
> transformer?
> What is the feedpoint resistance of Hamstick dipole?
>
> Any ideas or experiences?
>
> 73 Jouko OH5RM
>

3622. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-25 23:53:44 UTC
From: "Jim, K7JEB" <k7jeb@cox.net>
Message-ID: <70b4e52c-865f-4d4d-8830-cda73f4ac42c@e10g2000prf.googlegroups.com>
Source record: 26694

On Mar 9, 6:33 pm, Chuck <nos...@nospam.at.all> wrote:

> >On Sun, 9 Mar 2008 15:07:26 -0700 (PDT), K7ITM <k7...@msn.com> wrote:
> >Note that, as far as I've been able to determine, Michelson did not
> >have a coherent light source to shine into his interferometer, but
> >still he saw interference patterns. Perhaps he had invented lasers

> It is said he used sodium vapor gas light (~589 nm). Coherent enough.
> Chuck

Just a slight addition here. Before lasers, the way to get a
coherent light source was to bottle-up a high-intensity,
monochromatic source, such as the aforementioned sodium-
vapor light, in a reflective cavity with a very small pinhole in
its side. As the photons dribble out through the pinhole, they
are forced into a somewhat phase-coherent wave train. This
source was used in optical processors for synthetic-aperture
imagery back in the 50's.... Jim, K7JEB

3623. Re: Stealth Loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 02:22:36 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <rpcju3p2vn21mhaocnfukd65068rq5vjm7@4ax.com>
Source record: 26695

On Tue, 25 Mar 2008 09:32:51 -0700, Jim Lux <james.p.lux@jpl.nasa.gov>
wrote:

>Buck wrote:
>
>>
>> Now that auto-tuners are about as inexpensive as the manual tuners, I
>> am awfully tempted to wander over to the SGC shelf at one of the ham
>> stores and try it out.
>>
>> I am moving to a new house soon. We will be restricted in antennas
>> only to the extent that we don't make the yard look too ugly. It
>> isn't terribly well suited for many antennas, but I do hope to put up
>> at least one decent fan-dipole, more accurately parallel dipole. I
>> don't think I can fit a full-wave loop, due to lack of supports, but
>> it looks like I'll have a place outside my window where a row of trees
>> can support a 60 foot or so high dipole.... I still have a 100 foot
>> roll of 300 or 450 ohm window line :)
>
>
>The advantage of the tuner with a "fan" or "parallel wire" dipole is
>that if you put it at the feedpoint, the incredibly tedious pruning
>process is eliminated. You just have to get a couple wires "about
>right", and the tuner does the rest (who cares if the resonance is at
>13.5 MHz.. that's not a huge change). And, in the "thrown on the roof"
>sort of scenario, as the roof grunge and moisture changes or the trees
>grow up or get leaves on them, changing the native Z of the antenna, the
>tuner automatically compensates.
>
>It's a coax feedline, so it's easy to route. The matching is at the
>antenna, so the loss in the feedline is less of an issue.
>
>In this sort of thing it *is* useful to have some way to see if the
>antenna has fallen apart or shorted out or is covered with wet leaves.
>The tuner will happily tune almost anything, but you have no real way to
>know if it's actually radiating.

Actually, a field strength meter in the radio room works wonders. If
it quits deflecting and you are pumping full power... oops.

I've used a couple techniques.. a
>monitor receiver with a whip antenna is one; looking at NCDXF beacons or
>WWV is another.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3624. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 02:32:01 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <81dju397t7g0n7j2kov2ig76sg232cfpg9@4ax.com>
Source record: 26696

>- Yes the efficiency on 80m may be too low, because of small size.
>- Adding center extenders could help but then 75m hamsticks are out of 80m
>band
>- By using 40m hamsticks and maybe center loading coil and extenders tuning
>to 80m possible?
>- Then also operating on 40m without extenders OK
>- 80 operation only needed for domestic qsos, no DX
>- On 30m and 20m hamstick dipole would work OK
>
>Any comments on these?
>
>73 Jouko OH5RM
>
>

Ok, the antenna is portable. Toss a wire over a couple of tree limbs
and either use full-sized 80 meter dipole, or load it with loading
coils. If you load the antenna with coils located at the end point of
40 meters, you may find yourself with a dual band antenna -- 40/80.
Since you are operating primarily local 80 meter operation, any height
above ground up to about 20 feet will result in NVIS, pretty good
signal there.

You could also try a tree-limb somewhat vertical. Drop a short ground
rod into the ground, tap shield to that and toss other end of 65 foot
wire (plus or minus) over a tree limb. It will operate, but not
perfect. However, it should work as well or better than the
hamsticks.

Just another thot
Buck

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3625. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 09:19:42 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <47ea1536$0$14987$9b536df3@news.fv.fi>
Source record: 26697

John,

Yes I think using capasitive loading at the end of coil parts is the right
way to move the frequency.
What kind of results did you get with the hamstick dipole?
OK 50Ohm feedpoint resistance. I thought it is lower, but maybe it is so
due to high loss resistance in coils.

73 Jouko OH5RM

3626. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 10:37:00 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <12afaa71-edc1-4ec1-8d98-88bcae1498b7@s37g2000prg.googlegroups.com>
Source record: 26698

On Mar 25, 10:28 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
> >> Point is, energy can be stored and released at a
> >> later time. You earlier said that reactances do not
> >> store energy for release at a later time yet that
> >> is exactly what reactances do.
>
> > Yes indeed. And what I have said, is that when this is
> > happening it is always possible to identify the element
> > which is storing the energy and provide the function
> > that describes the energy flow in and out of the
> > element. It is this identification and function that
> > I keep asking for to back up the handwaving claim that
> > you have been making.
>
> Good grief, Keith, do you not know how to track the
> energy flow into and out of a reactance during an RF
> cycle? Isn't that covered in EE201, "Alternating
> Current Circuits", by Kerchner and Corcoran, 3rd
> edition (c)1951? Quoting page 19:
>
> "The implication is that the inductive element
> receives energy from the source during one-quarter
> of a cycle of the applied voltage and returns exactly
> the same amount of energy to the driving source during
> the next one-quarter of a cycle."
>
> The equations are provided if you really need them.
> Hint: A shorted 1/8WL stub is inductive.

Instead of writing two lines identifying the element
and providing the function describing its energy flow,
you write 14 lines tell me I should do it.

But my explanations do not require this element to
store and return the "interference energy".

You should consider that perhaps your inability to
identify the element and its energy function really
calls into question your concept of "interference
energy" being stored and returned later.

> > Bzzt. Power is the rate of change of energy.
>

> Sorry, you are wrong about that.
> From the IEEE Dictionary: "power - the rate of
> generating, transferring, or using energy".
>
> Power is a rate, not a rate of change. The
> energy flow can be constant, i.e. rate of change
> equal zero.

When energy is transferred, the quantity is decreasing
in the supplier and increasing in the receiver. From
the supplier's perspective, this is a negative flow and
from the receiver's perspective, a positive flow.

In calculus terms, energy flow is the derivative of the
quantity of energy, i.e. the rate of change of the
amount of energy. The slope of the curve recording the
amount of energy can be negative, even though the amount
of energy is always positive.

> > Please re-read all the equations with "(t)". There
> > is no "cos(theta)" factor when "(t)" is present.
>
> I assume that exponential (phasor) notation for the
> instantaneous values of the interfering voltages could
> be used in which case there would indeed be a cos(theta)
> present.

No. "cos(theta)" only appears in the equations describing
the average, and not in those equations that describe the
actual function of time.

[snip]
> > Read it as Pr.correction(t) to emphasize that it is not
> > average power of which I am writing. Then it is not
> > interference.
>
> That statement makes it obvious that you don't understand
> interference. When instantaneous values are being used,
> if [V1(t)^2 + V2(t)^2] NOT= [V1(t) + V2(t)]^2, then
> interference is present. Did you miss Physics 201?

I suppose, if you want to rename superposition as interference.
But none of my basic circuit theory books use the word
interference when discussing superposition.

> > Because the powers imputed to the
> > constituent voltages of superposition do not represent
> > actual energy flows.
>
> That statement is a violation of the wave reflection
> model. Do you really believe that when you look
> yourself in the mirror that those reflections are

> devoid of energy? If so, please feel free to prove
> your assertion.

If the powers imputed to the constituent voltages of
superposition did represent actual energy flows, then
you would be able to simply add them to get the total
flow, since energy can not be created or destroyed.

The fact that a correction needs to be applied when
adding them is proof that they can not be actual energy
flows.

But you know that, and that is why you have to search
for where this correction, that which you call the
"interference energy", goes. Because only if you can
account for it, can you claim that it is an actual
energy flow, which is needed to make you explanations
agree with conservation of energy. But in this example
you can not account for this "interference energy".
You have not identified the element that stores it nor
being able to obtain a function which describes the flow
into that element. You should take this as a reason to
call into question the whole idea that this "interference
energy" is an actual energy flow.

> > But you have to be cautious that you are applying
> > conservation to powers that represent actual energy
> > flows.
>
> Reflected waves contain energy whether from your mirror
> or from a mismatched load at the end of a transmission
> line. You are arguing that the wave reflection model
> is wrong. Please prove it.

If *your* "wave reflection model" includes the idea that
Pref always represents an actual energy flow, then *your*
"wave reflection model" is wrong.

> > Or perhaps, these powers of which you speak do not
> > represent actual energy flows and therefore your
> > requirement that they need accounting is incorrect
> > and all of your attempts to explain them, unnecessary.
>
> Yes, perhaps the wave reflection model is wrong but
> that makes your argument not with me, but with Ramo,
> Whinnery, Johnson, Chipman, Slater, Hecht, and Walter
> Maxwell. Good luck on winning that one.

I am not convinced. It is clear that *your* "wave reflection
model" is wrong, but I have not seen these other authors
invest any effort in trying to explain where the reflected
power goes. Perhaps they realized it was a meaningless

question and their "wave reflection models" do not require
that the Pref represent an actual energy flow.

> > The difficulty of accounting for these powers is entirely
> > consistent with them not representing the actual flow
> > of energy.
>
> No, it is perfectly consistent with a large degree
> of ignorance which few people desire to alleviate.
>
> Ignoring the role of interference and lumping all the
> energy components into a mashed potato salad is one
> method of sweeping everything under the rug so you
> can ignore the problem instead of solving it.

I am still waiting for the simple answer as to which
element stores and returns this "interference energy" and
the function that describes the flow into this element.

> > Or possibly, the premise that these powers represent
> > actual energy flows is flawed.
>
> Feel free to prove the wave reflection model wrong.

That your "wave reflection model" is inconsistent with
conservation of energy (until you identify the storage
element and its energy transfer function) should be proof
enough.

> > This turns out, however, just to be an ideosyncracy of the math,
> > much like the way Pf-Pr is the actual energy flow in the transmission
> > line because of the way that Vf and Vr are derived from Vactual
>
> Feel free to prove the math wrong.

The math is correct. It is the interpretation that is in error.

Pf-Pr is always equal to Pnet simply because of the way that Vfor
and Vref are computed. Even though Pf-Pr adds to the actual measured
energy flow, it does not mean that Pf and Pr are actual energy flows.
They MUST add simply becase of the way they are computed.

The same is true for some of the "proofs" in your other papers. The
successful equalities are simply a consequence of the way the numbers
being added are computed. A successful equality does not necessarily
prove an interpretation.

> > It would be good, if just for a day, you let go of the
> > idea that Preflected represents an actual energy flow.
>
> I will do that the day that you prove those reflections
> from your mirror, that allow you to see yourself each
> morning, contain zero energy.

This is indeed the root of the problem. You need to let go of the mirror just long enough to get over the hump. As it stands, whenever you approach the hump, you think about the mirror and refuse to see what might be on the other side of the hump. That is why I suggest letting go of the mirror just for a short while. Explore to see if there exists a completely self consistent set of explanations on the other side of the hump. You will find it to be so. But this can only happen if you let go of the mirror long enough to get over the hump.

If it doesn't work out, you can always pick up the mirror again. There is nothing to lose by temporarily doing some exploration without the mirror.

[snip]

...Keith

3627. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 11:15:20 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <96d4a761-a4d5-4797-9c87-d33644a77dc2@n75g2000hsh.googlegroups.com>
Source record: 26699
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 26, 12:26 am, Richard Clark <kb7...@comcast.net> wrote:
> On Tue, 25 Mar 2008 13:55:16 -0700 (PDT), Artem <artem.b...@gmail.com>
> wrote:
>
> >> Nice close-up. Choking of some of the lines seems OK, but not the
> >> coax.
> >http://img370.imageshack.us/my.php?image=d2eb0.jpg
>
> >Could you find in this picture choke?
>
> What material is used in the ferrite?

For transformer - low magnetic permeability (50) for chokes - high.

>
> >> So, now where is the schematic of the biasing for these
> >> varicaps? If those two clear insulation lines are going to the loop,
>
> >It's lines from resonance loop to amplifier.
>
> Does this mean the varicaps are across the loop?

http://img524.imageshack.us/my.php?image=antjy3.jpg

3628. NO INVESTMENT ONLY EARNING

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 11:18:35 UTC
From: "dreamcashpoint@yahoo.co.in" <dreamcashpoint@yahoo.co.in>
Message-ID: <2d952b37-7861-4267-bb4e-cde5b9c4a5c6@d21g2000prf.googlegroups.com>
Source record: 26700

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3629. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 12:32:03 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b9383c12-25a5-4a55-9b2e-a1bd898703e2@u10g2000prn.googlegroups.com>
Source record: 26701

On Mar 25, 10:28 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Read it as Pr.correction(t) to emphasize that it is not
> > average power of which I am writing. Then it is not
> > interference.
>
> That statement makes it obvious that you don't understand
> interference. When instantaneous values are being used,
> if [V1(t)^2 + V2(t)^2] NOT= [V1(t) + V2(t)]^2, then
> interference is present. Did you miss Physics 201?

Let us build a slightly better example that complies with
your "NOT =" expression above.

```
+-----------------------------------+
| |
Vs1(t) = 141.4cos(wt) \
| = 100 Vrms Rload /
| 50 ohms \
Vs2(t) = 70.7cos(wt) /
| = 50 Vrms |
+-----------------------------------+
```

Using superposition the contribution from source 1 is
Vload.s1 = 100 Vrms
Iload.s1 = 2 Arms
and from source 2 is
Vload.s2 = 50 Vrms
Iload.s2 = 1 Arms
combining
Vload = 150 Vrms
Iload = 3 Arms

From
Pload = Vload * Iload
= 150 * 3
= 450 Waverage

As can be seen, this example satisfies your requirement
for interference:
[V1(t)^2 + V2(t)^2] NOT= [V1(t) + V2(t)]^2

Computing the imputed powers for the waves from each source
we have
Pload.s1 = 100 * 2
= 200 Waverage

Pload.s2 = 50 * 1
= 50 Waverage
To obtain the power in the load from these imputed powers
we need to use
Pload = Pload.s1 + Pload.s2 + Pload.correction
450 = 200 + 50 + Pload.correction
200 = Pload.correction

From previous analysis
Pcorrection = 2 * sqrt(P1 * P2)cos(theta)
(the cos(theta) term is appropriate here because these
are average powers being used)
Pcorrection = 2 * sqrt(10000) * 1
= 200
as required from above.

So according to your energy analsysis, the power in
the load comes from
the wave from source 1 = 200 W
the wave from source 2 = 50 W
"interference energy" = 200 W
for a total of
450 W as required.

Now if the 200 W from the wave from source 1 and the
50 W from the wave from source 2 represent actual
energy flows, then the "interference energy" must
also be an actual energy flow to satisfy conservation
of energy.

What element provides the energy for this "interference
energy" flow? Note that in this analysis, this energy
is an average energy flow, so it can not be saved during
part of the cycle and returned during another part.

In other posts, you have suggested that this would be
a constructive interference energy and that there would
be an equal destructive interference energy to provide
it. If you still claim this, where is this destructive
interference happening?

...Keith

3630. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 14:04:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <5KsGj.10608$qS5.4520@nlpi069.nbdc.sbc.com>
Source record: 26702

JN wrote:
> - Adding center extenders could help but then 75m hamsticks are out of 80m
> band ... Any comments on these?

This is not necessarily true. Since the length of
the top stinger has a much greater effect on resonant
frequency than the length of the bottom section, you
can increase that bottom section length by a large
amount and then adjust the top stinger length by a
smaller amount to achieve the desired resonant
frequency. And you are going down in frequency to
the CW portion of 80m.

For instance, you might extend the bottom portion
by 6 feet and only have to shorten the top stinger
by 2 feet. (When you shorten the stinger, you may
have to hacksaw off a portion to keep the stinger
bottom from residing in the middle of the loading
coil.)

Let's say you have an eight foot long base-loaded
mobile antenna. You decide to move the loading coil
farther up the antenna to the center-loaded position.
If you keep the *same length and same coil*, the resonant
frequency will increase. You have to add more stinger
length to bring it back to the original resonant
frequency (or more coil). Moving the fixed coil farther
away from the feedpoint requires the antenna length to
be increased. That fact works in your favor.

Since the additional bottom section is moving the
fixed loading coil farther away from the feedpoint,
the above effect will occur for your extended
configuration. Experiment with it and see what
happens. You could just use wire for the
experimentation and hang it between two supports.

```
-----/////-----+-----FP-----+-----/////-----
hamstick wire wire hamstick
```

--
73, Cecil http://www.w5dxp.com

3631. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 14:16:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RUsGj.20132$xq2.2387@newssvr21.news.prodigy.net>
Source record: 26703

Ed_G wrote:
> Cecil, I would be interested in finding out what you are using for
> base extenders..... varying lengths of ? with 3/8"-24 female one end, male
> another. You make something, or is something commercially available?

Hustler makes various extender sections. I have
2 foot and 5 foot sections from Hustler.

Most of my extender sections are from Henry, the
Texas Bugcatcher guy. They are the "BASE MAST"
sections available in lengths from 1/2 foot to
5 feet and special lengths can be ordered.

http://www.texasbugcatcher.com/
--
73, Cecil http://www.w5dxp.com

3632. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 14:20:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xYsGj.20134$xq2.1612@newssvr21.news.prodigy.net>
Source record: 26704

Art Unwin wrote:
> Cecil, he is not interested in finding the new,
> he is more comfortable of staying with the old
> people of his era.

I'm just trying to understand what Terman said.
Did he say that all of the radiation is perpendicular
to the radiating element or that most of the
radiation is perpendicular to the radiating element
or that none of the radiation is off the ends
of the element?
--
73, Cecil http://www.w5dxp.com

3633. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 14:23:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <x%sGj.20136$xq2.17674@newssvr21.news.prodigy.net>
Source record: 26705

Gene Fuller wrote:
> In any case, you answered my question. "Wave reflection model" means
> nothing beyond ordinary electromagnetic theory. Big deal.

It is a big deal when someone asserts that there is
no energy in a reflected EM wave or that the energy
in a reflected EM wave doesn't have to be conserved
or that a reflected wave doesn't obey the rules
of the wave reflection model.
--
73, Cecil http://www.w5dxp.com

3634. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 14:47:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <7mtGj.30247$R84.28344@newssvr25.news.prodigy.net>
Source record: 26707

Richard Harrison wrote:
> Cecil Moore wrote:
> "What am I missing?"
>
> Radio waves spread during propagation. Huygens` principle is a cause.

But the Method Of Moments used by NEC for antenna radiation patterns calculates the interference at a point in space based on radiation from different elementary dipole sections of the antenna. For instance, when the antenna is two wavelengths long there is no more broadside radiation than there is radiation off the ends.

In "Antenna Theory" by Balanis, in Chapter 8, page 407, on Moment Method, he illustrates the method using radiation angles less than 45 degrees to the radiating element.
--
73, Cecil http://www.w5dxp.com

3635. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 14:55:23 UTC
From: K7JEB <k7jeb_2@yahoo.com>
Message-ID: <MttGj.77731$497.13847@newsfe14.phx>
Source record: 26708

"Jim, K7JEB" <k7jeb@cox.net> wrote in message
news:70b4e52c-865f-4d4d-8830-cda73f4ac42c@e10g2000prf.googlegroups.com...
> ....This
> source was used in optical processors for synthetic-aperture
> imagery back in the 50's....

That should have read "synthetic-aperture radar imagery"...
Just trying to not let my mind outrun my typing speed.
K7JEB

3636. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 15:22:33 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <kTtGj.611$Cn4.434@news02.roc.ny>
Source record: 26709

Cecil Moore wrote:
> Gene Fuller wrote:
>> I did a little bit of the cheap modern day replacement for research by
>> Googling "wave reflection model". Some 455 references came back.
>
> That's strange. When I did the identical thing, 1,970,000
> references came back. Wonder what is wrong with your computer?

I used the quote marks around the words and got 266 references.
Few of them, other than yours, relate to electronics at all, much less
radio.

Dave K8MN

3637. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 15:26:52 UTC
From: Artem <artem.bond@gmail.com>
Message-ID: <4b5146d2-da24-4187-8703-57585308526d@n58g2000hsf.googlegroups.com>
Source record: 26710
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Mar 26, 5:40 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Wed, 26 Mar 2008 04:15:20 -0700 (PDT), Artem <artem.b...@gmail.com>
> wrote:
>
> >> What material is used in the ferrite?
>
> >For transformer - low magnetic permeability (50) for chokes - high.
>
> Unless you can be more specific, this sounds like the wrong material
> (which you have not specified - do you know what you used?).

I'm use USSR ferrite 50HH.

3638. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 15:40:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <7irku351vpev99189pkh37sev2uvufohid@4ax.com>
Source record: 26706
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Wed, 26 Mar 2008 04:15:20 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>> What material is used in the ferrite?
>
>For transformer - low magnetic permeability (50) for chokes - high.

Unless you can be more specific, this sounds like the wrong material
(which you have not specified - do you know what you used?).

73's
Richard Clark, KB7QHC

3639. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 15:43:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tauGj.2611$p24.917@nlpi061.nbdc.sbc.com>
Source record: 26711

Keith Dysart wrote:
> You should consider that perhaps your inability to
> identify the element and its energy function really
> calls into question your concept of "interference
> energy" being stored and returned later.

I have previously multiple times identified the element
as the network reactance and pointed you to a reference.

If you were asking me to teach you the English
language on r.r.a.a, you would get the same response.

> I suppose, if you want to rename superposition as interference.
> But none of my basic circuit theory books use the word
> interference when discussing superposition.

I'm not renaming superposition. I'm using the
definition of "interference" provided by Hecht
in "Optics". Superposition can occur with or
without interference. The present discussion is
about superposition with interference present.
Interference is just a word which identifies
the special case of superposition that is
under discussion.

> If the powers imputed to the constituent voltages of
> superposition did represent actual energy flows, then
> you would be able to simply add them to get the total
> flow, since energy can not be created or destroyed.

There you go again, confusing power and energy.
There is *NO* conservation of power principle.
Until you give up on superposing powers, you
are doomed to failure. There is absolutely nothing
wrong with storing energy and turning it into
power later in time. Do you think that backup
storage batteries are a violation of the
conservation of energy principle?

> The fact that a correction needs to be applied when
> adding them is proof that they can not be actual energy
> flows.

There is *NO CORRECTION TO THE ENERGY COMPONENTS*. There
is only a correction to the power components to account
for the time the energy is being stored before it is
dissipated. You really need to learn the difference

between energy and power.

> You should take this as a reason to
> call into question the whole idea that this "interference
> energy" is an actual energy flow.

Your argument is not with me - it is with experts
like Eugene Hecht. Please read his *57 page* Chapter
9 on "Interference" and then get back to us. With 57
pages devoted to the subject, Hecht doesn't seem to
share your problems with it.

> If *your* "wave reflection model" includes the idea that
> Pref always represents an actual energy flow, then *your*
> "wave reflection model" is wrong.

When you can prove that reflected traveling waves contain
zero energy, i.e. that ExH=0, I will accept your assertion
but not before. Exactly how does a TDR detect zero energy?

In fact, the thing you need to do is forget the transmission
line and deal with light waves encountering boundaries with
different indexes of refraction. The problem is identical,
but dealing with light out in the open prohibits you from
pushing your mashed-potatoes energy religion.
--
73, Cecil http://www.w5dxp.com

3640. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 15:49:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qguGj.24730$Ch6.680@newssvr11.news.prodigy.net>
Source record: 26712

Keith Dysart wrote:
> What element provides the energy for this "interference
> energy" flow? Note that in this analysis, this energy
> is an average energy flow, so it can not be saved during
> part of the cycle and returned during another part.

Already answered a few postings ago. Sorry you
missed it. Here it is again:

Here are the basic principles:

When destructive interference occurs, there is "extra"
energy left over from that isolated event. That energy
must go somewhere. Here are the possibilities in a
typical lossless RF transmitting system.

1. The source can throttle back on its energy output
to compensate for the destructive interference energy.

2. Reactive components can store the destructive
interference energy and return it to the network at
a later time.

3. In the absence of (1) and (2) above, an RF energy
wave is launched in a direction that allows the
"extra" energy to leave the destructive event area.

When constructive interference occurs, there is "missing"
energy needed to be supplied into that isolated event. That
energy must come from somewhere. Here are the possibilities
in a typical lossless RF transmitting system.

1. The source can simply supply the energy needed by
the constructive interference event.

2. Reactive components can return stored energy to
the network.

3. In the absence of (1) and (2) above, constructive
interference energy *must* be supplied in real time
by destructive interference between two other waves.
--
73, Cecil http://www.w5dxp.com

3641. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 16:04:08 UTC
From: richardharrison@webtv.net
Message-ID: <1112-47EA73F8-34@storefull-3254.bay.webtv.net>
Source record: 26713

Cecil Moore wrote:
"But the Method Of Moments used by NEC for antenna radiation patterns calculates the interference at a point in space based on radiation from different elementary dipole sections of the antenna."

Completely logical and it works. Interference or vector sum?

Terman illustrates radiation from an elementary doublet (dipole) , and it is mostly at right angles to the antenna axis, on page 865 of his 1955 opus. On page 866 he shows an actual antenna consisting of numerous elementary doublets and on page 867 he says:
"The result is that the fields radiated from different elementary sections of a long wire add vectorially to give a sum that depends on direction."

Kraus devotes Chapter 14 in the 3rd edition of "Antennas" to: "The Cylindrical Antenna and the Moment Method (MM)."

Best regards, Richard Harrison, KB5WZI

3642. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 17:37:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <sRvGj.2628$p24.2215@nlpi061.nbdc.sbc.com>
Source record: 26714

Keith Dysart wrote:
> Now if the 200 W from the wave from source 1 and the
> 50 W from the wave from source 2 represent actual
> energy flows, then the "interference energy" must
> also be an actual energy flow to satisfy conservation
> of energy.

One other observation: Although the interference model
will work for a lumped circuit example, there is no
reason to use it as it complicates the computations
and adds nothing to the solution. The wave reflection
model also works for circuits but there is simply no
good reason to use it for lumped circuit analysis.

Where interference becomes a useful tool is when it
happens away from any compensating source. An analysis
of the interference of two EM light waves in free space
far removed from any source leaves us with two constant
sources of energy, the total energy of which has to go
somewhere. The following two web pages tell us exactly
where the energy goes.

http://www.mellesgriot.com/products/optics/oc_2_1.htm

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

Your theory seems to require that the EM waves must
know beforehand whether to carry energy or not from
a star light years away. You apparently have invented
a rather curious "smart wave theory".

The question is: How did those two interfering waves
from Alpha Centauri know whether to arrive at the
planet Earth ten years later carrying ExH energy
or not carrying ExH energy?
--
73, Cecil http://www.w5dxp.com

3643. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 17:56:03 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <47ea8e39$0$14990$9b536df3@news.fv.fi>
Source record: 26715

"Cecil Moore" >

> Experiment with it and see what
> happens. You could just use wire for the
> experimentation and hang it between two supports.
>
> -----/////-----+-----FP-----+-----/////-----
> hamstick wire wire hamstick
>
> --
> 73, Cecil http://www.w5dxp.com

I have no hamsticks yet, but maybe I could use some simulation like this:
http://www.k7mem.150m.com/Electronic_Notebook/antennas/shortant.html

73 Jouko OH5RM

3644. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 18:10:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GkwGj.36206$J41.9672@newssvr14.news.prodigy.net>
Source record: 26717

JN wrote:
> "Cecil Moore" >
>> Experiment with it and see what
>> happens. You could just use wire for the
>> experimentation and hang it between two supports.
>>
>> -----/////-----+-----FP-----+-----/////-----
>> hamstick wire wire hamstick
>>
>> --
>> 73, Cecil http://www.w5dxp.com
>
> I have no hamsticks yet, but maybe I could use some simulation like this:
> http://www.k7mem.150m.com/Electronic_Notebook/antennas/shortant.html

If you use a fiberglass rod for the coil form similar
to the hamstick fiberglass rod and wind the same number
of turns of the same size wire on it, it should work.
But if you are going to go to that trouble, you might
as well wind high-Q coils.

In fact, if you replace the 75m hamstick coils with
large-diameter high-Q coils, you can probably increase
your radiated power by 1000%, i.e. 10 dB :-).
--
73, Cecil http://www.w5dxp.com

3645. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 18:53:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <EYwGj.2644$p24.341@nlpi061.nbdc.sbc.com>
Source record: 26718

Keith Dysart wrote:
> Let us build a slightly better example that complies with
> your "NOT =" expression above.

Your constant voltage sources are NOT a better example
and not even a good example. To confront the subject
being discussed, you should use constant power sources.

The reason is obvious. A constant steady-state EM
wave is a constant average power source, not a constant
voltage source. Constant voltage source examples
just won't do.

Try your example with constant power sources and
see what happens.
--
73, Cecil http://www.w5dxp.com

3646. Re: Narrow band antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-26 19:03:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jd7lu3tightn2ksm5buu335134s9ihgb37@4ax.com>
Source record: 26716
Cross-posted to: sci.electronics.design,rec.radio.amateur.antenna

On Wed, 26 Mar 2008 08:26:52 -0700 (PDT), Artem <artem.bond@gmail.com>
wrote:

>I'm use USSR ferrite 50HH.

Google reveals all of one page in the entire Web that responds to that
as a search term - and that page refuses to load.

73's
Richard Clark, KB7QHC

3647. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 00:16:16 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <addc682b-f38e-4b77-a9bb-8c1a7925cd18@c19g2000prf.googlegroups.com>
Source record: 26719

On Mar 26, 11:43 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > You should consider that perhaps your inability to
> > identify the element and its energy function really
> > calls into question your concept of "interference
> > energy" being stored and returned later.
>
> I have previously multiple times identified the element
> as the network reactance and pointed you to a reference.

Indeed you have, but you have not answered the second clause
in the question. Until you can provide the energy flow
function of the element you claim is storing the energy
there is no reason to believe that it is the element.

Can it be that hard to provide the function?
Or perhaps the element you have identified does not have
the appropriate energy flow function? (It doesn't.)

> > I suppose, if you want to rename superposition as interference.
> > But none of my basic circuit theory books use the word
> > interference when discussing superposition.
>
> I'm not renaming superposition. I'm using the
> definition of "interference" provided by Hecht
> in "Optics". Superposition can occur with or
> without interference. The present discussion is
> about superposition with interference present.
> Interference is just a word which identifies
> the special case of superposition that is
> under discussion.

Sure. OK.

> > If the powers imputed to the constituent voltages of
> > superposition did represent actual energy flows, then
> > you would be able to simply add them to get the total
> > flow, since energy can not be created or destroyed.
>
> There you go again, confusing power and energy.
> There is *NO* conservation of power principle.

Conservation of energy arises from the inability
to create or destroy energy. Energy can only flow from
one element to another.

This requires that the sum of the flows out of the
elements providing energy equals the sum of the flows
into the elements receiving the energy. Choose
whatever name you want for it, but this is the
reason that
Ps(t) must equal Prs(t) + Pg(t)

And it is just as powerful a concept as conservation
of energy since it follows directly from that principle.

> > The fact that a correction needs to be applied when
> > adding them is proof that they can not be actual energy
> > flows.
>
> There is *NO CORRECTION TO THE ENERGY COMPONENTS*. There
> is only a correction to the power components to account
> for the time the energy is being stored before it is
> dissipated. You really need to learn the difference
> between energy and power.

And we are still waiting for the energy flow function
for the element that you claim is doing the storing
of the energy.

> > You should take this as a reason to
> > call into question the whole idea that this "interference
> > energy" is an actual energy flow.
>
> Your argument is not with me - it is with experts
> like Eugene Hecht. Please read his *57 page* Chapter
> 9 on "Interference" and then get back to us. With 57
> pages devoted to the subject, Hecht doesn't seem to
> share your problems with it.

Actually, we are debating *your* interpretation.

> > If *your* "wave reflection model" includes the idea that
> > Pref always represents an actual energy flow, then *your*
> > "wave reflection model" is wrong.
>
> When you can prove that reflected traveling waves contain
> zero energy, i.e. that ExH=0, I will accept your assertion
> but not before.

You see. There you go again. Refusing to set aside an
assumption, even temporarily. It does make it difficult
to explore alternate explanations if you stop before you
start.

> Exactly how does a TDR detect zero energy?

Does it detect energy? Are you sure?
Or is it voltage that it detects? Or current?

> In fact, the thing you need to do is forget the transmission
> line and deal with light waves encountering boundaries with
> different indexes of refraction. The problem is identical,
> but dealing with light out in the open prohibits you from
> pushing your mashed-potatoes energy religion.

No. Light, in a 3 dimensional space and at such high frequency makes the math and measurements so complicated that it is extremely difficult to follow the energy. Much better to learn from a one-dimensional transmission line and then see if the solutions also apply to light. Which they do. But the analysis is tractable in a transmission line.

...Keith

3648. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 00:18:01 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <d809cfeb-7ad7-4d2d-a98a-c8060478eda4@s13g2000prd.googlegroups.com>
Source record: 26720

On Mar 26, 11:49 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > What element provides the energy for this "interference
> > energy" flow? Note that in this analysis, this energy
> > is an average energy flow, so it can not be saved during
> > part of the cycle and returned during another part.
>
> Already answered a few postings ago. Sorry you
> missed it. Here it is again:

Since there was no destructive interference in the example,
the rest of your post is snipped as being a non-sequitor.

...Keith

3649. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 00:19:02 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <00f7ca53-f40d-4240-8cae-51db1c656934@i12g2000prf.googlegroups.com>
Source record: 26721

On Mar 26, 1:37 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Now if the 200 W from the wave from source 1 and the
> > 50 W from the wave from source 2 represent actual
> > energy flows, then the "interference energy" must
> > also be an actual energy flow to satisfy conservation
> > of energy.
>
> One other observation: Although the interference model
> will work for a lumped circuit example, there is no
> reason to use it as it complicates the computations
> and adds nothing to the solution. The wave reflection
> model also works for circuits but there is simply no
> good reason to use it for lumped circuit analysis.

Except when it can be called into service to disprove
some aspects of *your* "wave reflection model".

> Where interference becomes a useful tool is when it
> happens away from any compensating source. An analysis
> of the interference of two EM light waves in free space
> far removed from any source leaves us with two constant
> sources of energy, the total energy of which has to go
> somewhere. The following two web pages tell us exactly
> where the energy goes.
>
> http://www.mellesgriot.com/products/optics/oc_2_1.htm
>
> http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/w...

It is unfortunate that they did not expect someone to use
their website to try to understand the behavior of transmission
lines, or they might have taken more care to explain what is
happening at the sub-wavelength level.

> Your theory seems to require that the EM waves must
> know beforehand whether to carry energy or not from
> a star light years away. You apparently have invented
> a rather curious "smart wave theory".

That would be nice, but no, not required. Though it is
easy to see how one might be misguided into thinking so.

The question is, can you set aside the mis-guiding
influences long enough to learn about the alternative
explanations?

> The question is: How did those two interfering waves
> from Alpha Centauri know whether to arrive at the
> planet Earth ten years later carrying ExH energy
> or not carrying ExH energy?

It is a question, but only seems relevent if *your* model
is incorrect.

...Keith

3650. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 00:23:45 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <fc02992e-223a-477a-a2b5-5bf67a1a0caf@d4g2000prg.googlegroups.com>
Source record: 26722

On Mar 26, 2:53 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Let us build a slightly better example that complies with
> > your "NOT =" expression above.
>
> Your constant voltage sources are NOT a better example
> and not even a good example. To confront the subject
> being discussed, you should use constant power sources.

Well, if that is all it takes to stop you, here is a
variation that should satisfy. It aligns well with your
example of Fig 1-1......

Let us build a slightly better example that complies with
your "NOT =" expression above.

```
50 ohms 50 ohms
+------/\/\/\----------------+---/\/\/\---+
| | |
| \ |
Vs1(t) = 282.8cos(wt) Rload / Vs2(t) = 141.4cos(wt)
| = 200 Vrms 50 ohms \ | = 100 Vrms
| / |
| | |
+---------------------------+------------+
```

Using superposition the contribution from source 1 is
Vload.s1 = 100 Vrms
Iload.s1 = 2 Arms
and from source 2 is
Vload.s2 = 50 Vrms
Iload.s2 = 1 Arms
combining
Vload = 150 Vrms
Iload = 3 Arms

From
Pload = Vload * Iload
= 150 * 3
= 450 Waverage

As can be seen, this example satisfies your requirement
for interference:
[V1(t)^2 + V2(t)^2] NOT= [V1(t) + V2(t)]^2

Computing the imputed powers for the waves from each source
we have
Pload.s1 = 100 * 2
= 200 Waverage
Pload.s2 = 50 * 1
= 50 Waverage
To obtain the power in the load from these imputed powers
we need to use
Pload = Pload.s1 + Pload.s2 + Pload.correction
450 = 200 + 50 + Pload.correction
200 = Pload.correction

From previous analysis
Pcorrection = 2 * sqrt(P1 * P2)cos(theta)
(the cos(theta) term is appropriate here because these
are average powers being used)
Pcorrection = 2 * sqrt(10000) * 1
= 200
as required from above.

So according to your energy analsysis, the power in
the load comes from
the wave from source 1 = 200 W
the wave from source 2 = 50 W
"interference energy" = 200 W
for a total of
450 W as required.

Now if the 200 W from the wave from source 1 and the
50 W from the wave from source 2 represent actual
energy flows, then the "interference energy" must
also be an actual energy flow to satisfy conservation
of energy.

What element provides the energy for this "interference
energy" flow?

In other posts, you have suggested that this would be
a constructive interference energy and that there would
be an equal destructive interference energy to provide
it. If you still claim this, where is this destructive
interference happening?

...Keith

3651. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 01:35:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NRCGj.2703$p24.1317@nlpi061.nbdc.sbc.com>
Source record: 26723

Keith Dysart wrote:
> Or perhaps the element you have identified does not have
> the appropriate energy flow function? (It doesn't.)

Please prove your assertion.

> This requires that the sum of the flows out of the
> elements providing energy equals the sum of the flows
> into the elements receiving the energy.

True for energy. Not true for power.

> And we are still waiting for the energy flow function
> for the element that you claim is doing the storing
> of the energy.

If you cannot understand the reference I gave you,
I don't know what to tell you.

> Does it detect energy? Are you sure?
> Or is it voltage that it detects? Or current?

Please provide proof that voltage or current can
exist without energy.
--
73, Cecil http://www.w5dxp.com

3652. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 01:38:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fUCGj.2705$p24.1113@nlpi061.nbdc.sbc.com>
Source record: 26724

Keith Dysart wrote:
> The question is, can you set aside the mis-guiding
> influences long enough to learn about the alternative
> explanations?

Sorry, I'm not interested in those religious
concepts.
--
73, Cecil http://www.w5dxp.com

3653. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 01:51:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <r4DGj.2709$p24.1693@nlpi061.nbdc.sbc.com>
Source record: 26725

Keith Dysart wrote:
> In other posts, you have suggested that this would be
> a constructive interference energy and that there would
> be an equal destructive interference energy to provide
> it. If you still claim this, where is this destructive
> interference happening?

I have said a source can match any destructive interference
by supplying less power and match any constructive interference
by supplying more power. If you have to falsify what I have
said to try to win the argument, you have already lost.
Since you have ample sources available in your example, my
assertion about interference far removed from any source
doesn't apply - but you know that.
--
73, Cecil http://www.w5dxp.com

3654. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 02:10:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <JmDGj.16702$5K1.12814@newssvr12.news.prodigy.net>
Source record: 26726

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> In fact, the thing you need to do is forget the transmission
>> line and deal with light waves encountering boundaries with
>> different indexes of refraction. The problem is identical,
>> but dealing with light out in the open prohibits you from
>> pushing your mashed-potatoes energy religion.
>
> No. Light, in a 3 dimensional space and at such high frequency
> makes the math and measurements so complicated that it is
> extremely difficult to follow the energy.

Now how did I know that you would refuse to expose your
strange concepts to the light of day?
--
73, Cecil http://www.w5dxp.com

3655. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 02:12:26 UTC
From: Roger <GetValidAddress@my.com>
Message-ID: <vg0mu31tp8da43dp35t0rupbhrnl05ndpa@4ax.com>
Source record: 26727

On Sun, 09 Mar 2008 21:33:41 -0400, Chuck <nospam@nospam.at.all>
wrote:

>On Sun, 9 Mar 2008 15:07:26 -0700 (PDT), K7ITM <k7itm@msn.com> wrote:
>
>snip
>
>>
>>Note that, as far as I've been able to determine, Michelson did not
>>have a coherent light source to shine into his interferometer, but
>>still he saw interference patterns. Perhaps he had invented lasers
>
>snip
>
>
>It is said he used sodium vapor gas light (~589 nm). Coherent enough.

Monochromatic is not the same as coherent or in phase such as a
laser.

>
>Chuck
>
>-----== Posted via Newsfeeds.Com - Unlimited-Unrestricted-Secure Usenet News==----
>http://www.newsfeeds.com The #1 Newsgroup Service in the World! 120,000+ Newsgroups
>----= East and West-Coast Server Farms - Total Privacy via Encryption =----
Roger Halstead (K8RI & ARRL life member)
(N833R, S# CD-2 Worlds oldest Debonair)
www.rogerhalstead.com

3656. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 02:29:17 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A6DC641787BCHuckleberrybigvalley@198.186.192.196>
Source record: 26728

>
> Most of my extender sections are from Henry, the
> Texas Bugcatcher guy. They are the "BASE MAST"
> sections available in lengths from 1/2 foot to
> 5 feet and special lengths can be ordered.
>
> http://www.texasbugcatcher.com/

Thanks. Looked it up.... nice selection. I'll be looking into this.

Ed

3657. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 03:02:15 UTC
From: nm5k@wt.net
Message-ID: <e9b05d7d-1f44-48f5-9988-e89f43c016db@e6g2000prf.googlegroups.com>
Source record: 26729

On Mar 26, 8:16 am, Cecil Moore <nos...@w5dxp.com> wrote:

> Hustler makes various extender sections. I have
> 2 foot and 5 foot sections from Hustler.
>
> Most of my extender sections are from Henry, the
> Texas Bugcatcher guy. They are the "BASE MAST"
> sections available in lengths from 1/2 foot to
> 5 feet and special lengths can be ordered.
>

I have a hustler 3 footer I use all the time..
Really cranks the performance up when you are
parked and can use a taller whip.
My normal whip is 11 ft, exactly center loaded,
and the mast makes it 14, with the coil at 8 ft.
I wish I had a 5 foot version. Might have to get
one of those for industrial strength use. :/
Of course, if I had another 5 ft mast, I'd end up
coupling them together and having 8 ft. :)
There is no such thing as overkill with a
stationary mobile setup. lol
An 8 ft mast would give me a total height of
19 ft, and the coil would be at 13 ft.
That would brown the food on 75/40 m... :-

3658. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 06:06:22 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <VpCdnT_13qrDpHbanZ2dnUVZ_tuonZ2d@neonova.net>
Source record: 26730

Cecil Moore wrote:
> Roger Sparks wrote:
>> You need to take a look at the spreadsheets.
>
> Roger, in a nutshell, what is the bottom line?

The bottom line in a nutshell? I'll try.

First, I added a note to both spreadsheets indicating that zero degrees is CURRENT zero degrees. This because the source turns out to be reactive, with current peak 45 degrees from voltage peak.

> http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf

The spreadsheet addresses the following issues:

Does the traveling wave carry power? Yes. The spreadsheet was built assuming that power is carried by traveling waves. Because the resulting wave form and powers seem correct, the underlaying assumption seems correct.

Is power conserved on the transmission line, meaning, can the energy contained in power be conserved and located over time on the transmission line? Yes, the spreadsheet was built assuming that power could be conserved and traced over time so the underlaying assumption seems correct.

Does interference occur in this example? The spreadsheet was built assuming that voltage and currents from superpose in a manner consistent with constructive and destructive interference, so the underlaying assumption seems correct.

Is power stored in the reactive component for release in later in the cycle or during the next half cycle? Yes, power is stored on the transmission line during the time it takes for power to enter the line, travel to the end and return. The time of wave travel on the transmission line is related to the value of the reactive component.

Does the direction of wave travel affect the measurement of voltage and the application of power to a device? Yes. A wave loses energy (and therefore voltage) as it travels through a resistance. As a result, power from the prime source is ALWAYS applied across the sum of the resistance from the resistor AND transmission line. The spreadsheet was built using this assumption and seems correct. (At times during the cycle, the forward and reflected waves oppose, resulting in very little current through the resistor. During those times, the power applied to the transmission line is much HIGHER because the reflected wave reflects

from the load and source, and merges/adds to the forward wave from the source.)

Is the power interference equation Ptot = P1 + P2 + 2*SQRT(P1*P2)cos(theta) valid? The equation was not reviewed on this spreadsheet.

The bottom line, but maybe not in a nutshell.

73, Roger, W7WKB

3659. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 06:20:44 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <01HGj.3370$rb6.1690@trnddc01>
Source record: 26731

"usmcbrat" <president@whitehouse.gov> wrote in message
news:5_cFj.257$rb6.143@trnddc01...
>>..I'll be persistent and let people here
> know when I get the plans.

I still don't have "plans", but here's a picture. Turns out it was a 3
element. My apologies for such an inaccurate memory.

http://img168.imageshack.us/img168/5535/helotraining1shk5.jpg

3660. 93 832 pill symbol identify pill markings e penis enlargement pill greenwich

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 08:29:02 UTC
From: lactation0free@gmail.com
Message-ID: <6c308895-566d-4164-84e4-dd3825722ee1@13g2000hsb.googlegroups.com>
Source record: 26732

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armadillo trade mark counter poison pill, pill shape color size mark,
44 over 462 white pill, dri mark pill pen, pill mark biolab, white
pill with 44 over 462, 44 462 round white pill, pill with 357 mark,
white pill with w 4 mark, mdma pill, pill fob key ring, mutual 274 and
pill, lipo weight loss pill serious, oenis enlargement pill nashville,
abortion pill for canines, spotting while on pill,
leg cramps pill, fda diet pill above, nashville vimax penis
enlargement pill, pill stuck in esophogas,
forged pill prescription, pill poppin animal mp3, watson 606 pill id,
alanis pill,
tri cyclen birth control pill,
morning after pill teengers, yellow oval pill with 01 70, time release
pill caddy, penis enlargement pill beverly hills, weight loss journal
diet phentermine pill, pacman power pill, vegan weightless pill,
menstruation and morning after pill, pill enclosure on alprazalom,
darvocet picture pill, pill m358 m360,
case pill promotional, birth conception control pill, pill box cart
review search domain, bi 62 pink pill, removing pill,
peis enlargement pill north adams,
birth control pill holders, penis pill rutland,
safest birth control pill method, penis enlargeent pill pawtucket, sex
pill for woman, millipede pill, pill 8444, arthrotec pill, fda
approves new sleeping pill,
pdr look up pill, birth pill and invention, dan shen pill, birth
control pill large dose abortion, canine flea and heartworm pill, r
127 pill,
g 4910 pill,
magic oprah diet pill,
7 week pill and strickland, trinessa pill, stacker two weight loss
pill, tombstone pill, m362 pill, what diet pill do doctors recommend,
metal pocket pill containers,
skin lightening pill, pink pill 4741, pill bottle holder,
1960 birth control pill, coconut oil pill, birth control desogen pill,
pill 93 over 933, commit pill sleeping suicide, diabetic diet
gestational diet pill, birth control pill becoming pregnant identical,
red pill exctasy fish, diet pill with the most ephedrine, penis
enlargment pill york, oval pill 15 93 imprint,
pill identification of veterinary medicines, pill identification
imprint lookup,
spotting after one missed pill, female increase libido pill that,
herbal supplement licien pill, 110 blue pill, sleep in a pill, pill
marked 029, pill id 7382, doans kidney pill, loss pill quick slim
weight, pink just lika a pill, loma lux acne pill reviews, penos
enlargement pill stockton, id pill wizard,

clipart picture of a pill, organic removal of pill bugs, g14 pill,
organic vitamin pill companies,
penis enlargement pill new york city, ecstacy pill directory, female
libido enhancer pill,
identfy a pill 93 890,
weight loss diet pill supplier, recommended weight loss pill by
trainers, apple vinegar pill,
pill p 771, vanity breast enlargement pill, pets arthritis pill,
cranberry pill side effects, 2410 white round pill, new diet pill
released by fda, pill hardware mass ave hours, watson 303 pill
identification,
west-ward pill, a 364 white pill, pill rx virility vp,
metabolife ephedra diet pill, 54 710 pill identification, weight loss
thyroid pill review,
om 650 pain pill,
margarite acne pill, dianabol link pill purchase steroid,
large white pill with mm imprint, m358 white pill, take multiple
vitamin with diet pill, peach oval pill 93 31, ip 88 pill, different
brands of birth control pill, cure depression diet phentermine pill,
abortion pill for my dog, trimspa the diet pill,
perscription sleeping pill, psnis enlargement pill west memphis, what
pill orange 0 pfizer, penis emlargement pill reviews, jagged little
pill lyrics alanis, george pataki morning after pill,
best diet wbr pill, cum gushers pill, amphetamine loss pill weight,
medical pill camara, tramadol acetaminophen pill identification 537,
control identification pill poison, pill young jeezy, fat burning pill
oprah, birth control pill do's and don'ts,
tylenol 500 pill,
ectasy picture pill, charlotte vigrx pill, coreg heart pill, diet pill
is better didre, 561 rx pill, pill seasick, pill capsule bristol 500,
pill identification and md6, pms orange pill 2 identification, ypgurt
vaginal pill, taxol in pill form,
quit smoking new blue pill prescription, peniis enlargement pill
jefferson city, breast compare enhancement pill, pill m 0552, gas in
pill tank, enzyte pill, whit pain pill with 535 11, bez pill, blue
horny pill,
ultracet pill identification, watson 903 pill, no fix orange pill, top
bid dick enlarging pill, penis enlargement pill guthrie,
aloe pill vera,
fosamax pill purchase, alanis morissette jagged little pill acoustic,
alanis jagged little lyric morissette pill, penis enlargemetn pill
sonoma, watson green pill, free pill gothic complete, supplement
licien pill,
mexican diet pill en forma plus,
penis enlatgement pill lexington, blue batman ecstacy pill info, pill
popper forum, penis enlrgement pill chicago heights, anabolic steroid
pill, suicide by sleeping pill overdose,
watson pill list, penis enargement pill midland, pill identifacation
markings, whats the best penis pill, what pill says rugby on it,
chanel pill bracelet, bye pain pill, vietnamese 10 day diet pill,

birth control information morning after pill, infinity slim diet pill, flea control pill, vaginal bleeding while on the pill, diet pill flush, 512 pill imprint, breast size change on the pill, philadelphia vimax penis enlargement pill, blue e 64 pill, small white pill o m 180,
penid enlargement pill beverly hills,
orange pill score on back, typhoid pill side effects, dreamz sleeping pill,
blue pill ll c 42, lil wayen pill popin, dianne pill, 5421 pill, diet pill regulations, 682 pill, planned parenthood birth control pill, home abortion pill, pill m 751, pill prosolution toronto, abortion pill australia, vicadin pill, penis enlargemet pill easthampton, diet pill easy to swallow, abortion pill check up cbs news, pill identification za 21, blood clots birth control pill, peniss enlargement pill pasadena, penis enlargrment pill east rutherford, order the abortion pill, what is pill marked m 89,
contraceptive pill and breast feeding, pill smartburn,
birth control headache migraine pill, adderall one pill drug test, janssen pill identification, nitro pill cases,
identify pill markings e, pill hung in lung, breakthrough bleeding starting the pill, high androgen pill,
pill box dropshipping, 37.5 90 pill ultram, teenagers birth control pill secret,
trinessa generic pill, picture of a pill chopper,
oenis enlargement pill hagerstown, oenis enlargement pill kendall, birth control diet interact pill pill, coat pill swallow,
moring after pill, birth contol pill constipation,
white pill m 3, malinkrodt pill identification, pill 93 3109,
switching birth control pill brands, triphasic red pill, 93 832 pill symbol, jeweled pill boxes,
penis enlarging pill san diego california, rx pill indentifier, nitroglycerin pill high, white pill with ethex on it, white pill printed 770, rx 561 pill, britain great in ionamin only pill, 5htp appetite suppress pill,
audrey hepburn in pill form, 44 532 white round pill, size zero diet pill,
m4 pink pill, 2 week pill minder, 24 birth control loestrin pill,
rituxan pill or chemo,
identify medication pill, lincocin pill, yasmin birth control pill ingredients, buy penus enlarging pill, pro pill gimmick,
6 section pill organizer,
fiber thin diet pill, oenis enlargement pill georgetown, scientific name of a pill bugs, gg 257 pill, duromine diet pill, pill identification forum, yasmin contraceptive pill side effects, metformin pill in poop,
super diet pill, all natural water pill sun, pill white slx 102, an ecstasy pill, pill par 544, 92 bl pill, penis enlargement pill greenwich, cactus gordonii hoodia pill, pill n 12.5, autism cure pill, pharmacy supplies pill crusher, penia enlargement pill phoenix, delay your period with the pill, confessions of pain pill seekers, find pill

name oval orange, greenies pill pockets for cats, yasmin pill uk,
alanis morissette jagged little pill cd, 9339 pill, exstacy lookup
pill,
loosing weight on the pill,
pill gasoline, what kind of pill is naproxen,
best diet pill to curve appetite, sample pill vials,
cayenne pepper pill, acne best brand pill, contraceptive pill reduces
cancer risk women, poison pill nfl contracts, pill pictures and
descriptions, pill report xtc, ebb green pill, medicine pill splitter,
fastest breast enlargment pill, diet pill alle, what does darvocet
pill look like, pill 2102, breast reduction pill male, identify
ingredients in ecstasy pill, penis enlargement pill products, peniis
enlargement pill oxford,
pill case screw, birth control demulen pill,
cookie cutter pill bottle, neo took the pill, pill digest, penis
enlragement pill san juan, hemorroids pill treatment, identify a white
oval pill, birth control pill and marijuana,
penis pill davenport, rogaine by pill, birth control pill holder, 9331
pill, a03 pill, do penus enlarging pill work, pill white slx,
pill imprint 8 215, male enlargemet pill results, sex pill for men
pennsylvania, bladder infection pill,
code imprint pill, 81 mg aspirin pill identify, purple pill oregon, v
4812 pill, pill diagrams,
penid enlargement pill cary, penis nlargement pill fall river, 5094
white pill 5094 genertic, contraception and morning after pill, cutter
lipitor pill, lamictal pill 333, n 343 pill, watson 933 white pill,
cutter diet pill, green tea diet slim pill, buccal pill,
wilmington finance adipex diet pill, cock enhancement pill, quitting
birth control pill, 8080 denavir link links pill, diet pill called
robin egg, oenis enlargement pill high point,
newest safe diet pill,
pens enlargement pill brandon,
bloating on the pill, tranquilizer pill, skip period on the pill, pill
box in pembroke pines, loss meridian pill weight,
wl 25 pill, 4626 white pill,
does morning after pill need prescription, disposable pill pouches,
what is 3596 white pill, identify a pill by markings, hyperhydrosis
pill, extacy pill,
weight loss pill for mothers, pill bugs and habitat,
lupus birth control pill, natural cures vs the pill, birthcontrol pill
brands,
pill container with alarm, pill not dissolving when swallowed, best
temporary birth control pill shot, pill g 4910,
male enhancement pill comparison, pain pill identity, pill bug
metabolism, pill pool and rule, diet pill review trimspa, blood pill
pressure water, methylsulfonylmethane pill,
just like a pill pink lyric, penise nlargement pill bend,
nv diet pill side effects, reductil pill, 2666 identify a pill, penis
enlargement pill dearborn, mylan pill pictures, ava pill,
crane pill,

barbiturate pill, the birth control pill for pmdd,
diet pill metabolife lawsuit, diet pill class-action suits, l 187
pill, eminem purple pill lyrics,
tenuate pill, pill index m 30 injectable,
oenis enlargement pill pago pago, chemotherapy in a pill,
pill number 303, white and yellow oblong pill,
cipro pill description, pill reports ecstasy, diet pill reviews form
profesionals, birth control pill implantation, lilly 4415 pill i d,
pill watson 387, abortion pill medication guide ru-486, abg 10 pill,
naproxen 500mg pill identification, penis enlargement pill los alamos,
diet pill supplement off the mrket,
pill watson 444, 2908 round pill imprint, brilliant dream pill review,
norimin pill, alli weight loss pill reviews, penie enlargement pill
dalton, orthotricyclin birth control pill, blue pill 44 508 identify,
indian pill remedy 19th c,
pill 30 e 653, breast cancer contraceptive pill, chinese insomnia
pill,
small white pill mcneil on it, penos enlargement pill north little
rock,
pink pill 7.5 mg,
diet pill smartburn, sciatica pain pill, 532 md pill, is every
pressure pill duretic, mini rose pill box, contraception development
latest man pill,
penis enlargment pill tysons corner, mylan 346 orange pill, ecstasy
pill penguin, top bid dick enhancement pill, yellow pill 537,
watson 748 pill, pill pictures percocet, blue pill with m361 on it,
e700 pill,
wieght los pill, michigan colonoscopy pill prep, unger the pill, pill
with 7176 and, diet ephedrine pill sale, oprah diet pill endorsed,
chart id pill, best abdominal fat loss pill, penisenlargement pill
douglas, white owl pill, pill in stool wellbutin 150, 20 20 breast
gain pill plus, fahrenheit loss pill review weight, white round pill
with a imprint,
pill tube key ring, pill with pa 608 on it, low estrogen birth control
pill,
penise nlargement pill st george, penis enlatgement pill chattanooga,
online purchase cor 135 pill, man xl penis pill,
legal cannibus pill, surgery breast enlargement pill, apothocary
products inc pill box, what is sodium fluoride pill, pill automatic
despenser with lock, birth control loestrin pill, penis enlragement
pill maryland, pill under tongue anger attack, pill gg 28, penis
enlarement pill rancho cucamonga, pill vials, increase metabolism otc
weight loss pill, pill stamped e 311, nioxin pill,
zoloft how it works diagram,

3661. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 08:43:49 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <47eb5995$0$23816$9b536df3@news.fv.fi>
Source record: 26733

I made an interesting simulation for the ham stick dipole.

I first took total lenght 16 FT (2x hamstick), at 4MHz loading coils near
feedpoint calculated to be abt. 60 mikroH
Then I took total lenght 28 FT (8+6/FP/6+8) coils then moved to almost
center of elements. at 4MHz calculated 56 mikroH
and the same configuration at 3.56 MHz calculated 71MikroH for each coil.

Now 75m hamsicks seem to have abt. 60mikroH coils.
If you use 2x6Ft extenders at center you need 71 mikroH to resonate at
3.56Mhz.

This simulation uses lumped coils not helical like in hamstick, but I think
it is possible to use 75m sticks with extenders and still you need to lower
the resonance for 80m CW use.

73 Jouko OH5RM

"JN" <jnxx@vfemail.net> wrote in message
news:47ea8e39$0$14990$9b536df3@news.fv.fi...
>
> "Cecil Moore" >
>
>> Experiment with it and see what
>> happens. You could just use wire for the
>> experimentation and hang it between two supports.
>>
>> -----/////-----+-----FP-----+-----/////-----
>> hamstick wire wire hamstick
>>
>> --
>> 73, Cecil http://www.w5dxp.com
>
> I have no hamsticks yet, but maybe I could use some simulation like this:
> http://www.k7mem.150m.com/Electronic_Notebook/antennas/shortant.html
>
> 73 Jouko OH5RM
>

3662. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 11:03:35 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <naLGj.24022$CD7.14099@newsfe11.phx>
Source record: 26734

Roger wrote:

>>> Note that, as far as I've been able to determine, Michelson did not
>>> have a coherent light source to shine into his interferometer, but
>>> still he saw interference patterns. Perhaps he had invented lasers

>> It is said he used sodium vapor gas light (~589 nm). Coherent enough.

> Monochromatic is not the same as coherent or in phase such as a
> laser.

Just a slight addition here. Before lasers, the way to get a
coherent light source was to bottle-up a high-intensity,
monochromatic source, such as the aforementioned sodium-
vapor light, in a reflective cavity with a very small pinhole in
its side. As the photons dribble out through the pinhole, they
are forced into a somewhat phase-coherent wave train. This
source was used in optical processors for synthetic-aperture
radar imagery back in the 50's....

Jim, K7JEB

3663. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 11:49:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <PQLGj.23899$Ej5.5313@newssvr29.news.prodigy.net>
Source record: 26735

Roger Sparks wrote:
> The bottom line in a nutshell? I'll try.

Thanks Roger, good stuff and much appreciated.
My digesting of your spread sheets is about to
be interrupted by surgery.

> During those times, the power applied to
> the transmission line is much HIGHER because the reflected wave reflects
> from the load and source, and merges/adds to the forward wave from the
> source.)

May I suggest that you use the word "redistributed"
instead of "reflected" as does the FSU web page at:

http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index
.html

For the purposes of this discussion, I would suggest
that the word "reflection" be reserved for something
that happens to a single wave. When two waves are
superposed, energy can be redistributed but technically
it is not an ordinary reflection. I once used the
word "reflection" to describe both phenomena and it
confused people. Now I am careful to call the
reversal of energy flow due to superposition a
"redistribution" instead of a "reflection".

For instance, the multi-colored patterns seen when
a thin film of oil is on top of a puddle of water
is not an ordinary reflection but a combination
of multiple reflections and interference.

In addition, the reflection coefficient seen by the
reflected wave in our examples is 0.0 since the source
impedance equals the characteristic impedance of the
transmission line. There are no ordinary reflections
when the reflection coefficient is zero.
--
73, Cecil http://www.w5dxp.com

3664. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 11:58:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <89a1d3a2-a869-40fb-8380-3fbdf32a8a43@i7g2000prf.googlegroups.com>
Source record: 26736

On Mar 26, 9:35 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Or perhaps the element you have identified does not have
> > the appropriate energy flow function? (It doesn't.)
>
> Please prove your assertion.

So you are having difficulty doing the math to justify
your hypothesis.

> > This requires that the sum of the flows out of the
> > elements providing energy equals the sum of the flows
> > into the elements receiving the energy.
>
> True for energy. Not true for power.

Ummmmm. Conservation of energy requires that the total
quantity of energy in the system not change. This requires
that the sum of the changes of the quantity of energy in
each element be zero. A change in energy quantity is a
flow. The energy flows must sum to zero. Energy flow is
power. The powers must sum to 0 to satisfy conservation
of energy.

> > And we are still waiting for the energy flow function
> > for the element that you claim is doing the storing
> > of the energy.
>
> If you cannot understand the reference I gave you,
> I don't know what to tell you.

You could simply do the derivation for an example that
demonstrates your hypothesis.

> > Does it detect energy? Are you sure?
> > Or is it voltage that it detects? Or current?
>
> Please provide proof that voltage or current can
> exist without energy.

I realize now that you were probably thinking of a TDR
that sent a pulse (I was thinking of one that sent a
step). My assertion is that when
Ptotal = Pfor - Pref
the idea that Pfor and Pref describe actual energy
flows is very dubious. Ptotal always describes an

energy flow.

When Pfor is 0, then Pref is equal to Ptotal and since
Ptotal is always describing an energy flow, Pref does
in this case as well. Similarly when Pref is 0.

And now, since you are having trouble computing the
energy flows into the various elements here they are
again, for the circuit in the example of Fig 1-1, 100 Vrms
sinusoidal source, 50 ohm source resistor, 45 degrees of
50 ohm line, 12.5 ohm load, after the reflection returns...

The power flow into the line is
Pg(t) = 32 + 68cos(2wt)
and along with
Ps(t) = 100 + 116.6190379cos(2wt-30.96375653)
Prs(t) = 68 + 68cos(2wt-61.92751306)
energy is nicely conserved because
Ps(t) = Prs(t) + Pg(t)

The load presented by the line has a resistive and a
reactive component, so we can separate the power into
two parts
Pg.resis(t) = 32 + 32cos(2wt-61.92751306)
Pg.react(t) = 0 + 60cos(2wt+28.07248694)
which, for confirmation, nicely sums to Pg(t) above.

Now as I recall, your claim was that the total power
dissipated in the source resistor would be the power
dissipated before the reflection returned plus the
power imputed to be in the reflected wave plus the
power stored in and returned from some other element
in the circuit.
Prs(t) = 50 + 50cos(2wt)
+ Pr.g(t)
+ Pstorage
= 50 + 50cos(2wt)
+ 18 - 18cos(2wt)
+ Pstorage
Pstorage = 68 + 68cos(2wt-61.92751306)
- 50 - 50cos(2wt)
- 18 + 18cos(2wt)
= 0 + 36cos(2wt-90)
which is not the power function of the reactive
component of the line input impedance, Pg.reac(t),
computed above. So the energy is not being stored
in the reactive component of the line input
impedance.

...Keith

3665. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 11:59:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4b34b5cd-d89a-4456-a187-67b45bbd7f37@d21g2000prf.googlegroups.com>
Source record: 26737

On Mar 26, 9:51 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > In other posts, you have suggested that this would be
> > a constructive interference energy and that there would
> > be an equal destructive interference energy to provide
> > it. If you still claim this, where is this destructive
> > interference happening?
>
> I have said a source can match any destructive interference
> by supplying less power and match any constructive interference
> by supplying more power. If you have to falsify what I have
> said to try to win the argument, you have already lost.
> Since you have ample sources available in your example, my
> assertion about interference far removed from any source
> doesn't apply - but you know that.

I had not realized that you had these alternate sources for
the interference energies, not having seen that in your papers.

But it is one way to sidestep the issue; different rules for
the expectations of superposition and interference in different
scenarios.

I am surprised then, for the example of Fig 1-1 with 12.5 ohms,
that you don't just say "There is a source nearby, that *must*
be where the unaccounted energy comes from", and leave it at
that.

...Keith

3666. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 12:02:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <n1MGj.6138$6H.5214@newssvr22.news.prodigy.net>
Source record: 26738

JN wrote:
> Now 75m hamsicks seem to have abt. 60mikroH coils.
> If you use 2x6Ft extenders at center you need 71 mikroH to resonate at
> 3.56Mhz.

Which gives you incentive to replace the hamstick
coils with relatively high-Q coils and thus increase
your radiation efficiency by magnitudes.
--
73, Cecil http://www.w5dxp.com

3667. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 13:25:59 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080327062559.dd1718ba.rsparks@elltel.net>
Source record: 26739

On Thu, 27 Mar 2008 11:49:03 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > The bottom line in a nutshell? I'll try.
>
> Thanks Roger, good stuff and much appreciated.
> My digesting of your spread sheets is about to
> be interrupted by surgery.

Thanks for the kind words. Sorry to hear about your surgery. I hope it goes well and you have a quick recovery.

>
> > During those times, the power applied to
> > the transmission line is much HIGHER because the reflected wave reflects
> > from the load and source, and merges/adds to the forward wave from the
> > source.)
>
> May I suggest that you use the word "redistributed"
> instead of "reflected" as does the FSU web page at:
>
> http://micro.magnet.fsu.edu/primer/java/scienceopticsu/interference/waveinteractions/index.html
>
Clip

I think "redistributed" would be the word if the discontinuity included a resistance. "Reflection" is the historical word for wave reversal and implies a "mirror image", which is not the same as the forward image.

I hope the surgery does not take you away from the discussion for long.

--
73, Roger, W7WKB

3668. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 13:54:02 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fsg8tq$105m$1@f04n12.cac.psu.edu>
Source record: 26740

nm5k@wt.net wrote:
> On Mar 26, 8:16 am, Cecil Moore <nos...@w5dxp.com> wrote:
>
>> Hustler makes various extender sections. I have
>> 2 foot and 5 foot sections from Hustler.
>>
>> Most of my extender sections are from Henry, the
>> Texas Bugcatcher guy. They are the "BASE MAST"
>> sections available in lengths from 1/2 foot to
>> 5 feet and special lengths can be ordered.
>>
>
> I have a hustler 3 footer I use all the time..
> Really cranks the performance up when you are
> parked and can use a taller whip.
> My normal whip is 11 ft, exactly center loaded,
> and the mast makes it 14, with the coil at 8 ft.
> I wish I had a 5 foot version. Might have to get
> one of those for industrial strength use. :/
> Of course, if I had another 5 ft mast, I'd end up
> coupling them together and having 8 ft. :)
> There is no such thing as overkill with a
> stationary mobile setup. lol
> An 8 ft mast would give me a total height of
> 19 ft, and the coil would be at 13 ft.
> That would brown the food on 75/40 m... :-

How do you adjust the coil at that height? Of course I find that I
choose and spend most of my time on one band per mobile session, so
maybe it isn't a big problem.

- 73 de Mike N3LI -

3669. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 14:33:22 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <SeOGj.4383$Dv5.2658@trnddc02>
Source record: 26741

"usmcbrat" <president@whitehouse.gov> wrote in message
news:01HGj.3370$rb6.1690@trnddc01...
>
> "usmcbrat" <president@whitehouse.gov> wrote in message
> news:5_cFj.257$rb6.143@trnddc01...
>>>..I'll be persistent and let people here
>> know when I get the plans.
>
> I still don't have "plans", but here's a picture. Turns out it was a 3
> element. My apologies for such an inaccurate memory.
>
> http://img168.imageshack.us/img168/5535/helotraining1shk5.jpg
>

Hi "UMC"
Is it practical to mount the antenna outside toe helicopter? I once designed an antenna system for military helicopter VHF homing. I used two dipoles made of foil taped to the plastic windshield. It worked. The idea was/is simple, but you'd need to build a seperate electronic device to go between the antenna and the receiver. And, you'd (of course) need to manuver the helicopter rather than twist/turn the antenna, because, the helicopter would be the antenna.

Jerry KD6JDJ

3670. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 15:10:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6OOGj.24810$Ch6.4958@newssvr11.news.prodigy.net>
Source record: 26742

Keith Dysart wrote:
> So you are having difficulty doing the math to justify
> your hypothesis.

Actually no, the math is not difficult. I'm pre-
occupied with something else and think it's just
time to agree with Hecht that instantaneous power
is "of limited utility".

Have you taken a look at Roger's spreadsheets?

> Conservation of energy requires that the total
> quantity of energy in the system not change.

:-) Isn't the whole purpose of a transmitting
antenna to radiate energy away from the antenna
system? And that radiation continues to be "lost"
from the system space for some time after the
source power is removed?

Wouldn't you have to define the "system" as the
entire universe for your statement to be true?

> The powers must sum to 0 to satisfy conservation
> of energy.

That may be true, but there's still no conservation
of instantaneous power principle. A hot resistor
continues to radiate heat long after any power
source is removed.

> You could simply do the derivation for an example that
> demonstrates your hypothesis.

Already done on my web page. My only actual hypothesis
concerns average power. I've wasted too much time
bantering about something that Hecht says is "of
limited utility".

> the idea that Pfor and Pref describe actual energy
> flows is very dubious.

Again, look yourself in the mirror and tell yourself
that what you are seeing contains no energy. The
theory that some EM waves contain energy and some
do not is not new to you. Dr. Best was the first to
theorize that canceled waves continue to propagate
forever devoid of energy. Someone else asserted that

canceled waves never contained any energy to start
with. I strongly suspect that what you are seeing
in the mirror are the waves that didn't cancel and
that do contain energy. :-)

> So the energy is not being stored
> in the reactive component of the line input
> impedance.

Assuming you have not made an error, so what? Energy
stored in the reactance is only one of the possibilities
that I listed earlier. As I said in an earlier posting
which you declared a non-sequitor (sic), one or more of
the following is true:

1. The source adjusts to the energy requirements.

2. The reactance stores and delivers energy.

3. Wave energy is redistributed during superposition.

4. Something I haven't thought of.

The ExH reflected wave energy exists and cannot
be destroyed. It goes somewhere and its average
value is dissipated in the source resistor in
my special case example. You are attempting to
destroy the reflected wave energy using words
and math presumably knowing all along that
reflected wave energy cannot be destroyed.
--
73, Cecil http://www.w5dxp.com

3671. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 15:37:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <gbPGj.5263$qT6.201@nlpi070.nbdc.sbc.com>
Source record: 26743

Keith Dysart wrote:
> I had not realized that you had these alternate sources for
> the interference energies, not having seen that in your papers.

I only posted it three times here and you chose to
ignore all of those postings. I have published only
one paper with three more to go. The special case
Part 1 contains zero average interference so there
is no alternate source for average interference and
indeed, none is needed for Part 1.

> But it is one way to sidestep the issue; different rules for
> the expectations of superposition and interference in different
> scenarios.

That's why I have four parts only one of which has
been published. The rules are not different but the
conditions within the examples are different. Part 2
will be an example with the condition of average
destructive interference existing at the source
resistor. Although there are no ordinary reflections
because the reflection coefficient is 0.0, there will
exist something that looks a lot like a reflection
caused by superposition/interference. The FSU web page
calls it a "redistribution", not a "reflection".
I am satisfied with FSU's word "redistribution" for
the results of coherent wave interaction.

> I am surprised then, for the example of Fig 1-1 with 12.5 ohms,
> that you don't just say "There is a source nearby, that *must*
> be where the unaccounted energy comes from", and leave it at
> that.

Since my special case example contains zero average
interference, the average power output of the source
is constant and unaffected by zero interference.
There is zero average energy unaccounted for.

Part 2 will illustrate the source adjusting its power
output to compensate for destructive interference.
--
73, Cecil http://www.w5dxp.com

3672. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 15:52:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2pPGj.36277$J41.23362@newssvr14.news.prodigy.net>
Source record: 26744

Roger Sparks wrote:
> I think "redistributed" would be the word if the discontinuity
> included a resistance. "Reflection" is the historical word for
> wave reversal and implies a "mirror image", which is not the same
> as the forward image.

What I am suggesting is that "redistribution" be used
instead of "reflection" for cases where there exists
no discontinuity. If the source resistor matches the
Z0 of the feedline, there is no discontinuity and
therefore no conventional reflection, yet there are
cases where reflected energy is redistributed back
toward the load. That reversal appears to be a reflection
but is actually the result of superposition along
with destructive interference between *two* waves.
That is what causes the disparity between the physical
reflection coefficient, (Z1-Z2)/(Z1+Z2), and the virtual
reflection coefficient, SQRT(Pref/Pfor).

> I hope the surgery does not take you away from the discussion
> for long.

At the least, I should still have one good eye left. ;-)
--
73, Cecil http://www.w5dxp.com

3673. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 16:43:59 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <j9QGj.89578$cQ1.14502@bgtnsc04-news.ops.worldnet.att.net>
Source record: 26745

Cecil Moore wrote:

>
> What I am suggesting is that "redistribution" be used
> instead of "reflection" for cases where there exists
> no discontinuity.

This is sad.

But I suppose that if you are going to invent new science you might as well invent new terminology as well. 8-)

Yes, I know that the now-famous FSU web page uses "redistribution". Did you happen to notice that the page was created by a lab tech and a Java programmer? Do you suppose Hecht, Born and Wolf, and all of the other acknowledged experts would support dumping "reflection"?

73,
Gene
W4SZ

3674. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 16:59:39 UTC
From: nm5k@wt.net
Message-ID: <901ccfd9-0c49-490e-9f64-6aa26e5612ad@s12g2000prg.googlegroups.com>
Source record: 26746

On Mar 27, 7:54 am, Michael Coslo <m...@psu.edu> wrote:

>
> How do you adjust the coil at that height? Of course I find that I
> choose and spend most of my time on one band per mobile session, so
> maybe it isn't a big problem.
>
> - 73 de Mike N3LI -

Well, I only have a few taps on the coil, so I don't have to change
all that often. I might have three taps for 80m, a couple for 40m,
one each for the rest of the bands..
I'll tune the antenna in the normal 11 ft mode, using the usual
tap for the freq I'm using, and then I add the 3 ft mast.
I'll stay on the same coil tap, but shorten the stinger a couple
of inches or so.
I'm on 80 or 40 most all the time, so I don't have to change
but maybe twice a day.. 40 all day, and then I'll switch to
75 at night when it gets dark.

3675. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 17:26:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kNQGj.6$Gq7.1@newssvr19.news.prodigy.net>
Source record: 26747

Gene Fuller wrote:
> Yes, I know that the now-famous FSU web page uses "redistribution".
> Do you suppose Hecht, Born and Wolf, and all of the other
> acknowledged experts would support dumping "reflection"?

I would guess the answer is "yes" when the physical
reflection coefficient is zero - in order to avoid
a logical contradiction.

How does a "reflection" occur when the physical reflection
coefficient is zero, in violation of the wave reflection
model? Why is there often a difference between the
physical reflection coefficient and the virtual
reflection coefficient? Which one is wrong?

The convention that I have adopted is that the word
"reflection" is reserved for single wave events.

For multiple wave events where interference exists,
something besides a simple "reflection" takes place.
The intricate color patterns on the surface of a thin
film of oil floating on a puddle of water are not
simple reflections but instead an interaction of
multiple reflected waves. The resulting image bears
absolutely no resemblance to the incident image.

Following the FSU web page usage, the word "redistribution"
is used for multiple wave interaction events like wave
cancellation. (The words we choose to use to describe the
phenomena have zero effect on the phenomena.)

"A rose by any other name would smell as sweet."
--
73, Cecil http://www.w5dxp.com

3676. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 17:29:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <EPQGj.7$Gq7.4@newssvr19.news.prodigy.net>
Source record: 26748

nm5k@wt.net wrote:
> ... I'll switch to 75 at night when it gets dark.

What do you switch to at night when it doesn't
get dark? :-)
--
73, Cecil http://www.w5dxp.com

3677. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 17:41:16 UTC
From: AndyS <andysharpe@juno.com>
Message-ID: <b0bb6d19-6be4-43d2-84a5-db1152ae3105@i7g2000prf.googlegroups.com>
Source record: 26749
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

Joel Koltner wrote:>
> This implies only that the antenna/receiver *matching* is good enough... yes?
>
*** No, it says nothing about the matching. It only says that the
signals
coming down the antenna from the cosmos are greater than the receiver
noise. If the antenna is matched to the receiver, whatever is picked
up
will be more efficiently fed into the receiver, resulting in a still
higher level.
If the antenna is not matched, well, there may be a heck of a lot of
both noise and signal, and even unmatched the results are strong
enough to override the rx noise..... One caveat , tho, ... in some
conditionsm,
a matched receiver input results in a higher receiver noise level....
not much,
but enough for purists to argue the point incessantly :>))))) .

> (I'm thinking that you would still sometimes prefer a highly directional
> antenna over just a dipole even though both increase the background noise.
> I.e., in both cases the antenna matching is good enough, but without the
> directionality the antenna itself might not be good enough to eliminate
> interference, overloading, etc. from sources other than the one you're
> interested in.)

**** Of course, and a good point..... I was only talking about desired
signal
and atmospheric noise.... If there is a coherent interferer, then
that's a
whole 'nuther thang...... :>)))

Andy W4OAH

3678. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 18:16:00 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fsgo90$1038$2@f04n12.cac.psu.edu>
Source record: 26750

Cecil Moore wrote:
> nm5k@wt.net wrote:
>> ... I'll switch to 75 at night when it gets dark.
>
> What do you switch to at night when it doesn't
> get dark? :-)

Dammit Cecil - not when I'm drinking coffee! hehehe 8^)

- 73 de Mike N3LI -

3679. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 20:19:09 UTC
From: Mark <makolber@yahoo.com>
Message-ID: <a5ca8995-beef-4330-954b-4890e968c425@d4g2000prg.googlegroups.com>
Source record: 26601

> > I still don't have "plans", but here's a picture. Turns out it was a 3
> > element. My apologies for such an inaccurate memory.

How about a small Yagi made with "rubber duckies"?

Mark

3680. Re: Double dipole better than YAGI 5 elements??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 20:31:16 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <ouTGj.4823$Ew5.713@trnddc04>
Source record: 26602

"user" <dag@allemaale.be> wrote in message
news:fs91dk$r6d$1@registered.motzarella.org...
>
>
> Take a look here too:
> http://cordis.europa.eu/ictresults/index.cfm/section/news/tpl/article/BrowsingType/Features/ID/89327
>
>
> “The transmit antennas need to be spatially separated by between 10 and 20
> wavelengths and a delay applied to one antenna to achieve effective
> de-correlation. The amount of separation and delay depends on the type of
> environment to be covered,” says Bard.

Can someone explain this de-correlation to me? Is this not the same as a
phase shift? Would there not be a de-correlation when moving from broadside
to end fire?

Thanks for any assistance,
John

3681. FS: Open form coils

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 21:00:16 UTC
From: Henry <wa0goz@arrl.net>
Message-ID: <SM6dnXpa3YREI3HanZ2dnUVZ_sqinZ2d@comcast.com>
Source record: 26603

I have the following new open form coils for sale.

Air Dux coils

(3) 408T 1/2" dia X 2" long 8t/in $4 each
(4) 416T 1/2" dia X 2" long 15t/in $4 each
(3) 432T 1/2" dia X 2" long 30t/in $4 each
(4) 804T 1" dia X 3" long 4t/in $5 each
(3) 810T 1" dia X 3" long 10t/in $5 each
(3) 816T 1" dia X 3" long 16t/in $5 each

B & W coils

(1) 3006 5/8" dia X 1 1/4" long 8t/in $3
(1) 3008 5/8" dia X 1 7/8" long 32t/in $4

B & W xmitting coils each with a coupling loop on a 5 pin ceramic base
(You have to be old to remember these. :-))

(1) 10JEL (used) $8
(1) 40JEL $9
(1) 80JEL $10

Unknown manufacturer coils (but made like Air Dux)

(4) 1 1/4" dia X 10" long 6t/in $18 each
(2) 1 1/4" dia X 10" long 10t/in $18 each
(1) 2" dia X 10" long 4t/in $18
(1) 2" dia X 5" long 10t/in $9
(1) 2" dia X 7/8" long 10t/in $2

Lot price totals $261. I will discount if you buy the whole lot.

Prices are plus shipping in CONUS. I need your zip code to figure
shipping.

Henry WA0GOZ
wa0goz@arrl.net

3682. Re: Double dipole better than YAGI 5 elements??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 21:00:43 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fsh1ts$no8$1@news.jpl.nasa.gov>
Source record: 26604

John KD5YI wrote:
>
> "user" <dag@allemaale.be> wrote in message
> news:fs91dk$r6d$1@registered.motzarella.org...
>
>>
>>
>> Take a look here too:
>> http://cordis.europa.eu/ictresults/index.cfm/section/news/tpl/article/BrowsingType/Features/ID/89327
>>
>>
>>
>> “The transmit antennas need to be spatially separated by between 10
>> and 20
>> wavelengths and a delay applied to one antenna to achieve effective
>> de-correlation. The amount of separation and delay depends on the type of
>> environment to be covered,” says Bard.
>
>
>
> Can someone explain this de-correlation to me? Is this not the same as a
> phase shift?

They're talking about that the received signals from the two antennas
are decorrelated, generally, with respect to the multipath. For the two
direct paths, it is just a time delay difference. But when you throw
reflections into the mix, they'll be decorrelated.

Virtually all DTV receivers use some form of adaptive RAKE receiver to
effectively utilize the energy in the multipath and to provide
resistance to multipath fading. To the receiver, adding another
transmitter just looks like another reflected path.

Would there not be a de-correlation when moving from
> broadside to end fire?

Depends.. How far did the phase center move when moving from broadside
to end fire.

3683. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 21:45:11 UTC
From: nm5k@wt.net
Message-ID: <70bb6264-9601-4ada-9571-4e9841556b09@i29g2000prf.googlegroups.com>
Source record: 26605

On Mar 27, 11:29 am, Cecil Moore <nos...@w5dxp.com> wrote:
> n...@wt.net wrote:
> > ... I'll switch to 75 at night when it gets dark.
>
> What do you switch to at night when it doesn't
> get dark? :-)
> --
> 73, Cecil http://www.w5dxp.com

My map of Alaska. :/

3684. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 22:31:58 UTC
From: HRBE <hrbe@bigpond.net.au>
Message-ID: <yfVGj.3349$n8.139@news-server.bigpond.net.au>
Source record: 26606

Hi Jouko,

I made up a 4 band "spider" mount, to which you can screw in 4 sets of hamsticks. I have a full set of hamstick whips from 80m down to 6m.

So I have a multiband hamstick dipole array!

When one thinks about the feedpoint impedance, even without the capacitive disk, it certainly should be lower, but as I am using them at 7 metres from groundlevel in a portable situation, I use a small antenna tuner.

At that height, they act like a "cloud warmer" or a NVIS antenna, so at 80m its good for up to 350km. I haven't really given the other frequencies a try yet.

Let me know I can email you with a few pics of my multiband "spider mount", as I have a small lathe and milling machine in my workshop, it wasn't hard to make.

73
de VK2KCE John
"JN" <jnxx@vfemail.net> wrote in message
news:47ea1536$0$14987$9b536df3@news.fv.fi...
> John,
>
> Yes I think using capasitive loading at the end of coil parts is the right
> way to move the frequency.
> What kind of results did you get with the hamstick dipole?
> OK 50Ohm feedpoint resistance. I thought it is lower, but maybe it is so
> due to high loss resistance in coils.
>
> 73 Jouko OH5RM
>

3685. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 22:44:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <IrVGj.5287$qT6.5122@nlpi070.nbdc.sbc.com>
Source record: 26607

Gene Fuller wrote:
> Did you happen to notice that the page was
> created by a lab tech and a Java programmer?

Gene, if a tech asserts a fact and an expert
asserts a falsehood, who are you going to
choose to believe?
--
73, Cecil http://www.w5dxp.com

3686. Re:Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 22:53:50 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <2AVGj.24648$w51.18413@fe2.news.blueyonder.co.uk>
Source record: 26608

What sort of capacitors can I use in parallel in making some 7MHz and
3.7MHz wire wound traps?

What voltage should they be and is the value that important?

Max power will be 200 watts.

Thanks

3687. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-27 23:41:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <WgWGj.30389$R84.699@newssvr25.news.prodigy.net>
Source record: 26609

Barrett wrote:
> What sort of capacitors can I use in parallel in making some 7MHz and
> 3.7MHz wire wound traps?

I've had good luck with door-knob caps.
--
73, Cecil http://www.w5dxp.com

3688. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 01:38:51 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <25811665-0d6f-4108-bc36-e8d2a34c7f4d@i12g2000prf.googlegroups.com>
Source record: 26611

On Mar 27, 6:44 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Gene Fuller wrote:
> > Did you happen to notice that the page was
> > created by a lab tech and a Java programmer?
>
> Gene, if a tech asserts a fact and an expert
> asserts a falsehood, who are you going to
> choose to believe?

The simulator at that web site does seem to have
its issues. Ask it to simulate 700 nm + 680 nm
at the same amplitude and see if the result
represents reality.

...Keith

PS. The result should look like a 689.8 nm sine
wave of continuously varying amplitude.

3689. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 01:47:31 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <T6YGj.9288$Oj5.8433@trnddc06>
Source record: 26612

"Jerry" <j.jmartes@verizon.net> wrote in message
news:SeOGj.4383$Dv5.2658@trnddc02...
> Is it practical to mount the antenna outside toe helicopter? I once
> designed an antenna system for military helicopter VHF homing. I used
> two dipoles made of foil taped to the plastic windshield. It worked.
> The idea was/is simple, but you'd need to build a seperate electronic
> device to go between the antenna and the receiver. And, you'd (of
> course) need to manuver the helicopter rather than twist/turn the antenna,
> because, the helicopter would be the antenna.

Hi Jerry:

I guess if the helicopter was specifically part of the searching agency then you could do something like that. I'm not sure if they'd ever do that. The choppers and pilots are usually "on loan" from whatever agency is available to help when someone's lost. The CHP has some, most Sheriff's departments, Feds, Military, State Police, etc. When a person is lost, people seem to come out of the woodwork with the desire to help. That often includes agencies that own helicopters.

While I'm now a certified trainer because of my classroom time, I'm still a brand-newbie to search and rescue, and have never been on a "real" search for a missing person. I've located hidden transmitters on dozens of occasions, either hidden on a person who was part of the training, or just plain hidden. If I can get within a couple of miles of one of the transmitters I can normally go straight to it, even if it's down a drainpipe, under a bridge, or behind the coffee maker in a restaurant... it doesn't really matter much where it is located.

More of our training is related to understanding people with Alzheimer's and other forms of dementia than is related to actual radio work, and rightfully so. There's much to study on the human side of it. One of my greatest fears now is that I'll search for a person who is at a significant danger of being injured and is lost in a giant crowd of people, and they don't want to be found. I feel uncomfortable "pointing" the antenna around crowds of people for obvious social and psychological reasons. An example might be someone "lost" in Time's Square on New Years Eve.... the very thought shivers me timbers! :)

Luckily, being from Central California, I'll be much more likely to be searching orange groves than giant crowds. Interestingly, orange groves absorb a signal much more than I had thought they would, and, the signal propagates much better down the rows than across the rows. The trees were laden with oranges and I could barely hear a signal from one of our guys who was purposely trying to avoid us. He was literally 5 or 6 rows in (across) and I could hardly hear the signal. Once we got to the end of the grove and

got to look down the rows, the signal jumped.

Thanks again for all of your help!

MB

3690. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 01:48:36 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <U7YGj.9289$Oj5.166@trnddc06>
Source record: 26613

"Mark" <makolber@yahoo.com> wrote in message
news:a5ca8995-beef-4330-954b-4890e968c425@d4g2000prg.googlegroups.com...

>>How about a small Yagi made with "rubber duckies"?

I admit it, I don't know what you mean. :)

3691. Re: Double dipole better than YAGI 5 elements??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 02:16:50 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <myYGj.9291$Oj5.6876@trnddc06>
Source record: 26614

```
"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:fsh1ts$no8$1@news.jpl.nasa.gov...
> John KD5YI wrote:
>>
>> "user" <dag@allemaale.be> wrote in message
>> news:fs91dk$r6d$1@registered.motzarella.org...
>>
>>>
>>>
>>> Take a look here too:
>>> http://cordis.europa.eu/ictresults/index.cfm/section/news/tpl/article/BrowsingType/Fea
tures/ID/89327
>>>
>>>
>>> “The transmit antennas need to be spatially separated by between 10 and
>>> 20
>>> wavelengths and a delay applied to one antenna to achieve effective
>>> de-correlation. The amount of separation and delay depends on the type
>>> of
>>> environment to be covered,” says Bard.
>>
>>
>>
>> Can someone explain this de-correlation to me? Is this not the same as a
>> phase shift?
>
> They're talking about that the received signals from the two antennas are
> decorrelated, generally, with respect to the multipath. For the two
> direct paths, it is just a time delay difference. But when you throw
> reflections into the mix, they'll be decorrelated.
>
> Virtually all DTV receivers use some form of adaptive RAKE receiver to
> effectively utilize the energy in the multipath and to provide resistance
> to multipath fading. To the receiver, adding another transmitter just
> looks like another reflected path.
>
>
>
> Would there not be a de-correlation when moving from
>> broadside to end fire?
>
> Depends.. How far did the phase center move when moving from broadside to
> end fire.
```

Well, as it says ABOVE, “The transmit antennas need to be spatially separated by between 10 and 20 wavelengths...", so that must be how far.

3692. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 02:33:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <iOYGj.8691$Rq1.3362@nlpi068.nbdc.sbc.com>
Source record: 26615

Keith Dysart wrote:
> The simulator at that web site does seem to have
> its issues. Ask it to simulate 700 nm + 680 nm
> at the same amplitude and see if the result
> represents reality.

The duration of each calculation appears to be
about one second and then a reboot.
--
73, Cecil http://www.w5dxp.com

3693. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 02:34:11 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <dP2dncSfCfxy13HanZ2dnUVZ_u-unZ2d@giganews.com>
Source record: 26610

Michael Coslo wrote:
> nm5k wrote:
> > Cecil Moore wrote:
> >
> >> Hustler makes various extender sections. I have
> >> 2 foot and 5 foot sections from Hustler.
> >>
> >> Most of my extender sections are from Henry, the
> >> Texas Bugcatcher guy. They are the "BASE MAST"
> >> sections available in lengths from 1/2 foot to
> >> 5 feet and special lengths can be ordered.
> >>
> >
> > I have a hustler 3 footer I use all the time..
> > Really cranks the performance up when you are
> > parked and can use a taller whip.
> > My normal whip is 11 ft, exactly center loaded,
> > and the mast makes it 14, with the coil at 8 ft.
> > I wish I had a 5 foot version. Might have to get
> > one of those for industrial strength use. :/
> > Of course, if I had another 5 ft mast, I'd end up
> > coupling them together and having 8 ft. :)
> > There is no such thing as overkill with a
> > stationary mobile setup. lol
> > An 8 ft mast would give me a total height of
> > 19 ft, and the coil would be at 13 ft.
> > That would brown the food on 75/40 m... :-
>
>
> How do you adjust the coil at that height? Of course I find that I
> choose and spend most of my time on one band per mobile session, so
> maybe it isn't a big problem.
>
> - 73 de Mike N3LI -

The Hustler MO-1 and MO-2 masts have a hinge at 15" and 27" above the bottom
end: http://www.new-tronics.com/main/html/mobile__hf.html
They're 54" tall. The MO-3 is also 54" tall but doesn't have the hinge.
The MO-4 is 22" tall (no hinge).
73,
Bryan WA7PRC

3694. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 02:44:11 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <03kou3ltibqia0nd0rvid43ao1g6uk88fs@4ax.com>
Source record: 26616
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Sat, 15 Mar 2008 04:11:21 -0700 (PDT), billcalley
<billcalley@yahoo.com> wrote:

>Hi All,
>
> I always hear that antennas have to be matched to their radio, but
>in receivers (such as FM and shortwave radios) I see mostly long
>random length antennas used, and these antennas -- be they a
>telescoping whip or a long wire out a window -- are used over some
>really wide bandwidths. How is this possible if an impedance match
>must always be maintained for radios? And since there cannot be a
>good match over such wide bandwidths with any (typical) wire antenna,
>what is the downside to using these completely unmatched long antennas
>for receivers? (Poor gain patterns with lots of nulls? Lower
>sensitivity due to bad noise figure or gain match for any LNA or
>frontend amp? Degraded overall antenna gain)?
>
>Thanks; I'm very confused on this subject!
>
>-Bill

In a short answer to your question, NO!

The finals won't burn out as there are none and you won't be feeding
radiation into your room.

However, as you probably noticed from the FM radio with the extendable
antenna, you sometimes get a better signal when you extend the antenna
nd move it to the right location.

A good (and matched) antenna may allow you to receive signals you
could not have received with a random length antenna.

Most radios that I have seen usually have a matching network built in
to match the antenna that comes with the radio. In most cases they
aren't that elaborate, just a small coil and a trimmer capacitor.

My father learned that as great as his 50 foot long copper wire worked
for listening to his favorite short wave broadcasts, the signals
improved immensely when I installed an fan-dipole for his three
favorite bands. Did he 'need' that antenna? no, he could hear his
stations without it, but the signal strength was improved and he was
able to pick up more stations.

Dad also ordered an antenna tuner kit, assembled it and attached it
to his 50 foot wire. He found a great improvement in signal strength

using the tuner, almost equal to the multi-band dipole I installed.

Signal to noise ratio are not synonymous with gain. One can have a lower-gain antenna with high s/n that outperforms a higher-gain antenna with low s/n. When it gets critical, the s/n can be the determining factor as to whether you receive intelligent communication or not.

You are probably digging for technical, theoretical information more than practical, but just in case...

If you look in stereo magazines, you seldom see radio ads bragging about how much better they receive than the competition. If you look in Ham magazines, that's a very important feature. Most consumers are looking for stereos that play music well and they listen to local stations. Most ham operators want to pull that weak signal out of the noise to make the contact.

Just some thoughts.

Hope this is helpful to someone.
Buck
N4PGW

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3695. www.voguesonline.net cheap coach gucci dior handbags & purse,nike air force x jordan 5 23 fusion shoes,cheap UGG boots dior prada sunglasses,sneakers

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 06:47:01 UTC
From: cnsneakers99@yahoo.com.cn
Message-ID: <9ae9dd7c-8ee8-44cd-8ff7-a7a1768060a3@n58g2000hsf.googlegroups.com>
Source record: 26617

China wholesale louis vuitton purse| prada purse|gucci purse|chanel purse|ipod nano |cheap juicy handbag | chloe handbag |Nike Shoes Gucci Prada Jordan TN SHOX Puma sneakers ... nike shoes|china nike shoes|air jordan sneakers|cheap gucci shoes| cheap prada shoes|lacoste shoes| puma trainers|nike sneakers|cheap nike shoes| nike shoes from china| Nike wholesale cheap nike jordans nike jordan dunks ..

china Wholesale Cheap Jordan 1-23 Shoes www.voguesonline.net Michael Jordan Shoes, Nike Jordan Basketball shoes, ... Jordan Shoes, Air Jordan Sneakers, Air Jordan Wholesale All of the Air Jordan sneakers have Nike Air in the shoes. Authentic quality Jordan Sneakers Custom Jordan Sneakers Wholesale Jordan Sneakers gucci sneakers prada sneakers We sale new Nike Sneakers,Air Jordan Sneakers,AIR FORCE 1S,Nike Dunks SB, Bape Sta from nike outlets and factory stores, also Nike wholesale - Jordan Shoes !

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3696. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 10:20:02 UTC
From: Jon Kåre Hellan <dev@null.com>
Message-ID: <1mhcergnfx.fsf@persaunet.uninett.no>
Source record: 26618

Cecil Moore <nospam@w5dxp.com> writes:

> nm5k@wt.net wrote:
>> ... I'll switch to 75 at night when it gets dark.
>
> What do you switch to at night when it doesn't
> get dark? :-)

Why the smiley?

"When I told you to turn off the light at 10:30PM, you were also
supposed to stop reading, dear"

Greetings from 63N. We don't get midnight sun, but we can read a
newspaper all night long.

73
LA4RT Jon

3697. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 11:16:54 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <Gs4Hj.103886$M9.49799@fe3.news.blueyonder.co.uk>
Source record: 26619

Some one sent me an email and said these will do the job. Ceramic capacitor disk 10KV/1000pF. Do you think these would work?

This is my first attempt at making traps and I do not fully understand how they work. I am willing to learn as this is what makes the hobby great but I cannot find enough step by step info to lead me in the right direction.

Thanks

"Cecil Moore" <nospam@w5dxp.com> wrote in message news:WgWGj.30389$R84.699@newssvr25.news.prodigy.net...
> Barrett wrote:
>> What sort of capacitors can I use in parallel in making some 7MHz and
>> 3.7MHz wire wound traps?
>
> I've had good luck with door-knob caps.
> --
> 73, Cecil http://www.w5dxp.com
>

3698. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 11:29:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AE4Hj.22811$0o7.20883@newssvr13.news.prodigy.net>
Source record: 26620

Jon Kï¿½re Hellan wrote:
> "When I told you to turn off the light at 10:30PM, you were also
> supposed to stop reading, dear"

:-) Do y'all call that night or day?
--
73, Cecil http://www.w5dxp.com

3699. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 11:40:23 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <HO4Hj.42220$TT4.26465@attbi_s22>
Source record: 26621

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:Gs4Hj.103886$M9.49799@fe3.news.blueyonder.co.uk...
> Some one sent me an email and said these will do the job. Ceramic
> capacitor disk 10KV/1000pF. Do you think these would work?
>
> This is my first attempt at making traps and I do not fully understand how
> they work. I am willing to learn as this is what makes the hobby great but
> I cannot find enough step by step info to lead me in the right direction.

No. For an 80/40 meter trapped dipole, the traps will need a capacitor close to 60 pF. 1000 pF will not be suitable.

You might look at the traps made of coaxial cable where the inductance is tuned to resonance with the capacity of the cable length itself. No easier to construct, and heavier than the wire wound/capacitor trap, but eminently easier to obtain in the materials department.

Info available from Google.

W4ZCB

3700. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 11:51:41 UTC
From: Jon Kåre Hellan <dev@null.com>
Message-ID: <1md4pfgj76.fsf@persaunet.uninett.no>
Source record: 26622

Cecil Moore <nospam@w5dxp.com> writes:

> Jon Kåre Hellan wrote:
>> "When I told you to turn off the light at 10:30PM, you were also
>> supposed to stop reading, dear"
>
> :-) Do y'all call that night or day?

We'd probably stretch "evening" until midnight. After that it's
"night", no matter how light.

Actually, we don't speak English at all, of course. :-)

3701. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 11:52:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6_4Hj.6251$6H.2682@newssvr22.news.prodigy.net>
Source record: 26623

Barrett wrote:
> Some one sent me an email and said these will do the job. Ceramic capacitor
> disk 10KV/1000pF. Do you think these would work?

I don't know about those particular ones. Some ceramic
capacitors are meant to be DC biased for bypass service.
I once tried to use disc ceramic caps across my ladder-
line. They caught on fire because they were not rated for
AC service and lit up the night sky.

Someone told me the ceramic insulator was actually
trying to physically vibrate at the RF frequency and
friction heated it up. I don't know if your capacitors
are rated for AC operation.

A friend of mine used silver mica capacitors for his
traps and they worked fine.

> This is my first attempt at making traps and I do not fully understand how
> they work. I am willing to learn as this is what makes the hobby great but I
> cannot find enough step by step info to lead me in the right direction.

-------trap----------FP----------trap-------

An ideal trap is parallel resonant with a high Q. That
gives it a very high impedance at the resonant frequency
and acts somewhat like an open circuit at the resonant
frequency blocking the flow of current to the outer
parts of the dipole. At the resonant frequency, the
inductive reactance and capacitive reactance are equal.
A Grid Dip Meter will indicate the resonant frequency.

At 1/2 that resonant frequency, the inductive reactance
goes down and the capacitive reactance goes up so the
"trap" acts like a loading coil instead of an open
circuit on the lower frequency.

Traps can be made out of coax if you are interested.
The coiled outer shield provides the inductance and
the capacitance is provided by the center-wire-to-
shield capacitance.

Kraus talks about self-resonant traps with no physical
capacitors. The inter-winding capacitance of the coil
wire supplies the necessary capacitance.
--
73, Cecil http://www.w5dxp.com

3702. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 12:06:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Sa5Hj.6254$6H.5031@newssvr22.news.prodigy.net>
Source record: 26624

Jon Kåre Hellan wrote:
> Actually, we don't speak English at all, of course. :-)

Us Texans don't palaver English neither.
--
73, Cecil http://www.w5dxp.com

3703. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 13:47:11 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <zF6Hj.117637$nw4.37432@fe1.news.blueyonder.co.uk>
Source record: 26625

I have seen some silver mica capacitors for sale @ 56pF they are, Capacitor
rad silver mica 56pf 400v 1%10mm 273 itt.

I was told that the voltage had to be higher than 6KV and those are only
400V. What is the Voltage that I can use and why?

Thanks

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:6_4Hj.6251$6H.2682@newssvr22.news.prodigy.net...
> Barrett wrote:
>> Some one sent me an email and said these will do the job. Ceramic
>> capacitor disk 10KV/1000pF. Do you think these would work?
>
> I don't know about those particular ones. Some ceramic
> capacitors are meant to be DC biased for bypass service.
> I once tried to use disc ceramic caps across my ladder-
> line. They caught on fire because they were not rated for
> AC service and lit up the night sky.
>
> Someone told me the ceramic insulator was actually
> trying to physically vibrate at the RF frequency and
> friction heated it up. I don't know if your capacitors
> are rated for AC operation.
>
> A friend of mine used silver mica capacitors for his
> traps and they worked fine.
>
>> This is my first attempt at making traps and I do not fully understand
>> how they work. I am willing to learn as this is what makes the hobby
>> great but I cannot find enough step by step info to lead me in the right
>> direction.
>
> -------trap----------FP----------trap-------
>
> An ideal trap is parallel resonant with a high Q. That
> gives it a very high impedance at the resonant frequency
> and acts somewhat like an open circuit at the resonant
> frequency blocking the flow of current to the outer
> parts of the dipole. At the resonant frequency, the
> inductive reactance and capacitive reactance are equal.
> A Grid Dip Meter will indicate the resonant frequency.
>
> At 1/2 that resonant frequency, the inductive reactance
> goes down and the capacitive reactance goes up so the

> "trap" acts like a loading coil instead of an open
> circuit on the lower frequency.
>
> Traps can be made out of coax if you are interested.
> The coiled outer shield provides the inductance and
> the capacitance is provided by the center-wire-to-
> shield capacitance.
>
> Kraus talks about self-resonant traps with no physical
> capacitors. The inter-winding capacitance of the coil
> wire supplies the necessary capacitance.
> --
> 73, Cecil http://www.w5dxp.com

3704. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 14:38:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Zp7Hj.480$Nc5.72@newssvr27.news.prodigy.net>
Source record: 26626

Barrett wrote:
> I was told that the voltage had to be higher than 6KV and those are only
> 400V. What is the Voltage that I can use and why?

Articles on capacitors for traps specify "transmitting"
type caps meaning high voltage ratings. I don't know
exactly the voltage rating required but it is in the
thousands of volts. That's why I used door-knob caps.

You can put capacitors in series to increase the
voltage rating but you also decrease the capacitance
and the voltages across each capacitor needs to be
equalized using resistors.
--
73, Cecil http://www.w5dxp.com

3705. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 16:23:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9c6qu3tkthnul39tt3jfj0bmf5k0mvbsh3@4ax.com>
Source record: 26627

On Fri, 28 Mar 2008 13:47:11 GMT, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>I have seen some silver mica capacitors for sale @ 56pF they are, Capacitor
>rad silver mica 56pf 400v 1%10mm 273 itt.
>
>I was told that the voltage had to be higher than 6KV and those are only
>400V. What is the Voltage that I can use and why?

Hi Barrett,

A lot of this flies on the wings of presumptions. One, is that you
have an 80M dipole being trapped for 40M. If so, then two of them in
series for each trap will work just fine with an inductance of roughly
20 microhenries.

No, you don't need expensive 6KV caps unless you put the wrong
frequency to the antenna - and by wrong, I mean wrong band, not just
slightly up or down band.

The voltage across these traps (with all presumptions being observed)
will vary from 400V to 550V across the 40M band for an ideal antenna
in free space. You probably live on earth, so presumptions are
already beginning to shift.

73's
Richard Clark, KB7QHC

3706. Re: Strange Antenna challenge Memorial Day - need suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 16:27:29 UTC
From: Eric <englere_geo@yahoo.com>
Message-ID: <e896baa1-5fe8-45eb-a0f4-52aae8218822@f63g2000hsf.googlegroups.com>
Source record: 26628

On Mar 25, 10:57 am, JIMMIE <JIMMIEDEE...@yahoo.com> wrote:
> On Mar 20, 1:34 pm, Eric <englere_...@yahoo.com> wrote:
>
> > I'm looking for suggestions for the Strange Antenna Challenge this
> > Memorial Day week-end. One guy used a pair of back-to-back trucks to
> > make a dipole, and one guy loaded up a sports stadium. A group in
> > Atlanta used an Extension Ladder on 20M and that worked well, but that
> > seems a little less strange than I'd like. It almost looks like a
> > regular antenna when it's standing straight up.
>
> > I want something that doesn't look like an antenna (one guy suggested
> > hoisting a BBQ grill into the trees, but I'm sure that wouldn't work
> > well on 20M). I want something that can be adjusted to be somewhat
> > near resonance without a tuner.
>
> > Ideas?
>
> > Eric
>
> Things automotive seem to be favored. How about an exhaust system for
> a radiator and a coil spring for a loading coil.
>
> Jimmie

Then we could sit on the car to tune it! We may have to call a bunch
of friends over, or else we could chow down on the hamburgers and
potatoe salad!

Eric

3707. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 17:14:59 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <W4udnej9c7IWunDanZ2dnUVZ_jWdnZ2d@comcast.com>
Source record: 26629

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:Gs4Hj.103886$M9.49799@fe3.news.blueyonder.co.uk...
> Some one sent me an email and said these will do the job. Ceramic
> capacitor disk 10KV/1000pF. Do you think these would work?
>

Some ceramic capacitors have the value change with the instantaneous applied voltage. I know somebody who tried to use one in a tuned circuit - complete disaster. Do not use the ones that are meant for power supply bypassing.

Tam/WB2TT

> This is my first attempt at making traps and I do not fully understand how
> they work. I am willing to learn as this is what makes the hobby great but
> I cannot find enough step by step info to lead me in the right direction.
>
>
> Thanks
>
>
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:WgWGj.30389$R84.699@newssvr25.news.prodigy.net...
>> Barrett wrote:
>>> What sort of capacitors can I use in parallel in making some 7MHz and
>>> 3.7MHz wire wound traps?
>>
>> I've had good luck with door-knob caps.
>> --
>> 73, Cecil http://www.w5dxp.com
>>
>
>

3708. Re: Re:Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 17:28:09 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <47ed2aad$0$14990$9b536df3@news.fv.fi>
Source record: 26630

If what you are trying to do is a dipole type antenna for 40m and 80m,
you do not need any capasitors at all. You can use choke-coils as in this
design
but leave the 20m and 15m dipoles out.

http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=13422

73 Jouko OH5RM

3709. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 22:16:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13uqriie50k822@corp.supernews.com>
Source record: 26631

Richard Clark wrote:
> . . .
> No, you don't need expensive 6KV caps unless you put the wrong
> frequency to the antenna - and by wrong, I mean wrong band, not just
> slightly up or down band.
>
> The voltage across these traps (with all presumptions being observed)
> will vary from 400V to 550V across the 40M band for an ideal antenna
> in free space. You probably live on earth, so presumptions are
> already beginning to shift.

There are quite a few variables involved in determining how much voltage the traps will see, not the least of which is the L/C ratio of the trap. I dug out a model of a 40/20 meter trapped dipole using traps using RG-58 I did some time ago, and found the trap voltage to be 568 volts RMS with 100 watts at 14.0 MHz. That's 800 volts peak. A model of a 40/20 meter trapped dipole with trap component X = 1000 ohms at resonance and moderate inductor Q showed highest voltage of 648 RMS (over 900 volts peak) at 7 MHz. So I'd want to use capacitors with a 2 kV rating to provide some margin.

Roy Lewallen, W7EL

3710. Re: Re:Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 22:41:50 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <OueHj.108190$M9.19144@fe3.news.blueyonder.co.uk>
Source record: 26632

Not knowing where to get the right capacitors from and at a good price I am thinking more on the lines of making some coaxial traps for the time being and see how I get on. What put me off of the coaxial traps is the size. I did just find this article on another type of trap.
http://www.arrl.org/tis/info/pdf/9207035.pdf

It doesn't make it clear how you join the inner and outer coil together and if they are wound in the same or opposite direction. What do you think is the correct way to wind and join them are?

Is it possible to make all the traps on 40mm PVC pipe or do they have to be a certain size diameter for each band?

Thanks

"JN" <jnxx@vfemail.net> wrote in message
news:47ed2aad$0$14990$9b536df3@news.fv.fi...
> If what you are trying to do is a dipole type antenna for 40m and 80m,
> you do not need any capasitors at all. You can use choke-coils as in this
> design
> but leave the 20m and 15m dipoles out.
>
> http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=13422
>
>
> 73 Jouko OH5RM
>
>

3711. Re: n8wwm rules with an iron fist

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 23:01:50 UTC
From: JD <ham@123.net>
Message-ID: <n5uqu3db3ecemfkcd0soljiqbeeqnlgg9h@4ax.com>
Source record: 26633
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.shortwave

Hoo-boy. Lotsa booze showing there. Woof.

On Sun, 24 Feb 2008 16:28:11 GMT, m II <c@in.the.hat> wrote:

>Channel Master wrote:
>
>> This is how a real radio N8WWM operator controls the airwaves. He dominates
>> the bands so DO NOT cross him! YOU HAVE BEEN WARNED!
>>
>> http://media.putfile.com/dougay-whines-again
>>
>>
>>
>
>It appears CB radio has made a resurgence. What a bunch of morons.
>
>
>
>
>
>
>
>mike

$$$$$$$$$$
Yours truly, Johnny Dollar!

3712. Re: Governor Romney dismissed role of Amateur Radio Operators in Emergencies.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 23:04:28 UTC
From: JD <ham@123.net>
Message-ID: <29uqu3dnm6rvkodgotb6qsu1uokc88mebn@4ax.com>
Source record: 26634
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.swap

On Mon, 25 Feb 2008 23:42:34 -0700, "Eric Gordon" <egordon@mho.net>
wrote:

>WHAT A JACKASS. OOOPPPSSSSS SORRY, HE'S A REPUBLICAN. SORRY, NO OFFENSE
>TO THE JACKASSES OF THE WORLD. HE'S AN INSULT TO HUMANITY, BUT NOT TOTALLY
>UNEXPECTED FROM A REPUBLICAN
>"laborkei" <laborkeiNOSPAM@hotmail.com> wrote in message
>news:I6sjj.51910$Mu4.41373@bignews7.bellsouth.net...
>> Attention all Amateur Operators.
>> Please Read, and send your comments to the ARRL and Romney Website.
>>
>>
>> Wednesday 16 November 2005 @ 15:48:10 | Eastern Massachusetts ARRL Romney
>> 'Disses' Amateur Radio In
>> Televised Town Meeting Posted on Wednesday16 November 2005 @ 15:48:10
>>
>> Governor Mitt Romney dismissed the role of Amateur Radio operators in
>> emergency communications
>> during a televised 'town meeting' program last night on WCVB's 'When
>> Disaster Strikes: Segment Two.'
>> The program featured public safety and volunteer organization officials
>> from
>> across Massachusetts
>> among its audience.
>>
>> Host and moderator Natalie Jacobson asked an increasingly-agitated
>> Governor
>> Romney questions about
>> communications interoperability, and communication without commercial
>> power.
>> Romney was next asked
>> by Jacobson, '...so does it come down to ham radio?...'
>>
>> The Governor replied in a disgusted tone, 'No, we don't need to deal with
>> ham radio operators...'
>>
>> Embarrassed public safety officials later tried to put in a good word for
>> Amateur Radio. National
>> Weather Service Warning Coordination Meteorologist Glenn Field was
>> prepared
>> to state the importance

>> of Amateur Radio, when Salvation Army Colonel Fred Van Brunt was called
>> upon. Van Brunt remarked
>> about his organization's quest to improve its communications capabilities
>> and how Amateur Radio has
>> aided his organization. 'The ham radio situation helps a great deal,' he
>> stated.
>>
>> 'I have already written and submitted a letter to the Governor's Office,'
>> wrote Eastern MA Section
>> Emergency Coordinator Rob Macedo, KD1CY. 'I have also written an email to
>> Natalie Jacobson.'
>>
>> ARRL Section Manager Mike Neilsen, W1MPN sent a section-wide email today
>> to
>> all Eastern MA ARRL
>> members describing the incident along with actions he and his staff were
>> taking to mitigate the
>> situation.
>>
>> '[Romney's] attitude about us sets an unfortunate tone within the state's
>> executive branch,' wrote
>> Neilsen. 'As a former military officer, I see this as a failure in
>> leadership. My immediate concern
>> is our working relationship within the [Massachusetts Emergency
>> Management
>> Team] environment.'
>> Neilsen intends to address the Governor's comments as 'an urgent matter'
>> at
>> a meeting on November 17
>> with Don Carlton from the Massachusetts Emergency Management Agency.
>>
>> 'I was very disturbed about what the Governor stated on the program,'
>> wrote
>> Ron Wood, W1PLW, the
>> section's Public Information Coordinator. 'It does show that more work is
>> needed by all hams in the
>> section. It's a great idea to write letters explaining the good we do.'
>> Wood
>> is attempting to
>> schedule a meeting with the Governor's office tomorrow so that EMA ARRL
>> staffers might discuss the
>> matter further.
>>
>> Tom Kinahan, N1CPE wrote that Governor Romney's comment has made 'a PR
>> problem' for Kinahan in his
>> role as MA State RACES Officer.
>>
>> 'I've got a roster of over 150 Amateur Radio operators that support local
>> communities, and those of
>> us that directly support the state government. There are at least double

>> that in terms of people
>> that are actually out there that I don't have formal paperwork on that
>> support Amateur Radio
>> emergency communications in some organized manner... The Governor has
>> said
>> that he 'certainly
>> doesn't need to rely on ham radio' -- where does that leave the RACES
>> program now?'
>>
>> 'I am ashamed tonight that I am a Republican!' remarked one ham radio
>> viewer. '[Romney] speaks in
>> derogatory tones about hams. He certainly shows an ignorance as to what
>> we
>> do and are capable of. I
>> suggest a grass roots campaign of local hams calling the State House and
>> The
>> Governor's Office to
>> protest.'
>>
>>
>> --
>>
>>
>>
>

Had to get your hateful (typical of liberal/socialist trolls), BDS
shots at anything Republican, huh?

$$$$$$$$$$
Yours truly, Johnny Dollar!

3713. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-28 23:59:18 UTC
From: Jim-NN7K
Message-ID: <UDfHj.8758$Rq1.367@nlpi068.nbdc.sbc.com>
Source record: 26635

Barrett wrote:
> I have seen some silver mica capacitors for sale @ 56pF they are, Capacitor
> rad silver mica 56pf 400v 1%10mm 273 itt.
>
> I was told that the voltage had to be higher than 6KV and those are only
> 400V. What is the Voltage that I can use and why?
>
> Thanks
>
>
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:6_4Hj.6251$6H.2682@newssvr22.news.prodigy.net...
>> Barrett wrote:
>>> Some one sent me an email and said these will do the job. Ceramic
>>> capacitor disk 10KV/1000pF. Do you think these would work?
>> I don't know about those particular ones. Some ceramic
>> capacitors are meant to be DC biased for bypass service.
>> I once tried to use disc ceramic caps across my ladder-
>> line. They caught on fire because they were not rated for
>> AC service and lit up the night sky.
>>
>> Someone told me the ceramic insulator was actually
>> trying to physically vibrate at the RF frequency and
>> friction heated it up. I don't know if your capacitors
>> are rated for AC operation.
>>
>> A friend of mine used silver mica capacitors for his
>> traps and they worked fine.
>>
>>> This is my first attempt at making traps and I do not fully understand
>>> how they work. I am willing to learn as this is what makes the hobby
>>> great but I cannot find enough step by step info to lead me in the right
>>> direction.
>> -------trap----------FP----------trap-------
>>
>> An ideal trap is parallel resonant with a high Q. That
>> gives it a very high impedance at the resonant frequency
>> and acts somewhat like an open circuit at the resonant
>> frequency blocking the flow of current to the outer
>> parts of the dipole. At the resonant frequency, the
>> inductive reactance and capacitive reactance are equal.
>> A Grid Dip Meter will indicate the resonant frequency.
>>
>> At 1/2 that resonant frequency, the inductive reactance

>> goes down and the capacitive reactance goes up so the
>> "trap" acts like a loading coil instead of an open
>> circuit on the lower frequency.
>>
>> Traps can be made out of coax if you are interested.
>> The coiled outer shield provides the inductance and
>> the capacitance is provided by the center-wire-to-
>> shield capacitance.
>>
>> Kraus talks about self-resonant traps with no physical
>> capacitors. The inter-winding capacitance of the coil
>> wire supplies the necessary capacitance.
>> --
>> 73, Cecil http://www.w5dxp.com
>
>
NOT to mention, that at the HIGHER frequency, the trap is at
the HIGH VOLTAGE point of the antenna at that resonant frequency
! At 50 ohms, impedence, at the feedpoint , the Maximum Voltage for a
100 watt transmitterwould be 50 volts at 2 Amps, but at the HIGH volatge
points (1/4 wave each side of a dipole), there can be literally
THOUSANDS of volts, at (admittedly) very low current . And, caps are
rated at Breakdown Voltage! This is why (unless you use very low
power),that you need these high voltage Capacitors . Hope this helps
explain.
Jim NN7K

3714. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 00:34:29 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <v7gHj.9905$Q52.6514@bignews9.bellsouth.net>
Source record: 26636

"Jim-NN7K" <nn7kexk7zfg@noway.net.> wrote in message
news:UDfHj.8758$Rq1.367@nlpi068.nbdc.sbc.com...
> Barrett wrote:
>> I have seen some silver mica capacitors for sale @ 56pF they are,
>> Capacitor rad silver mica 56pf 400v 1%10mm 273 itt.
>>
>> I was told that the voltage had to be higher than 6KV and those are only
>> 400V. What is the Voltage that I can use and why?
>>
>> Thanks
>>

25.4 pf per ft - That's the capacitance of Belden 9907 RG-58a coax. I got
the info here:
http://www.trinetcn.com/images/spec_sheets/belden/bel9907.pdf
All cable manufacturers publish the capacitance per ft of their coax.
With that said, I've heard of folks using that property of coax along with
a form to wind their own traps using RG-58.
I would think that since we use coax all the time for transmitting, it may
be able to withstand the electrical stress of working as a cap.
Oh - here's an article on the idea: http://degood.org/coaxtrap/
and this one has color illustrations and a calculator :
http://www.seed-solutions.com/gregordy/Amateur%20Radio/Experimentation/CoaxTrap.htm

3715. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 01:04:37 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <6i4ru3lsknp66i14iqbvk6g11fp81qikqj@4ax.com>
Source record: 26637

I don't see the original post, so I am replying here.

Here are some links where antennas are using coax traps.

http://degood.org/coaxtrap/

http://www.arrl.org/qex/Mueller.pdf

http://www.cebik.com/wire/trapqq.html

http://www.smeter.net/antennas/coaxtrap.php

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3716. Icom AH-4 Tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 03:06:00 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A6FCC778E49EHuckleberrybigvalley@198.186.192.196>
Source record: 26638

If anyone here has experience with the Icom AH-4 antenna tuner, I have a simple question. Is there any reason I can not extend the control line beyond the 10 meter length that Icom supplies with a new tuner?

Just checking before I order one.

Ed K7AAT

3717. Re: Icom AH-4 Tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 03:36:35 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A709474E32D7nonenowhere@61.9.191.5>
Source record: 26639

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in
news:Xns9A6FCC778E49EHuckleberrybigvalley@198.186.192.196:

>
>
> If anyone here has experience with the Icom AH-4 antenna tuner, I
> have
> a simple question. Is there any reason I can not extend the control
> line beyond the 10 meter length that Icom supplies with a new tuner?

You can extend it, I have done so. If you extend it to ridiculous lengths,
or with thin wire, you can expect to mess up the ATU due to voltage drop in
the ground and +12 wires.

Owen

3718. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 04:01:13 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A7098A1875DFnonenowhere@61.9.191.5>
Source record: 26640

Roy Lewallen <w7el@eznec.com> wrote in news:13uqriie50k822
@corp.supernews.com:

...
> I dug out a model of a 40/20 meter trapped dipole using traps using
> RG-58 I did some time ago, and found the trap voltage to be 568 volts
> RMS with 100 watts at 14.0 MHz. That's 800 volts peak. A model of a
> 40/20 meter trapped dipole with trap component X = 1000 ohms at
> resonance and moderate inductor Q showed highest voltage of 648 RMS
> (over 900 volts peak) at 7 MHz. So I'd want to use capacitors with a 2
> kV rating to provide some margin.

I have done some mathematical modelling of so called coax traps with the bootstrap connection (or the Hi Z connection as used in ARRL pubs), and the work has halted needing some reconciliation with quality measurements of inductor Q and trap impedance. The problem relates to estimating the equivalent resistance in an inductor made from coax braid and covered in the PVC jacket.

I see W8JI reports measurement of a coax trap at 7Mhz with about 18k ohms at resonance, I have some data from DG1MFT who measured a trap around 7MHz on a R&S ZVRE VNA at somewhere around 22k ohms at resonance. I have measured some prototypes at over 15k ohms using the TAPR VNA, but it is not in the same class as quality instruments. In conclusion, I suspect that it is likely that coax traps have impedance well over 10k ohms at resonance.

One way to reduce the voltage impressed on the trap is to design the system so that the trap is not close to resonance at any operating frequency.

Such a design means moving beyond the simplistic explanation that such antennas depend on traps acting like an on/off switch at the resonant frequency, and that when they are resonant, the outboard conductors do not exist.

Owen

3719. Re: Re:Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 04:35:59 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A709E86EFB48nonenowhere@61.9.191.5>
Source record: 26642

"Bryan" <bryan.swadenerNOSPAM@comcast.net> wrote in
news:KvKdnV6rH5jOXnDanZ2dnUVZ_gGdnZ2d@giganews.com:

...
> cutters. Most coaxial cables exhibit a capacitance of about 30pF/ft,

50 ohm cables with solid PE dielectric ALL exhibit a capacitance of about
30pF/ft. It is not a coincidence, C/unit length, Zo and velocity factor are
all related.

That method of estimating the capacitive reactance of an o/c stub (for that
is what you actually have) is only accurate for very short stubs.

Capacitors fabricated from coaxial transmission line are often much lossier
that quality fixed capacitors, so they should be used with care.

Owen

3720. Re: Icom AH-4 Tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 04:37:08 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A6FDBE955328Huckleberrybigvalley@198.186.192.196>
Source record: 26643

>> If anyone here has experience with the Icom AH-4 antenna tuner, I
>> have
>> a simple question. Is there any reason I can not extend the control
>> line beyond the 10 meter length that Icom supplies with a new tuner?
>
> You can extend it, I have done so. If you extend it to ridiculous
> lengths, or with thin wire, you can expect to mess up the ATU due to
> voltage drop in the ground and +12 wires.
>
> Owen
>
>

Thanks, Owen. I was just making sure before spending my precious
dollars. Don't expect to need control line more than 50 feet long... #
18 wire, I imagine.

Ed

3721. Re: Re:Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 05:20:07 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <KvKdnV6rH5jOXnDanZ2dnUVZ_gGdnZ2d@giganews.com>
Source record: 26641

Barrett wrote:
> What sort of capacitors can I use in parallel in making some 7MHz and
> 3.7MHz wire wound traps?
>
> What voltage should they be and is the value that important?
>
> Max power will be 200 watts.
>
> Thanks
>
Hi Barrett,

I once fabricated just such a trap dipole. I started by cutting a dipole for 40m w/o traps.

You'll need to adjust the resonant frequency of the traps to the 40 meter band, so that the antenna wire on the outer ends of the traps is electrically "cut off". Physically, this is not very easy to do with fixed value components. I used stubs of coaxial cable as capacitors across the inductors, and tuned them by trimming the ends with wire cutters. Most coaxial cables exhibit a capacitance of about 30pF/ft, and I believe mine were around 18" long... about 45pF (498 ohms reactance at 7 MHz). At 7.1 MHz, an inductance of 11.15uH resonates with 45pF. Any combination of LC that yields resonance on 40m is acceptable but, the more L you have, the shorter the overall length will need to be in order to resonate on 80m. To a point, larger wire size and turn spacing for the inductor will yield better Q.

Unless you're running very high power, it really doesn't matter much what type of coax to use. The concern is voltage rating as, when operating on 40 meters, there will be higher voltage across the "capacitor". Larger diameter coax will have a greater voltage rating. Solid polyethylene coax will have a significantly higher rating than foamed polyethylene. From Belden...

Type: RG8/U
Part No: 8214
Dielectric: FPE (foamed polyethylene)
Max RMS: 300V
Capacitance: 26.0/ft

Type: RG8/U
Part No: 8237
Dielectric: PE (solid polyethylene)
Max RMS: 3700V
Capacitance: 29.5/ft

Type: RG58A/U
Part No: 8219
Dielectric: FPE (foamed polyethylene)
Max RMS: 300V
Capacitance: 26.5/ft

Type: RG58A/U
Part No: 8259
Dielectric: PE (solid polyethylene)
Max RMS: 1400V
Capacitance: 30.8/ft

Even using solid PE coax, I had issues with arcing over the ends of the stubs when running a kilowatt (it was OK with only 100W.) I alleviated that problem by trimming only the outer jacket and shield, leaving a short stub of center conductor and dielectric protruding. When done, seal the coax stub with non-corrosive RTV, etc.

I noticed that others made reference to the voltage rating of various capacitors. When AC is applied across a capacitor, a certain amount of current will flow thru it. Capacitors also have a rating in terms of current as well as voltage. While a TV doorknob capacitor has a voltage rating in tens of kilovolts, it won't handle much current. This is why you don't see them used (for example) as plate blocking capacitors in RF amplifiers, even though the DC voltage across them is much less than their rating. Where I work, we use lots of multilayer porcelain capacitors in industrial RF power sources (for CO2 lasers), mostly from American Technical Ceramics (http://www.atceramics.com/). Their datasheets list the current rating vs capacitance vs frequency.

73,
Bryan WA7PRC

3722. Re: Re:Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 11:01:45 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <tkpHj.119431$nw4.2090@fe1.news.blueyonder.co.uk>
Source record: 26644

One last question. Is the diameter of the traps at different frequencies
that important and why?

They tend to be larger towards top band.

Thanks

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A709E86EFB48nonenowhere@61.9.191.5...
> "Bryan" <bryan.swadenerNOSPAM@comcast.net> wrote in
> news:KvKdnV6rH5jOXnDanZ2dnUVZ_gGdnZ2d@giganews.com:
>
> ...
>> cutters. Most coaxial cables exhibit a capacitance of about 30pF/ft,
>
> 50 ohm cables with solid PE dielectric ALL exhibit a capacitance of about
> 30pF/ft. It is not a coincidence, C/unit length, Zo and velocity factor
> are
> all related.
>
> That method of estimating the capacitive reactance of an o/c stub (for
> that
> is what you actually have) is only accurate for very short stubs.
>
> Capacitors fabricated from coaxial transmission line are often much
> lossier
> that quality fixed capacitors, so they should be used with care.
>
> Owen

3723. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 14:43:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <DAsHj.22885$0o7.6580@newssvr13.news.prodigy.net>
Source record: 26645

Owen Duffy wrote:
> Such a design means moving beyond the simplistic explanation that such
> antennas depend on traps acting like an on/off switch at the resonant
> frequency, and that when they are resonant, the outboard conductors do
> not exist.

The ARRL Antenna Book says the above is the "amateur"
version of how traps work. :-) They say "commercial"
versions use non-resonant traps.
--
73, Cecil http://www.w5dxp.com

3724. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 14:51:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <UHsHj.6351$6H.5924@newssvr22.news.prodigy.net>
Source record: 26646

Barrett wrote:
> One last question. Is the diameter of the traps at different frequencies
> that important and why?
>
> They tend to be larger towards top band.

More inductance is required on the lower frequencies
as inductive reactance decreases with frequency.
Inductance increases with coil diameter. If the
choice is lots of coax for small diameter coils
vs a lesser amount of coax for larger diameter coils,
the latter is preferable because of lower losses.
--
73, Cecil http://www.w5dxp.com

3725. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 19:45:48 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <42b22035-79fd-4e59-8695-2b307cf49e1d@s12g2000prg.googlegroups.com>
Source record: 26647

On Mar 27, 2:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> Cecil Moore wrote:
> > Roger Sparks wrote:
> >> You need to take a look at the spreadsheets.
>
> > Roger, in a nutshell, what is the bottom line?
>
> The bottom line in a nutshell? I'll try.
>
> First, I added a note to both spreadsheets indicating that zero degrees
> is CURRENT zero degrees. This because the source turns out to be
> reactive, with current peak 45 degrees from voltage peak.
>
> >http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf

I was not able to discern the derivation of the various equations
though the data in the columns looked somewhat reasonable. Were
the equation really based on the opening paragraph statement of
100 Vrms, or is it scaled to a different source voltage. The sin
functions have an amplituted of 100, which suggests a source of
200 volts or Vrms of 141.4 volts.

> The spreadsheet addresses the following issues:
>
> Does the traveling wave carry power? Yes. The spreadsheet was built
> assuming that power is carried by traveling waves. Because the
> resulting wave form and powers seem correct, the underlaying assumption
> seems correct.

It was not obvious which columns were used to draw this correlation.

However, even if this experiment is consistent with the hypothesis
it only takes one experiment which is not to disprove the hypothesis.

> Is power conserved on the transmission line, meaning, can the energy
> contained in power be conserved and located over time on the
> transmission line? Yes, the spreadsheet was built assuming that power
> could be conserved and traced over time so the underlaying assumption
> seems correct.
>
> Does interference occur in this example? The spreadsheet was built
> assuming that voltage and currents from superpose in a manner consistent
> with constructive and destructive interference, so the underlaying
> assumption seems correct.
>
> Is power stored in the reactive component for release in later in the

> cycle or during the next half cycle? Yes, power is stored on the
> transmission line during the time it takes for power to enter the line,
> travel to the end and return. The time of wave travel on the
> transmission line is related to the value of the reactive component.
>
> Does the direction of wave travel affect the measurement of voltage and
> the application of power to a device? Yes. A wave loses energy (and
> therefore voltage) as it travels through a resistance. As a result,
> power from the prime source is ALWAYS applied across the sum of the
> resistance from the resistor AND transmission line.

I am not sure that I would describe this as the wave losing energy,
but rather as the voltage dividing between the two impedances.
If the source resistance was replaced by another transmission,
which could easily be set to provide a 50 ohm impedance, would
you still describe it as the wave losing energy?

> The spreadsheet was
> built using this assumption and seems correct. (At times during the
> cycle, the forward and reflected waves oppose, resulting in very little
> current through the resistor. During those times, the power applied to
> the transmission line is much HIGHER because the reflected wave reflects
> from the load and source, and merges/adds to the forward wave from the
> source.)

I am not convinced. When there is very little current through the
resistor,
there is also very little current into the transmission line. This
suggests to me that the power applied to the transmission line is low.

...Keith

3726. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 19:47:54 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <410f6c48-2b0f-4e9e-9d17-552d3c22c366@e10g2000prf.googlegroups.com>
Source record: 26648

On Mar 27, 11:10 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > So you are having difficulty doing the math to justify
> > your hypothesis.
>
> Actually no, the math is not difficult. I'm pre-
> occupied with something else and think it's just
> time to agree with Hecht that instantaneous power
> is "of limited utility".
>
> Have you taken a look at Roger's spreadsheets?

Yes.

> > Conservation of energy requires that the total
> > quantity of energy in the system not change.
>
> :-) Isn't the whole purpose of a transmitting
> antenna to radiate energy away from the antenna
> system? And that radiation continues to be "lost"
> from the system space for some time after the
> source power is removed?
>
> Wouldn't you have to define the "system" as the
> entire universe for your statement to be true?

Sort of, but there is an easy work-around. Since we
are not particularly interested in what happens to
the energy going to the source resistor, for
example, we define the boundary of the system to
pass through the resistor and simply account for
the energy as a flow out of the system. And we
do the same for the source since we are not
particularly interested in where the energy for
the source comes from; we just account for it as
a flow into the system. And lastly, we don't
really care where the energy on the line goes to
or comes from, so we just account for it as a flow
out of the system. You may have noticed that we
have removed all the components from the system,
it is a null system, and all we are doing is
accounting for the flows into and out of the
system. Hence
Ps(t) = Prs(t) + Pg(t)

> > The powers must sum to 0 to satisfy conservation
> > of energy.
>
> That may be true, but there's still no conservation
> of instantaneous power principle.

To conserve energy however, i.e. to have no energy
accumulate in the null system described above, the
flows must balance at all times, that is,
instantaneously.

> A hot resistor
> continues to radiate heat long after any power
> source is removed.

If you want to be that complicated you can; energy
is delivered instantaneously to the resistor according
to Vr*Ir (or equivalently, V**2/R), stored in the
resistor as heat and dissipated to the environment
later.

But for our purposes, we can stop that analysis at
the point where the energy enters the resistor and
use Vr(t) * Ir(t) to compute the instantaneous flow
into the resistor.

> > You could simply do the derivation for an example that
> > demonstrates your hypothesis.
>
> Already done on my web page. My only actual hypothesis
> concerns average power. I've wasted too much time
> bantering about something that Hecht says is "of
> limited utility".

Unfortunately for your hypothesis, average power is
insufficient to account for energy which might be in
the reflected wave. An average power analysis agrees
with your hypothesis, while a more detailed instaneous
analysis disproves it.

> > the idea that Pfor and Pref describe actual energy
> > flows is very dubious.
>
> Again, look yourself in the mirror and tell yourself
> that what you are seeing contains no energy. The
> theory that some EM waves contain energy and some
> do not is not new to you. Dr. Best was the first to
> theorize that canceled waves continue to propagate
> forever devoid of energy. Someone else asserted that
> canceled waves never contained any energy to start
> with. I strongly suspect that what you are seeing
> in the mirror are the waves that didn't cancel and
> that do contain energy. :-)

If it was just a 'suspicion' you could probably let
go of the idea long enough to learn what is really
happening and why it is not inconsistent with the
idea that reflected wave energy is a dubious concept.

> > So the energy is not being stored
> > in the reactive component of the line input
> > impedance.
>
> Assuming you have not made an error,

You *have* found it hard to the do the math; otherwise,
you could detect an error, if there was one.

> so what? Energy
> stored in the reactance is only one of the possibilities
> that I listed earlier. As I said in an earlier posting
> which you declared a non-sequitor (sic), one or more of
> the following is true:
>
> 1. The source adjusts to the energy requirements.
>
> 2. The reactance stores and delivers energy.
>
> 3. Wave energy is redistributed during superposition.
>
> 4. Something I haven't thought of.

Your explanation is not complete until you can identify
the element that stores and returns the energy and its
energy transfer function.

> The ExH reflected wave energy exists and cannot
> be destroyed. It goes somewhere and its average
> value is dissipated in the source resistor in
> my special case example.

Or not, as has been shown with the detailed analysis.

> You are attempting to
> destroy the reflected wave energy using words
> and math presumably knowing all along that
> reflected wave energy cannot be destroyed.

Energy can not be destroyed. This leads inexorably
to the conclusion that the reflected wave does not
necessarily contain energy.

...Keith

3727. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 19:52:05 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <14428c67-a80a-4acc-9d40-1b56b70d1938@u10g2000prn.googlegroups.com>
Source record: 26649

On Mar 27, 11:37 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > I had not realized that you had these alternate sources for
> > the interference energies, not having seen that in your papers.
>
> I only posted it three times here and you chose to
> ignore all of those postings. I have published only
> one paper with three more to go. The special case
> Part 1 contains zero average interference so there
> is no alternate source for average interference and
> indeed, none is needed for Part 1.
>
> > But it is one way to sidestep the issue; different rules for
> > the expectations of superposition and interference in different
> > scenarios.
>
> That's why I have four parts only one of which has
> been published. The rules are not different but the
> conditions within the examples are different. Part 2
> will be an example with the condition of average
> destructive interference existing at the source
> resistor. Although there are no ordinary reflections
> because the reflection coefficient is 0.0, there will
> exist something that looks a lot like a reflection
> caused by superposition/interference. The FSU web page
> calls it a "redistribution", not a "reflection".
> I am satisfied with FSU's word "redistribution" for
> the results of coherent wave interaction.
>
> > I am surprised then, for the example of Fig 1-1 with 12.5 ohms,
> > that you don't just say "There is a source nearby, that *must*
> > be where the unaccounted energy comes from", and leave it at
> > that.
>
> Since my special case example contains zero average
> interference, the average power output of the source
> is constant and unaffected by zero interference.
> There is zero average energy unaccounted for.
>
> Part 2 will illustrate the source adjusting its power
> output to compensate for destructive interference.

Perhaps you should complete part one so that it fully
accounts for the energy flows before progressing to

writing part two. Average is not a full accounting.

...Keith

3728. Re: Re:Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 21:16:20 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A7149D0C1311nonenowhere@61.9.191.5>
Source record: 26650

"Barrett" <barrett@blueyounder.co.uk> wrote in
news:tkpHj.119431$nw4.2090@fe1.news.blueyonder.co.uk:

> One last question. Is the diameter of the traps at different
> frequencies that important and why?
>
> They tend to be larger towards top band.

You really need to read a text that systematically develops an understanding of the operation of a trapped antenna. It helps to understand the operation of an untrapped antenna.

Unfortunately, lots of articles in ham mags aren't very reliable, so you will need to read many articles and try to understand the underlying principles to filter out the misconceptions that find their way to publication.

By all means, ask questions about things you don't understand... but your questions seem more like guessing your way to a solution and plugging the gaps as they become apparent to you.

Owen

3729. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-29 23:18:39 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080329161839.5c128a52.rsparks@elltel.net>
Source record: 26551

On Sat, 29 Mar 2008 12:45:48 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 27, 2:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > Cecil Moore wrote:
> > > Roger Sparks wrote:
> > >> You need to take a look at the spreadsheets.
> > >
> > > Roger, in a nutshell, what is the bottom line?
> > >
> > The bottom line in a nutshell? I'll try.
> > >
> > First, I added a note to both spreadsheets indicating that zero degrees
> > is CURRENT zero degrees. This because the source turns out to be
> > reactive, with current peak 45 degrees from voltage peak.
> > >
> > >http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf
>
> I was not able to discern the derivation of the various equations
> though the data in the columns looked somewhat reasonable. Were
> the equation really based on the opening paragraph statement of
> 100 Vrms, or is it scaled to a different source voltage. The sin
> functions have an amplituted of 100, which suggests a source of
> 200 volts or Vrms of 141.4 volts.

I simplified and changed the phase for the equation in column C from '100sin(wt-90) + 100sin(wt-180)' to '100sin(wt+90) + 100sin(-wt)' so that the total voltage in column D better matches with the voltages from my formula in column G.

The equation for column B is just the sine wave for the base wave, showing the voltage resulting to the source resistor from the peak current. The equation in column C is the same (from current) but recognizes that current from the reflected wave will cancel the current from the forward wave coming through Rs. The two waves are traveling in opposite directions so one angle must be labeled with a negative sign so that it will rotate in the opposite direction. In column C, the first term is the reflected wave and the second term is the base wave.

My formula, displayed in column G, uses the applied voltage of 141.4 volts. I thought it would be easier to see how the spreadsheet was built using current to find the voltages. You can see how the results of column D match well with those from column G.

>
> > The spreadsheet addresses the following issues:
> > >
> > Does the traveling wave carry power? Yes. The spreadsheet was built
> > assuming that power is carried by traveling waves. Because the

> > resulting wave form and powers seem correct, the underlaying assumption
> > seems correct.
>
> It was not obvious which columns were used to draw this correlation.
>

Column E and column F display power. Column F recognizes that if 100 watts is applied continueously (on the average) over an entire 360 degree cycle, the final power applied over time would be 360 * 100 = 36000 watt-degrees. Part of the power comes from the reflection, part comes directly. Obviously, interference is very much at work in this example.

> However, even if this experiment is consistent with the hypothesis
> it only takes one experiment which is not to disprove the hypothesis.
>

True!

> > Is power conserved on the transmission line, meaning, can the energy
> > contained in power be conserved and located over time on the
> > transmission line? Yes, the spreadsheet was built assuming that power
> > could be conserved and traced over time so the underlaying assumption
> > seems correct.
> >
> > Does interference occur in this example? The spreadsheet was built
> > assuming that voltage and currents from superpose in a manner consistent
> > with constructive and destructive interference, so the underlaying
> > assumption seems correct.
> >
> > Is power stored in the reactive component for release in later in the
> > cycle or during the next half cycle? Yes, power is stored on the
> > transmission line during the time it takes for power to enter the line,
> > travel to the end and return. The time of wave travel on the
> > transmission line is related to the value of the reactive component.
> >
> > Does the direction of wave travel affect the measurement of voltage and
> > the application of power to a device? Yes. A wave loses energy (and
> > therefore voltage) as it travels through a resistance. As a result,
> > power from the prime source is ALWAYS applied across the sum of the
> > resistance from the resistor AND transmission line.
>
> I am not sure that I would describe this as the wave losing energy,
> but rather as the voltage dividing between the two impedances.
> If the source resistance was replaced by another transmission,
> which could easily be set to provide a 50 ohm impedance, would
> you still describe it as the wave losing energy?
>

It should be OK to think of the voltage dividing between two impedances. The important thing is to consider how the reflected voltage sums with the forward voltage where it is measured. Because the two waves are traveling in opposite directions, the measured voltage is not the voltage applied to either Rs or the transmission line. This is why columns B and

C must be added to find the total voltage across Rs.

> > The spreadsheet was
> > built using this assumption and seems correct. (At times during the
> > cycle, the forward and reflected waves oppose, resulting in very little
> > current through the resistor. During those times, the power applied to
> > the transmission line is much HIGHER because the reflected wave reflects
> > from the load and source, and merges/adds to the forward wave from the
> > source.)
>
> I am not convinced. When there is very little current through the
> resistor,
> there is also very little current into the transmission line. This
> suggests to me that the power applied to the transmission line is low.

I don't follow you here. Right, power into the transmission line is low when the current in is low, and it is high when the current is high. It is clear that peak current and peak voltage do not occur at the same time except when measured across the resistor in column D.

>
> ...Keith
>

This is just one example, but it seems like the power is accounted for here. We need another example where power can NOT be accounted for.

--
73, Roger, W7WKB

3730. Re: Wrapped Antenna Feeding

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-30 00:48:58 UTC
From: Dave Oldridge <doldridg@leavethisoutshaw.ca>
Message-ID: <Xns9A70B5290E6Fdoldridgsprintca@64.59.135.159>
Source record: 26552

Buck <usenet01@lumpuckeroo.com> wrote in
news:j9k9u3ptl65h0mjujjlr0641gld26ol7at@4ax.com:

>
> A B
> \ /
> X
> / \
> \ /
> X
> / \
> \ /
> X
> / \
> \ /
> X
> / \
> a b
>
> The above diagram represents a piece of material with two wires
> wrapped around it. One is wrapped clockwise and the other is counter
> clockwise. The first wire is a to A and the second is b to B.
>
> For the sake of discussion I am going to assume the piece of material
> is a 1" diameter pvc pipe and the wire lengths are each 16 feet or the
> equivalent of a 1/4 wave for 20 meters.
>
> I realize that the inductance will create a variation, but since this
> is hypothetical, I am assuming this is a 20 meter antenna. Also
> assume it is 20 feet or more above the ground with no ground plane
> radials.
>
> There are several scenarios for feeding this antenna. My question is
> what kind of performance could I expect by each of the variations
> below?
>
> 1) Feed ab - This is like a dipole with the elements intertwined.
>
> 2) Short AB and feed ab - a closed loop
>
> 3) feed Ab - this would require additional wire to reach the ends
>
> 4) feed Ab - using bending the pvc like a hula loop.
>

> Thank you

Short A to B and short a to b. Supply radials and feed at one end
against the radials. Work 20m DX.

--
Dave Oldridge+
ICQ 1800667

3731. **BIG BOOBS SEXY GIRLS VIDEOS**SEX GALLERY**

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-30 07:44:37 UTC
From: Riya <vvvvij@gmail.com>
Message-ID: <5855bdcc-046a-4ace-82ef-9feba1bff67e@u10g2000prn.googlegroups.com>
Source record: 26553

BIG BOOBS SEXY GIRLS VIDEOSSEX GALLERY**
LESBIAN SEX
SEX KISSING IN BATHROOM
PORN SEX
**ITS FREE~~~FREE~~~FREE~~~FREEE
http://biotechggg.blogspot.com/

http://biotechggg.blogspot.com/

http://biotechggg.blogspot.com/

3732. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-30 11:54:17 UTC
From: Homer J <homerj@home.com>
Message-ID: <f3ea2$47ef7f68$ce94701c$31618@DIALUPUSA.NET>
Source record: 26554
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

I did not see all the replies nor the original post but in the world of radio frequency (RF) match yes this would be an ideal situation since maximum energy transfer occur when Imepdance of the antenna (Zant) = Imedance of the Receiver Antenna Port (Zrx_port).

All this talk about noise while important to minimum detectable signal more greatly influenced by the internal Noise Figure (NF) of the receiver (RX). In my line of work, which is Radar engineering, we use a standard temperature T = 270 Kelvin to model the noise originating by natural extgernal sources of which the Sun is the biggest contributor.

The short end answer on HF you will probably not notice a big difference as long as the antenna is close between a 1/4 to 1/2 wavelength long [e.g. wavelength = Velocity of Light (C) / Frequency of Operation (Fo)]. However, if you use one of those collaspable whips found on the portable shortwave receivers you will. This is because the anyenna impedance is a lot less than the usual 50 Ohm impedance of the RX antenna port (e.g. Zant << Zrx_port).

You can match very short antennas with antenna tuners to make them transfer efficently to the RX antenna port but now the nasty parameter of effective antenna aperature (square feet or meters) reduces it caoture ability (think of catching a baseball with and without a glove, the probability of catching the ball is higher with a glove due to it larger capture area).

Well that is enough to put someone to ZZZzzzzzzzzz. Hi Hi

73, Homer J
on all lower and upper channels Thane-Fer

3733. Re: Re:Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-30 13:10:37 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <hjMHj.121278$nw4.70272@fe1.news.blueyonder.co.uk>
Source record: 26555

Thanks all for your time and help. Now I have enough information about the traps I can now look and read up and give it ago.

73 to all

"Owen Duffy" <none@no.where> wrote in message
news:Xns9A7149D0C1311nonenowhere@61.9.191.5...
> "Barrett" <barrett@blueyounder.co.uk> wrote in
> news:tkpHj.119431$nw4.2090@fe1.news.blueyonder.co.uk:
>
>> One last question. Is the diameter of the traps at different
>> frequencies that important and why?
>>
>> They tend to be larger towards top band.
>
> You really need to read a text that systematically develops an
> understanding of the operation of a trapped antenna. It helps to
> understand
> the operation of an untrapped antenna.
>
> Unfortunately, lots of articles in ham mags aren't very reliable, so you
> will need to read many articles and try to understand the underlying
> principles to filter out the misconceptions that find their way to
> publication.
>
> By all means, ask questions about things you don't understand... but your
> questions seem more like guessing your way to a solution and plugging the
> gaps as they become apparent to you.
>
> Owen

3734. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-30 14:43:59 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <9a4b494c-6191-49a4-8b6e-b97e9c3da34b@e6g2000prf.googlegroups.com>
Source record: 26556

On Mar 29, 7:18 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Sat, 29 Mar 2008 12:45:48 -0700 (PDT)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Mar 27, 2:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > Cecil Moore wrote:
> > > > Roger Sparks wrote:
> > > >> You need to take a look at the spreadsheets.
>
> > > > Roger, in a nutshell, what is the bottom line?
>
> > > The bottom line in a nutshell? I'll try.
>
> > > First, I added a note to both spreadsheets indicating that zero degrees
> > > is CURRENT zero degrees. This because the source turns out to be
> > > reactive, with current peak 45 degrees from voltage peak.
>
> > > >http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf
>
> > I was not able to discern the derivation of the various equations
> > though the data in the columns looked somewhat reasonable. Were
> > the equation really based on the opening paragraph statement of
> > 100 Vrms, or is it scaled to a different source voltage. The sin
> > functions have an amplituted of 100, which suggests a source of
> > 200 volts or Vrms of 141.4 volts.
>
> I simplified and changed the phase for the equation in column C from '100sin(wt-90) + 100sin(wt-180)' to '100sin(wt+90) + 100sin(-wt)' so that the total voltage in column D better matches with the voltages from my formula in column G.
>
> The equation for column B is just the sine wave for the base wave, showing the voltage resulting to the source resistor from the peak current. The equation in column C is the same (from current) but recognizes that current from the reflected wave will cancel the current from the forward wave coming through Rs. The two waves are traveling in opposite directions so one angle must be labeled with a negative sign so that it will rotate in the opposite direction. In column C, the first term is the reflected wave and the second term is the base wave.
>
> My formula, displayed in column G, uses the applied voltage of 141.4 volts. I thought it would be easier to see how the spreadsheet was built using current to find the voltages. You can see how the results of column D match well with those from column G.

I am still having difficulty matching these equations with mine. Just
to make sure we are discussing the same problem....

The circuit is a voltage source
Vs(t) = 141.4 sin(wt-45)
driving a source resistor of 50 ohms and 45 degress of 50 ohm
transmission line that is shorted at the end.

My calculations suggest that
Vrs.total(t) = 100 sin(wt-90)
Irs.total(t) = 2 sin(wt-90)

which agrees with you column D but not the introduction which
says that the zero current is at 0 degrees. With -100 volts
across the source resistor at 0 degrees, the current should
be -2 amps through the source resistor at 0 degrees; in other
words, a current maximum.

Using superposition, I compute the the contribution of the
source to be
Vrs.source(t) = 70.7 sin(wt-45)
and the contribution from the reflected wave to be
Vrs.reflected(t) = -70.7 sin(wt+45)
which sum to
Vrs.total(t) = 100 sin(wt-90)
as expected.

So while I can construct an expression for Column D, the
contributing values do not agree with those you have
provided in Columns B and C.

Column E follows from Column D and my calculations agree.
And also with Column F.

> > > The spreadsheet addresses the following issues:
>
> > > Does the traveling wave carry power? Yes. The spreadsheet was built
> > > assuming that power is carried by traveling waves. Because the
> > > resulting wave form and powers seem correct, the underlaying assumption
> > > seems correct.
>
> > It was not obvious which columns were used to draw this correlation.
>
> Column E and column F display power. Column F recognizes that if 100 watts is applied
continueously (on the average) over an entire 360 degree cycle, the final power applied
over time would be 360 * 100 = 36000 watt-degrees. Part of the power comes from the
reflection, part comes directly. Obviously, interference is very much at work in this
example.

Column E is the power dissipated in the resistor, and Column F
is the integral of Column and represents the total energy which
has flowed in to the resistor over the cycle. It is also the
average energy per cycle.

If you were to extend your analysis to compute the energy
in each degree of the reflected wave and add it to the energy
in each degree of Vrs.source(t) and sum these, you would

find that the instantaneous energy from Vrs.source and
Vrs.reflected does not agree with the instantaneous energy
dissipated in the source resistor. It is this disagreement
that is the root of my argument that the power in the
reflected wave is a dubious concept.

Using averages, the computed powers support the hypothesis,
but when examined with finer granularity, they do not.

> > However, even if this experiment is consistent with the hypothesis
> > it only takes one experiment which is not to disprove the hypothesis.
>
> True!
>
> > > Is power conserved on the transmission line, meaning, can the energy
> > > contained in power be conserved and located over time on the
> > > transmission line? Yes, the spreadsheet was built assuming that power
> > > could be conserved and traced over time so the underlaying assumption
> > > seems correct.
>
> > > Does interference occur in this example? The spreadsheet was built
> > > assuming that voltage and currents from superpose in a manner consistent
> > > with constructive and destructive interference, so the underlaying
> > > assumption seems correct.
>
> > > Is power stored in the reactive component for release in later in the
> > > cycle or during the next half cycle? Yes, power is stored on the
> > > transmission line during the time it takes for power to enter the line,
> > > travel to the end and return. The time of wave travel on the
> > > transmission line is related to the value of the reactive component.
>
> > > Does the direction of wave travel affect the measurement of voltage and
> > > the application of power to a device? Yes. A wave loses energy (and
> > > therefore voltage) as it travels through a resistance. As a result,
> > > power from the prime source is ALWAYS applied across the sum of the
> > > resistance from the resistor AND transmission line.
>
> > I am not sure that I would describe this as the wave losing energy,
> > but rather as the voltage dividing between the two impedances.
> > If the source resistance was replaced by another transmission,
> > which could easily be set to provide a 50 ohm impedance, would
> > you still describe it as the wave losing energy?
>
> It should be OK to think of the voltage dividing between two impedances. The important
thing is to consider how the reflected voltage sums with the forward voltage where it is
measured. Because the two waves are traveling in opposite directions, the measured voltage
is not the voltage applied to either Rs or the transmission line. This is why columns B and
C must be added to find the total voltage across Rs.

Whether one needs to add or subtract is more a matter of the
convention

being used for the signs of the values. When Vf and Vr are derived
using
Vtot = Vf + Vr; Itot = If + Ir
one would expect to have to add the negative of Vr to the contribution
from Vs to arrive at the total voltage across the source resistor.

> > > The spreadsheet was
> > > built using this assumption and seems correct. (At times during the
> > > cycle, the forward and reflected waves oppose, resulting in very little
> > > current through the resistor. During those times, the power applied to
> > > the transmission line is much HIGHER because the reflected wave reflects
> > > from the load and source, and merges/adds to the forward wave from the
> > > source.)
>
> > I am not convinced. When there is very little current through the
> > resistor,
> > there is also very little current into the transmission line. This
> > suggests to me that the power applied to the transmission line is low.
>
> I don't follow you here. Right, power into the transmission line is low when the current in is low, and it is high when the current is high. It is clear that peak current and peak voltage do not occur at the same time except when measured across the resistor in column D.

Power into the transmission line is low when either the voltage or
the current is low; when either is zero, the power is zero.

Since the highest voltage occurs with zero current and the highest
current occurs with zero voltage, maximum power into the transmission
line occurs when the voltage and current are both medium; more
precisely, when they are both at .707 of their maximum values.

> This is just one example, but it seems like the power is accounted for here. We need another example where power can NOT be accounted for.

I suggest it is the same example, but the granularity of the
analysis needs to be increased.

...Keith

3735. BNC Crimp Tool and crimp-connector

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-30 18:24:42 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <9J-dnVL1K4x3R3LanZ2dnUVZ_gSdnZ2d@bright.net>
Source record: 26557

Dear Group:

It appears that I may be compelled to crimp BNC connectors far out in a field.

I searched the many thousand messages I have saved that were of value and found this from Mr. Brian Kelly from August 3, 2003:
If you're going to spend money, then be sure to buy plugs with a captive pin and pressure-sleeve ("top hat") cable clamp.

They are more expensive than the original MIL type, but much better for hand assembly and much easier to remove and re-use... in other words, they're good long-term value for amateurs.

An example is the Tyco/Greenpar 1-1478401-0. There should be a disassembled picture at www.farnell.com/uk - search for part number 3977754. (The parts aren't laid out in quite the right order, but you'll get the idea.)

Personally I wouldn't use crimp connectors without the correct tools to make the full six-sided crimps in the two different sizes required. Also they cannot be re-used, which makes them poorer value for (most) amateurs.

With the assumptions that the cable is RG58C/U type, that the connection will be well wrapped and the BNC connector is on the end of a very long piece of cable going to HF receiving antenna(s):

Questions: What have you found to be the most reliable BNC connectors of the crimp type?
What crimping tool is the most appropriate?

A crimping tool that may inexpensively be modified to crimp UHF (to RG213/U type cable) type connectors is desirable.

Thanks for your advice. No substitute exists for experience with a task that so easily can go wrong.

73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net

3736. Re: BNC Crimp Tool and crimp-connector

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-30 19:52:48 UTC
From: Jim-NN7K
Message-ID: <kcSHj.36559$J41.12395@newssvr14.news.prodigy.net>
Source record: 26558

AMP makes connectors, and crimpers for coax- and they are quite
reliable- thats the good news. The BAD news is they are quite
expensive, and only crimp one size connector for each- one size for
rg58, one for rg-174 (?) The small stuff, used for baseband cables ,
and mux equipment, and another for UHF connecters . think these also
available for N types. You might look at their web page for info.

Also, IF interested, the CENTERS of a BNC connector is the same size
as the N connector, if you wish to make test cords- tho they obviously
DON'T lock to the female connectors- not good for a permanent
installation. --- Jim NN7K

J. Mc Laughlin wrote:
> Dear Group:
>
> It appears that I may be compelled to crimp BNC connectors far out in a
> field.
>
> I searched the many thousand messages I have saved that were of value and
> found this from Mr. Brian Kelly from August 3, 2003:
> If you're going to spend money, then be sure to buy plugs with a captive
> pin and pressure-sleeve ("top hat") cable clamp.
>
> They are more expensive than the original MIL type, but much better for
> hand assembly and much easier to remove and re-use... in other words,
> they're good long-term value for amateurs.
>
> An example is the Tyco/Greenpar 1-1478401-0. There should be a
> disassembled picture at www.farnell.com/uk - search for part number
> 3977754. (The parts aren't laid out in quite the right order, but you'll
> get the idea.)
>
> Personally I wouldn't use crimp connectors without the correct tools to
> make the full six-sided crimps in the two different sizes required. Also
> they cannot be re-used, which makes them poorer value for (most)
> amateurs.
>
> ------
>
> With the assumptions that the cable is RG58C/U type, that the connection
> will be well wrapped and the BNC connector is on the end of a very long
> piece of cable going to HF receiving antenna(s):
>
> Questions: What have you found to be the most reliable BNC connectors of

> the crimp type?
> What crimping tool is the most appropriate?
>
> A crimping tool that may inexpensively be modified to crimp UHF (to RG213/U
> type cable) type connectors is desirable.
>
> Thanks for your advice. No substitute exists for experience with a task
> that so easily can go wrong.
>
> 73, Mac N8TT
>

3737. Re: BNC Crimp Tool and crimp-connector

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-30 21:23:54 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <tOCdnT3PCbZ0mW3anZ2dnUVZ_tWtnZ2d@bright.net>
Source record: 26559

Dear Jim: Oh my, are they expensive. For half the price, Steren
(sterenusa.com) makes a model 204-036 that deals with BNC, RCA, and F type
connectors. What looks like the same tool, is sold under Paladin name and
some house-brands. I wonder if anyone has used this tool?

Sometimes one must pay a high price to receive reliability and quality, but
that is not always the case. Someone put us onto a modest cost CAT5 tool
that we used at work for many, many connectors with almost no failures.

Thanks for you advice. I will put the AMP 58433-2 on the list to consider.

73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Jim-NN7K" <nn7kexk7zfg@noway.net.> wrote in message
news:kcSHj.36559$J41.12395@newssvr14.news.prodigy.net...
> AMP makes connectors, and crimpers for coax- and they are quite reliable-
> thats the good news. The BAD news is they are quite expensive, and only
> crimp one size connector for each- one size for
> rg58, one for rg-174 (?) The small stuff, used for baseband cables ,
> and mux equipment, and another for UHF connecters . think these also
> available for N types. You might look at their web page for info.
>
> Also, IF interested, the CENTERS of a BNC connector is the same size
> as the N connector, if you wish to make test cords- tho they obviously
> DON'T lock to the female connectors- not good for a permanent
> installation. --- Jim NN7K
>
> --
> J. Mc Laughlin wrote:
>> Dear Group:
>>
>> It appears that I may be compelled to crimp BNC connectors far out in a
>> field.
>>
>> I searched the many thousand messages I have saved that were of value and
>> found this from Mr. Brian Kelly from August 3, 2003:
>> If you're going to spend money, then be sure to buy plugs with a captive
>> pin and pressure-sleeve ("top hat") cable clamp.
>>
>> They are more expensive than the original MIL type, but much better for
>> hand assembly and much easier to remove and re-use... in other words,
>> they're good long-term value for amateurs.

>>
>> An example is the Tyco/Greenpar 1-1478401-0. There should be a
>> disassembled picture at www.farnell.com/uk - search for part number
>> 3977754. (The parts aren't laid out in quite the right order, but you'll
>> get the idea.)
>>
>> Personally I wouldn't use crimp connectors without the correct tools to
>> make the full six-sided crimps in the two different sizes required. Also
>> they cannot be re-used, which makes them poorer value for (most)
>> amateurs.
>>
>> ------
>>
>> With the assumptions that the cable is RG58C/U type, that the connection
>> will be well wrapped and the BNC connector is on the end of a very long
>> piece of cable going to HF receiving antenna(s):
>>
>> Questions: What have you found to be the most reliable BNC connectors of
>> the crimp type?
>> What crimping tool is the most appropriate?
>>
>> A crimping tool that may inexpensively be modified to crimp UHF (to
>> RG213/U type cable) type connectors is desirable.
>>
>> Thanks for your advice. No substitute exists for experience with a task
>> that so easily can go wrong.
>>
>> 73, Mac N8TT
>>

3738. Re: BNC Crimp Tool and crimp-connector

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-30 21:32:36 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A724C92613FEnonenowhere@61.9.191.5>
Source record: 26560

"J. Mc Laughlin" <jcm@power-net.net> wrote in
news:tOCdnT3PCbZ0mW3anZ2dnUVZ_tWtnZ2d@bright.net:

> Dear Jim: Oh my, are they expensive. For half the price, Steren

Mac, have a look at the dies and frame at:

http://rfshop.com.au/Products/Hardware/tabid/426/List/1/CategoryID/261/Cate
gory2ID/776/Level/2/Default.aspx

These are out of Asia and the tools work quite well. As you will see, there
are dies that include cavities for a range of cables and you may are likely
to find a tool that will suit many small cables on BNC / UHF / SMA etc.

The tools come into Australia branded HIT, you may find them listed with
retailers over there.

BTW, RFSHOP are great to deal with, and if look around there site, you will
see a range of inexpensive, but good quality connectors etc.

Owen

3739. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 00:28:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <leWHj.11188$qS5.7273@nlpi069.nbdc.sbc.com>
Source record: 26561

Keith Dysart wrote:
> Unfortunately for your hypothesis, average power is
> insufficient to account for energy which might be in
> the reflected wave. An average power analysis agrees
> with your hypothesis, while a more detailed instaneous
> analysis disproves it.

One more time: My hypothesis doesn't apply to instantaneous powers at all so there is nothing to disprove. Please leave me out of any discussion of instantaneous powers.

> If it was just a 'suspicion' you could probably let
> go of the idea long enough to learn what is really
> happening and why it is not inconsistent with the
> idea that reflected wave energy is a dubious concept.

One look in a mirror should convince you otherwise.

> You *have* found it hard to the do the math;

Nope, I just think that instantaneous power math is a waste of my time. Seems to also be a waste of your time.

> Your explanation is not complete until you can identify
> the element that stores and returns the energy and its
> energy transfer function.

I simply don't have anything at all to say about instantaneous powers. In my opinion, such is a waste of my time. You might as well be demanding that I produce the math for how many angels can dance on the head of a pin.

> Energy can not be destroyed.

Yet, you are trying your best to destroy the energy in the reflected wave. Since you cannot destroy reflected energy at the average power level, you are trying to destroy it at the instantaneous level.
--
73, Cecil http://www.w5dxp.com

3740. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 00:43:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qsWHj.20823$xq2.1934@newssvr21.news.prodigy.net>
Source record: 26562

Keith Dysart wrote:
> Perhaps you should complete part one so that it fully
> accounts for the energy flows before progressing to
> writing part two. Average is not a full accounting.

Average is the only accounting that I consider to
be important and the only accounting that I am going
to do. I have added a disclaimer about instantaneous
power to my Part 1 article. I personally don't think
that anyone else cares about instantaneous powers.

If you need an instantaneous power article written,
please feel free to write it yourself. I wish you luck
but I personally consider it to be a waste of time.
--
73, Cecil http://www.w5dxp.com

3741. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 00:48:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9xWHj.20824$xq2.4443@newssvr21.news.prodigy.net>
Source record: 26563

Keith Dysart wrote:
> Using averages, the computed powers support the hypothesis,
> but when examined with finer granularity, they do not.

Well Keith, yours also falls apart at finer granularity
where you are required to determine the position and
momentum of the individual charge carriers.
--
73, Cecil http://www.w5dxp.com

3742. Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 01:34:41 UTC
From: dykesc <cupstidd@bellsouth.net>
Message-ID: <e208de22-21fa-4c17-a682-83f9254da117@8g2000hse.googlegroups.com>
Source record: 26564

The manual on the MFJ 259b warns that strong local broadcast band rf can cause problems with accuracy of the unit. The warning mentions strong AM broadcast signals. A new tall tower near my house is emitting a strong FM broadcast signal. When I hooked up my G5RV to the frequency counter input on my 259b, it immediately locked on at 100.500 MHz. The signal is so strong that I can hear the station at multiple frequencies when I tune across the FM broadcast band on a small FM radio. Could this be interferring with my attempts at getting reliable R-X SWR readings on my G5RV with the 259b?

3743. external-antenna wifi for handheld/handtop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 01:58:25 UTC
From: phlegmatico <phlegmatico@breakthru.com>
Message-ID: <802d090a-29c3-48b6-81fc-cc0c0ae87f8b@l42g2000hsc.googlegroups.com>
Source record: 26565
Cross-posted to: comp.sys.handhelds,rec.radio.amateur.antenna

what is the smallest computer that can be configured to work with an external-antenna rig-up for wifi at a distance from the hotspot?

3744. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 02:28:37 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <IaCdnUmx0a_X0W3anZ2dnUVZ_gudnZ2d@comcast.com>
Source record: 26566

"dykesc" <cupstidd@bellsouth.net> wrote in message
news:e208de22-21fa-4c17-a682-83f9254da117@8g2000hse.googlegroups.com...
> The manual on the MFJ 259b warns that strong local broadcast band rf
> can cause problems with accuracy of the unit. The warning mentions
> strong AM broadcast signals. A new tall tower near my house is
> emitting a strong FM broadcast signal. When I hooked up my G5RV to the
> frequency counter input on my 259b, it immediately locked on at
> 100.500 MHz. The signal is so strong that I can hear the station at
> multiple frequencies when I tune across the FM broadcast band on a
> small FM radio. Could this be interferring with my attempts at getting
> reliable R-X SWR readings on my G5RV with the 259b?

One way to find out. Measure the SWR through a low pass filter that is meant
to be used at a transmitter output. These things usually start to roll off
at about 40 MHz, and will have around 80 db loss at 100 Mhz.

Tam/WB2TT

3745. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 02:30:17 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <13v0j5rib6orp36@corp.supernews.com>
Source record: 26567

dykesc wrote:
> The manual on the MFJ 259b warns that strong local broadcast band rf
> can cause problems with accuracy of the unit. The warning mentions
> strong AM broadcast signals. A new tall tower near my house is
> emitting a strong FM broadcast signal. When I hooked up my G5RV to the
> frequency counter input on my 259b, it immediately locked on at
> 100.500 MHz. The signal is so strong that I can hear the station at
> multiple frequencies when I tune across the FM broadcast band on a
> small FM radio. Could this be interferring with my attempts at getting
> reliable R-X SWR readings on my G5RV with the 259b?

Absolutely. Ironically, among the many uses for an "antenna analyzer", the one they're least suited for is analyzing actual antennas -- at least in a lot of urban settings. What I've done is constructed a number of "half wave filters" which effectively filter out TV and FM signals without affecting the measured impedance appreciably on the band they're designed for. You do need one for each band, however.

A "half wave filter" has a unity voltage, current, and impedance transformation, and a 180 degree delay, at the design frequency, like a half wave transmission line, but provides a lowpass filtering function. They're broad enough that you can use one over a whole band without too much impedance error. It consists of a shunt C - series L - shunt C - series L - shunt C, with the reactance of every element except the middle C equal to 50 ohms (to mimic a 50 ohm transmission line). The reactance of the middle C is half the value of the others -- you can conveniently use two capacitors in parallel, each having the same reactance as the end capacitors. I generally use mica or NPO ceramic capacitors, and inductors wound on type 6 or type 2 powdered iron cores, for HF. You should test the filter by measuring several known impedances with it in series with the impedances, and with it removed.

You can make a highpass version, too, by exchanging the Ls and Cs. In your case, though, you need lowpass ones.

Roy Lewallen, W7EL

3746. Re: BNC Crimp Tool and crimp-connector

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 03:23:31 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <L8idnUw5MeuvxG3anZ2dnUVZ_tajnZ2d@bright.net>
Source record: 26568

Dear Owen: I am obliged for your suggestions and the RFShop reference.
Indeed, a set of dies for just the connectors of interest has some appeal,
and the HIT series has a good selection of dies. I have yet to locate where
the HIT series are available on this side of the Pacific, but I shall keep
looking.

I note again the comment made back in 2003 about the desirability of a hex
crimp. It turns out that Steren makes a single purpose tool (204-005) that
performs a hex crimp on BNCs and costs about the same as a HIT die. The
mating connector in quantity appears to be about half a dollar.

So many choices. Thank you again. 73, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Owen Duffy" <none@no.where> wrote in message
news:Xns9A724C92613FEnonenowhere@61.9.191.5...
> "J. Mc Laughlin" <jcm@power-net.net> wrote in
> news:tOCdnT3PCbZ0mW3anZ2dnUVZ_tWtnZ2d@bright.net:
>
>> Dear Jim: Oh my, are they expensive. For half the price, Steren
>
> Mac, have a look at the dies and frame at:
>
> http://rfshop.com.au/Products/Hardware/tabid/426/List/1/CategoryID/261/Cate
> gory2ID/776/Level/2/Default.aspx
>
> These are out of Asia and the tools work quite well. As you will see,
> there
> are dies that include cavities for a range of cables and you may are
> likely
> to find a tool that will suit many small cables on BNC / UHF / SMA etc.
>
> The tools come into Australia branded HIT, you may find them listed with
> retailers over there.
>
> BTW, RFSHOP are great to deal with, and if look around there site, you
> will
> see a range of inexpensive, but good quality connectors etc.
>
> Owen

3747. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 05:00:09 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <c4ednRQt6rk4_G3anZ2dnUVZ_tSknZ2d@giganews.com>
Source record: 26569

Roy Lewallen wrote:
> dykesc wrote:
> > The manual on the MFJ 259b warns that strong local broadcast band rf
> > can cause problems with accuracy of the unit. The warning mentions
> > strong AM broadcast signals. A new tall tower near my house is
> > emitting a strong FM broadcast signal. When I hooked up my G5RV to the
> > frequency counter input on my 259b, it immediately locked on at
> > 100.500 MHz. The signal is so strong that I can hear the station at
> > multiple frequencies when I tune across the FM broadcast band on a
> > small FM radio. Could this be interferring with my attempts at getting
> > reliable R-X SWR readings on my G5RV with the 259b?
>
> Absolutely. Ironically, among the many uses for an "antenna analyzer",
> the one they're least suited for is analyzing actual antennas -- at
> least in a lot of urban settings. What I've done is constructed a number
> of "half wave filters" which effectively filter out TV and FM signals
> without affecting the measured impedance appreciably on the band they're
> designed for. You do need one for each band, however.
>
> A "half wave filter" has a unity voltage, current, and impedance
> transformation, and a 180 degree delay, at the design frequency, like a
> half wave transmission line, but provides a lowpass filtering function.
> They're broad enough that you can use one over a whole band without too
> much impedance error. It consists of a shunt C - series L - shunt C -
> series L - shunt C, with the reactance of every element except the
> middle C equal to 50 ohms (to mimic a 50 ohm transmission line). The
> reactance of the middle C is half the value of the others -- you can
> conveniently use two capacitors in parallel, each having the same
> reactance as the end capacitors. I generally use mica or NPO ceramic
> capacitors, and inductors wound on type 6 or type 2 powdered iron cores,
> for HF. You should test the filter by measuring several known impedances
> with it in series with the impedances, and with it removed.
>
> You can make a highpass version, too, by exchanging the Ls and Cs. In
> your case, though, you need lowpass ones.
>
> Roy Lewallen, W7EL

He's getting RFI at one frequency. I was thinking an open quarterwave coaxial stub tuned to 100.5 MHz would serve to trap the offending signal, and be easy to implement. Cut it a tad long from the calculated length, connect it to the analyzer input using a tee adapter, and "tune" it up in frequency using a pair of wire cutters:

246/100.5 = 2.45' (or 2' 5-3/8") * Vf

Bryan WA7PRC

3748. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 11:04:19 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <65ae3506-0548-4131-8625-7bc2662519af@e10g2000prf.googlegroups.com>
Source record: 26570

On Mar 30, 8:28 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Unfortunately for your hypothesis, average power is
> > insufficient to account for energy which might be in
> > the reflected wave. An average power analysis agrees
> > with your hypothesis, while a more detailed instaneous
> > analysis disproves it.
>
> One more time: My hypothesis doesn't apply to instantaneous
> powers at all so there is nothing to disprove. Please
> leave me out of any discussion of instantaneous powers.

You state that your hypothesis is that for this specific
circuit, "the energy in the reflected wave is dissipated in
the source resistor". This claim is amenable to analysis
using instantaneous energy flows. When so analyzed, the
hypothesis fails.

I can see why you want to limit the kinds of analysis
applied to your hypothesis, but that is not how science
works.

If you wish to narrow your hypothesis to "the average energy
in the reflected wave is simply numerically equal to the
increase in the average dissipation in the source
resistor" I will not object since that hypothesis would
be completely accurate and not misleading.

As long as you wish to claim that there is actual energy
in the reflected wave, and that this energy is dissipated
in the source resistor, you must be prepared to offer a
full accounting.

> > If it was just a 'suspicion' you could probably let
> > go of the idea long enough to learn what is really
> > happening and why it is not inconsistent with the
> > idea that reflected wave energy is a dubious concept.
>
> One look in a mirror should convince you otherwise.
>
> > You *have* found it hard to the do the math;
>
> Nope, I just think that instantaneous power math is a
> waste of my time. Seems to also be a waste of your
> time.

Not at all. I've learned a new (at least to me) technique
for analyzing where the energy goes. I've increased my skills
with complex numbers in Excel. I have a firmer grasp about
power computations. I've explored the tautology of
Ptotal = Pforward - Preflected. I've learned a bit about
macros in Excel. I've tried Calc and found it wanting.
I've looked at energy flows in circulators. I've explored
active and passive circulators. And I've proved your
hypothesis to be false.

Not a waste at all.

> > Your explanation is not complete until you can identify
> > the element that stores and returns the energy and its
> > energy transfer function.
>
> I simply don't have anything at all to say about
> instantaneous powers. In my opinion, such is
> a waste of my time.

A higly convenient opinion since it allows you to continue
to believe your hypothesis.

> You might as well be demanding
> that I produce the math for how many angels can
> dance on the head of a pin.

No. Instantaneous flows *can* be computed. Angels on a pin
are a little more problematic.

> > Energy can not be destroyed.
>
> Yet, you are trying your best to destroy the energy
> in the reflected wave.

Since you start with an unshakeable belief in the
existance of energy in the reflected wave, this would be
your natural conclusion.

Those of us whose beliefs are not so fixed, evaluate
the proofs and come to the conclusion that energy in
the reflected wave is a dubious concept.

> Since you cannot destroy
> reflected energy at the average power level, you
> are trying to destroy it at the instantaneous
> level.

"Average" is just a data reduction from "instantaneous".
An agreement of averages is not a proof of anything
except that the "averages are numerically equal".

...Keith

3749. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 11:04:38 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b26bec76-c1c8-4aef-80a7-ac5709c3d2e8@s37g2000prg.googlegroups.com>
Source record: 26571

On Mar 30, 8:43 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Perhaps you should complete part one so that it fully
> > accounts for the energy flows before progressing to
> > writing part two. Average is not a full accounting.
>
> Average is the only accounting that I consider to
> be important and the only accounting that I am going
> to do. I have added a disclaimer about instantaneous
> power to my Part 1 article.

But the meaning of the disclaimer is not clear to the
reader. You really need to restate your hypothesis to
remove the possibility of misleading the reader.

I would suggest something along the lines of "My
hypothesis is that the average energy in the reflected
wave is *numerically* equal to the increase in dissipation
of the source resistor. It should be noted that this
says nothing about whether the energy in the reflected
wave is actually dissipated in the source resistor."
That would be completely accurate and very unlikely to
be misconstrued by the reader.

> I personally don't think
> that anyone else cares about instantaneous powers.

I am sure some do not. But anyone interested in a full
understanding does.

> If you need an instantaneous power article written,
> please feel free to write it yourself. I wish you luck
> but I personally consider it to be a waste of time.

It is convenient when you just ignore the analysis
that disproves your hypothesis. But it does not make
the hypothesis more correct.

...Keith

3750. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 11:04:52 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <81cc04c7-1e39-44e6-93f4-4443af7fdbfa@s37g2000prg.googlegroups.com>
Source record: 26572

On Mar 30, 8:48 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Using averages, the computed powers support the hypothesis,
> > but when examined with finer granularity, they do not.
>
> Well Keith, yours also falls apart at finer granularity
> where you are required to determine the position and
> momentum of the individual charge carriers.

Perhaps, but it is highly improbable that it falls apart
in a manner that ends up supporting the original failed
hypothesis.

...Keith

3751. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 12:04:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8r4Ij.17253$5K1.15657@newssvr12.news.prodigy.net>
Source record: 26573

Keith Dysart wrote:
> You state that your hypothesis is that for this specific
> circuit, "the energy in the reflected wave is dissipated in
> the source resistor".

First, let's correct your out-of-context quotation.
Here is what you should have quoted: "When zero
interference exists at the source resistor, the
energy in the reflected wave is dissipated in the
source resistor."

This is actually a fact for both average powers
and instantaneous powers. Since all of your examples
are associated with a non-zero level of interference,
they are irrelevant to the stated conditions.

Here is a quote from that article:
"Please note that any power referred to in this paper is an AVERAGE
POWER. Instantaneous power is irrelevant to the following discussion."
The word "average" is implied in every statement I make.

> This claim is amenable to analysis
> using instantaneous energy flows. When so analyzed, the
> hypothesis fails.

No, it doesn't fail. You have simply failed to satisfy
the zero interference precondition.

> If you wish to narrow your hypothesis to "the average energy
> in the reflected wave is simply numerically equal to the
> increase in the average dissipation in the source
> resistor" I will not object since that hypothesis would
> be completely accurate and not misleading.

That is, in fact, the only hypothesis presented in
my Part 1 article. Since my hypothesis never applied
to instantaneous power, I don't have to narrow the
hypothesis. My article stands as written. Please
cease and desist with the unfair innuendo.

> Not a waste at all.

Obviously, your opinion differs from mine. To the best
of my knowledge, you are the first person to spend any
mental effort on instantaneous power. If that's what
you want to do, be my guest. I consider it to be little
more than mental masturbation, "of limited utility" as

Hecht said.

In fact, I proved my assertion was true even at the
instantaneous power level when the "zero interference"
precondition is met.

> Since you start with an unshakeable belief in the
> existance of energy in the reflected wave, this would be
> your natural conclusion.

Since you are incapable of producing an EM wave devoid
of energy (or an angel dancing on the head of a pin) both
concepts are unrelated to reality IMO.

Your challenge is the same as it has always been. Just
produce an EM wave containing zero energy and get it
over with.
--
73, Cecil http://www.w5dxp.com

3752. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 12:43:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <S%4Ij.441$Gq7.201@newssvr19.news.prodigy.net>
Source record: 26574

Keith Dysart wrote:
> But the meaning of the disclaimer is not clear to the
> reader. You really need to restate your hypothesis to
> remove the possibility of misleading the reader.

What is it about "Please note that any power referred to
in this paper is an AVERAGE POWER. Instantaneous power
is irrelevant to the following discussion." that you
do not understand?

> I would suggest ...

I would suggest that you write your own article.
Mine stands as written in the *stated context*
of zero interference and average powers. I am
not interested in attempting a unified theory
of everything.

>> I personally don't think
>> that anyone else cares about instantaneous powers.
>
> I am sure some do not. But anyone interested in a full
> understanding does.

Anyone interested in a *full* understanding would
take the discussion down to the quantum level which,
interestingly enough, you have chosen to ignore.

> It is convenient when you just ignore the analysis
> that disproves your hypothesis. But it does not make
> the hypothesis more correct.

If you think your unethical innuendo, out-of-context
quotes, and straw man arguments disprove anything,
I feel sorry for you.

Once again, the context of my Part 1 assertions is
ZERO INTERFERENCE and *AVERAGE POWERS*. You have
disproved nothing so far. You were even taken aback
when it was true at the instantaneous level in the
context of zero instantaneous interference.
--
73, Cecil http://www.w5dxp.com

3753. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 12:53:17 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <195Ij.1155$Re7.434@trnddc04>
Source record: 26575

>
> He's getting RFI at one frequency. I was thinking an open quarterwave
> coaxial stub tuned to 100.5 MHz would serve to trap the offending signal,
> and be easy to implement. Cut it a tad long from the calculated length,
> connect it to the analyzer input using a tee adapter, and "tune" it up in
> frequency using a pair of wire cutters:
>
> 246/100.5 = 2.45' (or 2' 5-3/8") * Vf
>
> Bryan WA7PRC
>
What will that stub look like above and below the notch frequency? It sure
won't be invisble.
eg: 50 Ohm cable is around 27pF/'.
Dale W4OP

3754. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 13:01:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lg5lj.20855$xq2.11469@newssvr21.news.prodigy.net>
Source record: 26576

Keith Dysart wrote:
> Perhaps, but it is highly improbable that it falls apart
> in a manner that ends up supporting the original failed
> hypothesis.

Since the original hypothesis is in the context of
zero interference (and average powers) it has not
failed. So far, I have made no assertions about
conditions when interference is present as it is
in all of your examples. None of your observations
are relevant to my Part 1 article because they are
all outside the stated context of the article.

The challenge for you is to present a zero interference
example for which my hypothesis is false. So far, you
have failed to do so.

I have asserted, "If zero interference exists, then 'A'
is true". You have said 'A' is not true when interference
exists. I actually agree with you but it is irrelevant
to the stated 'if' portion of my premise. Where did
you study logic?

Maybe you don't realize that if the 'if' portion of
an 'if/then' statement is false, the entire statement
is true, by definition.

My assertions about conditions when interference is
present will appear in Parts 2 and 3 (which would have
been completed by now if I had ignored your diversions).
--
73, Cecil http://www.w5dxp.com

3755. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 14:55:19 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <rnu1v3dq7oh30i1j9mpq5rjiteu606h1ep@4ax.com>
Source record: 26577

On Sun, 30 Mar 2008 18:34:41 -0700 (PDT), dykesc
<cupstidd@bellsouth.net> wrote:

>The manual on the MFJ 259b warns that strong local broadcast band rf
>can cause problems with accuracy of the unit. The warning mentions
>strong AM broadcast signals. A new tall tower near my house is
>emitting a strong FM broadcast signal. When I hooked up my G5RV to the
>frequency counter input on my 259b, it immediately locked on at
>100.500 MHz. The signal is so strong that I can hear the station at
>multiple frequencies when I tune across the FM broadcast band on a
>small FM radio. Could this be interferring with my attempts at getting
>reliable R-X SWR readings on my G5RV with the 259b?

The worst is yet to come:
More transmitters are likely to be added to the new tower...

John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

3756. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 16:02:56 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fsr1vh$1u6$1@news.jpl.nasa.gov>
Source record: 26579

Barrett wrote:
> Some one sent me an email and said these will do the job. Ceramic capacitor
> disk 10KV/1000pF. Do you think these would work?

Depends on the dielectric material. There are some 10kV 1000pF caps out there that have a fair amount of loss at RF and a fairly big temperature coefficient, so as they get hot, the tuning will change.

What you want to know is how much current is flowing through the capacitor. Then you can look up the capacitor ratings and figure out if it will explode, melt, or work just fine.

Think about what that trap is doing, too. At frequencies above the resonant frequency, any current will be flowing through the capacitor (because its reactance is smaller, while the inductor's reactance is larger), but, the current might actually be pretty small. Say you have a 10-20 meter antenna with a trap. On 10m, you want the trap to "turn off" the 20 meter extension, so it's roughly at the "end" of the 10m dipole. That's where the current is lowest.

At frequencies below the resonant frequency, the capacitor's reactance is higher, and more of the current flows through the inductor.

3757. Re: Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 16:05:17 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fsr23t$1u6$2@news.jpl.nasa.gov>
Source record: 26580

Cecil Moore wrote:
> Barrett wrote:
>
>> Some one sent me an email and said these will do the job. Ceramic
>> capacitor disk 10KV/1000pF. Do you think these would work?
>
>
> I don't know about those particular ones. Some ceramic
> capacitors are meant to be DC biased for bypass service.
> I once tried to use disc ceramic caps across my ladder-
> line. They caught on fire because they were not rated for
> AC service and lit up the night sky.
>
> Someone told me the ceramic insulator was actually
> trying to physically vibrate at the RF frequency and
> friction heated it up.

That's basically what's going on. It's actually the ferromagnetic domains doing the vibrating in the ceramic (i.e. there's no physical displacement), but it's the losses in that vibration that's responsible for the dissipation.

I don't know if your capacitors
> are rated for AC operation.
>
> A friend of mine used silver mica capacitors for his
> traps and they worked fine.

Silver mica works fairly well at HF (assuming you stay within the ratings).. mica is a low loss dielectric

3758. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 16:11:36 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <IludnfQgVbqwkGzanZ2dnUVZ_qKgnZ2d@comcast.com>
Source record: 26578

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:13v0j5rib6orp36@corp.supernews.com...
> dykesc wrote:
>> The manual on the MFJ 259b warns that strong local broadcast band rf
>> can cause problems with accuracy of the unit. The warning mentions
>> strong AM broadcast signals. A new tall tower near my house is
>> emitting a strong FM broadcast signal. When I hooked up my G5RV to the
>> frequency counter input on my 259b, it immediately locked on at
>> 100.500 MHz. The signal is so strong that I can hear the station at
>> multiple frequencies when I tune across the FM broadcast band on a
>> small FM radio. Could this be interferring with my attempts at getting
>> reliable R-X SWR readings on my G5RV with the 259b?
>
> Absolutely. Ironically, among the many uses for an "antenna analyzer", the
> one they're least suited for is analyzing actual antennas -- at least in a
> lot of urban settings. What I've done is constructed a number of "half
> wave filters" which effectively filter out TV and FM signals without
> affecting the measured impedance appreciably on the band they're designed
> for. You do need one for each band, however.
>
> A "half wave filter" has a unity voltage, current, and impedance
> transformation, and a 180 degree delay, at the design frequency, like a
> half wave transmission line, but provides a lowpass filtering function.
> They're broad enough that you can use one over a whole band without too
> much impedance error. It consists of a shunt C - series L - shunt C -
> series L - shunt C, with the reactance of every element except the middle
> C equal to 50 ohms (to mimic a 50 ohm transmission line). The reactance of
> the middle C is half the value of the others -- you can conveniently use
> two capacitors in parallel, each having the same reactance as the end
> capacitors. I generally use mica or NPO ceramic capacitors, and inductors
> wound on type 6 or type 2 powdered iron cores, for HF. You should test the
> filter by measuring several known impedances with it in series with the
> impedances, and with it removed.
>
> You can make a highpass version, too, by exchanging the Ls and Cs. In your
> case, though, you need lowpass ones.
>
> Roy Lewallen, W7EL

I tried a 2.5 MHz HPF with an MFJ analyzer to measure a 75 m antenna.
Unfortunately there is too much phase shift. Really not usable below about 5
MHz. The MFJ works fine during daytime hours before all the signals come up.

Tam/WB2TT

3759. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 17:03:52 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080331100352.cef62740.rsparks@elltel.net>
Source record: 26581

On Sun, 30 Mar 2008 07:43:59 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 29, 7:18 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > On Sat, 29 Mar 2008 12:45:48 -0700 (PDT)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Mar 27, 2:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > Cecil Moore wrote:
> > > > > Roger Sparks wrote:
> > > > >> You need to take a look at the spreadsheets.
clip
> > > > >http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf
clip

> I am still having difficulty matching these equations with mine. Just
> to make sure we are discussing the same problem....
>
As I tried to understand your problem, I finally realized that it was really my problem. As a result, I redid the spreadsheet. I now label "my formula" as being erroneous, this because it does relate to the current, not the voltage, and must be displaced by 45 degrees.

My formula (labeled erroneous) was the result of the formulas of columns B and C added with trig identities. What I did not realize was that the adding, while correct, rotates the phase. The formula is wrong because it does not recognize the phase shift that had been assumed for line one.

> > > The spreadsheet addresses the following issues:
> >
> > > Does the traveling wave carry power? Yes. The spreadsheet was built
> > > assuming that power is carried by traveling waves. Because the
> > > resulting wave form and powers seem correct, the underlaying assumption
> > > seems correct.
> >
> > It was not obvious which columns were used to draw this correlation.
> >
> Column E and column F display power. Column F recognizes that if 100 watts is applied continueously (on the average) over an entire 360 degree cycle, the final power applied over time would be 360 * 100 = 36000 watt-degrees. Part of the power comes from the reflection, part comes directly. Obviously, interference is very much at work in this example.
>
> Column E is the power dissipated in the resistor, and Column F
> is the integral of Column and represents the total energy which

> has flowed in to the resistor over the cycle. It is also the
> average energy per cycle.
>
> If you were to extend your analysis to compute the energy
> in each degree of the reflected wave and add it to the energy
> in each degree of Vrs.source(t) and sum these, you would
> find that the instantaneous energy from Vrs.source and
> Vrs.reflected does not agree with the instantaneous energy
> dissipated in the source resistor. It is this disagreement
> that is the root of my argument that the power in the
> reflected wave is a dubious concept.
>

I think the energy adds correctly now. Of course it depends upon how we measure the energy because energy is stored in the transmission line at all times, but the stored energy is only measured across either Rs or the transmission line. We do not measure the energy within the transmission line in this example, which is the sum of the applied power for 90 degrees.

> Using averages, the computed powers support the hypothesis,
> but when examined with finer granularity, they do not.

I think each degree has the correct power now. I apologize for the errors, and hope that I have them all removed.

>
> > > However, even if this experiment is consistent with the hypothesis
> > > it only takes one experiment which is not to disprove the hypothesis.
> >
> > True!
> >
> > > > Is power conserved on the transmission line, meaning, can the energy
> > > > contained in power be conserved and located over time on the
> > > > transmission line? Yes, the spreadsheet was built assuming that power
> > > > could be conserved and traced over time so the underlaying assumption
> > > > seems correct.
> >
> > > > Does interference occur in this example? The spreadsheet was built
> > > > assuming that voltage and currents from superpose in a manner consistent
> > > > with constructive and destructive interference, so the underlaying
> > > > assumption seems correct.
> >
> > > > Is power stored in the reactive component for release in later in the
> > > > cycle or during the next half cycle? Yes, power is stored on the
> > > > transmission line during the time it takes for power to enter the line,
> > > > travel to the end and return. The time of wave travel on the
> > > > transmission line is related to the value of the reactive component.
> >
> > > > Does the direction of wave travel affect the measurement of voltage and
> > > > the application of power to a device? Yes. A wave loses energy (and
> > > > therefore voltage) as it travels through a resistance. As a result,
> > > > power from the prime source is ALWAYS applied across the sum of the

> > > > resistance from the resistor AND transmission line.
> >
> > > I am not sure that I would describe this as the wave losing energy,
> > > but rather as the voltage dividing between the two impedances.
> > > If the source resistance was replaced by another transmission,
> > > which could easily be set to provide a 50 ohm impedance, would
> > > you still describe it as the wave losing energy?
> >
> > It should be OK to think of the voltage dividing between two impedances. The important thing is to consider how the reflected voltage sums with the forward voltage where it is measured. Because the two waves are traveling in opposite directions, the measured voltage is not the voltage applied to either Rs or the transmission line. This is why columns B and C must be added to find the total voltage across Rs.
>
> Whether one needs to add or subtract is more a matter of the
> convention
> being used for the signs of the values. When Vf and Vr are derived
> using
> Vtot = Vf + Vr; Itot = If + Ir
> one would expect to have to add the negative of Vr to the contribution
> from Vs to arrive at the total voltage across the source resistor.
>
> > > > The spreadsheet was
> > > > built using this assumption and seems correct. (At times during the
> > > > cycle, the forward and reflected waves oppose, resulting in very little
> > > > current through the resistor. During those times, the power applied to
> > > > the transmission line is much HIGHER because the reflected wave reflects
> > > > from the load and source, and merges/adds to the forward wave from the
> > > > source.)
> >
> > > I am not convinced. When there is very little current through the
> > > resistor,
> > > there is also very little current into the transmission line. This
> > > suggests to me that the power applied to the transmission line is low.
> >
> > I don't follow you here. Right, power into the transmission line is low when the current in is low, and it is high when the current is high. It is clear that peak current and peak voltage do not occur at the same time except when measured across the resistor in column D.
>
> Power into the transmission line is low when either the voltage or
> the current is low; when either is zero, the power is zero.
>
> Since the highest voltage occurs with zero current and the highest
> current occurs with zero voltage, maximum power into the transmission
> line occurs when the voltage and current are both medium; more
> precisely, when they are both at .707 of their maximum values.
>
> > This is just one example, but it seems like the power is accounted for here. We need another example where power can NOT be accounted for.

>
> I suggest it is the same example, but the granularity of the
> analysis needs to be increased.
>
> ...Keith

I hope I have the spread sheet displaying correct values now. Thank you for your careful analysis.

I doubt that this will satisfy your power location concerns because the spread sheet shows more power being delivered to the resistor than is present in the voltage. This is because the impedance of the power equation has changed due to the contribution of the current component. Consider that for columns B and C, the same current flows whether the voltage in B is applied or the voltage in C is applied. This can only happen if the impedance seen by each respective voltage is different. This is interference at work
--
73, Roger, W7WKB

3760. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 18:04:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <d6adnft4palhumzanZ2dnUVZ_gudnZ2d@easystreetonline>
Source record: 26582

Roger Sparks wrote:
> Roy Lewallen wrote:
>> Let me reiterate that the contents of the boxes can certainly be
>> distinguished with tests made at multiple frequencies. But the
>> objective of my comments has been to counter the claim that there's
>> some terminal property such as "electrical degrees" which the various
>> lines (box contents) have which is different at the single frequency
>> at which their reactances are the same. I hear this claim still being
>> made, but so far not any evidence to support it.
>
> I provided the evidence in the thread titled,
> "Please verify (or disprove)". You have yet
> to respond to it. Here's your chance to nail
> me to the wall for good, Roy. Why are you so
> silent on that thread?

The main reason is that a recent change by my ISP apparently resulted in my not seeing a lot of postings. This morning it said there were about 5,000 unread messages, and I've been scanning through the more recent ones. I'll make it a point to find the thread you mention and respond.

It would be very helpful if you could tell me the date you started that thread.

Roy Lewallen, W7EL

3761. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 18:08:12 UTC
From: Joel Koltner <zapwireDASHgroups@yahoo.com>
Message-ID: <iM9Ij.113891$ng7.66960@en-nntp-05.dc1.easynews.com>
Source record: 26583
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

"Homer J" <homerj@home.com> wrote in message
news:f3ea2$47ef7f68$ce94701c$31618@DIALUPUSA.NET...
> All this talk about noise while important to minimum detectable signal more
> greatly influenced by the internal Noise Figure (NF) of the receiver (RX).

My understanding is that this is not the biggest influence at HF -- there's so much atmospheric noise down there that even with a pretty poor receiver (noise figure-wise) the MDS is usually just about the same as with a much better receiver.

> In my line of work, which is Radar engineering, we use a standard
> temperature T = 270 Kelvin to model the noise originating by natural
> extgernal sources of which the Sun is the biggest contributor.

Have you seen the graph in, e.g., Krauss's antenna or EM book? T=270 is a poor model at many frequencies. (Granted, if you're doing narrowband designs, it'll just be some offset error that's probably not too much worse than, say, +/-3dB.)

> However, if you use one of those collaspable whips found on the portable
> shortwave receivers you will. This is because the anyenna impedance is a lot
> less than the usual 50 Ohm impedance of the RX antenna port (e.g. Zant <<
> Zrx_port).
> You can match very short antennas with antenna tuners to make them transfer
> efficently to the RX antenna port but now the nasty parameter of effective
> antenna aperature (square feet or meters) reduces it caoture ability

From watching this thread I get the impression that -- at least on HF again -- the (lack of) capture area is the much bigger problem than the mismatch is.

---Joel

3762. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 18:19:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <Zr6dnYE_plvctmzanZ2dnUVZ_hqdnZ2d@easystreetonline>
Source record: 26584

Apparently Cecil, not Roger Sparks, wrote:

> Roy Lewallen wrote:
>> Let me reiterate that the contents of the boxes can certainly be
>> distinguished with tests made at multiple frequencies. But the
>> objective of my comments has been to counter the claim that there's
>> some terminal property such as "electrical degrees" which the various
>> lines (box contents) have which is different at the single frequency
>> at which their reactances are the same. I hear this claim still being
>> made, but so far not any evidence to support it.
>
> I provided the evidence in the thread titled,
> "Please verify (or disprove)". You have yet
> to respond to it. Here's your chance to nail
> me to the wall for good, Roy. Why are you so
> silent on that thread?

Please disregard my recent response.

There's still something strange about either my newsreader client or my ISP. The quoted message, as you see, indicates that it was posted by Roger Sparks, to whom I thought I was responding. But closer examination shows that it was actually posted by Cecil. Consequently, my answer is different. The reason I haven't responded is that I plonked Cecil quite some time ago so I wouldn't be dragged into his tiresome and unending alternate reality arguments. So unless someone quotes him (or the system malfunctions, as it has here), I don't see his postings at all. And if and when I do, I'm not inclined to respond. Other readers who disagree with my postings on this topic are welcome to question it, and are encouraged to look at the evidence given in all people's postings to decide for themselves what the facts are.

I apologize to Roger Sparks for the misattribution.

Roy Lewallen, W7EL

3763. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 18:22:41 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080331112241.cf6c2bad.rsparks@elltel.net>
Source record: 26585

On Mon, 31 Mar 2008 10:03:52 -0700
Roger Sparks <rsparks@elltel.net> wrote:

> On Sun, 30 Mar 2008 07:43:59 -0700 (PDT)
> Keith Dysart <Keith.Dysart@gmail.com> wrote:
>
> > On Mar 29, 7:18 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Sat, 29 Mar 2008 12:45:48 -0700 (PDT)
> > >
> > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > On Mar 27, 2:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > > Cecil Moore wrote:
> > > > > > Roger Sparks wrote:
> > > > > >> You need to take a look at the spreadsheets.
> clip
> > > > > >http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf
> clip
>

> I doubt that this will satisfy your power location concerns because the spread sheet shows more power being delivered to the resistor than is present in the voltage. This is because the impedance of the power equation has changed due to the contribution of the current component. Consider that for columns B and C, the same current flows whether the voltage in B is applied or the voltage in C is applied. This can only happen if the impedance seen by each respective voltage is different. This is interference at work
> --
> 73, Roger, W7WKB

After posting previosly, I got to thinking that interference here is wrecking the analysis of Column D. The traveling wave analysis is correct (Column H). Only one current is flowing through Rs, and the current is not enough to supply the power suggested in column D. While it is logical to add the voltages from Column B and Column C, the two voltages are often in opposition so they are not "seen" by Rs. As a result, we must have a reflection from Rs that I am not taking into account.
--
73, Roger, W7WKB

3764. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 18:26:39 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080331112639.3b21d941.rsparks@elltel.net>
Source record: 26586

On Mon, 31 Mar 2008 11:19:42 -0700
Roy Lewallen <w7el@eznec.com> wrote:

> Apparently Cecil, not Roger Sparks, wrote:
>
> > Roy Lewallen wrote:
> >> Let me reiterate that the contents of the boxes can certainly be
> >> distinguished with tests made at multiple frequencies. But the
> >> objective of my comments has been to counter the claim that there's
> >> some terminal property such as "electrical degrees" which the various
> >> lines (box contents) have which is different at the single frequency
> >> at which their reactances are the same. I hear this claim still being
> >> made, but so far not any evidence to support it.
> >
> > I provided the evidence in the thread titled,
> > "Please verify (or disprove)". You have yet
> > to respond to it. Here's your chance to nail
> > me to the wall for good, Roy. Why are you so
> > silent on that thread?
>
> Please disregard my recent response.
>
> There's still something strange about either my newsreader client or my
> ISP. The quoted message, as you see, indicates that it was posted by
> Roger Sparks, to whom I thought I was responding. But closer examination
> shows that it was actually posted by Cecil. Consequently, my answer is
> different. The reason I haven't responded is that I plonked Cecil quite
> some time ago so I wouldn't be dragged into his tiresome and unending
> alternate reality arguments. So unless someone quotes him (or the system
> malfunctions, as it has here), I don't see his postings at all. And if
> and when I do, I'm not inclined to respond. Other readers who disagree
> with my postings on this topic are welcome to question it, and are
> encouraged to look at the evidence given in all people's postings to
> decide for themselves what the facts are.
>
> I apologize to Roger Sparks for the misattribution.
>
> Roy Lewallen, W7EL

Hi Roy,

Accepted. Your first post had me wondering what had happened.

--
73, Roger, W7WKB

3765. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 18:32:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <r9OdncTH8NzIs2zanZ2dnUVZ_v-hnZ2d@easystreetonline>
Source record: 26587

Tam wrote:
>
> I tried a 2.5 MHz HPF with an MFJ analyzer to measure a 75 m antenna.
> Unfortunately there is too much phase shift. Really not usable below
> about 5 MHz. The MFJ works fine during daytime hours before all the
> signals come up.

The "half wave" filter I described makes no impedance disturbance only at the frequency at which all the components have the same reactance. The cutoff frequency, as I recall, is close to that frequency. So you'd have to make a filter with a cutoff close to 3.8 MHz, not 2.5 MHz, in order to measure a 75 m antenna if you're using this kind of filter. There are, of course, many other types of filters, but just about any will affect the impedance measurement except perhaps over a fairly narrow range of frequencies.

Roy Lewallen, W7EL

3766. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 20:08:08 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <b5794f4f-342a-472c-910c-410128d41899@m71g2000hse.googlegroups.com>
Source record: 26588

On Mar 31, 11:32 am, Roy Lewallen <w...@eznec.com> wrote:
> Tam wrote:
>
> > I tried a 2.5 MHz HPF with an MFJ analyzer to measure a 75 m antenna.
> > Unfortunately there is too much phase shift. Really not usable below
> > about 5 MHz. The MFJ works fine during daytime hours before all the
> > signals come up.
>
> The "half wave" filter I described makes no impedance disturbance only
> at the frequency at which all the components have the same reactance.
> The cutoff frequency, as I recall, is close to that frequency. So you'd
> have to make a filter with a cutoff close to 3.8 MHz, not 2.5 MHz, in
> order to measure a 75 m antenna if you're using this kind of filter.
> There are, of course, many other types of filters, but just about any
> will affect the impedance measurement except perhaps over a fairly
> narrow range of frequencies.
>
> Roy Lewallen, W7EL

Since there is just one frequency that's causing trouble (apparently),
and since I gather that it's removed in frequency a pretty good
percentage from the frequencies of interest, it may be possible to
block it with a fairly sharp notch filter. As Roy notes, the 100.5MHz
FM signal may not be the only one causing trouble, but assuming it is,
try this: shunt across the input to the analyzer, place a series LC.
The L: 9 turns #12AWG bare copper, 0.75" ID, 1.5" long (about 750nH,
SRF about 150MHz). The C: a high quality 1-5pF trimmer capacitor.
I'd recommend a good piston trimmer, but they tend to be expensive
unless you happen to have some or can get some surplus. Depending on
the exact coil characteristics, the cap will adjust to a 100MHz
resonance at about 2pF. By keeping a high L:C ratio, the notch will
be sharp--not as deep as it could be with lower L:C, but it should be
deep enough if you use good construction practice. The suggested
values should give you at least 25dB attenuation at the notch
frequency, and should look practically like the capacitor value (about
2pF) at HF.

Cheers,
Tom

3767. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 20:08:59 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <856f3599-12c5-47e5-8b95-5c8461a22ccd@c19g2000prf.googlegroups.com>
Source record: 26589

On Mar 31, 2:22 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Mon, 31 Mar 2008 10:03:52 -0700
>
> Roger Sparks <rspa...@elltel.net> wrote:
> > On Sun, 30 Mar 2008 07:43:59 -0700 (PDT)
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> > > On Mar 29, 7:18 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > > On Sat, 29 Mar 2008 12:45:48 -0700 (PDT)
>
> > > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > > On Mar 27, 2:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > > > Cecil Moore wrote:
> > > > > > > Roger Sparks wrote:
> > > > > > >> You need to take a look at the spreadsheets.
> > clip
> > > > > > >http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf
> > clip
>
> > I doubt that this will satisfy your power location concerns because the spread sheet shows more power being delivered to the resistor than is present in the voltage. This is because the impedance of the power equation has changed due to the contribution of the current component. Consider that for columns B and C, the same current flows whether the voltage in B is applied or the voltage in C is applied. This can only happen if the impedance seen by each respective voltage is different. This is interference at work
> > --
> > 73, Roger, W7WKB
>
> After posting previosly, I got to thinking that interference here is wrecking the analysis of Column D. The traveling wave analysis is correct (Column H). Only one current is flowing through Rs, and the current is not enough to supply the power suggested in column D. While it is logical to add the voltages from Column B and Column C, the two voltages are often in opposition so they are not "seen" by Rs. As a result, we must have a reflection from Rs that I am not taking into account.

Column B is correct; this being the voltage produced by the source
divided by two.
It is also the forward voltage on the line.
Vrs.source(t) = Vf(t) = 70.7 sin(wt)

Column C is the reflected voltage (not the reflected voltage impressed
across the
source resistor). The reflection coefficient is -1, and the delay is
90 degrees
so the reflected voltage at the generator is

Vr(t) = -1 * Vf(t - 90 degrees)
= - 70.7 sin(wt-90)
= 70.7 sin(wt+90)

But Vr is impressed across the resistor in the opposite direction to
that of
Vrs.source, so the equation for total Vrs is
Vrs.total(t) = Vrs.source(t) - Vr(t)
thus column D should be B31-C31.

Alternatively,
Vrs.reflect(t) = -Vr(t)
and then
Vrs.total(t) = Vrs.source(t) + Vrs.reflect(t)

Column E is correctly computing the instantaneous power from Column D
since
P(t) = V(t) * I(t)
= V(t) * V(t) / R
= V(t) * V(t) / 50 (in this example)
but has the wrong data because of the error in Column D.

Column F is integrating the power to yield either the energy in a
cycle or
the average power per cycle (though presented in unusual units).

I agree G is erroneous and I am not sure what H is computing.

...Keith

3768. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 21:11:00 UTC
From: rmoisescu@gmail.com
Message-ID: <52d2d90a-8473-4125-ac75-96e31822784d@s19g2000prg.googlegroups.com>
Source record: 26590

I find this topic very interesting, including the mandrill part :)

We all want to have small, broadband, eficient antennas. I believe Art is right in his original post, today we can have all these characteristics in the same package. There is no law of physics forbidding that. Through advances in computation power we can achieve today in months what took decades in the past and there is much research directed at these kinds of new antennas. Eventually everyone will be able to choose and model his own antenna based on the characteristics one wants, but without the cumbersome dimensions, without significant bandwith limitations, without major efficiency compromises. I believe the tradeoff (for it has to exist one) will be ease of manufacturing.

Incidentally these new antennas have a lot to do with what Art defines as equilibrium although I don't think he has a clear enough definition. But it's all related to patterns, patterns which can be found everywhere in nature an which can be expressed almost entirely through matemathical formulas. Scaling of antennas is clearly possible, despite of what the Chu-Harrington limit states (or to be fair, by applying them in a new way).
I eagerly await the day when the 80 meter dipole will be replace by a small device the size of a shoe box (although it might be a bit larger in the beginning :)).

Regards,
Robert

3769. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 21:44:52 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fsrm0n$cd6$1@aioe.org>
Source record: 26591

"Tam" wrote:
> The MFJ works fine during daytime hours before all the signals come up.

Unless (as in the OP) the source of the interfering signal is a
line-of-sight VHF/UHF broadcast station -- the nearby fields of which can be
very high, and little affected by the time of day.

RF

3770. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 22:47:00 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <K6udndjZxvJE9GzanZ2dnUVZ8sOonZ2d@bt.com>
Source record: 26593

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:p3q2v3huuqqsj0jil1t77tnmi5lhmq5svl@4ax.com...
> On Mon, 31 Mar 2008 14:11:00 -0700 (PDT), rmoisescu@gmail.com wrote:
>
>>Eventually
>>everyone will be able to choose and model his own antenna based on the
>>characteristics one wants, but without the cumbersome dimensions,
>>without significant bandwith limitations, without major efficiency
>>compromises.
>
> Hi Robert,
>
> 50 years ago they said Electricity would be so easy to produce they
> would pay us to use it. They ignored Hiroshima and discovered
> Chernobyl.
>
> 40 years ago they said DNA and genetics would allow us to design our
> own babies. They ignored Thalidomide and discovered Dolly the sheep
> that died before her time.
>
> 30 years ago they invented modeling software that would allow us to
> create the Gaussian dipole (or whatever) and discovered every dipole
> that came before it performed better.
>
> Nearly 20 years ago Johnny Carson retired and we are still getting
> jokes.
>
> Not nearly 10 years ago with the Dow at 11658 and a budget surplus at
> 230 billion, the Republicans promised prosperity was around the corner
> and their voters are now living in cardboard boxes with the Dow at
> 12176 and the national debt up 50%.
>
>>Scaling of antennas is clearly
>>possible, despite of what the Chu-Harrington limit states (or to be
>>fair, by applying them in a new way).
>
> But you don't know how, and have never seen one either.
>
> 73's
> Richard Clark, KB7QHC

Hi Richard,

I have a pair of computer speakers sitting on my desk that completely out
perform the so called ultimate hi-fi floor mounted tower system speakers I

bought 35 years ago for the equivalent of several thousand dollars in today's money. The old speakers still work just fine but the audio experts have learned how to squeeze that performance out of a speaker that old audio theory predicted couldn't possibly work. Just how does a 3 inch speaker in a cabinet the size of a couple of books manage to produce notes from 20 Hz - 20 kHz? To be fair, the small speakers can't fill a room with sound in the same smooth way that a larger speaker cabinet can, but for everyday use in a small modern house or apartment they are more than adequate for the majority of people.

It seems to me that Art and others are pursuing a similar path at RF. The aim being to produce an antenna that punches out a signal from a physically small area. It may not perform quite as well as a full size half or full wavelength antenna, but it will work well enough for most people with small gardens or limited real estate for an antenna farm.

Clearly there are considerable differences in dealing with sound waves and RF but I believe that a principle has been established that it is possible to 'simulate' the performance of a larger system using physically small components. Art may not be the first to get there, but he seems to be having a damn good try and someone, somewhere will eventually succeed.

Mike G0ULI

3771. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 23:00:31 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <p3q2v3huuqqsj0jil1t77tnmi5lhmq5svl@4ax.com>
Source record: 26592

On Mon, 31 Mar 2008 14:11:00 -0700 (PDT), rmoisescu@gmail.com wrote:

>Eventually
>everyone will be able to choose and model his own antenna based on the
>characteristics one wants, but without the cumbersome dimensions,
>without significant bandwith limitations, without major efficiency
>compromises.

Hi Robert,

50 years ago they said Electricity would be so easy to produce they would pay us to use it. They ignored Hiroshima and discovered Chernobyl.

40 years ago they said DNA and genetics would allow us to design our own babies. They ignored Thalidomide and discovered Dolly the sheep that died before her time.

30 years ago they invented modeling software that would allow us to create the Gaussian dipole (or whatever) and discovered every dipole that came before it performed better.

Nearly 20 years ago Johnny Carson retired and we are still getting jokes.

Not nearly 10 years ago with the Dow at 11658 and a budget surplus at 230 billion, the Republicans promised prosperity was around the corner and their voters are now living in cardboard boxes with the Dow at 12176 and the national debt up 50%.

>Scaling of antennas is clearly
>possible, despite of what the Chu-Harrington limit states (or to be
>fair, by applying them in a new way).

But you don't know how, and have never seen one either.

73's
Richard Clark, KB7QHC

3772. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 23:38:43 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <606fcb45-bf66-403f-b9f8-cfb9345b111c@a70g2000hsh.googlegroups.com>
Source record: 26594

On Mar 31, 5:47 pm, "Mike Kaliski" <michael.kali...@tesco.net> wrote:
> "Richard Clark" <kb7...@comcast.net> wrote in message
>
> news:p3q2v3huuqqsj0jil1t77tnmi5lhmq5svl@4ax.com...
>
>
>
> > On Mon, 31 Mar 2008 14:11:00 -0700 (PDT), rmoise...@gmail.com wrote:
>
> >>Eventually
> >>everyone will be able to choose and model his own antenna based on the
> >>characteristics one wants, but without the cumbersome dimensions,
> >>without significant bandwith limitations, without major efficiency
> >>compromises.
>
> > Hi Robert,
>
> > 50 years ago they said Electricity would be so easy to produce they
> > would pay us to use it. They ignored Hiroshima and discovered
> > Chernobyl.
>
> > 40 years ago they said DNA and genetics would allow us to design our
> > own babies. They ignored Thalidomide and discovered Dolly the sheep
> > that died before her time.
>
> > 30 years ago they invented modeling software that would allow us to
> > create the Gaussian dipole (or whatever) and discovered every dipole
> > that came before it performed better.
>
> > Nearly 20 years ago Johnny Carson retired and we are still getting
> > jokes.
>
> > Not nearly 10 years ago with the Dow at 11658 and a budget surplus at
> > 230 billion, the Republicans promised prosperity was around the corner
> > and their voters are now living in cardboard boxes with the Dow at
> > 12176 and the national debt up 50%.
>
> >>Scaling of antennas is clearly
> >>possible, despite of what the Chu-Harrington limit states (or to be
> >>fair, by applying them in a new way).
>
> > But you don't know how, and have never seen one either.
>
> > 73's

> > Richard Clark, KB7QHC
>
> Hi Richard,
>
> I have a pair of computer speakers sitting on my desk that completely out
> perform the so called ultimate hi-fi floor mounted tower system speakers I
> bought 35 years ago for the equivalent of several thousand dollars in
> today's money. The old speakers still work just fine but the audio experts
> have learned how to squeeze that performance out of a speaker that old audio
> theory predicted couldn't possibly work. Just how does a 3 inch speaker in a
> cabinet the size of a couple of books manage to produce notes from 20 Hz -
> 20 kHz? To be fair, the small speakers can't fill a room with sound in the
> same smooth way that a larger speaker cabinet can, but for everyday use in a
> small modern house or apartment they are more than adequate for the majority
> of people.
>
> It seems to me that Art and others are pursuing a similar path at RF. The
> aim being to produce an antenna that punches out a signal from a physically
> small area. It may not perform quite as well as a full size half or full
> wavelength antenna, but it will work well enough for most people with small
> gardens or limited real estate for an antenna farm.
>
> Clearly there are considerable differences in dealing with sound waves and
> RF but I believe that a principle has been established that it is possible
> to 'simulate' the performance of a larger system using physically small
> components. Art may not be the first to get there, but he seems to be having
> a damn good try and someone, somewhere will eventually succeed.
>
> Mike G0ULI

Mike,
I am already there. Regardless of the confidence I have in my own
findings
I have cinsented for a stanger in another state to test it in a way he
feels comfortable with.
I might also remind you that the antennas are Small full wave antennas
which vastly different
to electrically small antennas that is often written about by many
including Chu!
As far as equilibrium goes it is adviseable to go back a few hundred
years when
scientists observed a static bubble and wove a mathematical response
to their puzzle.
Most people on this thread do not have a thorough understanding of the
masters laws
which are derived around the term equilibrium. Many were agast at the
idea of adding a time variable
to Gaussian law since the correllation between a closed boundary and
equilibrium
was to complicated for them to understand. Then there were those who

disliked the idea of static particles
being electrons and wanted me to state it was a part of an electron
that passed in a straight line thru the atmosphere.
These people will go into a state of shock if I called partices by the
name of neutrinos no less.
All because of the stance they have taken that all is known about
radiation. It was the small step
that I took that scientists have been looking for for years when they
began
to lose faith in classical physics snd the laws of Newton and turned
to address numourous new sciences
for answers.Now they may retreat and bind themselves more firmly to
the classical science and the pursuit of a universal law
which Einstein seached so hard for.
As far as 'all is known' older people hate change with a vengence and
will fight to the death against it with
the short time they have left on this earth . Fortunately the younger
generation always comes along with an
inquisitiveness that cannot be suppressed and are willing to rebuild
where past structures disappear below the sands.
Small FULL WAVE radiators are here now where a single element can
supply the same gain as a planar array.
Single elements that can be made with two degrees of freedom that can
also be stacked to add an extra
degree of freedom for the smallest WiFi device. I now await the
standard comments that comes along after each of my patents,
I new that already! It is really not all that special! It was me who
gave you the idea in the first place.
Anybody can get a patent ! That was already known and invented before.
It is not my fault that people didn't make it earlier!
What use is it?> We already have good antennas!
Yup. Small full wave antennas are now here that can cover all
frequencies, not just all bands!
Moxon was just a tad to late to see the new antennas for small gardens
in the U.K.
Best regards
Art Unwin KB9MZ....xg (uk)

3773. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-03-31 23:59:05 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <005f444d-3658-4308-8e5a-8c25c8fe141b@c65g2000hsa.googlegroups.com>
Source record: 26596

On Mar 26, 11:04 am, richardharri...@webtv.net (Richard Harrison)
wrote:
> Cecil Moore wrote:
>
> "But the Method Of Moments used by NEC for antenna radiation patterns
> calculates the interference at a point in space based on radiation from
> different elementary dipole sections of the antenna."
>
> Completely logical and it works. Interference or vector sum?
>
> Terman illustrates radiation from an elementary doublet (dipole) , and
> it is mostly at right angles to the antenna axis, on page 865 of his
> 1955 opus. On page 866 he shows an actual antenna consisting of numerous
> elementary doublets and on page 867 he says:
> "The result is that the fields radiated from different elementary
> sections of a long wire add vectorially to give a sum that depends on
> direction."
>
> Kraus devotes Chapter 14 in the 3rd edition of "Antennas" to: "The
> Cylindrical Antenna and the Moment Method (MM)."
>
> Best regards, Richard Harrison, KB5WZI

Richard,
Surely you are aware of the two vectors which represent the electrical
field and the magnetic field
If the current carrying member is a diamagnetic material both of thes
vectors will be in the same direction.
But the diamagnetic material is just a myth of mine right ? So I will
go along with you and say the vectors are at right angles to each
other
just like all your books say. But later in your books they then refer
to the vector "curl. This vector must be added to the two vectors at
right angles to each other so a resultant vector can be found. Now you
and the books state that radiation is at right angle to the axis of
current flow.
So the question becomes'Where must the 'curl' vector be placed in
general terms to justify the right angle radiation statment that all
your books
apparently parrot? Simple question isn't it? Did all your learning get
discarded because of books because you are unwilling to challenge
them?
Terman was not made a saint, nor was Kraus or Feldman or even
Einstein. None of these would state that they never have made a

mistake.
Stop imitating Andy Capp and draw on your own thoughts for once
Art

3774. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 00:01:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <dXelj.8968$Rq1.310@nlpi068.nbdc.sbc.com>
Source record: 26597

Roy Lewallen wrote:
> There's still something strange about either my newsreader client or my
> ISP. The quoted message, as you see, indicates that it was posted by
> Roger Sparks, to whom I thought I was responding. But closer examination
> shows that it was actually posted by Cecil. Consequently, my answer is
> different.

Roy, maybe it would help if you explained how the laws
of physics change depending upon the individual to whom
you are responding.
--
73, Cecil http://www.w5dxp.com

3775. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 00:11:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <g5flj.8970$Rq1.755@nlpi068.nbdc.sbc.com>
Source record: 26598

Roger Sparks wrote:
> While it is logical to add the voltages from Column B and Column C,
> the two voltages are often in opposition so they are not "seen" by Rs.
> As a result, we must have a reflection from Rs that I am not taking
> into account.

It's not a "reflection" of a single wave, Roger, it is
a "redistribution" of energy caused by superposition
of two waves accompanied by interference. Eugene Hecht
explains it all in Chapter 9: Interference in "Optics".

For anyone who thinks he is already omniscient
about EM waves, I would highly recommend reading
Hecht's chapter on interference.
--
73, Cecil http://www.w5dxp.com

3776. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 00:17:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <baflj.8971$Rq1.1107@nlpi068.nbdc.sbc.com>
Source record: 26599

Richard Clark wrote:
> But you don't know how, and have never seen one either.

Dear Richard - some people contribute to human knowledge
through their optimism regarding things to come that are
presently out of reach. Some people would prefer that we
live forever in the dark ages. Which one are you?
--
73, Cecil http://www.w5dxp.com

3777. Re: Re:Homebrew traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 00:20:01 UTC
From: Bob <bobasior@hotmail.com>
Message-ID: <1f0a4$47f17eac$cef8bfdf$13532@TEKSAVVY.COM-Free>
Source record: 26600

http://cgi.ebay.com/68pF-6kV-Doorknob-CAPACITOR-K15U1-HAM-RADIO-PA-Lot-of-9_W0QQitemZ350041309291QQihZ022QQcategoryZ1502QQssPageNameZWDVWQQrdZ1QQcmdZViewItem

Good one., from eastern front....

Best regards. Bob

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:hjMHj.121278$nw4.70272@fe1.news.blueyonder.co.uk...
> Thanks all for your time and help. Now I have enough information about the
> traps I can now look and read up and give it ago.
>
> 73 to all
>
>
> "Owen Duffy" <none@no.where> wrote in message
> news:Xns9A7149D0C1311nonenowhere@61.9.191.5...
>> "Barrett" <barrett@blueyounder.co.uk> wrote in
>> news:tkpHj.119431$nw4.2090@fe1.news.blueyonder.co.uk:
>>
>>> One last question. Is the diameter of the traps at different
>>> frequencies that important and why?
>>>
>>> They tend to be larger towards top band.
>>
>> You really need to read a text that systematically develops an
>> understanding of the operation of a trapped antenna. It helps to
>> understand
>> the operation of an untrapped antenna.
>>
>> Unfortunately, lots of articles in ham mags aren't very reliable, so you
>> will need to read many articles and try to understand the underlying
>> principles to filter out the misconceptions that find their way to
>> publication.
>>
>> By all means, ask questions about things you don't understand... but your
>> questions seem more like guessing your way to a solution and plugging the
>> gaps as they become apparent to you.
>>
>> Owen
>
>

3778. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 00:45:08 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080331174508.a0a1158a.rsparks@elltel.net>
Source record: 26501

On Mon, 31 Mar 2008 19:11:56 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > While it is logical to add the voltages from Column B and Column C,
> > the two voltages are often in opposition so they are not "seen" by Rs.
> > As a result, we must have a reflection from Rs that I am not taking
> > into account.
>
> It's not a "reflection" of a single wave, Roger, it is
> a "redistribution" of energy caused by superposition
> of two waves accompanied by interference. Eugene Hecht
> explains it all in Chapter 9: Interference in "Optics".
>
> For anyone who thinks he is already omniscient
> about EM waves, I would highly recommend reading
> Hecht's chapter on interference.
> --
> 73, Cecil http://www.w5dxp.com

I had to chuckle when I read this Cecil. First I looked up the word "omniscient" to refresh my memory about meaning, but then I thought "anyone who thinks he is omniscient is not about to read the works of others and learn new tricks". Just human nature.

You can see from my postings that I am still trying to better understand the wave and reflections, still looking how to describe the energy distribution within the cycle. The storage of the redistributed energy must be close to the wires of the circuit so we should be able to describe it mathmatically, if I just knew how. We are probably close on the spreadsheet, but it is not yet crystal clear in my mind.

--
73, Roger, W7WKB

3779. Re: Strong Local FM Broadcast / MFJ 259b

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 00:48:25 UTC
From: dykesc <cupstidd@bellsouth.net>
Message-ID: <18e5091d-2562-47b6-923b-05288a5b60eb@a70g2000hsh.googlegroups.com>
Source record: 26502

Many thanks to all for the recommendations. I got reasonable results today by measuring antenna impedance and SWR through my MFJ 993b tuner with the tuner in "bypass" mode. Apparently the tuner, even in bypass mode, is affording some isolation from the offending FM rf. At 14.2 MHz EZNEC predicted an input impedance on my 50 ohm line of 38.78 - j49.01 at an SWR of 2.97. My actual measurement with the 259b looking into the bypassed 993b tuner was 17 -j28 at an SWR of 2.9. Similar "ballpark" agreement was attained on 40 and 80 meters. I'm certain building a filter of some sort, as you all have suggested, will yield better results. Wish I had a way to measure the strength of that FM signal. My oscope is only good to 50MHz.

3780. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 00:52:43 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fss10rpff1@news.jpl.nasa.gov>
Source record: 26503

rmoisescu@gmail.com wrote:
> I find this topic very interesting, including the mandrill part :)
>
> We all want to have small, broadband, eficient antennas. I believe Art
> is right in his original post, today we can have all these
> characteristics in the same package. There is no law of physics
> forbidding that.

Uhhh. actually there ARE laws of physics putting some pretty severe constraints on it, if not actually forbidding it, if you also accept the constraint that the material of which you make the antenna has finite resistance.

Through advances in computation power we can achieve
> today in months what took decades in the past and there is much
> research directed at these kinds of new antennas. Eventually
> everyone will be able to choose and model his own antenna based on the
> characteristics one wants, but without the cumbersome dimensions,
> without significant bandwith limitations, without major efficiency
> compromises. I believe the tradeoff (for it has to exist one) will be
> ease of manufacturing.

Where ease might be defined in terms of being able to be made of actually realizable materials?

>
> Incidentally these new antennas have a lot to do with what Art
> defines as equilibrium although I don't think he has a clear enough
> definition. But it's all related to patterns, patterns which can be
> found everywhere in nature an which can be expressed almost entirely
> through matemathical formulas. Scaling of antennas is clearly
> possible, despite of what the Chu-Harrington limit states (or to be
> fair, by applying them in a new way).

Chu and, later, Harrington said nothing about bandwidth, by the way. They were more concerned with directivity and size and stored energy (the latter of which ties to efficiency and bandwidth).

Also, even if you created a very small antenna with high efficiency (e.g. with superconductors), the fields around such an antenna will be quite intense, so while the antenna may be small, its near field will be pretty much the same size as the dipole it replaces, so you'll need to put that tiny antenna way up in the air with a non-conductive, non-lossy support to get it away from everything else. Finding a feedline might be a bit of a challenge. One has to be careful when one draws "the boundary" of the antenna.

In practical terms, the size of an antenna isn't just the dimensions of the metal, but the "keepout" area within which you can't tolerate any intrusions and still keep the same antenna performance (i.e. a 40m dipole laying on the ground doesn't work nearly as well as a dipole suspended 10 feet off the ground)

For that matter, avoiding the breakdown of air might be a problem. Consider a tesla coil, which is basically a fairly inefficient (in terms of radiated power for RF input power) small antenna for 100 kHz or so. The limit on performance for the tesla coil isn't thermal heating of the coil, but HV breakdown. Even a few hundred watts into a "shoebox" sized coil will have breakdown problems (and this is fully predicted by Chu's analysis... it's that "energy stored in the field" problem)

> I eagerly await the day when the 80 meter dipole will be replace by a
> small device the size of a shoe box (although it might be a bit
> larger in the beginning :)).
>
> Regards,
> Robert

3781. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 00:56:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <to03v398qd5887v6o6so8otn94llrnohgq@4ax.com>
Source record: 26595

On Mon, 31 Mar 2008 23:47:00 +0100, "Mike Kaliski"
<michael.kaliski@tesco.net> wrote:

>Hi Richard,
>
>I have a pair of computer speakers sitting on my desk that completely out
>perform the so called ultimate hi-fi floor mounted tower system speakers I
>bought 35 years ago for the equivalent of several thousand dollars in
>today's money.

Hi Mike,

I have a set of 30 year old Pioneers that still kick ass. The Pioneer
amp feeding any other set drives them into distortion where the
Pioneer speakers still have more range to go.

Never needed to push the amp above 4 to be heard outside.

OK, so much for the merits of qualitative reports, otherwise known as
testimonials. Proves nothing.

>The old speakers still work just fine but the audio experts
>have learned how to squeeze that performance out of a speaker that old audio
>theory predicted couldn't possibly work.

Magnetics got better, and theory stayed the same. Performance
followed the theory's prediction of new magnetics is all. This isn't
a mystery is it?

Care to name your speakers' model and manufacturer, or did you form
the cone and wind the voice coils around a selected magnet by hand?

73's
Richard Clark, KB7QHC

3782. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 01:04:22 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fss1mm$g8$1@news.jpl.nasa.gov>
Source record: 26512

Mike Kaliski wrote:

> Hi Richard,
>
> I have a pair of computer speakers sitting on my desk that completely
> out perform the so called ultimate hi-fi floor mounted tower system
> speakers I bought 35 years ago for the equivalent of several thousand
> dollars in today's money. The old speakers still work just fine but the
> audio experts have learned how to squeeze that performance out of a
> speaker that old audio theory predicted couldn't possibly work. Just how
> does a 3 inch speaker in a cabinet the size of a couple of books manage
> to produce notes from 20 Hz - 20 kHz? To be fair, the small speakers
> can't fill a room with sound in the same smooth way that a larger
> speaker cabinet can, but for everyday use in a small modern house or
> apartment they are more than adequate for the majority of people.
>
> It seems to me that Art and others are pursuing a similar path at RF.
> The aim being to produce an antenna that punches out a signal from a
> physically small area. It may not perform quite as well as a full size
> half or full wavelength antenna, but it will work well enough for most
> people with small gardens or limited real estate for an antenna farm.

Nope.. there's a significant difference between the speakers and the antenna, and that's the fact that the amateur user of the antenna is power limited (by regulation). In the speaker case, they trade off efficiency (acoustic watts out for electrical watts out) because electrical watts are cheap these days (not so back in McIntosh tube amp days...) You can tolerate a 1% efficient design that puts out 100mW of acoustic power with 10W electrical power in. (note that 120dB SPL = 1 Watt.. a symphony orchestra, at full tilt, is about a watt of acoustic power, and I daresay you couldn't tolerate a whole orchestra in your office)

OTOH, a 1% efficient antenna design is pretty crummy. A dipole is probably on the order of 70% efficient (RF power radiated into the far field vs RF power at the feedline). A mobile antenna (which everyone will agree is not particularly efficient, even if you argue about the actual magnitude) might be 5-10% efficient (10dB down).

As a practical matter, you can get away with a 1% efficient antenna, particularly if you're not looking for "link reliability"... The propagation loss between you and some arbitrary point could easily vary by 100 dB, so you just wait until propagation is "good enough" to work the guy with the 0.1W you radiate. Of such are "worked 300 countries on two bedsprings" sorts of stories made. Folks work around the world on less than a watt radiated, just not "on demand".. they keep trying until

conditions are just right and they "get lucky".

So, on that basis, you could probably fire up your 1500W amplifier into
a compact loop antenna that's a meter in diameter, and work the world,
eventually.

>
> Clearly there are considerable differences in dealing with sound waves
> and RF but I believe that a principle has been established that it is
> possible to 'simulate' the performance of a larger system using
> physically small components. Art may not be the first to get there, but
> he seems to be having a damn good try and someone, somewhere will
> eventually succeed.
>
> Mike G0ULI

3783. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 01:05:16 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080331180516.8e143f89.rsparks@elltel.net>
Source record: 26504

On Mon, 31 Mar 2008 13:08:59 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Mar 31, 2:22 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > On Mon, 31 Mar 2008 10:03:52 -0700
> >
> > Roger Sparks <rspa...@elltel.net> wrote:
> > > On Sun, 30 Mar 2008 07:43:59 -0700 (PDT)
> > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > >
> > > > > On Mar 29, 7:18 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > > > > On Sat, 29 Mar 2008 12:45:48 -0700 (PDT)
> > > >
> > > > > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > > > > On Mar 27, 2:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > > > > > Cecil Moore wrote:
> > > > > > > > > Roger Sparks wrote:
> > > > > > > > >> You need to take a look at the spreadsheets.
> > > > > clip
> > > > > > > > > >http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf
> > > > > clip
> > > >
> > > > > I doubt that this will satisfy your power location concerns because the spread sheet shows more power being delivered to the resistor than is present in the voltage. This is because the impedance of the power equation has changed due to the contribution of the current component. Consider that for columns B and C, the same current flows whether the voltage in B is applied or the voltage in C is applied. This can only happen if the impedance seen by each respective voltage is different. This is interference at work
> > > > --
> > > > 73, Roger, W7WKB
> > >
> > After posting previosly, I got to thinking that interference here is wrecking the analysis of Column D. The traveling wave analysis is correct (Column H). Only one current is flowing through Rs, and the current is not enough to supply the power suggested in column D. While it is logical to add the voltages from Column B and Column C, the two voltages are often in opposition so they are not "seen" by Rs. As a result, we must have a reflection from Rs that I am not taking into account.
>
> Column B is correct; this being the voltage produced by the source
> divided by two.
> It is also the forward voltage on the line.
> Vrs.source(t) = Vf(t) = 70.7 sin(wt)
>
> Column C is the reflected voltage (not the reflected voltage impressed

> across the
> source resistor). The reflection coefficient is -1, and the delay is
> 90 degrees
> so the reflected voltage at the generator is
> Vr(t) = -1 * Vf(t - 90 degrees)
> = - 70.7 sin(wt-90)
> = 70.7 sin(wt+90)
>
> But Vr is impressed across the resistor in the opposite direction to
> that of
> Vrs.source, so the equation for total Vrs is
> Vrs.total(t) = Vrs.source(t) - Vr(t)
> thus column D should be B31-C31.
>
> Alternatively,
> Vrs.reflect(t) = -Vr(t)
> and then
> Vrs.total(t) = Vrs.source(t) + Vrs.reflect(t)
>
> Column E is correctly computing the instantaneous power from Column D
> since
> P(t) = V(t) * I(t)
> = V(t) * V(t) / R
> = V(t) * V(t) / 50 (in this example)
> but has the wrong data because of the error in Column D.
>
> Column F is integrating the power to yield either the energy in a
> cycle or
> the average power per cycle (though presented in unusual units).
>
> I agree G is erroneous and I am not sure what H is computing.
>
> ...Keith
>
I made the change in Column D and the trend is more believable in Column E. I think the math here is noncommutative in the sense that time must rotate forward. I think this change does that even though the average power results stay the same.
--
73, Roger, W7WKB

3784. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 01:11:13 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <d3c3d0c1-609c-41d5-9955-f356c05586ae@a70g2000hsh.googlegroups.com>
Source record: 26505

On Mar 31, 7:52 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> rmoise...@gmail.com wrote:
> > I find this topic very interesting, including the mandrill part :)
>
> > We all want to have small, broadband, eficient antennas. I believe Art
> > is right in his original post, today we can have all these
> > characteristics in the same package. There is no law of physics
> > forbidding that.
>
> Uhhh. actually there ARE laws of physics putting some pretty severe
> constraints on it, if not actually forbidding it, if you also accept the
> constraint that the material of which you make the antenna has finite
> resistance.
>
> Through advances in computation power we can achieve
>
> > today in months what took decades in the past and there is much
> > research directed at these kinds of new antennas. Eventually
> > everyone will be able to choose and model his own antenna based on the
> > characteristics one wants, but without the cumbersome dimensions,
> > without significant bandwith limitations, without major efficiency
> > compromises. I believe the tradeoff (for it has to exist one) will be
> > ease of manufacturing.
>
> Where ease might be defined in terms of being able to be made of
> actually realizable materials?
>
>
>
> > Incidentally these new antennas have a lot to do with what Art
> > defines as equilibrium although I don't think he has a clear enough
> > definition. But it's all related to patterns, patterns which can be
> > found everywhere in nature an which can be expressed almost entirely
> > through matemathical formulas. Scaling of antennas is clearly
> > possible, despite of what the Chu-Harrington limit states (or to be
> > fair, by applying them in a new way).
>
> Chu and, later, Harrington said nothing about bandwidth, by the way.
> They were more concerned with directivity and size and stored energy
> (the latter of which ties to efficiency and bandwidth).
>
> Also, even if you created a very small antenna with high efficiency
> (e.g. with superconductors), the fields around such an antenna will be
> quite intense, so while the antenna may be small, its near field will be

> pretty much the same size as the dipole it replaces, so you'll need to
> put that tiny antenna way up in the air with a non-conductive, non-lossy
> support to get it away from everything else. Finding a feedline might be
> a bit of a challenge. One has to be careful when one draws "the
> boundary" of the antenna.
>
> In practical terms, the size of an antenna isn't just the dimensions of
> the metal, but the "keepout" area within which you can't tolerate any
> intrusions and still keep the same antenna performance (i.e. a 40m
> dipole laying on the ground doesn't work nearly as well as a dipole
> suspended 10 feet off the ground)
>
> For that matter, avoiding the breakdown of air might be a problem.
> Consider a tesla coil, which is basically a fairly inefficient (in terms
> of radiated power for RF input power) small antenna for 100 kHz or so.
> The limit on performance for the tesla coil isn't thermal heating of the
> coil, but HV breakdown. Even a few hundred watts into a "shoebox" sized
> coil will have breakdown problems (and this is fully predicted by Chu's
> analysis... it's that "energy stored in the field" problem)
>
> > I eagerly await the day when the 80 meter dipole will be replace by a
> > small device the size of a shoe box (although it might be a bit
> > larger in the beginning :)).
>
> > Regards,
> > Robert

3785. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 01:30:05 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <xeglj.59071$D_3.31467@bgtnsc05-news.ops.worldnet.att.net>
Source record: 26506

Cecil Moore wrote:
> Roger Sparks wrote:
>> While it is logical to add the voltages from Column B and Column C,
>> the two voltages are often in opposition so they are not "seen" by
>> Rs. As a result, we must have a reflection from Rs that I am not
>> taking into account.
>
> It's not a "reflection" of a single wave, Roger, it is
> a "redistribution" of energy caused by superposition
> of two waves accompanied by interference. Eugene Hecht
> explains it all in Chapter 9: Interference in "Optics".
>
> For anyone who thinks he is already omniscient
> about EM waves, I would highly recommend reading
> Hecht's chapter on interference.

Here's an even better idea.

Dump Hecht and read about interference in Born and Wolf. Chapter VII (in the 7th edition) is one of the main contributions. I particularly like Section 7.6. In this section the authors derive a general set of equations that deal with all sorts of reflection configurations. There is no need to worry about constructive or destructive interference. The equations smoothly transition from one to the other as appropriate. The equations don't fall apart as the reflection goes to zero. No "redistribution" is needed.

This is the way physics typically works; it is not necessary to separate superposition from interference or separate constructive from destructive. If the analysis and the equations are correct they will work for a wide range of parameters. Equations that must be fine-tuned for every possible change in reflection coefficient or other parameters are very limited and most troublesome.

73,
Gene
W4SZ

3786. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 01:38:36 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <dee63a8a-0bc5-461c-8776-c217bf620d0f@y21g2000hsf.googlegroups.com>
Source record: 26507

On Mar 31, 7:52 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> rmoise...@gmail.com wrote:
> > I find this topic very interesting, including the mandrill part :)
>
> > We all want to have small, broadband, eficient antennas. I believe Art
> > is right in his original post, today we can have all these
> > characteristics in the same package. There is no law of physics
> > forbidding that.
>
> Uhhh. actually there ARE laws of physics putting some pretty severe
> constraints on it, if not actually forbidding it, if you also accept the
> constraint that the material of which you make the antenna has finite
> resistance.
>
> Through advances in computation power we can achieve
>
> > today in months what took decades in the past and there is much
> > research directed at these kinds of new antennas. Eventually
> > everyone will be able to choose and model his own antenna based on the
> > characteristics one wants, but without the cumbersome dimensions,
> > without significant bandwith limitations, without major efficiency
> > compromises. I believe the tradeoff (for it has to exist one) will be
> > ease of manufacturing.
>
> Where ease might be defined in terms of being able to be made of
> actually realizable materials?
>
>
>
> > Incidentally these new antennas have a lot to do with what Art
> > defines as equilibrium although I don't think he has a clear enough
> > definition. But it's all related to patterns, patterns which can be
> > found everywhere in nature an which can be expressed almost entirely
> > through matemathical formulas. Scaling of antennas is clearly
> > possible, despite of what the Chu-Harrington limit states (or to be
> > fair, by applying them in a new way).
>
> Chu and, later, Harrington said nothing about bandwidth, by the way.
> They were more concerned with directivity and size and stored energy
> (the latter of which ties to efficiency and bandwidth).
>
> Also, even if you created a very small antenna with high efficiency
> (e.g. with superconductors), the fields around such an antenna will be
> quite intense, so while the antenna may be small, its near field will be

> pretty much the same size as the dipole it replaces, so you'll need to
> put that tiny antenna way up in the air with a non-conductive, non-lossy
> support to get it away from everything else. Finding a feedline might be
> a bit of a challenge. One has to be careful when one draws "the
> boundary" of the antenna.
>
> In practical terms, the size of an antenna isn't just the dimensions of
> the metal, but the "keepout" area within which you can't tolerate any
> intrusions and still keep the same antenna performance (i.e. a 40m
> dipole laying on the ground doesn't work nearly as well as a dipole
> suspended 10 feet off the ground)
>
> For that matter, avoiding the breakdown of air might be a problem.
> Consider a tesla coil, which is basically a fairly inefficient (in terms
> of radiated power for RF input power) small antenna for 100 kHz or so.
> The limit on performance for the tesla coil isn't thermal heating of the
> coil, but HV breakdown. Even a few hundred watts into a "shoebox" sized
> coil will have breakdown problems (and this is fully predicted by Chu's
> analysis... it's that "energy stored in the field" problem)
>
> > I eagerly await the day when the 80 meter dipole will be replace by a
> > small device the size of a shoe box (although it might be a bit
> > larger in the beginning :)).
>
> > Regards,
> > Robert

Jim,
With all due respect a discussion is futile if you stray from the
concept of
a small FULL WAVE antenna and use the ELECTRICALLY SMALL antenna
as a straw man. The electrically small antenna is a fractional wave
antenna
which is represented by a series circuit. This is totally different
to a parallel
tank circuit. This correlates to a pendulum being cast as a weight
that comes
to a abrupt stop and instead of swinging up goes back from the bottom
to the
top from whence it came! A electrical small antenna assumes an
awefull lot
as to the mechanics of action involved in a full period. The tank
circuit is a
good example that shows that all segments of a period in terms of area
are exactly the same
where the tank circuit clearly shows that radiation occurres only in
the last
quarter of a period! The idea or concept of a fractional wave antenna
came
from the assumption that a sino soidal pattern can be seen as four

areas
under a line which can be considered the same as four times a quarter
segment,
a concept around which the NEC programs were formed. You NEVER get
radiation
at every quarter segment of a period. The concept implicit in Maxwells
laws is
that equilibrium is a given which means that the root C L portion is
that of a
full wave antenna as a minimum.
All the laws of the masters are based on a stable boundary at the
beginning and
at the time for a period of time., Time has removed a lot of memory of
the human race.
I suspect that the NEC programs around the current flow OUTSIDE the
arbitary boundary
that allowed them the successes they have gained without having to
consider
the mechanics of the innards within the boundary.
Regards
Art Unwin

3787. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 01:55:13 UTC
From: rmoisescu@gmail.com
Message-ID: <c1eaf1c4-e2c7-4dab-b8fd-6974195af9b8@z38g2000hsc.googlegroups.com>
Source record: 26508

On Mar 31, 7:00 pm, Richard Clark <kb7...@comcast.net> wrote:
>
> Hi Robert,
>
> 50 years ago they said Electricity would be so easy to produce they
> would pay us to use it. They ignored Hiroshima and discovered
> Chernobyl.

I believe ease of production is a subjective term. To obtain energy
one must consume energy, there's no free lunch. But ease may be
considered 'convenience' to us, i.e. what suits our production
capability better.

>
> 40 years ago they said DNA and genetics would allow us to design our
> own babies. They ignored Thalidomide and discovered Dolly the sheep
> that died before her time.

Genetics have indeed contributed to most important advances in our
understanding of the human body. Instead of relying only on physiology
and anatomy, we can now have a glimpse at the 'programming language'
at the core. What use do we put it to, that's a different problem.

>
> 30 years ago they invented modeling software that would allow us to
> create the Gaussian dipole (or whatever) and discovered every dipole
> that came before it performed better.

That's a bit of devil's advocate stance, isn't it? :) You can't
seriously say that modelling software didn't bring something to the
table.

>
> Nearly 20 years ago Johnny Carson retired and we are still getting
> jokes.
>
> Not nearly 10 years ago with the Dow at 11658 and a budget surplus at
> 230 billion, the Republicans promised prosperity was around the corner
> and their voters are now living in cardboard boxes with the Dow at
> 12176 and the national debt up 50%.
>
> >Scaling of antennas is clearly
> >possible, despite of what the Chu-Harrington limit states (or to be
> >fair, by applying them in a new way).
>
> But you don't know how, and have never seen one either.

That's true, I am not an expert in this field, I only try to stay up
to date with the technology, feel free to correct me if I'm wrong, but
I have seen many advancements in this direction lately.

>
> 73's
> Richard Clark, KB7QHC

Best regards,
Robert

3788. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 01:59:46 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f2c02712-68c0-49d4-ac14-a01db4520d9c@s13g2000prd.googlegroups.com>
Source record: 26509

On Mar 31, 8:04 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > You state that your hypothesis is that for this specific
> > circuit, "the energy in the reflected wave is dissipated in
> > the source resistor".
>
> First, let's correct your out-of-context quotation.
> Here is what you should have quoted: "When zero
> interference exists at the source resistor, the
> energy in the reflected wave is dissipated in the
> source resistor."
>
> This is actually a fact for both average powers
> and instantaneous powers. Since all of your examples
> are associated with a non-zero level of interference,
> they are irrelevant to the stated conditions.

Since my example is *your* example (q.v. your Fig 1-1), your
example has non-zero interference (as you state above), so
you have just said that your example violates the stated
conditions.

Or are you going to say that the circuit exhibits interference
when an instantaneous analysis is performed, but knows that
it should refrain from doing so when only an average analysis
is done?

> Here is a quote from that article:
> "Please note that any power referred to in this paper is an AVERAGE
> POWER. Instantaneous power is irrelevant to the following discussion."
> The word "average" is implied in every statement I make.

Yes, "implied" is the word. Why not clearly state that, while the
average energy appears to be dissipated in the source resistor, the
actual energy is not.

Or *is* the intent to deceive?

> > This claim is amenable to analysis
> > using instantaneous energy flows. When so analyzed, the
> > hypothesis fails.
>
> No, it doesn't fail. You have simply failed to satisfy
> the zero interference precondition.

If the precondition fails for the circuit, then it fails for
the circuit.

> > If you wish to narrow your hypothesis to "the average energy
> > in the reflected wave is simply numerically equal to the
> > increase in the average dissipation in the source
> > resistor" I will not object since that hypothesis would
> > be completely accurate and not misleading.
>
> That is, in fact, the only hypothesis presented in
> my Part 1 article. Since my hypothesis never applied
> to instantaneous power, I don't have to narrow the
> hypothesis. My article stands as written. Please
> cease and desist with the unfair innuendo.

You insist that the narrowing is "implied", but then
refuse to explicitly state such to make it clear to
the reader. Why?

> > Not a waste at all.
>
> Obviously, your opinion differs from mine. To the best
> of my knowledge, you are the first person to spend any
> mental effort on instantaneous power. If that's what
> you want to do, be my guest. I consider it to be little
> more than mental masturbation, "of limited utility" as
> Hecht said.

Yes. It does not support your hypothesis, so it is wise
to ignore it.

> In fact, I proved my assertion was true even at the
> instantaneous power level when the "zero interference"
> precondition is met.

Ah, yes. X**2 + Y**2 = (X+Y)**2 only when X or Y equals 0,
which for the example at hand applies at exactly 4 instances
per cycle.

The rest of the time the circuit exhibits interference.

> > Since you start with an unshakeable belief in the
> > existance of energy in the reflected wave, this would be
> > your natural conclusion.
>
> Since you are incapable of producing an EM wave devoid
> of energy (or an angel dancing on the head of a pin) both
> concepts are unrelated to reality IMO.
>
> Your challenge is the same as it has always been. Just
> produce an EM wave containing zero energy and get it
> over with.

Tis a problem isn't it. You won't let go of energy in the reflected wave long enough to even explore the circuit to discover the inconsistencies that result from the belief.

You can not find a reason why instantaneous analysis should not work, but the conclusions are uncomfortable, so you decide that Hecht has told you not to bother, and you stop. Without knowing why.

...Keith

3789. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 02:00:00 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <71c08fe4-3c94-493b-873d-f0c8a007a392@i12g2000prf.googlegroups.com>
Source record: 26510

On Mar 31, 8:43 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > But the meaning of the disclaimer is not clear to the
> > reader. You really need to restate your hypothesis to
> > remove the possibility of misleading the reader.
>
> What is it about "Please note that any power referred to
> in this paper is an AVERAGE POWER. Instantaneous power
> is irrelevant to the following discussion." that you
> do not understand?

After many posts and back and forth, I understand. But the
poor first reader will miss the implications: that the
imputed energy in the reflected wave is not dissipated
in the source resistor.

Why not save the reader the challenge and just state it
clearly?

> > I would suggest ...
>
> I would suggest that you write your own article.
> Mine stands as written in the *stated context*
> of zero interference and average powers. I am
> not interested in attempting a unified theory
> of everything.

Except that you have now indicated that there is
interference in the circuit of Fig 1-1.

> >> I personally don't think
> >> that anyone else cares about instantaneous powers.
>
> > I am sure some do not. But anyone interested in a full
> > understanding does.
>
> Anyone interested in a *full* understanding would
> take the discussion down to the quantum level which,
> interestingly enough, you have chosen to ignore.

Yes. I have stopped at the level that disproves that the
imputed energy in the reflected wave is dissipated in
the source resistor. That is sufficient for me.

I do not think that deeper analysis will show this to
be wrong, but you are invited to do so.

On the other hand, average analysis can be shown to
produce misleading results by applying instantaneous
analysis. You should be interested because it disproves
that the imputed energy in the reflected wave is
dissipated in the source resistor.

> > It is convenient when you just ignore the analysis
> > that disproves your hypothesis. But it does not make
> > the hypothesis more correct.
>
> If you think your unethical innuendo, out-of-context
> quotes, and straw man arguments disprove anything,
> I feel sorry for you.
>
> Once again, the context of my Part 1 assertions is
> *ZERO INTERFERENCE* and *AVERAGE POWERS*. You have
> disproved nothing so far. You were even taken aback
> when it was true at the instantaneous level in the
> context of zero instantaneous interference.

I was? If so, I have now moved beyond. Especially since
you now assert that the circuit does exhibit interference,
the hypothesis becomes moot.

...Keith

3790. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 02:00:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <8c15d561-d399-45ee-92a5-b218b3301b9a@d21g2000prf.googlegroups.com>
Source record: 26511

On Mar 31, 9:01 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Perhaps, but it is highly improbable that it falls apart
> > in a manner that ends up supporting the original failed
> > hypothesis.
>
> Since the original hypothesis is in the context of
> zero interference (and average powers) it has not
> failed. So far, I have made no assertions about
> conditions when interference is present as it is
> in all of your examples. None of your observations
> are relevant to my Part 1 article because they are
> all outside the stated context of the article.
>
> The challenge for you is to present a zero interference
> example for which my hypothesis is false. So far, you
> have failed to do so.

We are talking about the same circuit, which you now
claim exhibits interference, rendering your hypothesis
moot.

> I have asserted, "If zero interference exists, then 'A'
> is true". You have said 'A' is not true when interference
> exists. I actually agree with you but it is irrelevant
> to the stated 'if' portion of my premise. Where did
> you study logic?

Good that you agree. And now that you state that the
circuit exhibits interference, it might be best to
withdraw your example.

...Keith

3791. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 02:11:15 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <8c6ea085-d186-4d76-bc23-b918761fcbb6@8g2000hse.googlegroups.com>
Source record: 26513

On Mar 31, 8:04 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Mike Kaliski wrote:
> > Hi Richard,
>
> > I have a pair of computer speakers sitting on my desk that completely
> > out perform the so called ultimate hi-fi floor mounted tower system
> > speakers I bought 35 years ago for the equivalent of several thousand
> > dollars in today's money. The old speakers still work just fine but the
> > audio experts have learned how to squeeze that performance out of a
> > speaker that old audio theory predicted couldn't possibly work. Just how
> > does a 3 inch speaker in a cabinet the size of a couple of books manage
> > to produce notes from 20 Hz - 20 kHz? To be fair, the small speakers
> > can't fill a room with sound in the same smooth way that a larger
> > speaker cabinet can, but for everyday use in a small modern house or
> > apartment they are more than adequate for the majority of people.
>
> > It seems to me that Art and others are pursuing a similar path at RF.
> > The aim being to produce an antenna that punches out a signal from a
> > physically small area. It may not perform quite as well as a full size
> > half or full wavelength antenna, but it will work well enough for most
> > people with small gardens or limited real estate for an antenna farm.
>
> Nope.. there's a significant difference between the speakers and the
> antenna, and that's the fact that the amateur user of the antenna is
> power limited (by regulation). In the speaker case, they trade off
> efficiency (acoustic watts out for electrical watts out) because
> electrical watts are cheap these days (not so back in McIntosh tube amp
> days...) You can tolerate a 1% efficient design that puts out 100mW of
> acoustic power with 10W electrical power in. (note that 120dB SPL = 1
> Watt.. a symphony orchestra, at full tilt, is about a watt of acoustic
> power, and I daresay you couldn't tolerate a whole orchestra in your office)
>
> OTOH, a 1% efficient antenna design is pretty crummy. A dipole is
> probably on the order of 70% efficient (RF power radiated into the far
> field vs RF power at the feedline). A mobile antenna (which everyone
> will agree is not particularly efficient, even if you argue about the
> actual magnitude) might be 5-10% efficient (10dB down).
>
> As a practical matter, you can get away with a 1% efficient antenna,
> particularly if you're not looking for "link reliability"... The
> propagation loss between you and some arbitrary point could easily vary
> by 100 dB, so you just wait until propagation is "good enough" to work
> the guy with the 0.1W you radiate. Of such are "worked 300 countries on
> two bedsprings" sorts of stories made. Folks work around the world on

> less than a watt radiated, just not "on demand".. they keep trying until
> conditions are just right and they "get lucky".
>
> So, on that basis, you could probably fire up your 1500W amplifier into
> a compact loop antenna that's a meter in diameter, and work the world,
> eventually.
>
>
>
> > Clearly there are considerable differences in dealing with sound waves
> > and RF but I believe that a principle has been established that it is
> > possible to 'simulate' the performance of a larger system using
> > physically small components. Art may not be the first to get there, but
> > he seems to be having a damn good try and someone, somewhere will
> > eventually succeed.
>
> > Mike G0ULI

Believe it or not Jim but I presently have a 160 meter antenna (full
wave)
wound on a metre loop that is resonant and can be used to work the
world.
It is hanging in the yard right now and obviously is very efficient at
what it does.
Covers the whole band to. Paid a dollar at the dollar store for the
hoola hoop!
Don't need to add capacitors and inductances evry few KHZ !
Art

3792. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 02:26:14 UTC
From: rmoisescu@gmail.com
Message-ID: <91bafb2a-34e1-4e3d-91fa-ef58caa2d14b@a22g2000hsc.googlegroups.com>
Source record: 26514

On Mar 31, 8:52 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> rmoise...@gmail.com wrote:
>
>
> Uhhh. actually there ARE laws of physics putting some pretty severe
> constraints on it, if not actually forbidding it, if you also accept the
> constraint that the material of which you make the antenna has finite
> resistance.
>
>
> Where ease might be defined in terms of being able to be made of
> actually realizable materials?
>

The term 'actually realizable materials' seems to shift it's
definition every time something new is discovered :)

>
>
>
> Chu and, later, Harrington said nothing about bandwidth, by the way.
> They were more concerned with directivity and size and stored energy
> (the latter of which ties to efficiency and bandwidth).

True, I didn't imply that.

>
> Also, even if you created a very small antenna with high efficiency
> (e.g. with superconductors), the fields around such an antenna will be
> quite intense, so while the antenna may be small, its near field will be
> pretty much the same size as the dipole it replaces, so you'll need to
> put that tiny antenna way up in the air with a non-conductive, non-lossy
> support to get it away from everything else. Finding a feedline might be
> a bit of a challenge. One has to be careful when one draws "the
> boundary" of the antenna.

Ok, it was my mistake to not clarify 'high efficiency'. By that I
meant 'at the same order of efficiency as normal scale designs'.
I am currenty interested by what I have seen claimed as 'compacted
antennas', which behave similar to normal ones, except their
dimensions are smaller, X-axis wise at least. That those designs do
not perform as well or better than their counterparts is no problem
to me, as long as the figures are in the same ballpark. That would
mean they still are more efficient than previous designs which
attempted to solve the problem of physical dimensions, which is an
advancement in my book. That some other unexpected features as the

broadband factor may appear is only a bonus, because we can achieve
that with full scale antennas too.
To be more specific, I was reffering to such designs that reduce the
scale of antennas in at least one axis:
http://adsabs.harvard.edu/abs/2004ITAP...52.1945P
http://ctd.grc.nasa.gov/organization/branches/amosb/RCA_RESEARCH/RESEARCH_mini-antennas.ht
m
http://ntrs.nasa.gov/details.jsp?R=362773
http://ntrs.nasa.gov/details.jsp?R=470415
I have seen some of them described as fractal trees, but the
information is relatively scarce. I know research is continuing on
this subject and even found some info at a website somewhere but I
can't remember where. Since you probably know more about them than me,
I would appreciate some guidance here too :)

>
> In practical terms, the size of an antenna isn't just the dimensions of
> the metal, but the "keepout" area within which you can't tolerate any
> intrusions and still keep the same antenna performance (i.e. a 40m
> dipole laying on the ground doesn't work nearly as well as a dipole
> suspended 10 feet off the ground)
>
> For that matter, avoiding the breakdown of air might be a problem.
> Consider a tesla coil, which is basically a fairly inefficient (in terms
> of radiated power for RF input power) small antenna for 100 kHz or so.
> The limit on performance for the tesla coil isn't thermal heating of the
> coil, but HV breakdown. Even a few hundred watts into a "shoebox" sized
> coil will have breakdown problems (and this is fully predicted by Chu's
> analysis... it's that "energy stored in the field" problem)
>

I do not dispute that, however I get a feeling we're talking about
different things.

Best,
Robert

3793. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 02:39:18 UTC
From: rmoisescu@gmail.com
Message-ID: <63a1df32-2683-42d0-878f-8198187bb406@59g2000hsb.googlegroups.com>
Source record: 26515

> It is hanging in the yard right now and obviously is very efficient at
> what it does.

You mean it's very efficient at hanging in the yard? :)
Joking aside, I'd be interested in a *NEC file. Is it possible to
model, or is it restricted by the number of segments?

Robert

3794. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 02:44:14 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <9beab939-709a-4dbd-9060-9193d76b20f2@a70g2000hsh.googlegroups.com>
Source record: 26516

On Mar 31, 9:26 pm, rmoise...@gmail.com wrote:
> On Mar 31, 8:52 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
> > rmoise...@gmail.com wrote:
>
> > Uhhh. actually there ARE laws of physics putting some pretty severe
> > constraints on it, if not actually forbidding it, if you also accept the
> > constraint that the material of which you make the antenna has finite
> > resistance.
>
> > Where ease might be defined in terms of being able to be made of
> > actually realizable materials?
>
> The term 'actually realizable materials' seems to shift it's
> definition every time something new is discovered :)
>
>
>
> > Chu and, later, Harrington said nothing about bandwidth, by the way.
> > They were more concerned with directivity and size and stored energy
> > (the latter of which ties to efficiency and bandwidth).
>
> True, I didn't imply that.
>
>
>
> > Also, even if you created a very small antenna with high efficiency
> > (e.g. with superconductors), the fields around such an antenna will be
> > quite intense, so while the antenna may be small, its near field will be
> > pretty much the same size as the dipole it replaces, so you'll need to
> > put that tiny antenna way up in the air with a non-conductive, non-lossy
> > support to get it away from everything else. Finding a feedline might be
> > a bit of a challenge. One has to be careful when one draws "the
> > boundary" of the antenna.
>
> Ok, it was my mistake to not clarify 'high efficiency'. By that I
> meant 'at the same order of efficiency as normal scale designs'.
> I am currenty interested by what I have seen claimed as 'compacted
> antennas', which behave similar to normal ones, except their
> dimensions are smaller, X-axis wise at least. That those designs do
> not perform as well or better than their counterparts is no problem
> to me, as long as the figures are in the same ballpark. That would
> mean they still are more efficient than previous designs which
> attempted to solve the problem of physical dimensions, which is an

> advancement in my book. That some other unexpected features as the
> broadband factor may appear is only a bonus, because we can achieve
> that with full scale antennas too.
> To be more specific, I was reffering to such designs that reduce the
> scale of antennas in at least one axis:http://adsabs.harvard.edu/abs/2004ITAP...52.1945P
http://ctd.grc.nasa.gov/organization/branches/amosb/RCA_RESEARCH/RESE...http://ntrs.nasa.g
ov/details.jsp?R=362773http://ntrs.nasa.gov/details.jsp?R=470415
> I have seen some of them described as fractal trees, but the
> information is relatively scarce. I know research is continuing on
> this subject and even found some info at a website somewhere but I
> can't remember where. Since you probably know more about them than me,
> I would appreciate some guidance here too :)
>
>
>
> > In practical terms, the size of an antenna isn't just the dimensions of
> > the metal, but the "keepout" area within which you can't tolerate any
> > intrusions and still keep the same antenna performance (i.e. a 40m
> > dipole laying on the ground doesn't work nearly as well as a dipole
> > suspended 10 feet off the ground)
>
> > For that matter, avoiding the breakdown of air might be a problem.
> > Consider a tesla coil, which is basically a fairly inefficient (in terms
> > of radiated power for RF input power) small antenna for 100 kHz or so.
> > The limit on performance for the tesla coil isn't thermal heating of the
> > coil, but HV breakdown. Even a few hundred watts into a "shoebox" sized
> > coil will have breakdown problems (and this is fully predicted by Chu's
> > analysis... it's that "energy stored in the field" problem)
>
> I do not dispute that, however I get a feeling we're talking about
> different things.
>
> Best,
> Robert

Robert, the Fractal can now be considered obsolete when compared to
mine.
The person who is testing my antenna is a member of this group.
Maybe he will drop a bone regarding this new antenna of mine so I can
have some credability. For years I have been insulted on my findings
and frankly I am getting fed up.People stated that I did not have such
an antenna,
A $5000 stake was put up by an Aussie (they bet on anything) to say
that he believed me.
Not one of the talking heads were willing to take on the Aussie and
win big.
As I stated they are mostly talking heads and nothing else.
Regards
Art

3795. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 03:09:23 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <5b68950c-b3f4-4b82-913a-a68f2e926880@u69g2000hse.googlegroups.com>
Source record: 26517

On Mar 31, 9:39 pm, rmoise...@gmail.com wrote:
> > It is hanging in the yard right now and obviously is very efficient at
> > what it does.
>
> You mean it's very efficient at hanging in the yard? :)
> Joking aside, I'd be interested in a *NEC file. Is it possible to
> model, or is it restricted by the number of segments?
>
> Robert

Restricted by the number of segments but I have tested enough of the
diifferent designs
to know what I am talking aboutand only a few can be programed but
with limited segments
it can only provide guidance. MAYBE one day I will supply the patent
request number
I received last year as well as the following patent number but the
number of insults
have ruled that possibility out. The person who is testing it never
insulted me and
wanted badly to be on the inside of this new antenna. Sooner or later
the PTO will provide all.
The hula hoop was just a design for checking, The one I have now is on
a tip and turn set up
for the top of my tower for use with a mesh dish for 160 and all other
frequencies. I want to change the polarity
in situ !.
You never can stop learning once you get off the normal path and
penetrate the underbrush.
Suddenly the brush is behind and a clear valley bathed in sun light
appears and you have little time
to fully explore
There are many different versions of this antenna primarily to get a
complete range of impedences
for use as well as determining tilt angle e.t.c.
Regards
Art

3796. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 03:45:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hdilj.24322$Ej5.17537@newssvr29.news.prodigy.net>
Source record: 26518

Keith Dysart wrote:
> Since my example is *your* example (q.v. your Fig 1-1), your
> example has non-zero interference (as you state above), so
> you have just said that your example violates the stated
> conditions.

Keith, if I send you $100, would you use it to buy
yourself some ethics?
--
73, Cecil http://www.w5dxp.com

3797. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 03:46:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <LeiIj.24323$Ej5.20496@newssvr29.news.prodigy.net>
Source record: 26519

Keith Dysart wrote:
> After many posts and back and forth, I understand.

Do you understand that you need to go out and buy
some ethics?
--
73, Cecil http://www.w5dxp.com

3798. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 04:06:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fxiIj.24324$Ej5.1800@newssvr29.news.prodigy.net>
Source record: 26520

Keith Dysart wrote:
> We are talking about the same circuit, which you now
> claim exhibits interference, rendering your hypothesis
> moot.

If the average interference is zero, the average
reflected power is dissipated in the source resistor.
All of your unethical lies, innuendo, and hand-waving
will not change that fact of physics.
--
73, Cecil http://www.w5dxp.com

3799. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 04:17:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RHilj.24325$Ej5.7867@newssvr29.news.prodigy.net>
Source record: 26521

Roger Sparks wrote:
> The storage of the redistributed energy must be close to the
> wires of the circuit so we should be able to describe it
> mathmatically, if I just knew how.

The math is pretty easy, Roger. Keith seems to believe
that an inductor stores power which is, of course, a
ridiculous concept. As soon as I can see a character
that is smaller than 2 inches tall, I will respond.
--
73, Cecil http://www.w5dxp.com

3800. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 04:19:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GJilj.24327$Ej5.2177@newssvr29.news.prodigy.net>
Source record: 26522

Gene Fuller wrote:
> Dump Hecht ...

Dump Gene Fuller. :-)
--
73, Cecil http://www.w5dxp.com

3801. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 04:39:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <u0jIj.24330$Ej5.5633@newssvr29.news.prodigy.net>
Source record: 26523

Keith Dysart wrote:
> After many posts and back and forth, I understand. But the
> poor first reader will miss the implications: that the
> imputed energy in the reflected wave is not dissipated
> in the source resistor.

You have yet to provide an example of zero interference
where the reflected power is not dissipated in the source
resistor. Until you do that, you are just waving your hands.

Examples containing interference will be covered in Parts
2 & 3 but the poor first reader will not get to read them
until you cease your present unethical behavior.
--
73, Cecil http://www.w5dxp.com

3802. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 09:59:42 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <06582826-b575-41d6-8cc3-d095f4f5666b@s19g2000prg.googlegroups.com>
Source record: 26524

On Apr 1, 12:06 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > We are talking about the same circuit, which you now
> > claim exhibits interference, rendering your hypothesis
> > moot.
>
> If the average interference is zero, the average
> reflected power is dissipated in the source resistor.
> All of your unethical lies, innuendo, and hand-waving
> will not change that fact of physics.

More precisely, the average value of the imputed reflected
power is numerically equal to the increase in the average
power dissipated in the source resistor.

It is not obvious why you reject this more precise, less
misleading description. Is there an intent to mislead the
reader?

...Keith

3803. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 09:59:49 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <697950e0-07e2-4dc4-9ec4-df1fcf59d55c@e23g2000prf.googlegroups.com>
Source record: 26525

On Apr 1, 12:17 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > The storage of the redistributed energy must be close to the
> > wires of the circuit so we should be able to describe it
> > mathmatically, if I just knew how.
>
> The math is pretty easy, Roger. Keith seems to believe
> that an inductor stores power which is, of course, a
> ridiculous concept.

You must have misunderstood. The power measured at the
terminals of an inductor is the rate of change with respect
to time of the energy stored within the inductor.

In calculus terms, the power is the derivative of the energy
within the inductor.

This is equivalent to the rate of flow of energy into
the inductor (or out of, if you choose a different convention
for the sign of the value).

...Keith

3804. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 09:59:55 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c772f68b-f882-42d3-bf39-09cc50c46a95@d21g2000prf.googlegroups.com>
Source record: 26526

On Apr 1, 12:39 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > After many posts and back and forth, I understand. But the
> > poor first reader will miss the implications: that the
> > imputed energy in the reflected wave is not dissipated
> > in the source resistor.
>
> You have yet to provide an example of zero interference
> where the reflected power is not dissipated in the source
> resistor. Until you do that, you are just waving your hands.

You misunderstand. I am not attempting to do that. Though somewhat bizzarre, I have, for the purposes of this discussion, accepted your definition of interference.

And using your definition, that there is no interference when (V1**2 + V2**2) = (V1+V2)**2, it can be seen that for the circuit at hand, your Fig 1-1, there is zero interference in the terms you wish to add, four times in each cycle. From this one might conclude that the imputed reflected power is dissipated in the source resistor at four instances during the cycle. For the remainder of the cycle, again using your definition of interference, there is interference and hence the imputed reflected power is not all dissipated in the source resistor.

Thus any unqualified assertion that the imputed reflected power is dissipated in the source resistor is somewhat disingenuous.

> Examples containing interference will be covered in Parts
> 2 & 3 but the poor first reader will not get to read them
> until you cease your present unethical behavior.

But you have been claiming that the circuit of Part 1 already exhibits interference.

...Keith

3805. 2 opposite parabolic reflectors in a single directional WIFI antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 10:34:36 UTC
From: JM <stasioNOQUIEROSPAM@NOQUIEROSPAMteleline.es>
Message-ID: <fst34h$e3i$1@aioe.org>
Source record: 26527

Hello. Is it possible to put two opposite parabolic reflectors in a single directional antenna of an WiFi Access Point (A.P.-A)?
In fact, the Access Point (A.P.-A) has two antennas, but it needs to send its signal very far, so it is not appropriate to put a directional parabolic reflector of aluminum foil on each individual antenna oriented each in the opposite direction.
Curiously, the signal from A.P.-A comes very well to another Access Point (A.P.-B) that is very far (and that has a directional parabolic reflector of aluminum foil), but the signal ot this A.P.-A comes very badly to the laptops that are near (near to this A.P.-A).
Is it possible to put two parabolic reflectors of aluminum foil in the opposite direction in each antenna of the Access Point (AP-A)? I am referring to a parabolic reflector of aluminum foil oriented to P.A.-B and another parabolic reflector oriented to laptops, this (2 reflectors) in each 2 antennaS. Will operate? Is there another better and equally simple solution?
Sincerely, JM

3806. Re: 2 opposite parabolic reflectors in a single directional WIFI antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 11:04:47 UTC
From: JM <stasioNOQUIEROSPAM@NOQUIEROSPAMteleline.es>
Message-ID: <fst4skjnb1@aioe.org>
Source record: 26528

Correction: "in a single directional WIFI antenna" = "in a (single) typical
WIFI antenna".
In this case, the Belkin F5D7130 antennas:
http://www.belkin.com/uk/support/product/?lid=enu&pid=F5D7130uk
JM

"JM" <stasioNOQUIEROSPAM@NOQUIEROSPAMteleline.es> escribiï¿½ en el mensaje de
noticias:fst34h$e3i$1@aioe.org...
> Hello. Is it possible to put two opposite parabolic reflectors in a single
> directional antenna of an WiFi Access Point (A.P.-A)?
> In fact, the Access Point (A.P.-A) has two antennas, but it needs to send
> its signal very far, so it is not appropriate to put a directional
> parabolic reflector of aluminum foil on each individual antenna oriented
> each in the opposite direction.
> Curiously, the signal from A.P.-A comes very well to another Access Point
> (A.P.-B) that is very far (and that has a directional parabolic reflector
> of aluminum foil), but the signal ot this A.P.-A comes very badly to the
> laptops that are near (near to this A.P.-A).
> Is it possible to put two parabolic reflectors of aluminum foil in the
> opposite direction in each antenna of the Access Point (AP-A)? I am
> referring to a parabolic reflector of aluminum foil oriented to P.A.-B and
> another parabolic reflector oriented to laptops, this (2 reflectors) in
> each 2 antennaS. Will operate? Is there another better and equally simple
> solution?
> Sincerely, JM

3807. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 12:08:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ZAplj.1400$Nc5.1304@newssvr27.news.prodigy.net>
Source record: 26529

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> If the average interference is zero, the average
>> reflected power is dissipated in the source resistor.
>> All of your unethical lies, innuendo, and hand-waving
>> will not change that fact of physics.
>
> More precisely, the average value of the imputed reflected
> power is numerically equal to the increase in the average
> power dissipated in the source resistor.

More precisely, at the *exact* time of arrival of the
reflected wave, the average power dissipated in the
source resistor increases by *exactly* the magnitude
of the average reflected power. Do you think that is
just a coincidence?

> It is not obvious why you reject this more precise, less
> misleading description.

Why do you use such unfair ill-willed debating techniques
based on innuendo and not on facts in evidence?

IMO, our two statements above say the same thing
with mine being the more precise and detailed.
I don't reject yours - I just prefer mine.

If the source of the increased dissipation in the
source resistor is not the reflected energy, exactly
where did that "extra" energy come from at the exact
time of arrival of the reflected wave?

Hint: Since the only other source of energy in the
entire system is the reflected wave, any additional
source would violate the conservation of energy
principle.
--
73, Cecil http://www.w5dxp.com

3808. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 12:38:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <s1qIj.24346$Ej5.8933@newssvr29.news.prodigy.net>
Source record: 26530

Keith Dysart wrote:
> And using your definition, that there is no interference
> when (V1**2 + V2**2) = (V1+V2)**2, it can be seen that
> for the circuit at hand, your Fig 1-1, there is zero
> interference in the terms you wish to add, four times
> in each cycle.

Correction for omitted word above: And using my
definition, that there is no *average* interference
when (V1**2 + V2**2) = (V1+V2)**2,"
Those are average (RMS) values of voltage.

The test for zero *instantaneous* interference is:
[V1(t)^2 + V2(t)^2] NOT= [V1(t)^2+V2(t)^2]
Those are instantaneous values of voltage.

Please correct your confusion about what I have said.
It is also clear that you don't understand when
interference exists and when it doesn't.

The instantaneous destructive interference equals
the instantaneous constructive interference 90
degrees later. That's why the interference averages
out to zero.

I believe, although I have not taken the time to
prove it, that the instantaneous interference is
zero only at the zero-crossings of the source
voltage and reflected voltage.

Again, the existence and magnitude of the
instantaneous interference is irrelevant to
the assertions in my Part 1 article. It is
obvious that the interference averages out
to zero over each cycle for the example
presented.
--
73, Cecil http://www.w5dxp.com

3809. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 13:49:15 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fstegrmrc1@f04n12.cac.psu.edu>
Source record: 26531

Cecil Moore wrote:
> Richard Clark wrote:
>> But you don't know how, and have never seen one either.
>
> Dear Richard - some people contribute to human knowledge
> through their optimism regarding things to come that are
> presently out of reach. Some people would prefer that we
> live forever in the dark ages. Which one are you?

Never forget that we need all types, Cecil. Imagine a world where
complete suspension of disbelief made all theories equal.

- 73 de Mike N3LI -

3810. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 13:52:45 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fstendmrc2@f04n12.cac.psu.edu>
Source record: 26532

rmoisescu@gmail.com wrote:
>
>
> That's true, I am not an expert in this field, I only try to stay up
> to date with the technology, feel free to correct me if I'm wrong, but
> I have seen many advancements in this direction lately.

Those are?

And there is nothing wrong with advancements, but do these antennas use
any new laws of physics?

- 73 de Mike N3LI -

3811. Antenna Switch Problem; Thoughts On Please

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 15:03:07 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <P-idnQvlbtWZ0m_anZ2dnUVZ_uqvnZ2d@comcast.com>
Source record: 26533

Hello,

Would appreciate your opinions on the following, please:

I have two scanners that I now have connected to a single Scantenna antenna
in the attic.
Receiving only.

The coax comes from the antenna to an A/B push-button switch I bought from
Grove.
It's a cheap switch, only $20, and made in China. They imply on their web
site that the body
is die cast metal, but it came to me with a plastic body.
http://www.grove-ent.com/SWC01.html

It's their SWC01, supposedly good to 2 GHz, and uses F connectors.

It appears identical to the TVC brand AB-90 switch from Home Network Supply,
which says on their description that
there is 90 db isolation.
https://www.homenetworksupply.com/products_details.aspx?theme_id=1454900095&department_id=
5736102740&sub_id=&product_id=5854125807

Pushbutton A is arranged so that it switches the antenna to the upstairs
scanner, while pushbutton B switches it to the coax leading to the
downstairs scanner.

Well, big surprise.

I can push button B, but yet hear (at much reduced volume) conversations on
the upstairs scanner.

Sure doesn't seem like 90 db isolation.

Is this what is to be expected on these cheap switches, or possibly just a
bum one, or... ?

Any thoughts would be most appreciated.

Thanks,
Bob

3812. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 15:18:03 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <78452414-9812-4cfb-a256-1b798816e382@l42g2000hsc.googlegroups.com>
Source record: 26534

On Mar 31, 7:52 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> rmoise...@gmail.com wrote:
> > I find this topic very interesting, including the mandrill part :)
>
> > We all want to have small, broadband, eficient antennas. I believe Art
> > is right in his original post, today we can have all these
> > characteristics in the same package. There is no law of physics
> > forbidding that.
>
> Uhhh. actually there ARE laws of physics putting some pretty severe
> constraints on it, if not actually forbidding it, if you also accept the
> constraint that the material of which you make the antenna has finite
> resistance.
>
> Through advances in computation power we can achieve
>
> > today in months what took decades in the past and there is much
> > research directed at these kinds of new antennas. Eventually
> > everyone will be able to choose and model his own antenna based on the
> > characteristics one wants, but without the cumbersome dimensions,
> > without significant bandwith limitations, without major efficiency
> > compromises. I believe the tradeoff (for it has to exist one) will be
> > ease of manufacturing.
>
> Where ease might be defined in terms of being able to be made of
> actually realizable materials?
>
>
>
> > Incidentally these new antennas have a lot to do with what Art
> > defines as equilibrium although I don't think he has a clear enough
> > definition. But it's all related to patterns, patterns which can be
> > found everywhere in nature an which can be expressed almost entirely
> > through matemathical formulas. Scaling of antennas is clearly
> > possible, despite of what the Chu-Harrington limit states (or to be
> > fair, by applying them in a new way).
>
> Chu and, later, Harrington said nothing about bandwidth, by the way.
> They were more concerned with directivity and size and stored energy
> (the latter of which ties to efficiency and bandwidth).
>
> Also, even if you created a very small antenna with high efficiency
> (e.g. with superconductors), the fields around such an antenna will be
> quite intense, so while the antenna may be small, its near field will be

> pretty much the same size as the dipole it replaces, so you'll need to
> put that tiny antenna way up in the air with a non-conductive, non-lossy
> support to get it away from everything else. Finding a feedline might be
> a bit of a challenge. One has to be careful when one draws "the
> boundary" of the antenna.
>
> In practical terms, the size of an antenna isn't just the dimensions of
> the metal, but the "keepout" area within which you can't tolerate any
> intrusions and still keep the same antenna performance (i.e. a 40m
> dipole laying on the ground doesn't work nearly as well as a dipole
> suspended 10 feet off the ground)
>
> For that matter, avoiding the breakdown of air might be a problem.
> Consider a tesla coil, which is basically a fairly inefficient (in terms
> of radiated power for RF input power) small antenna for 100 kHz or so.
> The limit on performance for the tesla coil isn't thermal heating of the
> coil, but HV breakdown. Even a few hundred watts into a "shoebox" sized
> coil will have breakdown problems (and this is fully predicted by Chu's
> analysis... it's that "energy stored in the field" problem)
>
> > I eagerly await the day when the 80 meter dipole will be replace by a
> > small device the size of a shoe box (although it might be a bit
> > larger in the beginning :)).
>
> > Regards,
> > Robert

When the air breaks down around an antenna it is because the antenna
is not in a state of equilibrium. When a dipole is replaced by a quad
ala
a series circuit is replaced by a tank circuit it clearly shows that
the latter
is more efficient.This was firmly proven in Quito.Maximum radiation
efficiency requires equilibrium. Period
Art

3813. Re: Antenna Switch Problem; Thoughts On Please

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 15:30:04 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <sAsIj.359$ch4.167@nlpi064.nbdc.sbc.com>
Source record: 26535

Robert11 wrote:
> Hello,
>
> Would appreciate your opinions on the following, please:
>
> I have two scanners that I now have connected to a single Scantenna antenna
> in the attic.
> Receiving only.
>
> The coax comes from the antenna to an A/B push-button switch I bought from
> Grove.
> It's a cheap switch, only $20, and made in China. They imply on their web
> site that the body
> is die cast metal, but it came to me with a plastic body.
> http://www.grove-ent.com/SWC01.html
>
> It's their SWC01, supposedly good to 2 GHz, and uses F connectors.
>
> It appears identical to the TVC brand AB-90 switch from Home Network Supply,
> which says on their description that
> there is 90 db isolation.
> https://www.homenetworksupply.com/products_details.aspx?theme_id=1454900095&department_i
d=5736102740&sub_id=&product_id=5854125807
>
> Pushbutton A is arranged so that it switches the antenna to the upstairs
> scanner, while pushbutton B switches it to the coax leading to the
> downstairs scanner.
>
> Well, big surprise.
>
> I can push button B, but yet hear (at much reduced volume) conversations on
> the upstairs scanner.
>
> Sure doesn't seem like 90 db isolation.
>
> Is this what is to be expected on these cheap switches, or possibly just a
> bum one, or... ?
>
> Any thoughts would be most appreciated.
>
> Thanks,
> Bob
>
>

>

Bob;

90db of isolation is not the same as absolute isolation. There is still
some RF bleed from one line to the other line that a sensitive rf amp
can detect and send on to the detector.
Is there a reason for the a/b switch or just your feeling that you need
to switch the antenna from one radio to another.

Dave WD9BDZ

3814. To Dave From OP: Re: Antenna Switch Problem; Thoughts On Please

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 15:39:45 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <kuudnTdBPOKjym_anZ2dnUVZ_hOdnZ2d@comcast.com>
Source record: 26536

Hi Dave,

The reason for the A/B switch is that I have only one Scantenna in the
attic, but I splurged over the years, and recently, and now find myself with
a Uniden and a GRE scanner.

Have one upstairs, and one downstairs.
So, want to switch my single Scantenna, depending on which I'm listening to.

Can always use a rubber duckie, I guess, on the GRE as it's a handheld, but
the Scantenna is much better, and I find that I'm using the GRE pretty much
as a base unit a lot.

Best regards,
Bob

"David G. Nagel" <nagel.david@sbcglobal.net> wrote in message
news:sAsIj.359$ch4.167@nlpi064.nbdc.sbc.com...
> Robert11 wrote:
>> Hello,
>>
>> Would appreciate your opinions on the following, please:
>>
>> I have two scanners that I now have connected to a single Scantenna
>> antenna in the attic.
>> Receiving only.
>>
>> The coax comes from the antenna to an A/B push-button switch I bought
>> from Grove.
>> It's a cheap switch, only $20, and made in China. They imply on their
>> web site that the body
>> is die cast metal, but it came to me with a plastic body.
>> http://www.grove-ent.com/SWC01.html
>>
>> It's their SWC01, supposedly good to 2 GHz, and uses F connectors.
>>
>> It appears identical to the TVC brand AB-90 switch from Home Network
>> Supply, which says on their description that
>> there is 90 db isolation.
>> https://www.homenetworksupply.com/products_details.aspx?theme_id=1454900095&department_
id=5736102740&sub_id=&product_id=5854125807
>>
>> Pushbutton A is arranged so that it switches the antenna to the upstairs
>> scanner, while pushbutton B switches it to the coax leading to the

>> downstairs scanner.
>>
>> Well, big surprise.
>>
>> I can push button B, but yet hear (at much reduced volume) conversations
>> on the upstairs scanner.
>>
>> Sure doesn't seem like 90 db isolation.
>>
>> Is this what is to be expected on these cheap switches, or possibly just
>> a bum one, or... ?
>>
>> Any thoughts would be most appreciated.
>>
>> Thanks,
>> Bob
>>
>>
>>
>
>
> Bob;
>
> 90db of isolation is not the same as absolute isolation. There is still
> some RF bleed from one line to the other line that a sensitive rf amp can
> detect and send on to the detector.
> Is there a reason for the a/b switch or just your feeling that you need to
> switch the antenna from one radio to another.
>
> Dave WD9BDZ

3815. Pan and tilt

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 16:11:42 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <f6768ba6-ef8a-43a4-9d93-b16002c88fad@z38g2000hsc.googlegroups.com>
Source record: 26537

Had a bit of luck when assembling the antenna to the pan and tilt
mechanism
prior to placing them on the tower. The PM motors do not have brakes
on them!
Fortunately the leverage of the tilting does not overcome the motors
inertia and I am in the clear.
For the future any ideas on a braking means to ensure stabilility in
position?
Both motors use chain drives and I suppose I could use solenoids to
tighten the chain
Regards
Art.

3816. Re: Antenna Switch Problem; Thoughts On Please

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 16:38:25 UTC
From: Jeff <jeff@local.host>
Message-ID: <47f2652b$0$1344$834e42db@reader.greatnowhere.com>
Source record: 26538

> I can push button B, but yet hear (at much reduced volume) conversations
> on
> the upstairs scanner.
>
> Sure doesn't seem like 90 db isolation.
>
> Is this what is to be expected on these cheap switches, or possibly just a
> bum one, or... ?
>
> Any thoughts would be most appreciated.
>

Try disconnecting the coax to the switched-out scanner from the switch and see if you still hear the stations. It is possibly just pick up direct into the cable etc.

Jeff

3817. Re:MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 16:47:10 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <vGxIj.3$C36.1@newsfet15.ams>
Source record: 26545

I don't think that my MFJ-259Z is charging properly. Its new and it has been on charge for over 6 hours and all the batteries are still reading 0 Volts. I'm using the PSU that came with it. It works fine from the PSU but doesn't seem to be charging. The switch inside for charging is turned on.. Can some one please advise me how to check it?

Thanks

3818. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 17:18:01 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <ee7ee4a9-d023-41d6-b761-2a88d1a9399d@e39g2000hsf.googlegroups.com>
Source record: 26539

On Mar 31, 9:39 pm, rmoise...@gmail.com wrote:
> > It is hanging in the yard right now and obviously is very efficient at
> > what it does.
>
> You mean it's very efficient at hanging in the yard? :)
> Joking aside, I'd be interested in a *NEC file. Is it possible to
> model, or is it restricted by the number of segments?
>
> Robert

Let me clarify my answer.
The natural resonance resistance can exceed 1000 ohms
thought with the same design the resistance can be lowered
at the expense of bandwidth. These design forms can be easily
modelled with or without a dish reflector. I introduced twisted
wire into the design to overcome the reduced bandwidth of
the other design to bring the resistance down to the 50 to
100 ohm mark for easy match to existing components.
Since the impedance resistance is drastically lowered when
using the standard design on the computor I am inclined only
to use the computor as a guide in that instance. The dish
modelled consist of parallel elements which obviously would
be a bear to tilt so many inaccuracies are built in except in
the case of the assembly being tilted which I am presently
researching.
Art

3819. A Bit More On My Reception "Problems"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 17:40:23 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <v96dnaYyRPEe7m_anZ2dnUVZ_sWdnZ2d@comcast.com>
Source record: 26540

Hi,

Just thought I'd ask, and mention a Bit More, Re My scanner AM "Reception "Problems"

a. is there a concept as "intrinsic antenna noise" for a receiving scanner antenna type ?

On AM scanner frequencies, around 118 MHz or so, I find my Disconne is a lot quieter than a Scantenna I have.

Both are in the same attic spot, and use similar coax downfeeds.

The Scantenna uses a balun of sorts; I think it's 300 to 50 ohm.

b. I've mentioned the problems I have in picking up, well, an airport control tower about 8 miles away.
I think I've come to the conclusion that it's "simply" a case of AM (always) being a lot noisier than FM.
Does this make any sense ?

If it's some sort of overload on the scanner, using the scanner ATTN does not help.

c. Funny thing is that when I use my JRC NRD 545, with either the Scantenna or the Disconne, it comes in really clear.
This is without resorting to any of the fancy filtering or notching that the 545 has.
Hard to understand why it should be so much better with just its basic settings.

Perhaps the fact that it uses DSP helps a lot on AM, in some manner ?

Bob

3820. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 17:57:12 UTC
From: nm5k@wt.net
Message-ID: <8ff48b69-228d-4020-ac49-f2bf9e204b57@s8g2000prg.googlegroups.com>
Source record: 26541

On Apr 1, 9:18 am, Art Unwin <ArthurUn...@gmail.com> wrote:

>
> When the air breaks down around an antenna it is because the antenna
> is not in a state of equilibrium. When a dipole is replaced by a quad
> ala
> a series circuit is replaced by a tank circuit it clearly shows that
> the latter
> is more efficient.This was firmly proven in Quito.Maximum radiation
> efficiency requires equilibrium. Period
> Art

If you don't quit spewing all this blatant horse crap, I will be going
into
talking head mode again.
BTW, I'm younger than you are. So your claims of age affecting
vulnerability to the effects of constant bafflegab and horse caca
will
tested at great lengths in such an endeavor.
The change of the fabled antenna at HCJB had nothing to do with
efficiency. Period.

3821. Re: BNC Crimp Tool and crimp-connector

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 18:10:21 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47f27a8e$0$1111$4c368faf@roadrunner.com>
Source record: 26542

"J. Mc Laughlin" <jcm@power-net.net> wrote in message
news:tOCdnT3PCbZ0mW3anZ2dnUVZ_tWtnZ2d@bright.net...
> Dear Jim: Oh my, are they expensive. For half the price, Steren
> (sterenusa.com) makes a model 204-036 that deals with BNC, RCA, and F type
> connectors. What looks like the same tool, is sold under Paladin name and
> some house-brands. I wonder if anyone has used this tool?
>
> Sometimes one must pay a high price to receive reliability and quality,
> but that is not always the case. Someone put us onto a modest cost CAT5
> tool that we used at work for many, many connectors with almost no
> failures.
>
> Thanks for you advice. I will put the AMP 58433-2 on the list to
> consider.
>
> 73, Mac N8TT
>
I ve used both the Paladin and AMP crimp tools. The AMPS work very well all
the time.
I have found some of the Paladins that dont work as well a others. This
usually means the shield is not fastened to the body of the connector as
well as it should.. Not knowing each tools individual history this may be
as a result of normal use and abuse as the poorer ones seem to have been
around for a while. I know the ones most recently purchased perform very
well.

The AMP tools is at least 20 years old or older and still works flawlessly.
However its never been on a tower or tossed around in a tool bag, thrown in
the back of a truck, or used for a hammer.

If you have ever tried to replace a number of N connectors while on a tower
even the price of the AMP tool becomes very economical.

One thing the Paladin tool has going for it is durabilty. I have dropped it
off of a 60 ft tower without doing any damage. Im not sure if the AMP tool
would handle this.

Jimmie

3822. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 18:32:24 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <83438cd9-7f36-45cb-8b57-f9d5a1256a92@f63g2000hsf.googlegroups.com>
Source record: 26543

On Apr 1, 12:57 pm, n...@wt.net wrote:
> On Apr 1, 9:18 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>
>
> > When the air breaks down around an antenna it is because the antenna
> > is not in a state of equilibrium. When a dipole is replaced by a quad
> > ala
> > a series circuit is replaced by a tank circuit it clearly shows that
> > the latter
> > is more efficient.This was firmly proven in Quito.Maximum radiation
> > efficiency requires equilibrium. Period
> > Art
>
> If you don't quit spewing all this blatant horse crap, I will be going
> into
> talking head mode again.
> BTW, I'm younger than you are. So your claims of age affecting
> vulnerability to the effects of constant bafflegab and horse caca
> will
> tested at great lengths in such an endeavor.
> The change of the fabled antenna at HCJB had nothing to do with
> efficiency. Period.

You my friend are a good example of what a redneck thinks.
In the past you have bragged about your lack of schooling
spouting about the times you didn't go to school. Now you have a
license
to operate a radio where you can excercise your freedom of speech at
will.
Unfortunately, as soon as you start vibrating you vocal cords you
instantly
reveal who and what you are. This is of immense inportance to the
rest of us
when considering whether to use our precious time to your utterings.
Go ahead and be a talking head but you will find that your audio lacks
propagation
in the subject of antennas
Have a happy day and be nice to those around you. You will never know
when
that last day of yours comes around despite your youthful age.
Art Unwin

3823. Re: BNC Crimp Tool and crimp-connector

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 18:46:38 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <FdmdneoQppaRHm_anZ2dnUVZ_rKtnZ2d@bright.net>
Source record: 26544

Dear Jimmie: Thank you for sharing your experience. That is just the sort
of thing needed.

After looking at information available on the WEB, it seems most likely that
Steren is the actual manufacturer. Steren makes both a BNC-RCA-F crimp tool
(204-036) (about $42) and a dedicated BNC crimp tool (204-005) (about $16).
I hope that someone who has used these tools will report their experience.

Thanks again, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Jimmie D" <GFENDER@carolina.rr.com> wrote in message
news:47f27a8e$0$1111$4c368faf@roadrunner.com...
>
> "J. Mc Laughlin" <jcm@power-net.net> wrote in message
> news:tOCdnT3PCbZ0mW3anZ2dnUVZ_tWtnZ2d@bright.net...
>> Dear Jim: Oh my, are they expensive. For half the price, Steren
>> (sterenusa.com) makes a model 204-036 that deals with BNC, RCA, and F
>> type connectors. What looks like the same tool, is sold under Paladin
>> name and some house-brands. I wonder if anyone has used this tool?
>>
>> Sometimes one must pay a high price to receive reliability and quality,
>> but that is not always the case. Someone put us onto a modest cost CAT5
>> tool that we used at work for many, many connectors with almost no
>> failures.
>>
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>> consider.
>>
>> 73, Mac N8TT
>>
> I ve used both the Paladin and AMP crimp tools. The AMPS work very well
> all the time.
> I have found some of the Paladins that dont work as well a others. This
> usually means the shield is not fastened to the body of the connector as
> well as it should.. Not knowing each tools individual history this may be
> as a result of normal use and abuse as the poorer ones seem to have been
> around for a while. I know the ones most recently purchased perform very
> well.
>
> The AMP tools is at least 20 years old or older and still works
> flawlessly. However its never been on a tower or tossed around in a tool
> bag, thrown in the back of a truck, or used for a hammer.
>

> If you have ever tried to replace a number of N connectors while on a
> tower even the price of the AMP tool becomes very economical.
>
> One thing the Paladin tool has going for it is durabilty. I have dropped
> it off of a 60 ft tower without doing any damage. Im not sure if the AMP
> tool would handle this.
>
> Jimmie
>

3824. Re: Re:MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 21:49:06 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <MuWdndaYI_0_MW_anZ2dnUVZ_vmlnZ2d@comcast.com>
Source record: 26546

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:vGxIj.3$C36.1@newsfet15.ams...
>I don't think that my MFJ-259Z is charging properly. Its new and it has
>been
> on charge for over 6 hours and all the batteries are still reading 0
> Volts.
> I'm using the PSU that came with it. It works fine from the PSU but
> doesn't
> seem to be charging. The switch inside for charging is turned on.. Can
> some
> one please advise me how to check it?
>
> Thanks
>
Make sure the batteries are in the correct positions!

3825. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 22:15:04 UTC
From: nm5k@wt.net
Message-ID: <7c3b240a-3595-478b-b433-b5b750de16c1@i7g2000prf.googlegroups.com>
Source record: 26547

On Apr 1, 12:32 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Apr 1, 12:57 pm, n...@wt.net wrote:
>
>
>
> > On Apr 1, 9:18 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>
> > > When the air breaks down around an antenna it is because the antenna
> > > is not in a state of equilibrium. When a dipole is replaced by a quad
> > > ala
> > > a series circuit is replaced by a tank circuit it clearly shows that
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> > > Art
>
> > If you don't quit spewing all this blatant horse crap, I will be going
> > into
> > talking head mode again.
> > BTW, I'm younger than you are. So your claims of age affecting
> > vulnerability to the effects of constant bafflegab and horse caca
> > will
> > tested at great lengths in such an endeavor.
> > The change of the fabled antenna at HCJB had nothing to do with
> > efficiency. Period.
>
> You my friend are a good example of what a redneck thinks.
> In the past you have bragged about your lack of schooling
> spouting about the times you didn't go to school. Now you have a
> license
> to operate a radio where you can excercise your freedom of speech at
> will.
> Unfortunately, as soon as you start vibrating you vocal cords you
> instantly
> reveal who and what you are. This is of immense inportance to the
> rest of us
> when considering whether to use our precious time to your utterings.
> Go ahead and be a talking head but you will find that your audio lacks
> propagation
> in the subject of antennas
> Have a happy day and be nice to those around you. You will never know
> when
> that last day of yours comes around despite your youthful age.
> Art Unwin

Prior Art... I have never "bragged" about not going to school.
I was expelled from school. Which means I really didn't have a
whole lot of choice in the matter past that stage.
But in the general scheme of things this means little, as most
schools don't teach antenna theory unless it's a specific college
course.
You have never heard my vocal cords vibrate, as you have never
talked to me. I doubt if you have even heard me on the air.

Being you are so highly educated, why is your spelling
so bad?
Seems to me you went to school, but either slept through
it, or had other things to think about.
In any case, you are the last horses ass that should be
braying about my education.
I educate myself, and have plenty of books laying around.
It's funny, I am self educated and oft speak about antennas,
but few people have any problems with what I write about.
If they do, it's usually some fairly minor detail.
You on the other hand, claim to be well educated, but
almost everything you spout is challenged as bafflegab,
pure untruth, or just plain horse crap.
What is wrong with this picture?
Prior Art, you make me feel gifted, being I seem to be
ahead of you as far as antenna theory, and I didn't
take *any* scholarly courses for it.
I think you should learn to write and spell a little better
if you are going to whine about other peoples lack of
education. Your "Queens English" is a mess.
What is your excuse for this problem?
I absolutely hated English when in school, yet I seem
to be doing a bit better writing it than you, even with my
sub par education. At least I have an excuse though.
Again, you make me feel downright gifted to be on par
with such a highly educated man such as yourself. :/
MK

3826. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 22:56:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <O4zlj.31033$R84.9008@newssvr25.news.prodigy.net>
Source record: 26548

Barrett wrote:
> I don't think that my MFJ-259Z is charging properly. Its new and it has been
> on charge for over 6 hours and all the batteries are still reading 0 Volts.
> I'm using the PSU that came with it. It works fine from the PSU but doesn't
> seem to be charging. The switch inside for charging is turned on.. Can some
> one please advise me how to check it?

I just did a search of the MFJ web page and it said
"No Items Found!" for an MFJ-259Z.

My MFJ-259B has a jumper for standard vs rechargeable
batteries. Perhaps your jumper in in the standard
battery position rather than in the rechargeable
position?
--
73, Cecil http://www.w5dxp.com

3827. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 23:00:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <18zlj.31034$R84.10901@newssvr25.news.prodigy.net>
Source record: 26549

Cecil Moore wrote:
> My MFJ-259B has a jumper for standard vs rechargeable
> batteries. Perhaps your jumper in in the standard
> battery position rather than in the rechargeable
> position?

Actually, it is a "charger on" or "charger off"
jumper.
--
73, Cecil http://www.w5dxp.com

3828. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-01 23:22:49 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <48ccf053-c289-4715-b378-53e730feed43@a1g2000hsb.googlegroups.com>
Source record: 26451
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Mar 30, 6:54 am, "Homer J" <hom...@home.com> wrote:
> I did not see all the replies nor the original post but in the world of
> radio frequency (RF) match yes this would be an ideal situation since
> maximum energy transfer occur when Imepdance of the antenna (Zant) =
> Imedance of the Receiver Antenna Port (Zrx_port).
>
> All this talk about noise while important to minimum detectable signal more
> greatly influenced by the internal Noise Figure (NF) of the receiver (RX).
> In my line of work, which is Radar engineering, we use a standard
> temperature T = 270 Kelvin to model the noise originating by natural
> extgernal sources of which the Sun is the biggest contributor.
>
> The short end answer on HF you will probably not notice a big difference as
> long as the antenna is close between a 1/4 to 1/2 wavelength long [e.g.
> wavelength = Velocity of Light (C) / Frequency of Operation (Fo)]. However,
> if you use one of those collaspable whips found on the portable shortwave
> receivers you will. This is because the anyenna impedance is a lot less than
> the usual 50 Ohm impedance of the RX antenna port (e.g. Zant << Zrx_port).
>
> You can match very short antennas with antenna tuners to make them transfer
> efficently to the RX antenna port but now the nasty parameter of effective
> antenna aperature (square feet or meters) reduces it caoture ability (think
> of catching a baseball with and without a glove, the probability of catching
> the ball is higher with a glove due to it larger capture area).
>
> Well that is enough to put someone to ZZZzzzzzzzzz. Hi Hi
>
> 73, Homer J
> on all lower and upper channels Thane-Fer

I never knew that "aperature" could be measured in square feet or
metres!
Is there a book that describes it in such a way ?
Art

3829. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 00:07:44 UTC
From: LVMarc <LVMarc@att.net>
Message-ID: <JfzIj.8115$CO2.3703@newsfe12.phx>
Source record: 26550
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

Joel Koltner wrote:
> "Homer J" <homerj@home.com> wrote in message
> news:f3ea2$47ef7f68$ce94701c$31618@DIALUPUSA.NET...
>
>>All this talk about noise while important to minimum detectable signal more
>>greatly influenced by the internal Noise Figure (NF) of the receiver (RX).
>
>
> My understanding is that this is not the biggest influence at HF -- there's so
> much atmospheric noise down there that even with a pretty poor receiver (noise
> figure-wise) the MDS is usually just about the same as with a much better
> receiver.
>
>
>>In my line of work, which is Radar engineering, we use a standard
>>temperature T = 270 Kelvin to model the noise originating by natural
>>extgernal sources of which the Sun is the biggest contributor.
>
>
> Have you seen the graph in, e.g., Krauss's antenna or EM book? T=270 is a
> poor model at many frequencies. (Granted, if you're doing narrowband designs,
> it'll just be some offset error that's probably not too much worse than, say,
> +/-3dB.)
>
>
>>However, if you use one of those collaspable whips found on the portable
>>shortwave receivers you will. This is because the anyenna impedance is a lot
>>less than the usual 50 Ohm impedance of the RX antenna port (e.g. Zant <<
>>Zrx_port).
>>You can match very short antennas with antenna tuners to make them transfer
>>efficently to the RX antenna port but now the nasty parameter of effective
>>antenna aperature (square feet or meters) reduces it caoture ability
>
>
> From watching this thread I get the impression that -- at least on HF again --
> the (lack of) capture area is the much bigger problem than the mismatch is.
>
> ---Joel
>
>
yes

3830. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 00:29:26 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3ik5v31obsdqd5ptme6u0asdc72cvcv49j@4ax.com>
Source record: 26452

On Mon, 31 Mar 2008 18:55:13 -0700 (PDT), rmoisescu@gmail.com wrote:

>> >Scaling of antennas is clearly
>> >possible, despite of what the Chu-Harrington limit states (or to be
>> >fair, by applying them in a new way).
>>
>> But you don't know how, and have never seen one either.
>
>That's true, I am not an expert in this field, I only try to stay up
>to date with the technology, feel free to correct me if I'm wrong, but
>I have seen many advancements in this direction lately.

Hi Robert,

It takes only one to convince us, not many. Choose your best example
and then we can correct your impression of it being representative of
a new advance in technology.

Or we can simply skip the example and say there have been no new
advances, only new designs (not the same thing). Those new designs do
not strain the limits of 100 year old theory. They are only new
because of scale. We are no longer confined to the 2000M band for
QSOs (and most of those new designs are set in the cM bands).

73's
Richard Clark, KB7QHC

3831. roof ground plane

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 01:59:56 UTC
From: carpe ventus <pbargholz@gmail.com>
Message-ID: <2ab8167f-c307-419c-a9ad-b9f487983341@s8g2000prg.googlegroups.com>
Source record: 26454

G'day Group,

I have a new QTH with a steel roof (colorbond) and am thinking of putting up an unobtrusive (10m) vertical. I was considering mounting a quarter wave length of aluminum tube from the ridge cap, and use the roof as a ground plane. The roof slopes off either side at a shallow angle.

Anybody done this? Anybody see any problems?

thanks, Peter.

3832. Re: roof ground plane

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 02:14:15 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47f2ebf5$0$1101$4c368faf@roadrunner.com>
Source record: 26455

"carpe ventus" <pbargholz@gmail.com> wrote in message
news:2ab8167f-c307-419c-a9ad-b9f487983341@s8g2000prg.googlegroups.com...
> G'day Group,
>
> I have a new QTH with a steel roof (colorbond) and am thinking of
> putting up an unobtrusive (10m) vertical. I was considering mounting a
> quarter wave length of aluminum tube from the ridge cap, and use the
> roof as a ground plane. The roof slopes off either side at a shallow
> angle.
>
> Anybody done this? Anybody see any problems?
>
> thanks, Peter.

Peter, I have done this mounting the antenna on the peak of my workshop.
The result was an antenna with a near perfect match for 50 ohms as if that
matters that much.
Im waiting for warmer/dryer weather so I can replace it with a 5/8ths still
using the roof as a groundplane
and see how well that works.

Jimmie

3833. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 02:23:03 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3sq5v39223vtdlrbff141uomnr6tl0injf@4ax.com>
Source record: 26453

On Mon, 31 Mar 2008 19:26:14 -0700 (PDT), rmoisescu@gmail.com wrote:

>To be more specific, I was reffering to such designs that reduce the
>scale of antennas in at least one axis:
>http://adsabs.harvard.edu/abs/2004ITAP...52.1945P
>http://ctd.grc.nasa.gov/organization/branches/amosb/RCA_RESEARCH/RESEARCH_mini-antennas.h
tm
>http://ntrs.nasa.gov/details.jsp?R=362773
>http://ntrs.nasa.gov/details.jsp?R=470415
>I have seen some of them described as fractal trees, but the
>information is relatively scarce.

-SIGH-

>I know research is continuing on
>this subject and even found some info at a website somewhere but I
>can't remember where. Since you probably know more about them than me,
>I would appreciate some guidance here too :)

Hi Robert,

Well, your list of URLs just let the air out of the tires on this ride
into the new century.

"Relatively scarce" information comes from one of several problems:
1. you didn't look hard enough and it is out there;
2. you didn't look hard enough and it isn't out there;
3. you don't have to look at all because nothing new is out there.

That aside, and given you poor usage of efficiency:
>Ok, it was my mistake to not clarify 'high efficiency'. By that I
>meant 'at the same order of efficiency as normal scale designs'.
"Same order?"

A garden variety dipole in the back yard can be 95% efficient. Now,
what is comparable within the "same order?" 80%? 40%? 20%? 5%?
For the same bandwidth? For the same gain?

Without metrics this topic of "Antenna physical size" is a joke.

73's
Richard Clark, KB7QHC

3834. Re: To Dave From OP: Re: Antenna Switch Problem; Thoughts On Please

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 05:27:04 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <XQEIj.411$ch4.100@nlpi064.nbdc.sbc.com>
Source record: 26456

Robert11 wrote:
> Hi Dave,
>
> The reason for the A/B switch is that I have only one Scantenna in the
> attic, but I splurged over the years, and recently, and now find myself with
> a Uniden and a GRE scanner.
>
> Have one upstairs, and one downstairs.
> So, want to switch my single Scantenna, depending on which I'm listening to.
>
> Can always use a rubber duckie, I guess, on the GRE as it's a handheld, but
> the Scantenna is much better, and I find that I'm using the GRE pretty much
> as a base unit a lot.
>
> Best regards,
> Bob
>
> ---------------
>
>
> "David G. Nagel" <nagel.david@sbcglobal.net> wrote in message
> news:sAsIj.359$ch4.167@nlpi064.nbdc.sbc.com...
>> Robert11 wrote:
>>> Hello,
>>>
>>> Would appreciate your opinions on the following, please:
>>>
>>> I have two scanners that I now have connected to a single Scantenna
>>> antenna in the attic.
>>> Receiving only.
>>>
>>> The coax comes from the antenna to an A/B push-button switch I bought
>>> from Grove.
>>> It's a cheap switch, only $20, and made in China. They imply on their
>>> web site that the body
>>> is die cast metal, but it came to me with a plastic body.
>>> http://www.grove-ent.com/SWC01.html
>>>
>>> It's their SWC01, supposedly good to 2 GHz, and uses F connectors.
>>>
>>> It appears identical to the TVC brand AB-90 switch from Home Network
>>> Supply, which says on their description that
>>> there is 90 db isolation.
>>> https://www.homenetworksupply.com/products_details.aspx?theme_id=1454900095&department

_id=5736102740&sub_id=&product_id=5854125807
>>>
>>> Pushbutton A is arranged so that it switches the antenna to the upstairs
>>> scanner, while pushbutton B switches it to the coax leading to the
>>> downstairs scanner.
>>>
>>> Well, big surprise.
>>>
>>> I can push button B, but yet hear (at much reduced volume) conversations
>>> on the upstairs scanner.
>>>
>>> Sure doesn't seem like 90 db isolation.
>>>
>>> Is this what is to be expected on these cheap switches, or possibly just
>>> a bum one, or... ?
>>>
>>> Any thoughts would be most appreciated.
>>>
>>> Thanks,
>>> Bob
>>>
>>>
>>
>>
>> Bob;
>>
>> 90db of isolation is not the same as absolute isolation. There is still
>> some RF bleed from one line to the other line that a sensitive rf amp can
>> detect and send on to the detector.
>> Is there a reason for the a/b switch or just your feeling that you need to
>> switch the antenna from one radio to another.
>>
>> Dave WD9BDZ
>
>
Bob;

Why don't you make a second antenna. They are easy to make and will
perform as well as the commercial antenna you already have.
When I first got into Amateur radio my transmitting antenna was a 19"
piece of coat hanger. This was bent near one end and soldered to a
antenna connector. This very unglamorious thing was stuck into the back
end of my transmitter and performed very well. You can make something
slightly more attractive for your upstairs receiver for just a few cents.

Dave WD9BDZ

3835. Re: Re:MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 07:29:22 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <8BGIj.208$aH.87@newsfet15.ams>
Source record: 26457

The 2600 NiMH rechargeable batteries that came with MFJ-259Z are all reading 0 Volts and will not charge in the MFJ-259Z or in my smart charger. I thought that these types of batteries are not effected by discharge memory and yet these seem to be effected by it.

Is there anything I can do to get them working again?

The unit only arrived yesterday from W&S. Its taken long enough for it to arrive with out having to send it back and wait for a replacement from them. It also showed a nice silver shinny coupling antenna attachment in the picture and it came with what looks like an old bent piece of enamelled copper wire bent into a loop that is soldered to a PL259. A bit disappointing really for the money.

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:vGxIj.3$C36.1@newsfet15.ams...
>I don't think that my MFJ-259Z is charging properly. Its new and it has
>been
> on charge for over 6 hours and all the batteries are still reading 0
> Volts.
> I'm using the PSU that came with it. It works fine from the PSU but
> doesn't
> seem to be charging. The switch inside for charging is turned on.. Can
> some
> one please advise me how to check it?
>
> Thanks
>
>
>
>
>

3836. Re: Re:MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 08:29:14 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <7%GIj.2189$5w3.467@newsfet15.ams>
Source record: 26458

The jumper is on in the unit and all the batteries are in there correct position. The link for the MFJ-259Z on the W&S site is http://www.wsplc.com/cgi-bin/ss000001.pl?SS=MFJ-259Z&PR=-1&TB=A&SHOP=&ACTION.x=14&ACTION.y=3

They won't even charge in my Smart charger. They just shut down the charging as if there no good, but they are supposed to be brand new. Just borrowed some 1800mA and these are charging fine in the MFJ-259, so it looks like the problem is with the batteries. I have never experienced this with these type of batteries before only NiCad's.

"Barrett" <barrett@blueyounder.co.uk> wrote in message news:8BGIj.208$aH.87@newsfet15.ams...
> The 2600 NiMH rechargeable batteries that came with MFJ-259Z are all
> reading 0 Volts and will not charge in the MFJ-259Z or in my smart
> charger. I thought that these types of batteries are not effected by
> discharge memory and yet these seem to be effected by it.
>
> Is there anything I can do to get them working again?
>
> The unit only arrived yesterday from W&S. Its taken long enough for it to
> arrive with out having to send it back and wait for a replacement from
> them. It also showed a nice silver shinny coupling antenna attachment in
> the picture and it came with what looks like an old bent piece of
> enamelled copper wire bent into a loop that is soldered to a PL259. A bit
> disappointing really for the money.
>
> "Barrett" <barrett@blueyounder.co.uk> wrote in message
> news:vGxIj.3$C36.1@newsfet15.ams...
>>I don't think that my MFJ-259Z is charging properly. Its new and it has
>>been
>> on charge for over 6 hours and all the batteries are still reading 0
>> Volts.
>> I'm using the PSU that came with it. It works fine from the PSU but
>> doesn't
>> seem to be charging. The switch inside for charging is turned on.. Can
>> some
>> one please advise me how to check it?
>>
>> Thanks
>>
>>
>>
>>
>>

>
>

3837. Re: roof ground plane

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 09:22:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FfIlj.31081$R84.18451@newssvr25.news.prodigy.net>
Source record: 26459

carpe ventus wrote:
> Anybody see any problems?

Are all the pieces of the roof electrically
bonded together?
--
73, Cecil http://www.w5dxp.com

3838. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 09:28:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <UkIIj.416$ch4.399@nlpi064.nbdc.sbc.com>
Source record: 26460

Barrett wrote:
> The jumper is on in the unit and all the batteries are in there correct
> position. The link for the MFJ-259Z on the W&S site is
> http://www.wsplc.com/cgi-bin/ss000001.pl?SS=MFJ-259Z&PR=-1&TB=A&SHOP=&ACTION.x=14&ACTION.y=3

Is this an MFJ product?
--
73, Cecil http://www.w5dxp.com

3839. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 09:41:24 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <e8efe95f-a1aa-47e1-8df8-51f854f150b4@i36g2000prf.googlegroups.com>
Source record: 26461

On Apr 1, 8:08 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
> >> If the average interference is zero, the average
> >> reflected power is dissipated in the source resistor.
> >> All of your unethical lies, innuendo, and hand-waving
> >> will not change that fact of physics.
>
> > More precisely, the average value of the imputed reflected
> > power is numerically equal to the increase in the average
> > power dissipated in the source resistor.
>
> More precisely, at the *exact* time of arrival of the
> reflected wave, the average power dissipated in the
> source resistor increases by *exactly* the magnitude
> of the average reflected power. Do you think that is
> just a coincidence?

Not quite, but close. And averages can not change instantly.

But your phraseology suggests another way to approach
the problem. Let us consider what happens just after
the arrival of the reflected wave. For computational
convenience, we'll use a frequency of 1/360 hertz so
that 1 degree of the wave is one second long.

The reflected wave arrives at 90 seconds (or 90 degrees)
after the source is turned on. If the line is
terminated in 50 ohms, then no reflection arrives and
during the one second between degree 90 and degree 91,
the source resistor dissipates 0.01523 J of energy. The
line also receives 0.01523 J of energy and the source
provides 0.03046 J.
Esource.50[90..91] = 0.03046 J
Ers.50[90..91] = 0.01523 J
Eline.50[90..91] = 0.01523 J
Esource = Ers + Eline
as expected.
Efor = Eline
since Eref is 0.

Now let us examine the case with a 12.5 ohm load and
a non-zero reflected wave.
During the one second between degree 90 and degree 91,
the source resistor dissipation with no reflection

is still 0.01523 J and the imputed reflected wave
provides 99.98477 J for a total of 100.00000 J.

But the source resistor actually absorbs 98.25503 J
in this interval.

Ooooopppps. It does not add up. So the dissipation
in the source resistor went up, but not enough to
account for all of the imputed energy in the
reflected wave. This does not satisfy conservation
of energy, which should be sufficient to kill the
hypothesis.

But Esource = Ers + Eline as expected.
Esource.12.5[90..91] = -1.71451 J
Ers.12.5[90..91] = 98.25503 J
Eline.12.5[90..91] = -99.96954 J
Note that in the interval 90 to 91 degrees, the source
is absorbing energy. This is quite different than what
happens when there is no reflected wave.

You said earlier "Do you think that is just a coincidence?"
It is to be expected that the dissipation in the source
resistor changed; after all, the load conditions changed.
But it is mere happenstance that the average of the
increase in the dissipation is the same as the average
power imputed to the reflected wave; an ideosyncratic
effect of the selection of component values.

> > It is not obvious why you reject this more precise, less
> > misleading description.
>
> Why do you use such unfair ill-willed debating techniques
> based on innuendo and not on facts in evidence?
>
> IMO, our two statements above say the same thing
> with mine being the more precise and detailed.
> I don't reject yours - I just prefer mine.

Authors often do have difficulties detecting when
their words mislead. Excellent authors, and there
are not many, use the feedback from their readers
to adjust their wording to eliminate misleading
prose.

> If the source of the increased dissipation in the
> source resistor is not the reflected energy, exactly
> where did that "extra" energy come from at the exact
> time of arrival of the reflected wave?

Exactly. This is what calls into question the
notion that the reflected wave is transporting
energy. This imputed energy can not be accounted for.

Now the energy that can be accounted for is the
energy that flows in or out of the line. This
energy, along with the energy dissipated in the
source resistor will *always*, no matter how
you slice and dice it, be equal to the energy
being delivered by the source; completely satisfying
the requirements of conservation of energy.

The best that can be said for the imputed power in
the reflected wave is that when it is subtracted
from the imputed power in the forward wave, the
result will be the actual energy flow in the line.
But this is just a tautology; a result from the
very definition of Vforward and Vreflected.

> Hint: Since the only other source of energy in the
> entire system is the reflected wave, any additional
> source would violate the conservation of energy
> principle.

Alternatively, since it turns out that trying to
use this imputed power to calculate the power
dissipated in the source resistor results in a
violation of conservation of energy, this
energy flow imputed to the reflected wave is
a figment. The only thing that is real is the
total energy flow.

Now you have asked repeatedly about the reflection
from the mirror because you are sure that this
is proof of the energy in the reflected wave.

The energy in the light entering your eye is
the total energy; it is not imputed energy of a
wave that is a partial contributor to the total.
If the eye were also a source, such that there
was a Pfor to go along with Pref, then your
question would align with the situation under
discussion. But when the energy flow is only
in one direction, that flow is a total flow
and it definitely contains energy.

To recap, it is when a total flow is
broken into multiple non-zero constituent flows
that energy flow imputed to the constituents
is a dubious concept.

...Keith

3840. Re: roof ground plane

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 10:08:48 UTC
From: carpe ventus <pbargholz@gmail.com>
Message-ID: <dc0cb55c-14a7-4ab3-95f4-7c1560130fbb@i36g2000prf.googlegroups.com>
Source record: 26462

On Apr 2, 8:22 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> carpe ventus wrote:
> > Anybody see any problems?
>
> Are all the pieces of the roof electrically
> bonded together?
> --
> 73, Cecil http://www.w5dxp.com

Hi Cecil,

The sheets of roofing are secured together via tek screws that pass
through the overlapping sheets where they are fixed to the truss - so
probably??? Maybe??? No not really.

Consequences?

cheers, Peter.

3841. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 10:16:01 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <m1JIj.4892$Oj4.378@newsfet15.ams>
Source record: 26463

Yes it is. Just looked at the box and it says MFJ-259Z but the front of
meter says MFJ-259B. I don't understand this at all.

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:UkIIj.416$ch4.399@nlpi064.nbdc.sbc.com...
> Barrett wrote:
>> The jumper is on in the unit and all the batteries are in there correct
>> position. The link for the MFJ-259Z on the W&S site is
>> http://www.wsplc.com/cgi-bin/ss000001.pl?SS=MFJ-259Z&PR=-1&TB=A&SHOP=&ACTION.x=14&ACTIO
N.y=3
>
> Is this an MFJ product?
> --
> 73, Cecil http://www.w5dxp.com
>

3842. Re: roof ground plane

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 11:23:05 UTC
From: "H. Adam Stevens" <mayatwo@earthlink.net>
Message-ID: <hrqdnUblE80K8W7anZ2dnUVZ_uyinZ2d@earthlink.com>
Source record: 26464

"carpe ventus" <pbargholz@gmail.com> wrote in message
news:dc0cb55c-14a7-4ab3-95f4-7c1560130fbb@i36g2000prf.googlegroups.com...
> On Apr 2, 8:22 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> carpe ventus wrote:
>> > Anybody see any problems?
>>
>> Are all the pieces of the roof electrically
>> bonded together?
>> --
>> 73, Cecil http://www.w5dxp.com
>
> Hi Cecil,
>
> The sheets of roofing are secured together via tek screws that pass
> through the overlapping sheets where they are fixed to the truss - so
> probably??? Maybe??? No not really.
>
> Consequences?
>
> cheers, Peter.

That describes my aluminum roof.
Never had a problem.
Slope gives a ~50ohm impedance, as mentioned before.

73
H.
NQ5H

3843. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 12:37:41 UTC
From: amdx <amdx@knology.net>
Message-ID: <53a6f$47f37b1b$18d6b40c$17728@KNOLOGY.NET>
Source record: 26465

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:m1JIj.4892$Oj4.378@newsfet15.ams...
> Yes it is. Just looked at the box and it says MFJ-259Z but the front of
> meter says MFJ-259B. I don't understand this at all.
>
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:UkIIj.416$ch4.399@nlpi064.nbdc.sbc.com...
>> Barrett wrote:
>>> The jumper is on in the unit and all the batteries are in there correct
>>> position. The link for the MFJ-259Z on the W&S site is
>>> http://www.wsplc.com/cgi-bin/ss000001.pl?SS=MFJ-259Z&PR=-1&TB=A&SHOP=&ACTION.x=14&ACTI
ON.y=3
>>
>> Is this an MFJ product?
>> --
>> 73, Cecil http://www.w5dxp.com
>>
A quick Google search shows a few sales outlets, but the MFJ company didn't
show up when searching MFJ-259Z.
I suspect an after market modification by someone.
This site has a letter from someone else having a charging problem with the
MFL-259Z. See the second letter.
http://www.eham.net/reviews/detail/13
Mike

3844. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 13:17:16 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080402061716.9b5fa320.rsparks@elltel.net>
Source record: 26466

On Wed, 2 Apr 2008 02:41:24 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

clip
> But your phraseology suggests another way to approach
> the problem. Let us consider what happens just after
> the arrival of the reflected wave. For computational
> convenience, we'll use a frequency of 1/360 hertz so
> that 1 degree of the wave is one second long.
>
> The reflected wave arrives at 90 seconds (or 90 degrees)
> after the source is turned on. If the line is
> terminated in 50 ohms, then no reflection arrives and
> during the one second between degree 90 and degree 91,
> the source resistor dissipates 0.01523 J of energy. The
> line also receives 0.01523 J of energy and the source
> provides 0.03046 J.
> Esource.50[90..91] = 0.03046 J
> Ers.50[90..91] = 0.01523 J
> Eline.50[90..91] = 0.01523 J
> Esource = Ers + Eline
> as expected.
> Efor = Eline
> since Eref is 0.
I come up with 141.4v across 50 plus 50 ohms. The current should be 1.414a. Power to each 50 ohm resistor would be 50*1.4142^2 = 200w. For the 1 degree interval of 1 second, that would be 200 joules.

Right? Peak current flows at 90 degrees?
--
73, Roger, W7WKB

3845. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 13:33:46 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c764b7d9-4a2c-4875-8053-34b684aaf403@i7g2000prf.googlegroups.com>
Source record: 26467

On Apr 2, 9:17 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Wed, 2 Apr 2008 02:41:24 -0700 (PDT)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
>
> clip
>
>
>
> > But your phraseology suggests another way to approach
> > the problem. Let us consider what happens just after
> > the arrival of the reflected wave. For computational
> > convenience, we'll use a frequency of 1/360 hertz so
> > that 1 degree of the wave is one second long.
>
> > The reflected wave arrives at 90 seconds (or 90 degrees)
> > after the source is turned on. If the line is
> > terminated in 50 ohms, then no reflection arrives and
> > during the one second between degree 90 and degree 91,
> > the source resistor dissipates 0.01523 J of energy. The
> > line also receives 0.01523 J of energy and the source
> > provides 0.03046 J.
> >   Esource.50[90..91] = 0.03046 J
> >   Ers.50[90..91]   = 0.01523 J
> >   Eline.50[90..91]   = 0.01523 J
> >   Esource = Ers + Eline
> > as expected.
> >   Efor = Eline
> > since Eref is 0.
>
> I come up with 141.4v across 50 plus 50 ohms. The current should be 1.414a. Power to each 50 ohm resistor would be 50*1.4142^2 = 200w. For the 1 degree interval of 1 second, that would be 200 joules.
>
> Right? Peak current flows at 90 degrees?
> --
> 73, Roger, W7WKB- Hide quoted text -
>
> - Show quoted text -

We may be using different sources. My Vs is 141.4cos(wt)
so that between 90 degrees and 91 degrees, my source
voltage is going from 0 to -2.468 V.

And an ooopppps. I actually did the calculations for
a shorted load rather than 12.5 ohms as stated.
With the reflection coefficient of -1 and a 90 degree
delay, the reflected voltage between 90 and 91 degrees
changes from -70.711 V to -70.700 V.

Hoping these details resolve the disparity,

...Keith

3846. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 13:38:27 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <8%LIj.647$ci6.94@newsfet15.ams>
Source record: 26468

I borrowed some 1800mA and these are charging fine in the MFJ-259, so it
looks like the
problem is with the batteries. I have never experienced this with these type
of batteries before only NiCad's.

"amdx" <amdx@knology.net> wrote in message
news:53a6f$47f37b1b$18d6b40c$17728@KNOLOGY.NET...
>
> "Barrett" <barrett@blueyounder.co.uk> wrote in message
> news:m1JIj.4892$Oj4.378@newsfet15.ams...
>> Yes it is. Just looked at the box and it says MFJ-259Z but the front of
>> meter says MFJ-259B. I don't understand this at all.
>>
>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>> news:UkIIj.416$ch4.399@nlpi064.nbdc.sbc.com...
>>> Barrett wrote:
>>>> The jumper is on in the unit and all the batteries are in there
>>>> correct position. The link for the MFJ-259Z on the W&S site is
>>>> http://www.wsplc.com/cgi-bin/ss000001.pl?SS=MFJ-259Z&PR=-1&TB=A&SHOP=&ACTION.x=14&ACT
ION.y=3
>>>
>>> Is this an MFJ product?
>>> --
>>> 73, Cecil http://www.w5dxp.com
>>>
> A quick Google search shows a few sales outlets, but the MFJ company
> didn't show up when searching MFJ-259Z.
> I suspect an after market modification by someone.
> This site has a letter from someone else having a charging problem with
> the MFL-259Z. See the second letter.
> http://www.eham.net/reviews/detail/13
> Mike
>
>

3847. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 16:24:16 UTC
From: terryS <tsanford@nf.sympatico.ca>
Message-ID: <32ac5bd0-2516-4fdd-b228-0261748785d0@u69g2000hse.googlegroups.com>
Source record: 26469
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

On Mar 15, 9:11 am, billcalley <billcal...@yahoo.com> wrote:
> Hi All,
>
> I always hear that antennas have to be matched to their radio, but
> in receivers (such as FM and shortwave radios) I see mostly long
> random length antennas used, and these antennas -- be they a
> telescoping whip or a long wire out a window -- are used over some
> really wide bandwidths. How is this possible if an impedance match
> must always be maintained for radios? And since there cannot be a
> good match over such wide bandwidths with any (typical) wire antenna,
> what is the downside to using these completely unmatched long antennas
> for receivers? (Poor gain patterns with lots of nulls? Lower
> sensitivity due to bad noise figure or gain match for any LNA or
> frontend amp? Degraded overall antenna gain)?
>
> Thanks; I'm very confused on this subject!
>
> -Bill

What has not been mentioned much is that AM band broadcast receivers
and FM band receivers are designed to to tune over a fairly wide band
of frequencies; so very difficult to build antenna that will mtach at
all those different 'wavelengths'.

For example; the broadcast band (North America) is roughly 550
kilohertz (that's 545 metres wavelength) to about 1.7 megahertz (about
176 metres). That's 3:1 ratio!

On FM, 88 to 108 megahertz (3.4 to 2.8 metres) the ratio is less but
still cnsiderable at 1.2:1 So again very difficult to design and build
an 'all frequencies' antenna.

For stations designed to receive only one frequncy the antennae can be
constructed for that only; hence the matching can be as optimum as
possible.

3848. through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 16:46:28 UTC
From: Haines Brown <brownh@teufel.hartford-hwp.com>
Message-ID: <87ve30i4rf.fsf@teufel.hartford-hwp.com>
Source record: 26470

I'm sure a FAQ, but a search on line did not resolve my question.

I need to feed my coax (QRP, 10 meters) out through a pane of glass, and for that I need a through-glass coax coupler (this is not an automotive, but a home window situation).

Most couplers are apparently capacitative. At 10 meters, for example, would I gain much by going to a microstrip coupler instead (whatever that is)?

How good a coupling can I expect with a through-glass coupler? It sounds very lossy, but perhaps not.

What brands of couplers would you recommend, or what is a good source for such couplers?

--

Haines Brown, KB1GRM

3849. Suggestions for Intermittent Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 16:52:39 UTC
From: Bob Dixon <dixon.8@osu.edu>
Message-ID: <dixon.8-1710E9.12523902042008@charm.magnus.acs.ohio-state.edu>
Source record: 26471

My 40M beam works only intermittently. Typically under normal conditions, the received signals are weak and the SWR is very high. If I rotate the antenna, it "comes alive" in some directions and works fine for a while, then dies again. In all cases, if I transmit into it with a KW is comes alive and works fine for a while (few minutes) and then dies again. A single dit will fix it. 100W does not do it.

I replaced the coax which runs around the rotator and it made no difference. I just recently learned that a local friend also has an intermittent antenna which can be restored by transmitting a KW into it.

Is this a common problem? is there a generic solution? Any hints would be appreciated. Note that it is not too easy when up on the tower to jiggle things while someone on the ground tries to watch the SWR and shout back and forth. We tried that when we replaced the coax.

Thanks!

Bob W8ERD

3850. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 16:54:37 UTC
From: dplatt@radagast.org
Message-ID: <dbqcc5-e6u.ln1@radagast.org>
Source record: 26472

>I borrowed some 1800mA and these are charging fine in the MFJ-259, so it
>looks like the
>problem is with the batteries. I have never experienced this with these type
>of batteries before only NiCad's.

What brand and type are the batteries that don't work?

It's possible that you simply received a bunch of batteries that are completely defective (open) or are counterfeit dummies. Seems a bit implausible.

Another possibilty is that the 2600 mAh cells are actually OK, but were delivered to you in a completely-run-down state. That seems plausible... the manufacturer may not have precharged them, or they may have self-discharged in storage after manufacture. The older type of NiMH cells do have a relatively high self-discharge rate, and can go flat after as little as three or four months of storage.

If the batteries read 0 volts, then it's possible that a smart-charger might fail to detect their presence and start charging... I believe that some of the newer NiMH-aware charge-control ICs depend on the detection of _some_ voltage from the cell to detect the cell and start the charge.

Try sticking a few of the cells into an old-style "dumb and slow" NiCd battery charger for a few hours. These are usually fixed-current chargers (100 mA or so) with no battery-detect or charge-cutoff circuits, so they're not a good choice for general use with NiMH cells. They _will_ feed some charge into the cells if the cells aren't entirely open, and should bring the cells up to 1.0 volts or better fairly quickly. After 2-3 hours, take the cells out of the dumb charger, check the open-circuit voltage, and put them in your smart-charger, and see if they are accepted and begin charging. If so, they may be OK. If not, they're probably defective or bogus and you may want to return them to the seller for a refund.

Since an MFJ analyzer is the sort of device that tends to sit around unused for weeks at a time, I think that high-capacity high-self-discharge NiMH cells (e.g. most 2500 or above) are a poor choice. Unless you recharge for an hour or so once a week, you'll probably find them weak or dead when you want use the analyzer.

High-capacity NiCd cells are the traditional choice for this sort of application (and are what I use in my own MFJ). Another possibility is the newer low-self-discharge NiMH cells, such as the Imedions, Eneloops, Hybrios, and Hybrids. These are typically 2000-2100 mAh,

and will hold the majority of their charge for a year or more. If
your MFJ has been modified to charge NiMH properly (e.g. with a good
temperature or zero-delta-V cutoff circuit) they might be a good choice.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3851. Re: roof ground plane

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 17:11:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <E6PIj.3954$p24.3656@nlpi061.nbdc.sbc.com>
Source record: 26473

carpe ventus wrote:
> Consequences?

Strange happenings are possible. Unpredictable varying
current and radiation patterns, changing impedances,
harmonics generated at the ground plane, ... It may
be the best thing since sliced bread but it may not be.
--
73, Cecil http://www.w5dxp.com

3852. Re: roof ground plane

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 17:13:08 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-5577D7.09132702042008@netnews.worldnet.att.net>
Source record: 26474

In article
<2ab8167f-c307-419c-a9ad-b9f487983341@s8g2000prg.googlegroups.com>,
carpe ventus <pbargholz@gmail.com> wrote:

> G'day Group,
>
> I have a new QTH with a steel roof (colorbond) and am thinking of
> putting up an unobtrusive (10m) vertical. I was considering mounting a
> quarter wave length of aluminum tube from the ridge cap, and use the
> roof as a ground plane. The roof slopes off either side at a shallow
> angle.
>
> Anybody done this? Anybody see any problems?
>
> thanks, Peter.

In Alaska, we have a lot of Steel, and Galvanized Tin Roofs, and I have
built Antenna Systems using them as RF Grounds, all over the State.
If I have the time, I usually Strip the Ground Braid off a length
of RG-8 Coax and use that to tie the ridge cap and each individual
sheet together, and use that as the Tie point for the RF Ground. That
makes sure that you have electrical bonding for the whole Roof. It
has been my experience that these type systems work well for providing
RF Grounding for Marconi, and End-Feed Longwire Antenna Systems,
especially, considering that the actual Earth up here has very little
Mineralite, and therefor very poor conductivity.

--
Bruce in alaska
add <path> after <fast> to reply

3853. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 17:41:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <YyPIj.1555$Nc5.282@newssvr27.news.prodigy.net>
Source record: 26475

Keith Dysart wrote:
> And averages can not change instantly.

Now there is an assertion that should make you
famous. :-)

I have just had an operation on my eyes. My
prescription will be changing for a couple
of weeks and until then, I will be without
glasses. I have my newsreader characters set
to about 1/2 inch in height so I can see them.
I will be quite handicapped for a couple of
weeks.

> This does not satisfy conservation
> of energy, which should be sufficient to kill the
> hypothesis.

What hypothesis? The scope of my hypothesis is
limited to average power. You have not presented even
one example where my average power hypothesis is
incorrect. I have no hypothesis about instantaneous
power. Any failed hypothesis about instantaneous
power must have been presented by someone else -
it sure wasn't presented by me. I say my GMC
pickup is white. You say it is not white because
the tires are black. Your diversionary argument
is obviously a straw man because you cannot win
the main argument.

Instantaneous power, as Hecht says, is "of limited
utility". IMO, it is irrelevant and certainly far
beyond the scope of my Part 1 article. Please feel
free to write your own article and publish it. Such
an article would, IMO, be a waste of time.

> To recap, it is when a total flow is
> broken into multiple non-zero constituent flows
> that energy flow imputed to the constituents
> is a dubious concept.

Since you have not offered a single average power
example that disagrees with my average power
hypothesis, I guess we will just have to agree to
disagree about that.

You have completely ignored the fact that instantaneous
destructive interference energy is stored for part of
the cycle and then released back into the network as
constructive interference energy 90 degrees later.

I will save your posting and digest it better when
I get my eyesight back along with new glasses.
--
73, Cecil http://www.w5dxp.com

3854. Re: Suggestions for Intermittent Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 17:45:10 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <3af5e8ff-3a46-40b4-84df-5fea0cbe8ebf@a23g2000hsc.googlegroups.com>
Source record: 26476

On Apr 2, 11:52 am, Bob Dixon <dixo...@osu.edu> wrote:
> My 40M beam works only intermittently. Typically under normal
> conditions, the received signals are weak and the SWR is very high.
> If I rotate the antenna, it "comes alive" in some directions and works
> fine for a while, then dies again. In all cases, if I transmit into it
> with a KW is comes alive and works fine for a while (few minutes) and
> then dies again. A single dit will fix it. 100W does not do it.
>
> I replaced the coax which runs around the rotator and it made no
> difference. I just recently learned that a local friend also has an
> intermittent antenna which can be restored by transmitting a KW into it.
>
> Is this a common problem? is there a generic solution? Any hints
> would be appreciated. Note that it is not too easy when up on the tower
> to jiggle things while someone on the ground tries to watch the SWR and
> shout back and forth. We tried that when we replaced the coax.
>
> Thanks!
>
> Bob W8ERD

What you have is an electrical connection that is physically an
electrical
circuit but has a corrosion build up at the joint. A poorly connected
pressure
on the coax is often the cause. Change to a soldered connection and
make
sure the connection is tight. If you have twisted wires on the antenna
put
wire nuts on them.to increase pressure on the joint.
The antenna itself can create similar problems if you have not used a
conductive grease
at telescopic joint connections
Have fun
Art

3855. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 18:18:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <u5QIj.31118$R84.15833@newssvr25.news.prodigy.net>
Source record: 26477

Haines Brown wrote:
> I need to feed my coax (QRP, 10 meters) out through a pane of glass, and
> for that I need a through-glass coax coupler (this is not an automotive,
> but a home window situation).

You are probably not going to like the size of the
capacitive plates necessary for 10m operation. I
have a small strip of plexiglas installed in/under
my window where my wires enter and exit.
--
73, Cecil http://www.w5dxp.com

3856. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 18:29:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <zgQIj.31119$R84.10294@newssvr25.news.prodigy.net>
Source record: 26478

Dave Platt wrote:
> High-capacity NiCd cells are the traditional choice for this sort of
> application

I have been most happy with a small gelcell velcroed
to my MJF-259B.
--
73, Cecil http://www.w5dxp.com

3857. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 19:41:30 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <22ccc21c-4720-4b6c-957f-d28d86a8e093@u69g2000hse.googlegroups.com>
Source record: 26479

On Apr 1, 5:15 pm, n...@wt.net wrote:
> On Apr 1, 12:32 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>
>
> > On Apr 1, 12:57 pm, n...@wt.net wrote:
>
> > > On Apr 1, 9:18 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>
> > > > When the air breaks down around an antenna it is because the antenna
> > > > is not in a state of equilibrium. When a dipole is replaced by a quad
> > > > ala
> > > > a series circuit is replaced by a tank circuit it clearly shows that
> > > > the latter
> > > > is more efficient.This was firmly proven in Quito.Maximum radiation
> > > > efficiency requires equilibrium. Period
> > > > Art
>
> > > If you don't quit spewing all this blatant horse crap, I will be going
> > > into
> > > talking head mode again.
> > > BTW, I'm younger than you are. So your claims of age affecting
> > > vulnerability to the effects of constant bafflegab and horse caca
> > > will
> > > tested at great lengths in such an endeavor.
> > > The change of the fabled antenna at HCJB had nothing to do with
> > > efficiency. Period.
>
> > You my friend are a good example of what a redneck thinks.
> > In the past you have bragged about your lack of schooling
> > spouting about the times you didn't go to school. Now you have a
> > license
> > to operate a radio where you can excercise your freedom of speech at
> > will.
> > Unfortunately, as soon as you start vibrating you vocal cords you
> > instantly
> > reveal who and what you are. This is of immense inportance to the
> > rest of us
> > when considering whether to use our precious time to your utterings.
> > Go ahead and be a talking head but you will find that your audio lacks
> > propagation
> > in the subject of antennas
> > Have a happy day and be nice to those around you. You will never know
> > when

> > that last day of yours comes around despite your youthful age.
> > Art Unwin
>
> Prior Art... I have never "bragged" about not going to school.
> I was expelled from school. Which means I really didn't have a
> whole lot of choice in the matter past that stage.
> But in the general scheme of things this means little, as most
> schools don't teach antenna theory unless it's a specific college
> course.
> You have never heard my vocal cords vibrate, as you have never
> talked to me. I doubt if you have even heard me on the air.
>
> Being you are so highly educated, why is your spelling
> so bad?
> Seems to me you went to school, but either slept through
> it, or had other things to think about.
> In any case, you are the last horses ass that should be
> braying about my education.
> I educate myself, and have plenty of books laying around.
> It's funny, I am self educated and oft speak about antennas,
> but few people have any problems with what I write about.
> If they do, it's usually some fairly minor detail.
> You on the other hand, claim to be well educated, but
> almost everything you spout is challenged as bafflegab,
> pure untruth, or just plain horse crap.
> What is wrong with this picture?
> Prior Art, you make me feel gifted, being I seem to be
> ahead of you as far as antenna theory, and I didn't
> take *any* scholarly courses for it.
> I think you should learn to write and spell a little better
> if you are going to whine about other peoples lack of
> education. Your "Queens English" is a mess.
> What is your excuse for this problem?
> I absolutely hated English when in school, yet I seem
> to be doing a bit better writing it than you, even with my
> sub par education. At least I have an excuse though.
> Again, you make me feel downright gifted to be on par
> with such a highly educated man such as yourself. :/
> MK

Pray tell me then why I am incorrect. You can salvage the
answer from your own mind or even from a book.
If you are going to decry my explanation you must have the reason at
your finger tips.
You heard mention of the Tesla coil earlier as a posters sample with
respect to a particular point.
What the poster did not state was that a Tesla coil is NOT in a state
of equilibrium even tho it may be resonant!
Why else would energy break out from a circuit in the form of a spark
if there was more freedom to travel else where?l

Same goes for the old spark plug system, it is not in equilibrium. So go ahead supply an educated reason
as to why the sparks emminated from the dipole in Quito and why the closed circuit of a quad pushed the
particular problem away. On the other hand give an educated answer to the direction of the three vectors
involved in radiation that Harrison cannot give. You say you have books then go a head with
respect to these two questions that nobody on this group has been able to resolve.
With all the books you say you have then I would agree with you that even a high school drop out
can knock hell out of me with respect to antennas.
Have a happy day and smile
Art.
Ps. When younger I passed the Oxford and Cambridge entrance test on English but old age has taken its toll.

3858. Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 20:15:12 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <HLOdnWuwhejRdG7anZ2dnUVZ_sCtnZ2d@comcast.com>
Source record: 26480

Hello,

a. Anyone have any idea if a receiving Disconne type of antenna is
Polarized horiz. or vert. ?

b. Same question for a Scantenna ?

c. On VHF and UHF scanner freq's, are the (typically vertical, I believe ?)
transmitted polarizations from Fire and PD transmitters usually maintained
over distances of, e.g., 10 miles or so ? Or does "bounce", etc., tend to
totally de-polarize them ?

d. If a receiving signal is well polarized in one direction, say
vertically, how much loss would one expect if the receiving antenna is
oriented such that its preferred olarization is horiz. ?

e.g., for a rubber-duckie scanner antenna ?

Thanks,
Bob

3859. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 20:28:24 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <K0SIj.21$SC2.9@newsfet15.ams>
Source record: 26482

Dave, the batteries are called Supreme Power 2600mA standard charge 14-16 HRS x 260mA, quick charge 4-6 HRS x 550mA. REG USA Made in China.

I am waiting for a friend to bring by his old NiCad charger and I will give it ago. I will let you know how I got on.

For future reference would you have an idea on how long I should charge the batteries for using the MFJ?

I don't know who or how the charger circuit has been modified. I could ask W&S what sort of circuit has been used.

"Dave Platt" <dplatt@radagast.org> wrote in message news:dbqcc5-e6u.ln1@radagast.org...
> >I borrowed some 1800mA and these are charging fine in the MFJ-259, so it
>>looks like the
>>problem is with the batteries. I have never experienced this with these type
>>of batteries before only NiCad's.
>
> What brand and type are the batteries that don't work?
>
> It's possible that you simply received a bunch of batteries that are
> completely defective (open) or are counterfeit dummies. Seems a bit
> implausible.
>
> Another possibilty is that the 2600 mAh cells are actually OK, but
> were delivered to you in a completely-run-down state. That seems
> plausible... the manufacturer may not have precharged them, or they
> may have self-discharged in storage after manufacture. The older type
> of NiMH cells do have a relatively high self-discharge rate, and can
> go flat after as little as three or four months of storage.
>
> If the batteries read 0 volts, then it's possible that a smart-charger
> might fail to detect their presence and start charging... I believe
> that some of the newer NiMH-aware charge-control ICs depend on the
> detection of _some_ voltage from the cell to detect the cell and start
> the charge.
>
> Try sticking a few of the cells into an old-style "dumb and slow" NiCd
> battery charger for a few hours. These are usually fixed-current
> chargers (100 mA or so) with no battery-detect or charge-cutoff
> circuits, so they're not a good choice for general use with NiMH
> cells. They _will_ feed some charge into the cells if the cells
> aren't entirely open, and should bring the cells up to 1.0 volts or
> better fairly quickly. After 2-3 hours, take the cells out of the
> dumb charger, check the open-circuit voltage, and put them in your

> smart-charger, and see if they are accepted and begin charging. If
> so, they may be OK. If not, they're probably defective or bogus and
> you may want to return them to the seller for a refund.
>
> Since an MFJ analyzer is the sort of device that tends to sit around
> unused for weeks at a time, I think that high-capacity high-self-
> discharge NiMH cells (e.g. most 2500 or above) are a poor choice.
> Unless you recharge for an hour or so once a week, you'll probably find
> them weak or dead when you want use the analyzer.
>
> High-capacity NiCd cells are the traditional choice for this sort of
> application (and are what I use in my own MFJ). Another possibility
> is the newer low-self-discharge NiMH cells, such as the Imedions,
> Eneloops, Hybrios, and Hybrids. These are typically 2000-2100 mAh,
> and will hold the majority of their charge for a year or more. If
> your MFJ has been modified to charge NiMH properly (e.g. with a good
> temperature or zero-delta-V cutoff circuit) they might be a good choice.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

3860. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 20:29:30 UTC
From: Jon Kåre Hellan <dev@null.com>
Message-ID: <1mej9ouhjp.fsf@persaunet.uninett.no>
Source record: 26481

Cecil Moore <nospam@w5dxp.com> writes:

> Dave Platt wrote:
>> High-capacity NiCd cells are the traditional choice for this sort of
>> application
>
> I have been most happy with a small gelcell velcroed
> to my MJF-259B.

I've had mine for four years, and am still on my first set of
disposable batteries. Just have to make sure it doesn't turn on
accidentally under transport - I wrap some tape over one of the
batteries.

LA4RT Jon

3861. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 20:48:52 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <6jSIj.25050$6J3.10697@newsfe13.phx>
Source record: 26483

Robert11 wrote:

> a. Anyone have any idea if a receiving
> Discone type of antenna is Polarized
> horiz. or vert. ?

It is vertically polarized over its entire
frequency range.

> b. Same question for a Scantenna ?

If it is installed as usually illustrated with
the elements vertical, then, yes, it too is
vertically polarized.

> c. On VHF and UHF scanner freq's, are the
> (typically vertical, I believe ?) transmitted
> polarizations from Fire and PD transmitters
> usually maintained over distances of, e.g.,
> 10 miles or so ? Or does "bounce", etc., tend
> to totally de-polarize them ?

Land mobile and aircraft radios almost invariably
use vertically polarized antennas. That wave
polarization is generally maintained under conditions
of reflection and refraction over short- and long-
distance paths. For polarization rotation to occur
during propagation, the medium generally must be
birefringent (eg: the ionosphere). This rarely occurs
with terrestrial waves.

> d. If a receiving signal is well polarized in
> one direction, say vertically, how much loss
> would one expect if the receiving antenna is
> oriented such that its preferred polarization is
> horiz. ?

The usual figure one sees bandied about is 20 dB.

> e.g., for a rubber-duckie scanner antenna ?

There's an additional penalty of 20 dB imposed on
any antenna that has the word "duckie" in its name.
;-) ;-) ;-)

Jim, K7JEB

3862. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 21:53:15 UTC
From: dplatt@radagast.org
Message-ID: <brbdc5-ru6.ln1@radagast.org>
Source record: 26485

```
>> d. If a receiving signal is well polarized in
>> one direction, say vertically, how much loss
>> would one expect if the receiving antenna is
>> oriented such that its preferred polarization is
>> horiz. ?
>
>The usual figure one sees bandied about is 20 dB.

I've seen it quoted as "up to 30 dB". That's probably under ideal
(or ideally-bad) conditions, though.

>> e.g., for a rubber-duckie scanner antenna ?
>
>There's an additional penalty of 20 dB imposed on
>any antenna that has the word "duckie" in its name.
> ;-) ;-) ;-)

Heh. Yeah. Last weekend, my partner-in-repeater-crime and I ran some
simple outdoor-range tests on a few 2-meter beams, using an HP signal
generator and HP spectrum analyzer. We used a quarter-wave whip,
mag-mounted on a sheet of steel, as the reference antenna.

A two-element HB9CV beam was around 8 dB better than the reference
antenna, with a front-to-back ratio of 6-8 dB.

An Elk log-periodic 6-element beam measured out as quite similar to
the HB9CV (but has a lower SWR across the band) - 8 dB up, and about 7
dB front-to-back.

A 3-element Yagi made out of PVC and steel measuring tape segments,
designed for foxhunting, was 9-10 dB up and had about a 20 dB
front-to-back ratio at its deepest null.

Rubber duckies? Ugh. A Yaesu helically-wound duck was around 10 dB
worse than the reference antenna. An RD-9 "high gain" base-loaded
2-meter/440 superflexible antenna was around 12 dB worse than the
reference antenna.

I'd always heard that rubber duckies were actually rubber dummy loads.
Now I've actually seen the results for myself. Yeech.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!
```

3863. Re: Suggestions for Intermittent Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 22:04:22 UTC
From: Dave <noone@nowhere.com>
Message-ID: <GpTIj.5694$ie3.4458@trndny02>
Source record: 26484

what brand/model? the 40-2cd has a known problem with the loading coil connections becoming intermittant that gives symptoms just like that. other loading coils, baluns, or matching section connections may do the same thing on other models.

"Bob Dixon" <dixon.8@osu.edu> wrote in message news:dixon.8-1710E9.12523902042008@charm.magnus.acs.ohio-state.edu...
> My 40M beam works only intermittently. Typically under normal
> conditions, the received signals are weak and the SWR is very high.
> If I rotate the antenna, it "comes alive" in some directions and works
> fine for a while, then dies again. In all cases, if I transmit into it
> with a KW is comes alive and works fine for a while (few minutes) and
> then dies again. A single dit will fix it. 100W does not do it.
>
> I replaced the coax which runs around the rotator and it made no
> difference. I just recently learned that a local friend also has an
> intermittent antenna which can be restored by transmitting a KW into it.
>
> Is this a common problem? is there a generic solution? Any hints
> would be appreciated. Note that it is not too easy when up on the tower
> to jiggle things while someone on the ground tries to watch the SWR and
> shout back and forth. We tried that when we replaced the coax.
>
> Thanks!
>
> Bob W8ERD

3864. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-02 22:08:20 UTC
From: dplatt@radagast.org
Message-ID: <kncdc5-ru6.ln1@radagast.org>
Source record: 26486

>Dave, the batteries are called Supreme Power 2600mA standard charge
>14-16 HRS x 260mA, quick charge 4-6 HRS x 550mA. REG USA Made in China.

Hmmm. I see various web sites offering that brand, but I don't see
much in the way of comments about their quality (good or bad).

>I am waiting for a friend to bring by his old NiCad charger and I will
>give it ago. I will let you know how I got on.

Please do - I'm curious.

>For future reference would you have an idea on how long I should charge
>the batteries for using the MFJ?

Depends on the charger. In general, a fully-discharged NiMH cell will
need to be "fed" somewhere around 150% of its rated capacity in order
to reach full charge - some of the energy fed into it is dissipated as
heat and doesn't go into rebuilding the electrochemistry. The
"standard charge" recommendations you quoted are feeding the battery
at a rate of .1C (10% of its capacity per hour) for 14-16 hours, so
that's just about right.

If you're using a different charger, you'd need to determine the
amount of current being fed to each cell, divide that into the cell's
rated capacity (to get the time required for 100% capacity delivery),
and then add around 40-50%.

These calculations apply *only* to cells which are fully discharged!
If a cell is partially charged when you start to recharge it, it'll
reach full charge sooner than these calculations indicate... and at
that point the cell starts to heat up pretty rapidly.

Most of the NiMH technology sheets I've read, seem to recommend
charging these batteries at a relatively fast rate (no less than .2C,
with .5C and 1C being common) and using a temperature sensor as the
primary means of figuring out when to turn off the charge.
Zero-delta-V is often used as a secondary method, with a timer being
the final fallback.

>I don't know who or how the charger circuit has been modified. I could
>ask W&S what sort of circuit has been used.

That would be a good idea!

The 259/269 have a simple slow/trickle-charge circuit built in... it's
OK for NiCd cells but isn't ideal for NiMH. It would be very
interesting to know how this was modified for NiMH in the 259Z model.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3865. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 00:49:18 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <fac45548-7e42-435d-a769-dfb4b9e11688@m3g2000hsc.googlegroups.com>
Source record: 26487

On Apr 2, 6:08 pm, dpl...@radagast.org (Dave Platt) wrote:
> >Dave, the batteries are called Supreme Power 2600mA standard charge
> >14-16 HRS x 260mA, quick charge 4-6 HRS x 550mA. REG USA Made in China.
>
> Hmmm. I see various web sites offering that brand, but I don't see
> much in the way of comments about their quality (good or bad).
>
> >I am waiting for a friend to bring by his old NiCad charger and I will
> >give it ago. I will let you know how I got on.
>
> Please do - I'm curious.
>
> >For future reference would you have an idea on how long I should charge
> >the batteries for using the MFJ?
>
> Depends on the charger. In general, a fully-discharged NiMH cell will
> need to be "fed" somewhere around 150% of its rated capacity in order
> to reach full charge - some of the energy fed into it is dissipated as
> heat and doesn't go into rebuilding the electrochemistry. The
> "standard charge" recommendations you quoted are feeding the battery
> at a rate of .1C (10% of its capacity per hour) for 14-16 hours, so
> that's just about right.
>
> If you're using a different charger, you'd need to determine the
> amount of current being fed to each cell, divide that into the cell's
> rated capacity (to get the time required for 100% capacity delivery),
> and then add around 40-50%.
>
> These calculations apply *only* to cells which are fully discharged!
> If a cell is partially charged when you start to recharge it, it'll
> reach full charge sooner than these calculations indicate... and at
> that point the cell starts to heat up pretty rapidly.
>
> Most of the NiMH technology sheets I've read, seem to recommend
> charging these batteries at a relatively fast rate (no less than .2C,
> with .5C and 1C being common) and using a temperature sensor as the
> primary means of figuring out when to turn off the charge.
> Zero-delta-V is often used as a secondary method, with a timer being
> the final fallback.
>
> >I don't know who or how the charger circuit has been modified. I could
> >ask W&S what sort of circuit has been used.
>
> That would be a good idea!

>
> The 259/269 have a simple slow/trickle-charge circuit built in... it's
> OK for NiCd cells but isn't ideal for NiMH. It would be very
> interesting to know how this was modified for NiMH in the 259Z model.
>
> --
> Dave Platt <dpl...@radagast.org>   AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>   I do _not_ wish to receive unsolicited commercial email, and I will
>   boycott any company which has the gall to send me such ads!

You may want to use the NiCd charger on them for a few minutes and
then move them to the NiMH charger.

Jimmie

3866. Re: A Bit More On My Reception "Problems"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 00:57:53 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <b1767d7c-8d92-4c41-b4af-30e0c7153244@m36g2000hse.googlegroups.com>
Source record: 26488

On Apr 1, 1:40 pm, "Robert11" <rgs...@notme.com> wrote:
> Hi,
>
> Just thought I'd ask, and mention a Bit More, Re My scanner AM "Reception
> "Problems"
>
> a. is there a concept as "intrinsic antenna noise" for a receiving scanner
> antenna type ?
>
> On AM scanner frequencies, around 118 MHz or so, I find my Disconne is a lot
> quieter than a Scantenna I have.
>
> Both are in the same attic spot, and use similar coax downfeeds.
>
> The Scantenna uses a balun of sorts; I think it's 300 to 50 ohm.
>
> b. I've mentioned the problems I have in picking up, well, an airport
> control tower about 8 miles away.
> I think I've come to the conclusion that it's "simply" a case of AM (always)
> being a lot noisier than FM.
> Does this make any sense ?
>
> If it's some sort of overload on the scanner, using the scanner ATTN does
> not help.
>
> c. Funny thing is that when I use my JRC NRD 545, with either the Scantenna
> or the Disconne, it comes in really clear.
> This is without resorting to any of the fancy filtering or notching that the
> 545 has.
> Hard to understand why it should be so much better with just its basic
> settings.
>
> Perhaps the fact that it uses DSP helps a lot on AM, in some manner ?
>
> Bob

If the rx is for FM only it makes a lot od sense.
The limiter in the FM receiver actually removes AM modulation.

Jimmie

3867. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 01:08:34 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <KuednVfOIdmWs2nanZ2dnUVZ8selnZ2d@bt.com>
Source record: 26489

"Haines Brown" <brownh@teufel.hartford-hwp.com> wrote in message
news:87ve30i4rf.fsf@teufel.hartford-hwp.com...
> I'm sure a FAQ, but a search on line did not resolve my question.
>
> I need to feed my coax (QRP, 10 meters) out through a pane of glass, and
> for that I need a through-glass coax coupler (this is not an automotive,
> but a home window situation).
>
> Most couplers are apparently capacitative. At 10 meters, for example,
> would I gain much by going to a microstrip coupler instead (whatever
> that is)?
>
> How good a coupling can I expect with a through-glass coupler? It sounds
> very lossy, but perhaps not.
>
> What brands of couplers would you recommend, or what is a good source
> for such couplers?
>
> --
>
> Haines Brown, KB1GRM
>
>
Haines,

Automotive couplers for two metres manage with a 2 inch by 2 inch plate either side of the glass. It could be worth trying 6 inch by 6 inch plates on the domestic window and see what signal level gets out. Reception shouldn't be a problem if you can get 50% or more of your transmission power out through the glass.

You need to get as much capacitance as possible, which means big plates as closely spaced together as possible.

The plates can be formed from aluminum foil taped closely to the window for experimental purposes. Adhesive coated copper sheet or foil can be used once you have found a size and shape that works best for you.

Provided the window is single glazed, you have a chance of getting this to work. If the window is double glazed or has any type of thermal barrier coating, get out the power drill and fix a cable through the wall.

The only advantage that a commercial coupler might have is that the visual asthetics might be a bit better than a home brewed effort.

If the window can be opened, use a bit of thin figure of eight twin cable to bridge across the opening and just shut the window on it. Connect up the coax inside and outside and you're up and running. The bridging cable can be easily replaced if it gets broken by the window opening and shutting. A few inches of twin cable won't mess the overall impedence of the antenna system up too much.

Mike G0ULI

3868. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 01:33:20 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <u8ednQh4wudErmnanZ2dnUVZ8vmdnZ2d@bt.com>
Source record: 26490

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:to03v398qd5887v6o6so8otn94llrnohgq@4ax.com...
> On Mon, 31 Mar 2008 23:47:00 +0100, "Mike Kaliski"
> <michael.kaliski@tesco.net> wrote:
>
>>Hi Richard,
>>
>>I have a pair of computer speakers sitting on my desk that completely out
>>perform the so called ultimate hi-fi floor mounted tower system speakers I
>>bought 35 years ago for the equivalent of several thousand dollars in
>>today's money.
>
> Hi Mike,
>
> I have a set of 30 year old Pioneers that still kick ass. The Pioneer
> amp feeding any other set drives them into distortion where the
> Pioneer speakers still have more range to go.
>
> Never needed to push the amp above 4 to be heard outside.
>
> OK, so much for the merits of qualitative reports, otherwise known as
> testimonials. Proves nothing.
>
>>The old speakers still work just fine but the audio experts
>>have learned how to squeeze that performance out of a speaker that old
>>audio
>>theory predicted couldn't possibly work.
>
> Magnetics got better, and theory stayed the same. Performance
> followed the theory's prediction of new magnetics is all. This isn't
> a mystery is it?
>
> Care to name your speakers' model and manufacturer, or did you form
> the cone and wind the voice coils around a selected magnet by hand?
>
> 73's
> Richard Clark, KB7QHC

Hi Richard,

Never one to refuse a challenge.
The old speakers were a pair of Celestion Ditton 15XR's with 30 watt per channel rating and a flat sound response output from around 20Hz to 20kHz, 104db at 1 yard driven with 1 watt. The XR stood for extended range indicating that the speaker design had been modified and upgraded from the

original Ditton 15 specifications.
The new speakers I mentioned are a pair of Creative T20's. 14 watts per channel from a built in amp and very nice to listen to. They don't really compare with the Celestions for the smooth mellow sound that only seems to come with wooden cabinets, but for the price they are excellent. Good point about the magnets though. The super high powered magnets, ultra rigid, lightweight fibre glass cones and developments in ported cabinet design have all contributed to the superb performance of the T20's.

Apparently they have been out for a while now, but it was only when I was wandering about in a PC World store that I heard a pair up and running. I was stopped in my tracks by the sound coming out of these tiny devices and spent a good couple of minutes looking for the subwoofer unit that I felt sure was hidden away somewhere. There wasn't a subwoofer and after that, I just knew I had to buy a pair.

I have no connection with Creative and in fact I am a bit annoyed with the company's attitude to (not) providing proper sound card drivers for Windows Vista.

Anyway, just go and check out the web reviews.

Sorry everyone else, but this bit hasn't really got anything at all to do with antennas.

Cheers

Mike

3869. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 01:59:12 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A74E0250D22mcoslocomcastnet@216.196.97.136>
Source record: 26491

"Mike Kaliski" <michael.kaliski@tesco.net> wrote in
news:u8ednQh4wudErmnanZ2dnUVZ8vmdnZ2d@bt.com:

> Apparently they have been out for a while now, but it was only when I
> was wandering about in a PC World store that I heard a pair up and
> running. I was stopped in my tracks by the sound coming out of these
> tiny devices and spent a good couple of minutes looking for the
> subwoofer unit that I felt sure was hidden away somewhere. There
> wasn't a subwoofer and after that, I just knew I had to buy a pair.
>
> I have no connection with Creative and in fact I am a bit annoyed with
> the company's attitude to (not) providing proper sound card drivers
> for Windows Vista.

Wait for Windows 8. It can't be worse!

> Anyway, just go and check out the web reviews.
>
> Sorry everyone else, but this bit hasn't really got anything at all to
> do with antennas.

What must be really wonderful is how these speaker manufacturers have not
only managed to change resonant points, but managed to get these very
small systems to move the massive amounts of air needed with the small
speaker systems involved! Oops, sorry, I got sarcastic..

While it is true that we can get better sound from smaller speaker
systems than we have been able to in the past, we have to keep in mind
that those advances are available for the full size systems too. IOW, all
things being equal.....

No new physics are needed.

3870. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 03:37:10 UTC
From: nm5k@wt.net
Message-ID: <cf874053-607b-4e8d-b6a6-01caf777470a@i12g2000prf.googlegroups.com>
Source record: 26492

On Apr 2, 1:41 pm, Art Unwin <ArthurUn...@gmail.com> wrote:

>
> Pray tell me then why I am incorrect. You can salvage the
> answer from your own mind or even from a book.

>When the air breaks down around an antenna it is because the antenna
>is not in a state of equilibrium.

Define equilibrium as it pertains to an antenna. Until you do, it's
fairly hard to comment on the first statement.
If you have corona discharge from an antenna, it's usually due
to sharp points when using wire or a whip with a pointed tip.
Thats why they stick round balls on whips, flagpoles, etc..

>When a dipole is replaced by a quad ala
>a series circuit is replaced by a tank circuit it clearly shows that
>the latter is more efficient.

What clearly shows this?
This is the statement which drew my comment.
The efficiency of a 1/2 WL dipole and a 1 WL loop are so close as
to be almost unmeasurable in the real world.
But you can take this even farther. Almost *any* size dipole
or loop will radiate most all of what is fed to it.
A 1/10 WL whip radiates almost all of the power applied to
it, same as a 1/4 WL, 1/2 WL, or whatever you want to try.
This not not conjecture. This is pretty much written in stone
after many years of testing.
Why you continue to ignore this simple fact boggles my mind.
So your statement is so far from reality I would be amiss
in my "talking head" duties if I did not comment.
Don't take my word for it. Ask anyone you can think of
that has a clue. They will tell you the same thing.

What it going to spoil your "full size performance from a
dinky radiator" picnic is not the radiator and it's abilities to be
an efficient radiator.
It's going to be actually feeding the power to such a small
radiator and not turning a large amount of RF to heat in the
process. No cheating letting the feed line be the antenna..
Look at "small" HF transmitting loops. Do you see any
using 22 gauge wire? I doubt it.
They will be using the fattest or widest strip of material
they can get their hands on.
There are other issues involved also in feeding such an

antenna. Never do these small loops equal the performance
of a full size antenna. They radiate enough to maybe let
you operate, and thats about it.

>This was firmly proven in Quito.Maximum radiation
>efficiency requires equilibrium. Period

Again, the change to quad loops at HCJB was to
avoid the sharp points of the dipoles, yagi's, or
whatever they were using. In the high alitudes of
Quito, HV breakdown at the tips was a serious problem.
The change had absolutely nothing to do with antenna
efficiency.
Not to mention that the whole idea of a loop being
more efficient than a dipole is totally wrong.
And I don't see how equilibrium has anything to
do with it, whatever you might mean by that silly "E"
word.
Anything else you are curious about?
BTW, no grabbing of books were needed to form
this response.
Art

3871. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 04:15:13 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <lRYIj.18513$bC6.16983@trnddc08>
Source record: 26493

"Mike Kaliski" <michael.kaliski@tesco.net> wrote in message
news:KuednVfOIdmWs2nanZ2dnUVZ8selnZ2d@bt.com...
>
> "Haines Brown" <brownh@teufel.hartford-hwp.com> wrote in message
> news:87ve30i4rf.fsf@teufel.hartford-hwp.com...
>> I'm sure a FAQ, but a search on line did not resolve my question.
>>
>> I need to feed my coax (QRP, 10 meters) out through a pane of glass, and
>> for that I need a through-glass coax coupler (this is not an automotive,
>> but a home window situation).
>>
>> Most couplers are apparently capacitative. At 10 meters, for example,
>> would I gain much by going to a microstrip coupler instead (whatever
>> that is)?
>>
>> How good a coupling can I expect with a through-glass coupler? It sounds
>> very lossy, but perhaps not.
>>
>> What brands of couplers would you recommend, or what is a good source
>> for such couplers?
>>
The effective 2M antennas (Antenna Specialists) accomplish the lossless fed
through because the radiator is voltage fed half wave and the interior
coupling unit has a hi-->low Z transformer.
You could do the same at 10M by converting the 50 Ohm feed to a higher
impedance and then down converting outside. The downside is that this will
likely limit your bandwidth a bit.

Dale W4OP

3872. Re: A Bit More On My Reception "Problems"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 04:25:46 UTC
From: nm5k@wt.net
Message-ID: <710c471e-ac5b-4176-b803-b1df1bdfa32b@s19g2000prg.googlegroups.com>
Source record: 26494

On Apr 1, 11:40 am, "Robert11" <rgs...@notme.com> wrote:
> Hi,
>
> Just thought I'd ask, and mention a Bit More, Re My scanner AM "Reception
> "Problems"
>
> a. is there a concept as "intrinsic antenna noise" for a receiving scanner
> antenna type ?
>
> On AM scanner frequencies, around 118 MHz or so, I find my Disconne is a lot
> quieter than a Scantenna I have.
>
> Both are in the same attic spot, and use similar coax downfeeds.
>
> The Scantenna uses a balun of sorts; I think it's 300 to 50 ohm.
>
> b. I've mentioned the problems I have in picking up, well, an airport
> control tower about 8 miles away.
> I think I've come to the conclusion that it's "simply" a case of AM (always)
> being a lot noisier than FM.
> Does this make any sense ?
>
> If it's some sort of overload on the scanner, using the scanner ATTN does
> not help.
>
> c. Funny thing is that when I use my JRC NRD 545, with either the Scantenna
> or the Disconne, it comes in really clear.
> This is without resorting to any of the fancy filtering or notching that the
> 545 has.
> Hard to understand why it should be so much better with just its basic
> settings.
>
> Perhaps the fact that it uses DSP helps a lot on AM, in some manner ?
>
> Bob

Basically, one receiver is good. One not so good...
I'd rig up a simple 3 el yagi and point it at the airport.
Then either one will probably work ok. :/
I see the same here with various radios. I have 3-4
that pick up aircraft. 2-3 scanners, and the Icom 706mk2g.
The 706 smokes the scanners as far as sensitivity on
the air bands. The scanners are all fairly cheap radio
shack models, and while they work, you get what you

pay for. All the JRC's are fairly decent radios.
Wouldn't surprise me at all to see one smoke a typical
scanner on VHF.

3873. Re: Pan and tilt

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 04:31:40 UTC
From: Rick Frazier <rickf@rickfrazier.com>
Message-ID: <47f45d6b$0$6150$4c368faf@roadrunner.com>
Source record: 26495

Art Unwin wrote:
> Had a bit of luck when assembling the antenna to the pan and tilt
> mechanism
> prior to placing them on the tower. The PM motors do not have brakes
> on them!
> Fortunately the leverage of the tilting does not overcome the motors
> inertia and I am in the clear.
> For the future any ideas on a braking means to ensure stabilility in
> position?
> Both motors use chain drives and I suppose I could use solenoids to
> tighten the chain
> Regards
> Art.
Most permanent magnet motors will resist rotation if you short the input...
When not driving with a voltage, place a short across the leads. This
essentially has the motor acting as a generator into a dead short, which
makes for significant torque to overcome the subsequent rotational
resistance. Not as good as a wedge (like many commercial rotators) or a
really high gearing ratio (worm and gear or worm and sector), but if
you've already got a reasonable gear reduction it may be all you need...

--Rick AH7H

3874. Horn antenna simulation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 05:10:01 UTC
From: kalpraj.m@gmail.com
Message-ID: <6d72daf5-3414-4151-9edb-a7f08f3c0932@u36g2000prf.googlegroups.com>
Source record: 26496

HI,
I hav horn antenna which is required to be simulated. Its open
mounth has dimensions 36"X27" n short mouth has dimensions 6.5"X3.25".
Its height is 48" n excitation point is 3" away from shorter side i.e.
6.5". Excitation point uses N-type female connector n probe is of
copper of 0.125" in length.
Please give me its simulation result or send me its simulation
sofrware link if u know

3875. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 05:12:40 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <e2ff908f-c0b1-43e0-a36f-41e2f8034b82@l42g2000hsc.googlegroups.com>
Source record: 26497

On Apr 2, 10:37 pm, n...@wt.net wrote:
> On Apr 2, 1:41 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>
>
> > Pray tell me then why I am incorrect. You can salvage the
> > answer from your own mind or even from a book.
> >When the air breaks down around an antenna it is because the antenna
> >is not in a state of equilibrium.
>
> Define equilibrium as it pertains to an antenna. Until you do, it's
> fairly hard to comment on the first statement.

I don't think I can do that for you, it would take to long.

> If you have corona discharge from an antenna, it's usually due
> to sharp points when using wire or a whip with a pointed tip.
> Thats why they stick round balls on whips, flagpoles, etc..

When you have a discharge it is a loss of energy
>
> >When a dipole is replaced by a quad ala
> >a series circuit is replaced by a tank circuit it clearly shows that
> >the latter is more efficient.
>
> What clearly shows this?
Well there is no discharge. This is becaquse that there is a route
of a lesser impedance available

> This is the statement which drew my comment.
> The efficiency of a 1/2 WL dipole and a 1 WL loop are so close as
> to be almost unmeasurable in the real world.
Almost doesn't count when measuring efficiency and in the real world
many CAN tell the difference
> But you can take this even farther. Almost *any* size dipole
> or loop will radiate most all of what is fed to it.
Again you are admitting to lower efficiency when you use the word
"most"

> A 1/10 WL whip radiates almost all of the power applied to
> it, same as a 1/4 WL, 1/2 WL, or whatever you want to try.
> This not not conjecture. This is pretty much written in stone
> after many years of testing.
Again you use the word "most" which is admitting less efficiency

> Why you continue to ignore this simple fact boggles my mind.
> So your statement is so far from reality I would be amiss
> in my "talking head" duties if I did not comment.
> Don't take my word for it. Ask anyone you can think of
> that has a clue. They will tell you the same thing.
>
> What it going to spoil your "full size performance from a
> dinky radiator" picnic is not the radiator and it's abilities to be
> an efficient radiator.
> It's going to be actually feeding the power to such a small
> radiator and not turning a large amount of RF to heat in the
> process. No cheating letting the feed line be the antenna..

I think you are missing the point here. My antenna has a full wave length of wire
not a fraction there of. So the radiator has the same inductance and capacitance
that one would expect from a full wave antenna spread out in a straight line
where the wire surface is exposed to the atmosphere, so there is no reason
for the energy to circumvent the wire circuit as it must do for a fractional wavelength.

> Look at "small" HF transmitting loops. Do you see any
> using 22 gauge wire? I doubt it.
> They will be using the fattest or widest strip of material
> they can get their hands on.

What you are seeing as representing a loop antenna is a fractional wave length
Often it comes with a HV variable capacitor for tuning.

The loop that I made was a plastic loop with a full wave length of wire wound upon it. No high voltage capacitor needed as it coveres the whole band.
As far as 22 gauge wire being used this is because there is no mechanical stresses
imposed on it as would be for a stretched out radiator. So the main consideration
is to supply enough skin depth since the diameter itself
is not a factor in terms of fusing.current

> There are other issues involved also in feeding such an
> antenna. Never do these small loops equal the performance
> of a full size antenna. They radiate enough to maybe let
> you operate, and thats about it.

If the scource impedance is one that you can match efficiently
then you have at hand a efficient radiator of a wavelength where
the normal loop you are refering to uses a metal loop as the radiator
which is much shorter than a wavelength of wire wound on a plastic loop.

The loop is now a small full wave radiator not a small fractional
small wave antenna

>
> >This was firmly proven in Quito.Maximum radiation
> >efficiency requires equilibrium. Period
>
> Again, the change to quad loops at HCJB was to
> avoid the sharp points of the dipoles, yagi's, or
> whatever they were using. In the high alitudes of
> Quito, HV breakdown at the tips was a serious problem.
> The change had absolutely nothing to do with antenna
> efficiency.
If the impedance is to high on the antenna compared to
discharging through air to the transmitter ground then that
is a very inefficient antenna

> Not to mention that the whole idea of a loop being
> more efficient than a dipole is totally wrong.
The energy travels easily along the wire circuit without
encountering a high impedance that it is forced to take a circuitous
route thru ground to the transmitter ground. When the energy
is passing thru ground it becomes a loss.

> And I don't see how equilibrium has anything to
> do with it, whatever you might mean by that silly "E"
> word.
If a circuit is not balanced and a fractional wave length long
it is not in equilibrium!. The energy supplied to the radiator
will always encounter a energy wasting impedance in the wire itself if
is not at least a wavelength long, and of the right material
(diamagnetic)
otherwise the energy will seek a route outside the wired circuit which
can only lead to losses. Think of it this way, a fractional wave
length radiator
cannot avoid the energy taking a route thru ground and the ground is a
loss.
Hopefully you now see antennas in a different light. I do urge you to
look up
the tank circuit since it is quite an interesting circuit with its
phase changes
and effective resistances apparently changing without being diverted
from the circuit wire confines. Another place where the books are in
error
is their association with the iron filing magnet experiment at HS
which
forms a magnetic field very different from that formed from aluminum,
copper and other diamagnetic materials. When you pass a time varying
current thru
copper the magnetic field turns at right angles to the radiator axis
and in fact

compliments the electrical field vector (they are not at right
angles)
Now you can see what lifts or ejects the static particles resting on
the surface
because they are repelled instead of bing magnetically atracted
(Static: nearly devoid of energy and of small mass)
. So the EH antennas which supposedly combines the EH fields just
didn't
understand that with a radiator the combination of vectors is already
a given!
I think you also are making a mistake that many books make when
referring to
small antennas instead of referring to ELECTRICALLY small antennas

> Anything else you are curious about?
> BTW, no grabbing of books were needed to form
> this response.
> Art

Best regards, no offence intended
Art Unwin ......KB9MZ..(uk)

3876. Re: Pan and tilt

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 05:16:29 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <9949e9cf-0615-4824-b3fb-23f95af1dddd@b1g2000hsg.googlegroups.com>
Source record: 26498

On Apr 2, 11:31 pm, Rick Frazier <ri...@rickfrazier.com> wrote:
> Art Unwin wrote:
> > Had a bit of luck when assembling the antenna to the pan and tilt
> > mechanism
> > prior to placing them on the tower. The PM motors do not have brakes
> > on them!
> > Fortunately the leverage of the tilting does not overcome the motors
> > inertia and I am in the clear.
> > For the future any ideas on a braking means to ensure stabilility in
> > position?
> > Both motors use chain drives and I suppose I could use solenoids to
> > tighten the chain
> > Regards
> > Art.
>
> Most permanent magnet motors will resist rotation if you short the input...
> When not driving with a voltage, place a short across the leads. This
> essentially has the motor acting as a generator into a dead short, which
> makes for significant torque to overcome the subsequent rotational
> resistance. Not as good as a wedge (like many commercial rotators) or a
> really high gearing ratio (worm and gear or worm and sector), but if
> you've already got a reasonable gear reduction it may be all you need...
>
> --Rick AH7H

Thank you very much for that.Fortunately the system appears to be
stable enough
as the antenna and mesh dish is very light and minimul wind
resistance.
Regards Art

3877. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 05:39:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <IcydnSAOgtvg8GnanZ2dnUVZ_j6dnZ2d@easystreetonline>
Source record: 26500

A NiMH or NiCd cell reading of zero volts usually indicates an internal short, caused by metallic dendrite growth. If this is the problem with the cells, they won't respond to any ordinary attempt to charge them. It's sometimes possible to "zap" a shorted cell (by discharging a very large capacitor into the cell) to burn out the shorts, but you end up with a cell that has higher than normal self-discharge and a tendency to grow shorts again. So if they don't respond to normal charging, I recommend tossing them and getting some new cells.

If the device has a charger designed for NiMH cells, that is, one that charges at a fairly high rate and properly detects the end of charge, then I highly recommend one of the newer low-self discharge cells such as the Sanyo Eneloop. If it doesn't have a proper NiMH charger and just pumps in a constant current charge without end of charge detection, you should use NiCd cells because they can tolerate that charge regimen much better than NiMH cells can. I've had very good luck with Sanyo and Panasonic NiCd cells. Don't be suckered by inflated capacity claims which the minor brands liberally use. Even with the better brands, the highest capacity cells have historically had more problems with overly fast self discharge and premature cell failure.

Roy Lewallen, W7EL

3878. Re: Horn antenna simulation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 05:43:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <IcydnSMOgtvo82nanZ2dnUVZ_j6dnZ2d@easystreetonline>
Source record: 26351

kalpraj.m@gmail.com wrote:
> HI,
> I hav horn antenna which is required to be simulated. Its open
> mounth has dimensions 36"X27" n short mouth has dimensions 6.5"X3.25".
> Its height is 48" n excitation point is 3" away from shorter side i.e.
> 6.5". Excitation point uses N-type female connector n probe is of
> copper of 0.125" in length.
> Please give me its simulation result or send me its simulation
> sofrware link if u know

Is this a homework assignment or is it a commercial product being developed?

Roy Lewallen, W7EL

3879. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 06:18:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <06s8v3h4vs8r3obbkbrvss7de983ippcj1@4ax.com>
Source record: 26499

On Thu, 3 Apr 2008 02:33:20 +0100, "Mike Kaliski"
<michael.kaliski@tesco.net> wrote:

>Hi Richard,
>
>Never one to refuse a challenge.
>The old speakers were a pair of Celestion Ditton 15XR's with 30 watt per
>channel rating and a flat sound response output from around 20Hz to 20kHz,
>104db at 1 yard driven with 1 watt. The XR stood for extended range
>indicating that the speaker design had been modified and upgraded from the
>original Ditton 15 specifications.

Hi Mike,

Pretty impressive. My own Pioneers fall 10dB below that.

>The new speakers I mentioned are a pair of Creative T20's. 14 watts per
>channel from a built in amp and very nice to listen to.

Good to have a recommendation there too.

>They don't really
>compare with the Celestions for the smooth mellow sound that only seems to
>come with wooden cabinets, but for the price they are excellent. Good point
>about the magnets though. The super high powered magnets, ultra rigid,
>lightweight fibre glass cones and developments in ported cabinet design have
>all contributed to the superb performance of the T20's.
>
>Apparently they have been out for a while now, but it was only when I was
>wandering about in a PC World store that I heard a pair up and running. I
>was stopped in my tracks by the sound coming out of these tiny devices and
>spent a good couple of minutes looking for the subwoofer unit that I felt
>sure was hidden away somewhere. There wasn't a subwoofer and after that, I
>just knew I had to buy a pair.

I would have to agree.

>I have no connection with Creative and in fact I am a bit annoyed with the
>company's attitude to (not) providing proper sound card drivers for Windows
>Vista.

Maybe with service pack 4.

>Anyway, just go and check out the web reviews.

I will.

>Sorry everyone else, but this bit hasn't really got anything at all to do
>with antennas.

But it does show how performance correlates to numbers to theory to practice - something dreadfully missing in Art's contributions, if you can call throwing claims against the wall to see what sticks as a contribution.

73's
Richard Clark, KB7QHC

3880. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 12:12:04 UTC
From: Haines Brown <brownh@hartford-hwp.com>
Message-ID: <87abkbi1d7.fsf@teufel.hartford-hwp.com>
Source record: 26352

"Mike Kaliski" <michael.kaliski@tesco.net> writes:

> "Haines Brown" <brownh@teufel.hartford-hwp.com> wrote in message
> news:87ve30i4rf.fsf@teufel.hartford-hwp.com...
> Automotive couplers for two metres manage with a 2 inch by 2 inch
> plate either side of the glass. It could be worth trying 6 inch by 6
> inch plates on the domestic window and see what signal level gets
> out. Reception shouldn't be a problem if you can get 50% or more of
> your transmission power out through the glass.

The suggestions for a panel to insert into a partially opened window and to close the window on twin lead seem out. It's a steel casement type window that must be fully shut, and even if twin-lead were to get around the edge, it would be sandwiched in steel. I don't own the wall, so even if a hole could be put in it (which it can't), I don't own it.

On the positive side, this is a single pain of ordinary class, and I could make a capacitative coupler over 12" square and still get too near the steel frame. It's a curtained window, and so appearance is not important.

A question. Is this coupling purely capacitative at this frequency (the more surface area the better), or is it somewhat tuned (try different sizes to see what signal level gets out).

An obvious question, how can the coax be connected to the sheets of metal? That is, what happens to the braid? Or could there be two sheets next to each other on both sides of the glass, say one foot square each, with one for the coax center conductor and one for its braid?

> The only advantage that a commercial coupler might have is that the
> visual asthetics might be a bit better than a home brewed effort.

I was hoping to see a commercial coupler to figure out how they are constructed, but so far have seen only one for XP radio, and it is not clear what's up with it.

--

Haines Brown, KB1GRM

3881. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 12:25:27 UTC
From: Haines Brown <brownh@teufel.hartford-hwp.com>
Message-ID: <8763uzi0qw.fsf@teufel.hartford-hwp.com>
Source record: 26353

"Dale Parfitt" <parinc1@verizon.net> writes:

> The effective 2M antennas (Antenna Specialists) accomplish the
> lossless fed through because the radiator is voltage fed half wave and
> the interior coupling unit has a hi-->low Z transformer. You could do
> the same at 10M by converting the 50 Ohm feed to a higher impedance
> and then down converting outside. The downside is that this will
> likely limit your bandwidth a bit.

Dale, this is interesting, although my initial challenge is just to get capacitative coupling through glass without much attention to the impedance on either side. I hope/assume that at 10 meters, paralel metal sheets under a foot in size will represent just an impedance affecting signal strengh a bit, not something in need of tuning.

When you speak of "radiator", I assume you mean the antenna itself rather than the metal sheet that is inside and radiates through the glass. I'm running a magnetic loop antenna, with an antenna tuner inside the building at the transmitter end of the coax.

--

Haines Brown, KB1GRM

3882. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 13:21:38 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <er6dncdfhrhSRGnanZ2dnUVZ8rKdnZ2d@pipex.net>
Source record: 26354

Barrett wrote:
> The jumper is on in the unit and all the batteries are in there correct
> position. The link for the MFJ-259Z on the W&S site is
> http://www.wsplc.com/cgi-bin/ss000001.pl?SS=MFJ-259Z&PR=-1&TB=A&SHOP=&ACTION.x=14&ACTION
.y=3
>
> They won't even charge in my Smart charger. They just shut down the charging
> as if there no good, but they are supposed to be brand new. Just borrowed
> some 1800mA and these are charging fine in the MFJ-259, so it looks like the
> problem is with the batteries. I have never experienced this with these type
> of batteries before only NiCad's.
==========
Suggest you allow a say 100 mA current to flow through the individual
(new)batteries , monitoring the voltage across the battery.
As soon as the voltage is 1.2 V you can further charge in your automatic
charger.
When fully charged , discharge either in your automatic charger or
manually (with a 12 to 15 Ohms resistor) ,down to
1Volt and recharge. The (new) batteries should then work well.

New NiMH batteries often need a few manually imposed charging
/discharging cycles before working properly.

Good Luck

Frank GM0CSZ / KN6WH

3883. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 13:27:49 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <QpudnRx7v8bcRmnaRVnygwA@pipex.net>
Source record: 26355

Barrett wrote:
> Yes it is. Just looked at the box and it says MFJ-259Z but the front of
> meter says MFJ-259B. I don't understand this at all.
==========
For a number of years I have used my MFJ259B with an external 12V
Sealed Lead Acid (SLA) battery 12V-0.8Ah or larger capacity.
I never used internal batteries.

The analyser is regularly used for training purposes (SWR graphs for the
UK Foundation Licence assessment)

Frank GM0CSZ / KN6WH

3884. Re: Horn antenna simulation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 13:45:29 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <BcmdnQ8FE7LqQmnanZ2dnUVZ_s-pnZ2d@bright.net>
Source record: 26356

Dear kalpraj.m

Go to your school's library. Find books on antennas. Kraus' book (any edition) is good choice. Turn to the chapter on horn antennas, which is Chapter 9 in Kraus' Antennas, third edition. Study material.

Good studies, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
<kalpraj.m@gmail.com> wrote in message
news:6d72daf5-3414-4151-9edb-a7f08f3c0932@u36g2000prf.googlegroups.com...
> HI,
> I hav horn antenna which is required to be simulated. Its open
> mounth has dimensions 36"X27" n short mouth has dimensions 6.5"X3.25".
> Its height is 48" n excitation point is 3" away from shorter side i.e.
> 6.5". Excitation point uses N-type female connector n probe is of
> copper of 0.125" in length.
> Please give me its simulation result or send me its simulation
> sofrware link if u know

3885. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 13:47:27 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080403064727.5a965c38.rsparks@elltel.net>
Source record: 26357

On Wed, 2 Apr 2008 06:33:46 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 2, 9:17 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Wed, 2 Apr 2008 02:41:24 -0700 (PDT)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> >
> > clip
> >
> >
> >
> > > But your phraseology suggests another way to approach
> > > the problem. Let us consider what happens just after
> > > the arrival of the reflected wave. For computational
> > > convenience, we'll use a frequency of 1/360 hertz so
> > > that 1 degree of the wave is one second long.
> >
> > > The reflected wave arrives at 90 seconds (or 90 degrees)
> > > after the source is turned on. If the line is
> > > terminated in 50 ohms, then no reflection arrives and
> > > during the one second between degree 90 and degree 91,
> > > the source resistor dissipates 0.01523 J of energy. The
> > > line also receives 0.01523 J of energy and the source
> > > provides 0.03046 J.
> > >   Esource.50[90..91] = 0.03046 J
> > >   Ers.50[90..91]   = 0.01523 J
> > >   Eline.50[90..91]   = 0.01523 J
> > >   Esource = Ers + Eline
> > > as expected.
> > >   Efor = Eline
> > > since Eref is 0.
> >
> > I come up with 141.4v across 50 plus 50 ohms. The current should be 1.414a. Power to each 50 ohm resistor would be 50*1.4142^2 = 200w. For the 1 degree interval of 1 second, that would be 200 joules.
> >
> > Right? Peak current flows at 90 degrees?
> > --
> > 73, Roger, W7WKB- Hide quoted text -
> >
> > - Show quoted text -
>
> We may be using different sources. My Vs is 141.4cos(wt)

> so that between 90 degrees and 91 degrees, my source
> voltage is going from 0 to -2.468 V.
>
> And an ooopppps. I actually did the calculations for
> a shorted load rather than 12.5 ohms as stated.
> With the reflection coefficient of -1 and a 90 degree
> delay, the reflected voltage between 90 and 91 degrees
> changes from -70.711 V to -70.700 V.
>
> Hoping these details resolve the disparity,
>
> ...Keith

I am sorry Keith, but I still can not duplicate your work. I wonder if the difference is in how we each apply the recharge voltage to the transmission line.

I redid my table showing the power in the source and reflected waves. I now have the power to resistor Rs coming from voltage agreeing with the expected power calculated from current.

The table can be found at
http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf.

-*/---------
--
73, Roger, W7WKB

3886. Re: Pan and tilt

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 17:10:23 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <463c0822-2632-40ef-8899-0f80fbd916d2@u69g2000hse.googlegroups.com>
Source record: 26358

On Apr 3, 12:16 am, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Apr 2, 11:31 pm, Rick Frazier <ri...@rickfrazier.com> wrote:
>
>
>
> > Art Unwin wrote:
> > > Had a bit of luck when assembling the antenna to the pan and tilt
> > > mechanism
> > > prior to placing them on the tower. The PM motors do not have brakes
> > > on them!
> > > Fortunately the leverage of the tilting does not overcome the motors
> > > inertia and I am in the clear.
> > > For the future any ideas on a braking means to ensure stabilility in
> > > position?
> > > Both motors use chain drives and I suppose I could use solenoids to
> > > tighten the chain
> > > Regards
> > > Art.
>
> > Most permanent magnet motors will resist rotation if you short the input...
> > When not driving with a voltage, place a short across the leads. This
> > essentially has the motor acting as a generator into a dead short, which
> > makes for significant torque to overcome the subsequent rotational
> > resistance. Not as good as a wedge (like many commercial rotators) or a
> > really high gearing ratio (worm and gear or worm and sector), but if
> > you've already got a reasonable gear reduction it may be all you need...
>
> > --Rick AH7H
>
> Thank you very much for that.Fortunately the system appears to be
> stable enough
> as the antenna and mesh dish is very light and minimul wind
> resistance.
> Regards Art

Pan tilt and revolve now working perfectly. Antenna does not exceed
3.2 to 1 from
!.8 upto 170 Mhz just like a log periodic tho it can be adjusted at
any frequency
if I felt the need. Today I will be checking out the TV stations and
tonight
I will get on the air without the amplifier. Life is good
Art

3887. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 17:19:13 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <ft33ih$14uc$1@f04n12.cac.psu.edu>
Source record: 26359

Richard Clark wrote:

> But it does show how performance correlates to numbers to theory to
> practice - something dreadfully missing in Art's contributions, if you
> can call throwing claims against the wall to see what sticks as a
> contribution.

Or one's underwear...

- 73 de Mike N3LI -

3888. From OP: Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 17:32:53 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <n4udnZRwY9ZeiWjanZ2dnUVZ_gadnZ2d@comcast.com>
Source record: 26360

Hi,

Thanks for replies.
Good info.

Regards,
Bob

"Robert11" <rgsros@notme.com> wrote in message
news:HLOdnWuwhejRdG7anZ2dnUVZ_sCtnZ2d@comcast.com...
> Hello,
>
> a. Anyone have any idea if a receiving Disconne type of antenna is
> Polarized horiz. or vert. ?
>
> b. Same question for a Scantenna ?
>
> c. On VHF and UHF scanner freq's, are the (typically vertical, I believe
> ?) transmitted polarizations from Fire and PD transmitters usually
> maintained over distances of, e.g., 10 miles or so ? Or does "bounce",
> etc., tend to totally de-polarize them ?
>
> d. If a receiving signal is well polarized in one direction, say
> vertically, how much loss would one expect if the receiving antenna is
> oriented such that its preferred olarization is horiz. ?
>
> e.g., for a rubber-duckie scanner antenna ?
>
> Thanks,
> Bob
>

3889. Re: Suggestions for Intermittent Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 17:34:19 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <ft34er$14ue$1@f04n12.cac.psu.edu>
Source record: 26361

Dave wrote:
> what brand/model? the 40-2cd has a known problem with the loading coil
> connections becoming intermittant that gives symptoms just like that. other
> loading coils, baluns, or matching section connections may do the same thing
> on other models.
>
> "Bob Dixon" <dixon.8@osu.edu> wrote in message
> news:dixon.8-1710E9.12523902042008@charm.magnus.acs.ohio-state.edu...
>> My 40M beam works only intermittently. Typically under normal
>> conditions, the received signals are weak and the SWR is very high.
>> If I rotate the antenna, it "comes alive" in some directions and works
>> fine for a while, then dies again. In all cases, if I transmit into it
>> with a KW is comes alive and works fine for a while (few minutes) and
>> then dies again. A single dit will fix it. 100W does not do it.
>>
>> I replaced the coax which runs around the rotator and it made no
>> difference. I just recently learned that a local friend also has an
>> intermittent antenna which can be restored by transmitting a KW into it.
>>
>> Is this a common problem? is there a generic solution? Any hints
>> would be appreciated. Note that it is not too easy when up on the tower
>> to jiggle things while someone on the ground tries to watch the SWR and
>> shout back and forth. We tried that when we replaced the coax.

This antenna is probably going to have to come down for a look-see. I
would suspect something very near the area closest to the mast, but
those coils are a suspect too.

Running high power into the antenna might fix it, or might burn a coil
or other part up. I guess the rationale was to heat up an intermittent
connection, and "weld" it back together. Hoo boy, I'd pass on that.

Setting the antenna down will allow you to do some maintenance on the
whole thing. If you have one intermittent, problems can show up in other
places too, so its time to bite the bullet. Certainly not pleasant with
a 40 meter beam.

- 73 de Mike N3LI -

3890. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 17:35:17 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <6179951b-4b44-4072-8273-63e06667b7a7@q27g2000prf.googlegroups.com>
Source record: 26362

On Apr 3, 9:47 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Wed, 2 Apr 2008 06:33:46 -0700 (PDT)
> I am sorry Keith, but I still can not duplicate your work. I wonder if the difference is in how we each apply the recharge voltage to the transmission line.

I do not know. The spreadsheet that did the work is now available from
this page:
http://keith.dysart.googlepages.com/radio6

Perhaps with the extra detail, you can find the discrepancy.

> I redid my table showing the power in the source and reflected waves. I now have the power to resistor Rs coming from voltage agreeing with the expected power calculated from current.

My sheet agrees with yours for the samples I checked.

...Keith

3891. W2AU Balun - 1:1 or 4:1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 17:54:59 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <a86av35jjnv4crg0n9cffpi83k3pj98kij@4ax.com>
Source record: 26363

I have been given a W2AU balun. It is an older one with no markings other than W2AU BALUN on it. I am not sure which model it is, 1:1 or 4:1, but I am guessing it is 4:1.

The balun has a metal bar that goes from the ground screw of the SO-239 connector to the support eyelet on the top of the balun.

It is 6 inches long with about 1.5 inch diameter tubing. It has three eyelets, one on top and one on each side of the top for the dipole wires.

Can anyone confirm what I have here?

thanks

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3892. Re: Horn antenna simulation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 18:38:08 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <Rd5VYTAQQS9HFwsn@b-howie.demon.co.uk>
Source record: 26364

In message
<6d72daf5-3414-4151-9edb-a7f08f3c0932@u36g2000prf.googlegroups.com>,
kalpraj.m@gmail.com writes
>HI,
> I hav horn antenna which is required to be simulated. Its open
>mounth has dimensions 36"X27" n short mouth has dimensions 6.5"X3.25".
>Its height is 48" n excitation point is 3" away from shorter side i.e.
>6.5". Excitation point uses N-type female connector n probe is of
>copper of 0.125" in length.
> Please give me its simulation result or send me its simulation
>sofrware link if u know

Http://home.ict.nl/~arivoors/

4nec2 has a horn antenna in its example files you can probably modify or
scale. I tried running it, but I don't have the right NEC engine to
handle the segmentation.

Regards

Brian GM4DIJ
--
Brian Howie

3893. Re: W2AU Balun - 1:1 or 4:1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 20:06:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <KaWdneJCzqwypWjanZ2dnUVZ_jCdnZ2d@easystreetonline>
Source record: 26365

I can't say whether it's 4:1 or 1:1, but it fits the description of a 1:1 W2AU balun I got long ago. I think they might have changed the design somewhere along the line, but the one I have is a voltage balun. A 1:1 voltage balun measures a short circuit across the two input terminals or two output terminals; a 1:1 current balun will read open. If it's a 4:1, it's very likely a voltage balun, but both voltage and current 4:1 baluns will show a DC short across the terminals. The only way I know of to determine whether it's a 1:1 or 4:1 is either to use something like an antenna analyzer, or connect the output to a 50 ohm dummy load and look at the SWR at the input side. If it's a 4:1 balun, the SWR will probably be at least 4:1, and likely higher.

Roy Lewallen, W7EL

Buck wrote:
> I have been given a W2AU balun. It is an older one with no markings
> other than W2AU BALUN on it. I am not sure which model it is, 1:1 or
> 4:1, but I am guessing it is 4:1.
>
> The balun has a metal bar that goes from the ground screw of the
> SO-239 connector to the support eyelet on the top of the balun.
>
> It is 6 inches long with about 1.5 inch diameter tubing. It has three
> eyelets, one on top and one on each side of the top for the dipole
> wires.
>
>
> Can anyone confirm what I have here?
>
> thanks
>
>

3894. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 20:49:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <epbJj.21$GE1.19@nlpi061.nbdc.sbc.com>
Source record: 26366

Keith Dysart wrote:
> My sheet agrees with yours for the samples I checked.

Here's an example that changes nothing but allows
isolation of the component energy flows.

```
50 ohms
+---1WL-50-ohm---\/\/\/\---1WL-50-ohm---+
| |
Source 141.4*cos(wt) volts Load +j50
| |
+--------------------------------------+
GND GND
```

It appears to me that the confusion arises from
the *series* resistor.
--
73, Cecil http://www.w5dxp.com

3895. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 21:11:09 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <48cb28a2-e8ab-48f7-903e-a7cc32773d17@i7g2000prf.googlegroups.com>
Source record: 26367

On 2 abr, 18:46, Haines Brown <bro...@teufel.hartford-hwp.com> wrote:
> I'm sure a FAQ, but a search on line did not resolve my question.
>
> I need to feed my coax (QRP, 10 meters) out through a pane of glass, and
> for that I need a through-glass coax coupler (this is not an automotive,
> but a home window situation).
>
> Most couplers are apparently capacitative. At 10 meters, for example,
> would I gain much by going to a microstrip coupler instead (whatever
> that is)?
>
> How good a coupling can I expect with a through-glass coupler? It sounds
> very lossy, but perhaps not.
>
> What brands of couplers would you recommend, or what is a good source
> for such couplers?
>
> --
>
> Haines Brown, KB1GRM

Hello,

Why not using inductive coupling? You can get reasonable coupling as
wires are just mm away from eachother, so you don't need high Q factor
circuit.
Matching indoor only is possible (so you don't need matching outside
to interface to 50 Ohm coaxial cable).

Best regards,

Wim
PA3DJS
www.tetech.nl
please remove abc from the mail address.

3896. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 21:42:21 UTC
From: Haines Brown <brownh@teufel.hartford-hwp.com>
Message-ID: <87y77uhayq.fsf@teufel.hartford-hwp.com>
Source record: 26368

Wimpie <wimabctel@tetech.nl> writes:

> Why not using inductive coupling? You can get reasonable coupling as
> wires are just mm away from eachother, so you don't need high Q factor
> circuit.

Didn't occur to me. Are you suggesting a couple coils sharing an axis,
one just inside the window and the other outside? Would the two coils
simply be designed for a 50-ohm impedance at, say, 10 meters?

I can imagine wrapping a 50-ohm coil on pvc, and inserting it into a
larger diameter pvc that is capped and which has a coax connector passing
through it. and the whole attached to the glass with silicone
adhesive. One on either side of the glass.

> Matching indoor only is possible (so you don't need matching outside
> to interface to 50 Ohm coaxial cable).

Not sure of your point. It seems I need to match outside.

Another problem just occurred to me. I'll use a MFJ magnetic loop, and
its tuner, if I recall, depends on an uninterrupted electical connection
through the coax. If so, I'm stuck.
--

Haines Brown, KB1GRM

3897. Re: Suggestions for Intermittent Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 22:13:03 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <FM6dnTct0tvwy2janZ2dnUVZ_t2inZ2d@bright.net>
Source record: 26369

Dear Bob: Great to hear from another of Kraus' boys. I had a similar
problem with a large LPDA after it had been up for a while. Its pattern
went backwards. It had to be taken down whereupon a loose connection was
found. So many things to go wrong.

At least better weather is coming. 73, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Michael Coslo" <mjc5@psu.edu> wrote in message
news:ft34er$14ue$1@f04n12.cac.psu.edu...
> Dave wrote:
>> what brand/model? the 40-2cd has a known problem with the loading coil
>> connections becoming intermittant that gives symptoms just like that.
>> other loading coils, baluns, or matching section connections may do the
>> same thing on other models.
>>
>> "Bob Dixon" <dixon.8@osu.edu> wrote in message
>> news:dixon.8-1710E9.12523902042008@charm.magnus.acs.ohio-state.edu...
>>> My 40M beam works only intermittently. Typically under normal
>>> conditions, the received signals are weak and the SWR is very high.
>>> If I rotate the antenna, it "comes alive" in some directions and works
>>> fine for a while, then dies again. In all cases, if I transmit into it
>>> with a KW is comes alive and works fine for a while (few minutes) and
>>> then dies again. A single dit will fix it. 100W does not do it.
>>>
>>> I replaced the coax which runs around the rotator and it made no
>>> difference. I just recently learned that a local friend also has an
>>> intermittent antenna which can be restored by transmitting a KW into it.
>>>
>>> Is this a common problem? is there a generic solution? Any hints
>>> would be appreciated. Note that it is not too easy when up on the tower
>>> to jiggle things while someone on the ground tries to watch the SWR and
>>> shout back and forth. We tried that when we replaced the coax.
>
>
> This antenna is probably going to have to come down for a look-see. I
> would suspect something very near the area closest to the mast, but those
> coils are a suspect too.
>
> Running high power into the antenna might fix it, or might burn a coil or
> other part up. I guess the rationale was to heat up an intermittent
> connection, and "weld" it back together. Hoo boy, I'd pass on that.
>

> Setting the antenna down will allow you to do some maintenance on the
> whole thing. If you have one intermittent, problems can show up in other
> places too, so its time to bite the bullet. Certainly not pleasant with a
> 40 meter beam.
>
> - 73 de Mike N3LI -

3898. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 22:30:00 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <c44ec47e-39a4-48d0-990a-d8c79d8b24aa@i7g2000prf.googlegroups.com>
Source record: 26370

On 3 abr, 23:42, Haines Brown <bro...@teufel.hartford-hwp.com> wrote:
> Wimpie <wimabc...@tetech.nl> writes:
> > Why not using inductive coupling? You can get reasonable coupling as
> > wires are just mm away from eachother, so you don't need high Q factor
> > circuit.
>
> Didn't occur to me. Are you suggesting a couple coils sharing an axis,
> one just inside the window and the other outside? Would the two coils
> simply be designed for a 50-ohm impedance at, say, 10 meters?
>
> I can imagine wrapping a 50-ohm coil on pvc, and inserting it into a
> larger diameter pvc that is capped and which has a coax connector passing
> through it. and the whole attached to the glass with silicone
> adhesive. One on either side of the glass.
>
> > Matching indoor only is possible (so you don't need matching outside
> > to interface to 50 Ohm coaxial cable).
>
> Not sure of your point. It seems I need to match outside.
>
> Another problem just occurred to me. I'll use a MFJ magnetic loop, and
> its tuner, if I recall, depends on an uninterrupted electical connection
> through the coax. If so, I'm stuck.
> --
>
> Haines Brown, KB1GRM

Hello,

I was thinking of just 1 turn windings glued on the window of about
D=10'' (correctly aligned), in combination with a two trimmer
capacitor match (from which one can probably be a fixed value after
experimenting).

When you would do matching both inside and outside you can get a
broader response. Window glass is just about 0.15'' thick, so I think
a single match (inside) would have sufficient bandwidth (especially
when you would use foil/strip material for the two single turn
windings).

Best regards,

Wim
PA3DJS
www.tetech.nl
please remove abc from the address.

3899. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 22:47:36 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080403154736.772a90c9.rsparks@elltel.net>
Source record: 26371

On Thu, 3 Apr 2008 10:35:17 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 3, 9:47 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Wed, 2 Apr 2008 06:33:46 -0700 (PDT)
> > I am sorry Keith, but I still can not duplicate your work. I wonder if the difference is in how we each apply the recharge voltage to the transmission line.
>
> I do not know. The spreadsheet that did the work is now available from
> this page:
> http://keith.dysart.googlepages.com/radio6
>
> Perhaps with the extra detail, you can find the discrepancy.
>
> > I redid my table showing the power in the source and reflected waves. I now have the power to resistor Rs coming from voltage agreeing with the expected power calculated from current.
>
> My sheet agrees with yours for the samples I checked.
>
> ...Keith

I think that at 91 degrees, the sign of the returning wave should be positive, not negative. Thus, it should be +1.234v. My reasoning is that the voltage from the line side of the resistor adds to the voltage from the source side of the resistor, but in this case it takes a little longer to get around the loop. The 90 degrees is timing, the lead edge of the wave is not reversed by turning the corner at what we call the short.

Another way of thinking about it is that if the transmission line was shorter, the added voltage to the resistor from the line side would arrive even earlier, and add. If the line were zero length, there would be no question but that the voltage would add.

Lastly, your current peaks at 135 degrees, not 45 degrees, which should be the delay.

It is interesting to notice that the current is delayed 45 degrees, but the voltage is delayed 90 degrees. It is as if the current does not take the entire trip around the loop, but the voltage does. The current apparently travels an average of half the distance around the loop.

I know that the convention for calculating the reflection coefficient is to make it negative for a shorted transmission line. The negative sign makes sense because the voltages at the short cancel so we have a zero voltage across the short. That convention sure messes up our spread sheet calculations however.

--
73, Roger, W7WKB

3900. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-03 22:56:04 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080403155604.c7e29cad.rsparks@elltel.net>
Source record: 26372

On Thu, 03 Apr 2008 15:49:15 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Keith Dysart wrote:
> > My sheet agrees with yours for the samples I checked.
>
> Here's an example that changes nothing but allows
> isolation of the component energy flows.
>
> 50 ohms
> +---1WL-50-ohm---\/\/\/\---1WL-50-ohm---+
> | |
> Source 141.4*cos(wt) volts Load +j50
> | |
> +---------------------------------------+
> GND GND
>
> It appears to me that the confusion arises from
> the *series* resistor.
> --
> 73, Cecil http://www.w5dxp.com

This circuit has a reflection at the 50 ohm resistor because the impedance transitions from 50 ohms to 100 ohms, then back to 50 ohms.

--
73, Roger, W7WKB

3901. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 00:12:45 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <d8OdndPUg93m72jaRVnyjQA@bt.com>
Source record: 26373

"Haines Brown" <brownh@hartford-hwp.com> wrote in message
news:87abkbi1d7.fsf@teufel.hartford-hwp.com...
> "Mike Kaliski" <michael.kaliski@tesco.net> writes:
>
>> "Haines Brown" <brownh@teufel.hartford-hwp.com> wrote in message
>> news:87ve30i4rf.fsf@teufel.hartford-hwp.com...
>> Automotive couplers for two metres manage with a 2 inch by 2 inch
>> plate either side of the glass. It could be worth trying 6 inch by 6
>> inch plates on the domestic window and see what signal level gets
>> out. Reception shouldn't be a problem if you can get 50% or more of
>> your transmission power out through the glass.
>
> The suggestions for a panel to insert into a partially opened window and
> to close the window on twin lead seem out. It's a steel casement type
> window that must be fully shut, and even if twin-lead were to get around
> the edge, it would be sandwiched in steel. I don't own the wall, so even
> if a hole could be put in it (which it can't), I don't own it.
>
> On the positive side, this is a single pain of ordinary class, and I
> could make a capacitative coupler over 12" square and still get too near
> the steel frame. It's a curtained window, and so appearance is not
> important.
>
> A question. Is this coupling purely capacitative at this frequency (the
> more surface area the better), or is it somewhat tuned (try different
> sizes to see what signal level gets out).
>
> An obvious question, how can the coax be connected to the sheets of
> metal? That is, what happens to the braid? Or could there be two sheets
> next to each other on both sides of the glass, say one foot square each,
> with one for the coax center conductor and one for its braid?
>
>> The only advantage that a commercial coupler might have is that the
>> visual asthetics might be a bit better than a home brewed effort.
>
> I was hoping to see a commercial coupler to figure out how they are
> constructed, but so far have seen only one for XP radio, and it is not
> clear what's up with it.
>
> --
>
> Haines Brown, KB1GRM
>
Haines,

The versions I used years ago relied purely on capacitive coupling. The braid was broken and only the centre lead of the coax was connected to the plates. The earth return was via the automobile chassis for vehicle use, or via earth connections for domestic use. The metal frame of the window might work if you have any means of getting a good connection, otherwise you will need some form of reliable (low impedence) earth connection inside and outside the building for the system to work properly.

The coupling through the glass should be purely capacitive although some inductance effects will inevitably be introduced due to the size of the plates.

As an alternative you might consider making up two matched tuned circuits (coil and capacitor) set for the 10 metre band and try inductively coupling the coils through the glass. To my mind that would be smaller and easier to set up without the need to worry about earth feeds. A kind of through glass balun if you like. Obviously you will need to keep a reasonable distance away from the metal window frame, but a couple of turns of wire and a couple of capacitors may be all you need.

Mike G0ULI

3902. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 00:40:05 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <WvSdnZp3cKN_5WjanZ2dnUVZ8vOdnZ2d@bt.com>
Source record: 26374

"Haines Brown" <brownh@teufel.hartford-hwp.com> wrote in message
news:87y77uhayq.fsf@teufel.hartford-hwp.com...
> Wimpie <wimabctel@tetech.nl> writes:
>
>> Why not using inductive coupling? You can get reasonable coupling as
>> wires are just mm away from eachother, so you don't need high Q factor
>> circuit.
>
> Didn't occur to me. Are you suggesting a couple coils sharing an axis,
> one just inside the window and the other outside? Would the two coils
> simply be designed for a 50-ohm impedance at, say, 10 meters?
>
> I can imagine wrapping a 50-ohm coil on pvc, and inserting it into a
> larger diameter pvc that is capped and which has a coax connector passing
> through it. and the whole attached to the glass with silicone
> adhesive. One on either side of the glass.
>
>> Matching indoor only is possible (so you don't need matching outside
>> to interface to 50 Ohm coaxial cable).
>
> Not sure of your point. It seems I need to match outside.
>
> Another problem just occurred to me. I'll use a MFJ magnetic loop, and
> its tuner, if I recall, depends on an uninterrupted electical connection
> through the coax. If so, I'm stuck.
> --
>
> Haines Brown, KB1GRM
>
Haines,

Just read the other postings about inductive coupling and I think that would be the best way to go with a standard wire antenna like a half wave dipole, vertical, etc.

I can't see any way of getting a magnetic loop antenna to work because you need a direct DC path for power and tuning commands from the tuning unit to the loop.

Might be better to put your ingenuity to better use by finding somewhere hidden to run a thin bit of coax through the wall. Behind a switch plate, power socket, joint fillet, alongside a pipe. There must be somewhere to put a 1/4 inch hole that can be concealed later? For QRP work, you might get away with a short through wall length of really thin coax, the 1/8 inch stuff used to connect signal assemblies inside equipment.

If you are really brave, a masonry drill at high speed will cut through glass with a bit of soapy water acting as a lubricant. Take your time and try and brace the other side with a wooden block or elses a big bullseye chip will be thrown out when the drill breaks through. Fill the hole with transparent quick set epoxy when it is no longer needed.

Mike G0ULI

3903. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 00:50:05 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <57560c1b-2bc8-4b16-9548-e1e5134119e3@m44g2000hsc.googlegroups.com>
Source record: 26375

On Apr 3, 6:47 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Thu, 3 Apr 2008 10:35:17 -0700 (PDT)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Apr 3, 9:47 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Wed, 2 Apr 2008 06:33:46 -0700 (PDT)
> > > I am sorry Keith, but I still can not duplicate your work. I wonder if the
difference is in how we each apply the recharge voltage to the transmission line.
>
> > I do not know. The spreadsheet that did the work is now available from
> > this page:
> >http://keith.dysart.googlepages.com/radio6
>
> > Perhaps with the extra detail, you can find the discrepancy.
>
> > > I redid my table showing the power in the source and reflected waves. I now have
the power to resistor Rs coming from voltage agreeing with the expected power calculated
from current.
>
> > My sheet agrees with yours for the samples I checked.
>
> > ...Keith
>
> I think that at 91 degrees, the sign of the returning wave should be positive, not
negative. Thus, it should be +1.234v. My reasoning is that the voltage from the line side
of the resistor adds to the voltage from the source side of the resistor, but in this case
it takes a little longer to get around the loop. The 90 degrees is timing, the lead edge
of the wave is not reversed by turning the corner at what we call the short.

I do believe that -1.234 is correct. The reflection coefficient is -1,
so at the
short, Vr(t) is always equal to -Vf(t), which, when summed, give a
Vtot(t) of 0
which is what is expected at a short. Vr.g(t) is delayed by 90 degrees
from
Vf.g(t) so at 91 degrees, we should expect Vr.g(91) to be (-1 *
Vf.g(1)) or
-1.234. This is also how the spreadsheet computes it.

> Another way of thinking about it is that if the transmission line was shorter, the added
voltage to the resistor from the line side would arrive even earlier, and add. If the line
were zero length, there would be no question but that the voltage would add.

Vg(t) is the voltage across the line, so Vg(t) is the sum of Vf.g(t)
and Vr.g(t),

recalling that Vtot = Vf + Vr.

And
Vrs(t) = Vs(t) - Vg(t)
Since Vf.g(t) = Vs(t)/2, and Vg(t) = Vf.g(t) + Vr.g(t) we have, by
substitution,
Vrs(t) = 2 * Vf.g(t) - Vf - Vr.g(t)
= Vf.g(t) - Vr.g(t)

> Lastly, your current peaks at 135 degrees, not 45 degrees, which should be the delay.
>
> It is interesting to notice that the current is delayed 45 degrees, but the voltage is delayed 90 degrees. It is as if the current does not take the entire trip around the loop, but the voltage does. The current apparently travels an average of half the distance around the loop.

Be careful if you are comparing things before and after the 90 degree
point. At 90
degrees, the circuit conditions change dramatically.

At the entrance to the line, Ig is delayed 90 degrees from Vg which is
to be expected
since the line is behaving as a pure inductor from any time after 90
degrees. Before
that the line is behaving as a resistance.

At the resistor, the offset is only half this because the resistor and
the line have
the same magnitude of impedance.

> I know that the convention for calculating the reflection coefficient is to make it negative for a shorted transmission line. The negative sign makes sense because the voltages at the short cancel so we have a zero voltage across the short. That convention sure messes up our spread sheet calculations however.

One does have to be careful to treat the signs consistently. In this
sheet, the convention
is that flows (current and energy) to the right (assuming the load is
to the right) are
positive. Some conventions use positive to mean flows to the right for
the forward wave
and flows to the left for the reflected wave.

On this sheet, Vtot = Vf+Vr, Itot=If+Ir and Ptot=Pf+Pr.
I hope no gremlins snuck in.

...Keith

3904. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 00:59:42 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <546fcdd6-1d3d-4875-a600-a66e5a6ececf@a70g2000hsh.googlegroups.com>
Source record: 26376

On Apr 3, 4:49 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > My sheet agrees with yours for the samples I checked.
>
> Here's an example that changes nothing but allows
> isolation of the component energy flows.
>
>   50 ohms
>   +---1WL-50-ohm---\/\/\/\---1WL-50-ohm---+
> | |
> Source 141.4*cos(wt) volts   Load +j50
> | |
>   +---------------------------------------+
>   GND   GND
>
> It appears to me that the confusion arises from
> the *series* resistor.

It seems to me that this circuit is quite different.
There is a reflection where the left TL connects
to the 50 ohm resistor. There is a reflection when
the reflected wave on the left TL arrives back at the
source and there is a reflection when the reflected
wave on the right TL hits the 50 ohm resistor.

This circuit takes an infinitely long time to settle.
The previous circuit only had a reflection at the load
and settled after one round trip.

Quite different.

...Keith

3905. Re: Suggestions for Intermittent Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 02:12:36 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <1e96fca5-d1ec-44ea-a424-c6e5c6d52ff6@24g2000hsh.googlegroups.com>
Source record: 26377

On Apr 3, 6:13 pm, "J. Mc Laughlin" <j...@power-net.net> wrote:
> Dear Bob: Great to hear from another of Kraus' boys. I had a similar
> problem with a large LPDA after it had been up for a while. Its pattern
> went backwards. It had to be taken down whereupon a loose connection was
> found. So many things to go wrong.
>
> At least better weather is coming.   73,   Mac   N8TT
> --
> J. McLaughlin; Michigan, USA
> Home: J...@power-net.net"Michael Coslo" <m...@psu.edu> wrote in message
>
> news:ft34er$14ue$1@f04n12.cac.psu.edu...
>
>
>
> > Dave wrote:
> >> what brand/model? the 40-2cd has a known problem with the loading coil
> >> connections becoming intermittant that gives symptoms just like that.
> >> other loading coils, baluns, or matching section connections may do the
> >> same thing on other models.
>
> >> "Bob Dixon" <dixo...@osu.edu> wrote in message
> >>news:dixon.8-1710E9.12523902042008@charm.magnus.acs.ohio-state.edu...
> >>> My 40M beam works only intermittently. Typically under normal
> >>> conditions, the received signals are weak and the SWR is very high.
> >>> If I rotate the antenna, it "comes alive" in some directions and works
> >>> fine for a while, then dies again. In all cases, if I transmit into it
> >>> with a KW is comes alive and works fine for a while (few minutes) and
> >>> then dies again. A single dit will fix it. 100W does not do it.
>
> >>> I replaced the coax which runs around the rotator and it made no
> >>> difference. I just recently learned that a local friend also has an
> >>> intermittent antenna which can be restored by transmitting a KW into it.
>
> >>> Is this a common problem? is there a generic solution?   Any hints
> >>> would be appreciated. Note that it is not too easy when up on the tower
> >>> to jiggle things while someone on the ground tries to watch the SWR and
> >>> shout back and forth. We tried that when we replaced the coax.
>
> > This antenna is probably going to have to come down for a look-see. I
> > would suspect something very near the area closest to the mast, but those
> > coils are a suspect too.
>
> > Running high power into the antenna might fix it, or might burn a coil or

> > other part up. I guess the rationale was to heat up an intermittent
> > connection, and "weld" it back together. Hoo boy, I'd pass on that.
>
> > Setting the antenna down will allow you to do some maintenance on the
> > whole thing. If you have one intermittent, problems can show up in other
> > places too, so its time to bite the bullet. Certainly not pleasant with a
> > 40 meter beam.
>
> > - 73 de Mike N3LI -- Hide quoted text -
>
> - Show quoted text -

I had a problem like that with a little Yagi for 10M I bought at a
hamfest. The Aluminum rod for the gamma match was riveted to the coax
connector. Repair was to replace the Al tube with a brass one and a
new connector was soldered to the tube.

Jimmie

3906. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 03:57:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <IGhJj.74$IF7.65@newssvr25.news.prodigy.net>
Source record: 26378

Roger Sparks wrote:
> This circuit has a reflection at the 50 ohm resistor because the impedance transitions from 50 ohms to 100 ohms, then back to 50 ohms.

Yet conditions are identical to the earlier example.
That should tell us something.
--
73, Cecil http://www.w5dxp.com

3907. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 04:01:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kKhJj.79$IF7.29@newssvr25.news.prodigy.net>
Source record: 26379

Keith Dysart wrote:
> It seems to me that this circuit is quite different.

Yet, steady-state conditions are identical. That
should tell us something about what is wrong
with the analysis so far. Wave reflection theory
works if the transmission line is a multiple of
one wavelength even if the multiple is zero.
--
73, Cecil http://www.w5dxp.com

3908. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 04:21:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <TJ-dnV1WvLdVMWjanZ2dnUVZ_r6rnZ2d@easystreetonline>
Source record: 26380

Mike Kaliski wrote:
>>
> Haines,
>
> The versions I used years ago relied purely on capacitive coupling. The
> braid was broken and only the centre lead of the coax was connected to
> the plates. The earth return was via the automobile chassis for vehicle
> use, or via earth connections for domestic use. The metal frame of the
> window might work if you have any means of getting a good connection,
> otherwise you will need some form of reliable (low impedence) earth
> connection inside and outside the building for the system to work properly.
>
> The coupling through the glass should be purely capacitive although some
> inductance effects will inevitably be introduced due to the size of the
> plates.

You'll have a considerable amount of inductance for another reason if you follow this approach.

Consider what happens when you separate the two conductors of the coax as Mike suggests. One conductor continues more-or-less directly through the glass. The other conductor becomes the "ground" path from wherever the current leaves the inside of the coax shield on one side of the glass to where it again enters on the other side. These are the two conductors of a transmission line which you've inserted in series with your normal line. If you'll do a little rough calculating, you'll find that this line has a much higher impedance than 50 ohms. So, if electrically short, its effect will be that of a series inductance. If it's not so short, the impedance transformation will be a lot more interesting. Another thing that happens is that the length of the "ground" conductor is greater than the length of the center conductor. This will probably give rise to common mode currents, which will involve the outside of the coax in the active feedline.

> As an alternative you might consider making up two matched tuned
> circuits (coil and capacitor) set for the 10 metre band and try
> inductively coupling the coils through the glass. To my mind that would
> be smaller and easier to set up without the need to worry about earth
> feeds. A kind of through glass balun if you like. Obviously you will
> need to keep a reasonable distance away from the metal window frame, but
> a couple of turns of wire and a couple of capacitors may be all you need.

That might have a better chance of producing a smaller disturbance to the whole feed system. If you use direct capacitive coupling through the glass, however, you should remember that you have two conductors to deal

with -- calling one "ground" doesn't give it magic properties. I'd use two coupling plates, one for each conductor, as close together as possible. A bit of intentional shunt capacitance would help compensate for the inevitable series inductance which would be created by even that setup.

Roy Lewallen, W7EL

3909. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 04:40:21 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080403214021.7f5b4c65.rsparks@elltel.net>
Source record: 26381

On Thu, 3 Apr 2008 17:50:05 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 3, 6:47 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > On Thu, 3 Apr 2008 10:35:17 -0700 (PDT)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Apr 3, 9:47 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > On Wed, 2 Apr 2008 06:33:46 -0700 (PDT)
> > > > I am sorry Keith, but I still can not duplicate your work. I wonder if the
difference is in how we each apply the recharge voltage to the transmission line.
> >
> > > I do not know. The spreadsheet that did the work is now available from
> > > this page:
> > >http://keith.dysart.googlepages.com/radio6
> >
> > > Perhaps with the extra detail, you can find the discrepancy.
> >
> > > > I redid my table showing the power in the source and reflected waves. I now have
the power to resistor Rs coming from voltage agreeing with the expected power calculated
from current.
> >
> > > My sheet agrees with yours for the samples I checked.
> >
> > > ...Keith
> >
> > I think that at 91 degrees, the sign of the returning wave should be positive, not
negative. Thus, it should be +1.234v. My reasoning is that the voltage from the line side
of the resistor adds to the voltage from the source side of the resistor, but in this case
it takes a little longer to get around the loop. The 90 degrees is timing, the lead edge
of the wave is not reversed by turning the corner at what we call the short.
>
> I do believe that -1.234 is correct. The reflection coefficient is -1,
> so at the
> short, Vr(t) is always equal to -Vf(t), which, when summed, give a
> Vtot(t) of 0
> which is what is expected at a short. Vr.g(t) is delayed by 90 degrees
> from
> Vf.g(t) so at 91 degrees, we should expect Vr.g(91) to be (-1 *
> Vf.g(1)) or
> -1.234. This is also how the spreadsheet computes it.

OK, I see now. You reversed the sign to calculate Vrs so once I get to the Vrs column, we are the same. You used the -1 reversal to calculate Vg, but plus one to calculate Vrs.

clip
>
> On this sheet, Vtot = Vf+Vr, Itot=If+Ir and Ptot=Pf+Pr.
> I hope no gremlins snuck in.
>
> ...Keith

I will go back and look some more at the power relationships from your earlier posting.

--
73, Roger, W7WKB

3910. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 04:57:02 UTC
From: nm5k@wt.net
Message-ID: <89740258-d613-476e-895f-e32240010e6b@q27g2000prf.googlegroups.com>
Source record: 26382

On Apr 2, 11:12 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Apr 2, 10:37 pm, n...@wt.net wrote:
>
> > On Apr 2, 1:41 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
> > > Pray tell me then why I am incorrect. You can salvage the
> > > answer from your own mind or even from a book.
> > >When the air breaks down around an antenna it is because the antenna
> > >is not in a state of equilibrium.
>
> > Define equilibrium as it pertains to an antenna. Until you do, it's
> > fairly hard to comment on the first statement.
>
> I don't think I can do that for you, it would take to long.

It hasn't stopped you from writing a novel on other issues..
>
> > If you have corona discharge from an antenna, it's usually due
> > to sharp points when using wire or a whip with a pointed tip.
> > Thats why they stick round balls on whips, flagpoles, etc..
>
> When you have a discharge it is a loss of energy

Not antenna efficiency though. It's more akin to running a
dipole with poor end insulators..
>
> > >When a dipole is replaced by a quad ala
> > >a series circuit is replaced by a tank circuit it clearly shows that
> > >the latter is more efficient.
>
> > What clearly shows this?
>
> Well there is no discharge. This is becaquse that there is a route
> of a lesser impedance available

Has nothing to do with antenna efficiency.
>
> > This is the statement which drew my comment.
> > The efficiency of a 1/2 WL dipole and a 1 WL loop are so close as
> > to be almost unmeasurable in the real world.
>
> Almost doesn't count when measuring efficiency and in the real world
> many CAN tell the difference> But you can take this even farther. Almost *any* size
dipole
> > or loop will radiate most all of what is fed to it.

>
> Again you are admitting to lower efficiency when you use the word
> "most"

The only reason I use "most" is because no real world antenna will
radiate 100% of the power applied to it.

>
> > A 1/10 WL whip radiates almost all of the power applied to
> > it, same as a 1/4 WL, 1/2 WL, or whatever you want to try.
> > This not not conjecture. This is pretty much written in stone
> > after many years of testing.
>
> Again you use the word "most" which is admitting less efficiency

No, it's admitting that no real antenna will radiate 100% of the
power fed to it. Has nothing to do with a comparison of the
various types.
>
> > Why you continue to ignore this simple fact boggles my mind.
> > So your statement is so far from reality I would be amiss
> > in my "talking head" duties if I did not comment.
> > Don't take my word for it. Ask anyone you can think of
> > that has a clue. They will tell you the same thing.
>
> > What it going to spoil your "full size performance from a
> > dinky radiator" picnic is not the radiator and it's abilities to be
> > an efficient radiator.
> > It's going to be actually feeding the power to such a small
> > radiator and not turning a large amount of RF to heat in the
> > process. No cheating letting the feed line be the antenna..
>
> I think you are missing the point here. My antenna has a full wave
> length of wire
> not a fraction there of.

So? From it's claimed performance, it's working as a
great dummy load.
You say it requires no matching to coax, and
covers the whole 160m band..
This simple description tells me your antenna is a
poor radiator of RF. It shows all the qualities of a
air cooled dummy load.
A truly efficient antenna of such a small size would
require matching to the feedline, would be quite high Q,
and the bandwidth would be very narrow.
So narrow as to possibly restrict the audio quality
of the average 2.5- 3 kc transmitter width .. :(
You can actually hear the restriction on the air.
I've noticed this many times when people try
very small high Q antennas on that band..

This is reciprical, and will be noticed on receive
also if you A/B between a full size antenna vs
the small version.

>So the radiator has the same inductance and
> capacitance
> that one would expect from a full wave antenna spread out in a
> straight line

You wish...

> where the wire surface is exposed to the atmosphere, so there is no
> reason
> for the energy to circumvent the wire circuit as it must do for a
> fractional wavelength.

Oh, like it does with a 1/2 wave dipole... :/

>
> > Look at "small" HF transmitting loops. Do you see any
> > using 22 gauge wire? I doubt it.
> > They will be using the fattest or widest strip of material
> > they can get their hands on.
>
> What you are seeing as representing a loop antenna is a fractional
> wave length
> Often it comes with a HV variable capacitor for tuning.
>
> The loop that I made was a plastic loop with a full wave length of
> wire wound upon it. No high voltage capacitor needed as it coveres
> the whole band.

Didn't work very well as a radiator of RF did it...
Good dummy load though I bet...

> As far as 22 gauge wire being used this is because there is no
> mechanical stresses
> imposed on it as would be for a stretched out radiator. So the main
> consideration
> is to supply enough skin depth since the diameter itself
> is not a factor in terms of fusing.current

I didn't know you were trying to construct a fuse box...
>
> > There are other issues involved also in feeding such an
> > antenna. Never do these small loops equal the performance
> > of a full size antenna. They radiate enough to maybe let
> > you operate, and thats about it.
>
> If the scource impedance is one that you can match efficiently
> then you have at hand a efficient radiator

Like a dummy load?

>of a wavelength where
> the normal loop you are refering to uses a metal loop as the radiator
> which is much shorter than a wavelength of wire wound on a plastic
> loop.
> The loop is now a small full wave radiator not a small fractional
> small wave antenna

No, it's a small antenna, coil loaded with many feet of 22 gauge
wire. In fact, the antenna is pretty much all coil.
Not too much different than a wound loopstick used for MW.
Their virtues as efficient radiators of RF are about nil.. :(
>
>
>
> > >This was firmly proven in Quito.Maximum radiation
> > >efficiency requires equilibrium. Period
>
> > Again, the change to quad loops at HCJB was to
> > avoid the sharp points of the dipoles, yagi's, or
> > whatever they were using. In the high alitudes of
> > Quito, HV breakdown at the tips was a serious problem.
> > The change had absolutely nothing to do with antenna
> > efficiency.
>
> If the impedance is to high on the antenna compared to
> discharging through air to the transmitter ground then that
> is a very inefficient antenna

No. It has nothing to do with antenna efficiency.
Antenna efficiency is reciprical from receive to
transmit.
It's like me taking a nearly fully efficient dipole
and running it through a bunch of wet tree branches
with poor insulators, and then running high power.
An antenna that is truly inefficient will be inefficient
on both transmit and receive.
Obviously in the case of the dipole, this is not the
case. When receiving only, I bet it works just fine.

>
> > Not to mention that the whole idea of a loop being
> > more efficient than a dipole is totally wrong.
>
> The energy travels easily along the wire circuit without
> encountering a high impedance that it is forced to take a circuitous
> route thru ground to the transmitter ground. When the energy
> is passing thru ground it becomes a loss.

Where does ground enter the picture?
>
> > And I don't see how equilibrium has anything to
> > do with it, whatever you might mean by that silly "E"

> > word.
>
> If a circuit is not balanced and a fractional wave length long
> it is not in equilibrium!.

But you won't define the E word, so this means little to
me...

>The energy supplied to the radiator
> will always encounter a energy wasting impedance in the wire itself if
> is not at least a wavelength long, and of the right material
> (diamagnetic)

Wire resistance does not go away if you use larger lengths of
wire vs shorter when using an equal wire gauge.

> otherwise the energy will seek a route outside the wired circuit which
> can only lead to losses. Think of it this way, a fractional wave
> length radiator
> cannot avoid the energy taking a route thru ground and the ground is a
> loss.

What about the 1/2 wave dipole?

> Hopefully you now see antennas in a different light.

Nope.. Why would I?

>I do urge you to
> look up
> the tank circuit since it is quite an interesting circuit with its
> phase changes
> and effective resistances apparently changing without being diverted
> from the circuit wire confines.

I've already read about tank circuits..

>Another place where the books are in
> error
> is their association with the iron filing magnet experiment at HS
> which
> forms a magnetic field very different from that formed from aluminum,
> copper and other diamagnetic materials. When you pass a time varying
> current thru
> copper the magnetic field turns at right angles to the radiator axis
> and in fact
> compliments the electrical field vector (they are not at right
> angles)
> Now you can see what lifts or ejects the static particles resting on
> the surface
> because they are repelled instead of bing magnetically atracted
> (Static: nearly devoid of energy and of small mass)

RF is never static..

> . So the EH antennas which supposedly combines the EH fields just
> didn't
> understand that with a radiator the combination of vectors is already
> a given!

Which means what?

> I think you also are making a mistake that many books make when
> referring to
> small antennas instead of referring to ELECTRICALLY small antennas

You are thinking wrong.

3911. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 05:29:55 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080403222955.45fc9c53.rsparks@elltel.net>
Source record: 26383

On Wed, 2 Apr 2008 02:41:24 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 1, 8:08 am, Cecil Moore <nos...@w5dxp.com> wrote:
> > Keith Dysart wrote:
> > > Cecil Moore <nos...@w5dxp.com> wrote:
> > >> If the average interference is zero, the average
> > >> reflected power is dissipated in the source resistor.
> > >> All of your unethical lies, innuendo, and hand-waving
> > >> will not change that fact of physics.
> > >
> > > More precisely, the average value of the imputed reflected
> > > power is numerically equal to the increase in the average
> > > power dissipated in the source resistor.
> > >
> > More precisely, at the *exact* time of arrival of the
> > reflected wave, the average power dissipated in the
> > source resistor increases by *exactly* the magnitude
> > of the average reflected power. Do you think that is
> > just a coincidence?
>
> Not quite, but close. And averages can not change instantly.
>
> But your phraseology suggests another way to approach
> the problem. Let us consider what happens just after
> the arrival of the reflected wave. For computational
> convenience, we'll use a frequency of 1/360 hertz so
> that 1 degree of the wave is one second long.
>
> The reflected wave arrives at 90 seconds (or 90 degrees)
> after the source is turned on. If the line is
> terminated in 50 ohms, then no reflection arrives and
> during the one second between degree 90 and degree 91,
> the source resistor dissipates 0.01523 J of energy. The
> line also receives 0.01523 J of energy and the source
> provides 0.03046 J.
> Esource.50[90..91] = 0.03046 J
> Ers.50[90..91] = 0.01523 J
> Eline.50[90..91] = 0.01523 J
> Esource = Ers + Eline
> as expected.
> Efor = Eline
> since Eref is 0.

OK, Power at the source is found from (V^2)/50 = 0.03046w. Another way to figure the power to the source would be by using the voltage and current through the source. Using current and voltage, the power at time 91 degrees of the reflected wave is 1.234v*1.43868a= 1.775w. Over one second integrated, the energy should be 1.775 J.

> Now let us examine the case with a 12.5 ohm load and
> a non-zero reflected wave.
> During the one second between degree 90 and degree 91,
> the source resistor dissipation with no reflection
> is still 0.01523 J and the imputed reflected wave
> provides 99.98477 J for a total of 100.00000 J.
>
> But the source resistor actually absorbs 98.25503 J
> in this interval.

100 - 1.775 = 98.225 J

The apparent impedance of the reflect wave has changed from 50 ohms to 0.8577 ohms.

There is still a confusion between what power comes from where at time 91 degrees, at least partly coming from how Vg is used. Or maybe the confusion is because we are mixing a circuit with a shorted line with calculations from a line with a 12.5 ohm load.

>
> Ooooopppps. It does not add up. So the dissipation
> in the source resistor went up, but not enough to
> account for all of the imputed energy in the
> reflected wave. This does not satisfy conservation
> of energy, which should be sufficient to kill the
> hypothesis.
>
> But Esource = Ers + Eline as expected.
> Esource.12.5[90..91] = -1.71451 J
> Ers.12.5[90..91] = 98.25503 J
> Eline.12.5[90..91] = -99.96954 J
> Note that in the interval 90 to 91 degrees, the source
> is absorbing energy. This is quite different than what
> happens when there is no reflected wave.
>
clip
> To recap, it is when a total flow is
> broken into multiple non-zero constituent flows
> that energy flow imputed to the constituents
> is a dubious concept.
>
> ...Keith

The power seems pretty well accounted for degree by degree so far as I can see right now.

I think your spread sheet would be easier to follow if the reflected power beginning at 91 degrees was positive, like adding batteries in series. That is what happens and there is no reversal of voltage when examined from the perspective of the resistor. There is only a delay in time of connection to the voltage source on the line side of the resistor.

--
73, Roger, W7WKB

3912. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 07:34:15 UTC
From: Jeff <jeff@local.host>
Message-ID: <47f5da0c$0$1341$834e42db@reader.greatnowhere.com>
Source record: 26384

>> I was hoping to see a commercial coupler to figure out how they are
>> constructed, but so far have seen only one for XP radio, and it is not
>> clear what's up with it.

If by commercial couplers you mean the units for through glass antennas, then the ones that I have taken apart consisted of a parallel tuned circuit with the coax inner tapped a little way up the coil and the braid connected to the cold end of the coil. The 'hot' end of the tuned circuit was connected to the coupling plate. The antenna just had a coupling plate. Of course it worked by virtue of the approx 1/2 wave whip having a high impedance at the base, so the required value of coupling capacitance was not extremely high.

73
Jeff

3913. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 11:02:23 UTC
From: Dave <noone@nowhere.com>
Message-ID: <3VnJj.5203$lV1.4691@trndny06>
Source record: 26385

<nm5k@wt.net> wrote in message
news:89740258-d613-476e-895f-e32240010e6b@q27g2000prf.googlegroups.com...
> On Apr 2, 11:12 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>> On Apr 2, 10:37 pm, n...@wt.net wrote:
>>
>> > On Apr 2, 1:41 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>>
>> > > Pray tell me then why I am incorrect. You can salvage the
>> > > answer from your own mind or even from a book.
>> > >When the air breaks down around an antenna it is because the antenna
>> > >is not in a state of equilibrium.
>>
>> > Define equilibrium as it pertains to an antenna. Until you do, it's
>> > fairly hard to comment on the first statement.
>>
>> I don't think I can do that for you, it would take to long.
>
> It hasn't stopped you from writing a novel on other issues..
>>
>> > If you have corona discharge from an antenna, it's usually due
>> > to sharp points when using wire or a whip with a pointed tip.
>> > Thats why they stick round balls on whips, flagpoles, etc..
>>
>> When you have a discharge it is a loss of energy
>
> Not antenna efficiency though. It's more akin to running a
> dipole with poor end insulators..
>>
>> > >When a dipole is replaced by a quad ala
>> > >a series circuit is replaced by a tank circuit it clearly shows that
>> > >the latter is more efficient.
>>
>> > What clearly shows this?
>>
>> Well there is no discharge. This is becaquse that there is a route
>> of a lesser impedance available
>
> Has nothing to do with antenna efficiency.
>>
>> > This is the statement which drew my comment.
>> > The efficiency of a 1/2 WL dipole and a 1 WL loop are so close as
>> > to be almost unmeasurable in the real world.
>>
>> Almost doesn't count when measuring efficiency and in the real world

>> many CAN tell the difference> But you can take this even farther. Almost
>> *any* size dipole
>> > or loop will radiate most all of what is fed to it.
>>
>> Again you are admitting to lower efficiency when you use the word
>> "most"
>
> The only reason I use "most" is because no real world antenna will
> radiate 100% of the power applied to it.
>
>>
>> > A 1/10 WL whip radiates almost all of the power applied to
>> > it, same as a 1/4 WL, 1/2 WL, or whatever you want to try.
>> > This not not conjecture. This is pretty much written in stone
>> > after many years of testing.
>>
>> Again you use the word "most" which is admitting less efficiency
>
> No, it's admitting that no real antenna will radiate 100% of the
> power fed to it. Has nothing to do with a comparison of the
> various types.
>>
>> > Why you continue to ignore this simple fact boggles my mind.
>> > So your statement is so far from reality I would be amiss
>> > in my "talking head" duties if I did not comment.
>> > Don't take my word for it. Ask anyone you can think of
>> > that has a clue. They will tell you the same thing.
>>
>> > What it going to spoil your "full size performance from a
>> > dinky radiator" picnic is not the radiator and it's abilities to be
>> > an efficient radiator.
>> > It's going to be actually feeding the power to such a small
>> > radiator and not turning a large amount of RF to heat in the
>> > process. No cheating letting the feed line be the antenna..
>>
>> I think you are missing the point here. My antenna has a full wave
>> length of wire
>> not a fraction there of.
>
> So? From it's claimed performance, it's working as a
> great dummy load.
> You say it requires no matching to coax, and
> covers the whole 160m band..
> This simple description tells me your antenna is a
> poor radiator of RF. It shows all the qualities of a
> air cooled dummy load.
> A truly efficient antenna of such a small size would
> require matching to the feedline, would be quite high Q,
> and the bandwidth would be very narrow.
> So narrow as to possibly restrict the audio quality

> of the average 2.5- 3 kc transmitter width .. :(
> You can actually hear the restriction on the air.
> I've noticed this many times when people try
> very small high Q antennas on that band..
> This is reciprical, and will be noticed on receive
> also if you A/B between a full size antenna vs
> the small version.
>
>>So the radiator has the same inductance and
>> capacitance
>> that one would expect from a full wave antenna spread out in a
>> straight line
>
> You wish...
>
>> where the wire surface is exposed to the atmosphere, so there is no
>> reason
>> for the energy to circumvent the wire circuit as it must do for a
>> fractional wavelength.
>
> Oh, like it does with a 1/2 wave dipole... :/
>
>>
>> > Look at "small" HF transmitting loops. Do you see any
>> > using 22 gauge wire? I doubt it.
>> > They will be using the fattest or widest strip of material
>> > they can get their hands on.
>>
>> What you are seeing as representing a loop antenna is a fractional
>> wave length
>> Often it comes with a HV variable capacitor for tuning.
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>> The loop that I made was a plastic loop with a full wave length of
>> wire wound upon it. No high voltage capacitor needed as it coveres
>> the whole band.
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> Didn't work very well as a radiator of RF did it...
> Good dummy load though I bet...
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>> As far as 22 gauge wire being used this is because there is no
>> mechanical stresses
>> imposed on it as would be for a stretched out radiator. So the main
>> consideration
>> is to supply enough skin depth since the diameter itself
>> is not a factor in terms of fusing.current
>
> I didn't know you were trying to construct a fuse box...
>>
>> > There are other issues involved also in feeding such an
>> > antenna. Never do these small loops equal the performance

>> > of a full size antenna. They radiate enough to maybe let
>> > you operate, and thats about it.
>>
>> If the scource impedance is one that you can match efficiently
>> then you have at hand a efficient radiator
>
> Like a dummy load?
>
> >of a wavelength where
>> the normal loop you are refering to uses a metal loop as the radiator
>> which is much shorter than a wavelength of wire wound on a plastic
>> loop.
>> The loop is now a small full wave radiator not a small fractional
>> small wave antenna
>
> No, it's a small antenna, coil loaded with many feet of 22 gauge
> wire. In fact, the antenna is pretty much all coil.
> Not too much different than a wound loopstick used for MW.
> Their virtues as efficient radiators of RF are about nil.. :(
>>
>>
>>
>> > >This was firmly proven in Quito.Maximum radiation
>> > >efficiency requires equilibrium. Period
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>> > Again, the change to quad loops at HCJB was to
>> > avoid the sharp points of the dipoles, yagi's, or
>> > whatever they were using. In the high alitudes of
>> > Quito, HV breakdown at the tips was a serious problem.
>> > The change had absolutely nothing to do with antenna
>> > efficiency.
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>> If the impedance is to high on the antenna compared to
>> discharging through air to the transmitter ground then that
>> is a very inefficient antenna
>
> No. It has nothing to do with antenna efficiency.
> Antenna efficiency is reciprical from receive to
> transmit.
> It's like me taking a nearly fully efficient dipole
> and running it through a bunch of wet tree branches
> with poor insulators, and then running high power.
> An antenna that is truly inefficient will be inefficient
> on both transmit and receive.
> Obviously in the case of the dipole, this is not the
> case. When receiving only, I bet it works just fine.
>
>>
>> > Not to mention that the whole idea of a loop being
>> > more efficient than a dipole is totally wrong.

>>
>> The energy travels easily along the wire circuit without
>> encountering a high impedance that it is forced to take a circuitous
>> route thru ground to the transmitter ground. When the energy
>> is passing thru ground it becomes a loss.
>
> Where does ground enter the picture?
>>
>> > And I don't see how equilibrium has anything to
>> > do with it, whatever you might mean by that silly "E"
>> > word.
>>
>> If a circuit is not balanced and a fractional wave length long
>> it is not in equilibrium!.
>
> But you won't define the E word, so this means little to
> me...
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>
>>The energy supplied to the radiator
>> will always encounter a energy wasting impedance in the wire itself if
>> is not at least a wavelength long, and of the right material
>> (diamagnetic)
>
> Wire resistance does not go away if you use larger lengths of
> wire vs shorter when using an equal wire gauge.
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>> otherwise the energy will seek a route outside the wired circuit which
>> can only lead to losses. Think of it this way, a fractional wave
>> length radiator
>> cannot avoid the energy taking a route thru ground and the ground is a
>> loss.
>
> What about the 1/2 wave dipole?
>
>> Hopefully you now see antennas in a different light.
>
> Nope.. Why would I?
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>>I do urge you to
>> look up
>> the tank circuit since it is quite an interesting circuit with its
>> phase changes
>> and effective resistances apparently changing without being diverted
>> from the circuit wire confines.
>
> I've already read about tank circuits..
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>>Another place where the books are in
>> error

>> is their association with the iron filing magnet experiment at HS
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>> forms a magnetic field very different from that formed from aluminum,
>> copper and other diamagnetic materials. When you pass a time varying
>> current thru
>> copper the magnetic field turns at right angles to the radiator axis
>> and in fact
>> compliments the electrical field vector (they are not at right
>> angles)
>> Now you can see what lifts or ejects the static particles resting on
>> the surface
>> because they are repelled instead of bing magnetically atracted
>> (Static: nearly devoid of energy and of small mass)
>
> RF is never static..
>
>> . So the EH antennas which supposedly combines the EH fields just
>> didn't
>> understand that with a radiator the combination of vectors is already
>> a given!
>
> Which means what?
>
>> I think you also are making a mistake that many books make when
>> referring to
>> small antennas instead of referring to ELECTRICALLY small antennas
>
> You are thinking wrong.
>
>
>
you might as well plonk him, he is either a persistent troll or totally
convinced that only he has the proper view of the world. in either case you
are fighting a losing battle.

3914. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 12:50:20 UTC
From: derekbluey@gmail.com
Message-ID: <112bbfde-5ba7-4aa4-9b54-1a0eb1572cbc@s13g2000prd.googlegroups.com>
Source record: 26386

On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
> <n...@wt.net> wrote in message
>
> news:89740258-d613-476e-895f-e32240010e6b@q27g2000prf.googlegroups.com...> On Apr 2,
11:12 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> >> On Apr 2, 10:37 pm, n...@wt.net wrote:
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> >> > > Pray tell me then why I am incorrect. You can salvage the
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>
> >> > Again, the change to quad loops at HCJB was to
> >> > avoid the sharp points of the dipoles, yagi's, or
> >> > whatever they were using. In the high alitudes of
> >> > Quito, HV breakdown at the tips was a serious problem.
> >> > The change had absolutely nothing to do with antenna
> >> > efficiency.
>
> >> If the impedance is to high on the antenna compared to
> >> discharging through air to the transmitter ground then that
> >> is a very inefficient antenna
>
> > No. It has nothing to do with antenna efficiency.
> > Antenna efficiency is reciprical from receive to
> > transmit.
> > It's like me taking a nearly fully efficient dipole
> > and running it through a bunch of wet tree branches
> > with poor insulators, and then running high power.
> > An antenna that is truly inefficient will be inefficient
> > on both transmit and receive.
> > Obviously in the case of the dipole, this is not the
> > case. When receiving only, I bet it works just fine.
>
> >> > Not to mention that the whole idea of a loop being
> >> > more efficient than a dipole is totally wrong.
>
> >> The energy travels easily along the wire circuit without
> >> encountering a high impedance that it is forced to take a circuitous

> >> route thru ground to the transmitter ground. When the energy
> >> is passing thru ground it becomes a loss.
>
> > Where does ground enter the picture?
>
> >> > And I don't see how equilibrium has anything to
> >> > do with it, whatever you might mean by that silly "E"
> >> > word.
>
> >> If a circuit is not balanced and a fractional wave length long
> >> it is not in equilibrium!.
>
> > But you won't define the E word, so this means little to
> > me...
>
> >>The energy supplied to the radiator
> >> will always encounter a energy wasting impedance in the wire itself if
> >> is not at least a wavelength long, and of the right material
> >> (diamagnetic)
>
> > Wire resistance does not go away if you use larger lengths of
> > wire vs shorter when using an equal wire gauge.
>
> >> otherwise the energy will seek a route outside the wired circuit which
> >> can only lead to losses. Think of it this way, a fractional wave
> >> length radiator
> >> cannot avoid the energy taking a route thru ground and the ground is a
> >> loss.
>
> > What about the 1/2 wave dipole?
>
> >> Hopefully you now see antennas in a different light.
>
> > Nope.. Why would I?
>
> >>I do urge you to
> >> look up
> >> the tank circuit since it is quite an interesting circuit with its
> >> phase changes
> >> and effective resistances apparently changing without being diverted
> >> from the circuit wire confines.
>
> > I've already read about tank circuits..
>
> >>Another place where the books are in
> >> error
> >> is their association with the iron filing magnet experiment at HS
> >> which
> >> forms a magnetic field very different from that formed from aluminum,
> >> copper and other diamagnetic materials. When you pass a time varying

> >> current thru
> >> copper the magnetic field turns at right angles to the radiator axis
> >> and in fact
> >> compliments the electrical field vector (they are not at right
> >> angles)
> >> Now you can see what lifts or ejects the static particles resting on
> >> the surface
> >> because they are repelled instead of bing magnetically atracted
> >> (Static: nearly devoid of energy and of small mass)
>
> > RF is never static..
>
> >> . So the EH antennas which supposedly combines the EH fields just
> >> didn't
> >> understand that with a radiator the combination of vectors is already
> >> a given!
>
> > Which means what?
>
> >> I think you also are making a mistake that many books make when
> >> referring to
> >> small antennas instead of referring to ELECTRICALLY small antennas
>
> > You are thinking wrong.
>
> you might as well plonk him, he is either a persistent troll or totally
> convinced that only he has the proper view of the world. in either case you
> are fighting a losing battle.

3915. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 13:08:18 UTC
From: derekbluey@gmail.com
Message-ID: <927ebca3-724e-4394-b7cd-0b8ef317731f@i36g2000prf.googlegroups.com>
Source record: 26387

> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:

> > > You are thinking wrong.
>
> > you might as well plonk him, he is either a persistent troll or totally
> > convinced that only he has the proper view of the world. in either case you
> > are fighting a losing battle.

Two perfect examples of a closed mind, but not to worry
enlightenment will be along shortly.

Derek

3916. Re: W2AU Balun - 1:1 or 4:1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 13:19:15 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <m0acv3tcqimibrna89qpaieros5gsc4mef@4ax.com>
Source record: 26388

I measured the terminals. they are short together and short to the
coax shield and short to the coax center.

Thanks for the input.
Buck

On Thu, 03 Apr 2008 13:06:03 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>I can't say whether it's 4:1 or 1:1, but it fits the description of a
>1:1 W2AU balun I got long ago. I think they might have changed the
>design somewhere along the line, but the one I have is a voltage balun.
>A 1:1 voltage balun measures a short circuit across the two input
>terminals or two output terminals; a 1:1 current balun will read open.
>If it's a 4:1, it's very likely a voltage balun, but both voltage and
>current 4:1 baluns will show a DC short across the terminals. The only
>way I know of to determine whether it's a 1:1 or 4:1 is either to use
>something like an antenna analyzer, or connect the output to a 50 ohm
>dummy load and look at the SWR at the input side. If it's a 4:1 balun,
>the SWR will probably be at least 4:1, and likely higher.
>
>Roy Lewallen, W7EL
>
>Buck wrote:
>> I have been given a W2AU balun. It is an older one with no markings
>> other than W2AU BALUN on it. I am not sure which model it is, 1:1 or
>> 4:1, but I am guessing it is 4:1.
>>
>> The balun has a metal bar that goes from the ground screw of the
>> SO-239 connector to the support eyelet on the top of the balun.
>>
>> It is 6 inches long with about 1.5 inch diameter tubing. It has three
>> eyelets, one on top and one on each side of the top for the dipole
>> wires.
>>
>>
>> Can anyone confirm what I have here?
>>
>> thanks
>>
>>

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

3917. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 13:30:08 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <acda835e-9456-499c-869e-2b55b0d83ae5@s37g2000prg.googlegroups.com>
Source record: 26389

```
On Apr 4, 1:29 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Wed, 2 Apr 2008 02:41:24 -0700 (PDT)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Apr 1, 8:08 am, Cecil Moore <nos...@w5dxp.com> wrote:
> > > Keith Dysart wrote:
> > > > Cecil Moore <nos...@w5dxp.com> wrote:
> > > >> If the average interference is zero, the average
> > > >> reflected power is dissipated in the source resistor.
> > > >> All of your unethical lies, innuendo, and hand-waving
> > > >> will not change that fact of physics.
>
> > > > More precisely, the average value of the imputed reflected
> > > > power is numerically equal to the increase in the average
> > > > power dissipated in the source resistor.
>
> > > More precisely, at the *exact* time of arrival of the
> > > reflected wave, the average power dissipated in the
> > > source resistor increases by *exactly* the magnitude
> > > of the average reflected power. Do you think that is
> > > just a coincidence?
>
> > Not quite, but close. And averages can not change instantly.
>
> > But your phraseology suggests another way to approach
> > the problem. Let us consider what happens just after
> > the arrival of the reflected wave. For computational
> > convenience, we'll use a frequency of 1/360 hertz so
> > that 1 degree of the wave is one second long.
>
> > The reflected wave arrives at 90 seconds (or 90 degrees)
> > after the source is turned on. If the line is
> > terminated in 50 ohms, then no reflection arrives and
> > during the one second between degree 90 and degree 91,
> > the source resistor dissipates 0.01523 J of energy. The
> > line also receives 0.01523 J of energy and the source
> > provides 0.03046 J.
> >   Esource.50[90..91] = 0.03046 J
> >   Ers.50[90..91]     = 0.01523 J
> >   Eline.50[90..91]   = 0.01523 J
> >   Esource = Ers + Eline
> > as expected.
> >   Efor = Eline
> > since Eref is 0.
```

>
> OK, Power at the source is found from (V^2)/50 = 0.03046w.

Not quite.

>Another way to figure the power to the source would be by using the voltage and current through the source.

This is how I did it.

Taking Esource.50[90..91] = 0.03046 J as an example ...

Psource.50[90] = V * I
= 0.000000 * 0.000000
= 0 W
Psource.50[91] = -2.468143 * -0.024681
= 0.060917 W

Using the trapezoid rule for numerical integration,
Esource.50[90..91] = ((Psource.50[90]+Psource.50[91])/2) * interval
= ((0+0.060917)/2)*1
= 0.030459 J

The other powers and energies in the spreadsheet are computed similarly.

There was an error in the computation of the 'delta's; the sign was wrong.
The spreadsheet available at http://keith.dysart.googlepages.com/radio6 has
now been corrected. (And, for Cecil, this spreadsheet no longer has macros
so it may be downloadable.)

To use this spreadsheet to compute my numbers above, set the formulae
for Vr.g and Ir.g in the rows for degrees 90 and 91 to zero.

> Using current and voltage, the power at time 91 degrees of the reflected wave is 1.234v*1.43868a= 1.775w. Over one second integrated, the energy should be 1.775 J.

I could not match to the above data to any rows, so I can't comment. But
perhaps the explanation above will correct the discrepancy.

> > Now let us examine the case with a 12.5 ohm load and
> > a non-zero reflected wave.

This was an ooooopppps. The spreadsheet actually calculates
for a shorted load.

> > During the one second between degree 90 and degree 91,
> > the source resistor dissipation with no reflection
> > is still 0.01523 J and the imputed reflected wave
> > provides 99.98477 J for a total of 100.00000 J.
>

> > But the source resistor actually absorbs 98.25503 J
> > in this interval.
>
> 100 - 1.775 = 98.225 J

I computed 98.25503 J from applying the trapezoid rule for
numerical integration of the power in the source resistor
at 90 degrees and 91 degrees.

I am not sure where you obtained 1.775 J.

> The apparent impedance of the reflect wave has changed from 50 ohms to 0.8577 ohms.
>
> There is still a confusion between what power comes from where at time 91 degrees, at least partly coming from how Vg is used. Or maybe the confusion is because we are mixing a circuit with a shorted line with calculations from a line with a 12.5 ohm load.

I do not think the latter is happening. If you want to see
the results for a 12.5 ohm load, set the Reflection Coefficient
cell in row 1 to -0.6.

> > Ooooopppps. It does not add up. So the dissipation
> > in the source resistor went up, but not enough to
> > account for all of the imputed energy in the
> > reflected wave. This does not satisfy conservation
> > of energy, which should be sufficient to kill the
> > hypothesis.
>
> > But Esource = Ers + Eline as expected.
> > Esource.12.5[90..91] = -1.71451 J
> > Ers.12.5[90..91] = 98.25503 J
> > Eline.12.5[90..91] = -99.96954 J
> > Note that in the interval 90 to 91 degrees, the source
> > is absorbing energy. This is quite different than what
> > happens when there is no reflected wave.
>
> clip
> > To recap, it is when a total flow is
> > broken into multiple non-zero constituent flows
> > that energy flow imputed to the constituents
> > is a dubious concept.
>
> > ...Keith
>
> The power seems pretty well accounted for degree by degree so far as I can see right now.

>
> I think your spread sheet would be easier to follow if the reflected power beginning at 91 degrees was positive, like adding batteries in series. That is what happens and there is no reversal of voltage when examined from the perspective of the resistor. There is only a delay in time of connection to the voltage source on the line side of the resistor.

When I wrote my original spreadsheet I had to decide which convention to
use and settled on positive flow meant towards the load. Care is certainly
needed in some of the computations. Choosing the other convention would
have meant that care would be needed in a different set of computations.
So I am not sure it would be less confusing, though it would be different.

When using superposition, one has to pick a reference voltage and current
direction for each component and then add or subtract the contributing
voltage or current depending on whether it is in the reference direction
or against the reference direction. Mistakes and confusion with relation
to the signs are not uncommon. Careful choice of reference directions will
sometimes help, but mostly it simply leads to some other voltage or
current that needs to be subtracted instead of added.

...Keith

3918. Re: W2AU Balun - 1:1 or 4:1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 13:41:14 UTC
From: gb <w9nogbspam@arrlspamno.net>
Message-ID: <VIidnUmlAuGdrWvanZ2dnUVZ_h6hnZ2d@comcast.com>
Source record: 26390

Look at these photos for INSIGHT

http://www.the-s38-guy.com/Page_76.html

http://www.the-s38-guy.com/Page_78.html

"Buck" <usenet01@lumpuckeroo.com> wrote in message
news:a86av35jjnv4crg0n9cffpi83k3pj98kij@4ax.com...
>I have been given a W2AU balun. It is an older one with no markings
> other than W2AU BALUN on it. I am not sure which model it is, 1:1 or
> 4:1, but I am guessing it is 4:1.
>
> The balun has a metal bar that goes from the ground screw of the
> SO-239 connector to the support eyelet on the top of the balun.
>
> It is 6 inches long with about 1.5 inch diameter tubing. It has three
> eyelets, one on top and one on each side of the top for the dipole
> wires.
>
>
> Can anyone confirm what I have here?
>
> thanks
>
>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

3919. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 13:48:00 UTC
From: Dave <noone@nowhere.com>
Message-ID: <kkqJj.1$Xy2.0@trndny04>
Source record: 26391

<derekbluey@gmail.com> wrote in message
news:927ebca3-724e-4394-b7cd-0b8ef317731f@i36g2000prf.googlegroups.com...
>
>> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
>
>> > > You are thinking wrong.
>>
>> > you might as well plonk him, he is either a persistent troll or totally
>> > convinced that only he has the proper view of the world. in either
>> > case you
>> > are fighting a losing battle.
>
>
> Two perfect examples of a closed mind, but not to worry
> enlightenment will be along shortly.
>
> Derek

please do enlighten us, art has failed miserably in that. i would love to
find out his antenna works as good as a full size half wave dipole and only
had to be tilted and turned on a tiny rotor... sure would be easier to
maintain than my current aluminum farm.

3920. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 13:57:01 UTC
From: hasan <schiers@netins.net>
Message-ID: <ft5c3fpmf1@news.netins.net>
Source record: 26392

Barrett wrote:
> Dave, the batteries are called Supreme Power 2600mA standard charge
> 14-16 HRS x 260mA, quick charge 4-6 HRS x 550mA. REG USA Made in China.
>
> I am waiting for a friend to bring by his old NiCad charger and I will
> give it ago. I will let you know how I got on.
>
> For future reference would you have an idea on how long I should charge
> the batteries for using the MFJ?
>
> I don't know who or how the charger circuit has been modified. I could
> ask W&S what sort of circuit has been used.
>
>
>
> "Dave Platt" <dplatt@radagast.org> wrote in message
> news:dbqcc5-e6u.ln1@radagast.org...
> > >I borrowed some 1800mA and these are charging fine in the MFJ-259,
> so it
> >>looks like the
> >>problem is with the batteries. I have never experienced this with
> these type
> >>of batteries before only NiCad's.
> >
> > What brand and type are the batteries that don't work?
> >
> > It's possible that you simply received a bunch of batteries that are
> > completely defective (open) or are counterfeit dummies. Seems a bit
> > implausible.
> >
> > Another possibilty is that the 2600 mAh cells are actually OK, but
> > were delivered to you in a completely-run-down state. That seems
> > plausible... the manufacturer may not have precharged them, or they
> > may have self-discharged in storage after manufacture. The older type
> > of NiMH cells do have a relatively high self-discharge rate, and can
> > go flat after as little as three or four months of storage.
> >
> > If the batteries read 0 volts, then it's possible that a smart-charger
> > might fail to detect their presence and start charging... I believe
> > that some of the newer NiMH-aware charge-control ICs depend on the
> > detection of _some_ voltage from the cell to detect the cell and start
> > the charge.
> >
> > Try sticking a few of the cells into an old-style "dumb and slow" NiCd

> > battery charger for a few hours. These are usually fixed-current
> > chargers (100 mA or so) with no battery-detect or charge-cutoff
> > circuits, so they're not a good choice for general use with NiMH
> > cells. They _will_ feed some charge into the cells if the cells
> > aren't entirely open, and should bring the cells up to 1.0 volts or
> > better fairly quickly. After 2-3 hours, take the cells out of the
> > dumb charger, check the open-circuit voltage, and put them in your
> > smart-charger, and see if they are accepted and begin charging. If
> > so, they may be OK. If not, they're probably defective or bogus and
> > you may want to return them to the seller for a refund.
> >
> > Since an MFJ analyzer is the sort of device that tends to sit around
> > unused for weeks at a time, I think that high-capacity high-self-
> > discharge NiMH cells (e.g. most 2500 or above) are a poor choice.
> > Unless you recharge for an hour or so once a week, you'll probably find
> > them weak or dead when you want use the analyzer.
> >
> > High-capacity NiCd cells are the traditional choice for this sort of
> > application (and are what I use in my own MFJ). Another possibility
> > is the newer low-self-discharge NiMH cells, such as the Imedions,
> > Eneloops, Hybrios, and Hybrids. These are typically 2000-2100 mAh,
> > and will hold the majority of their charge for a year or more. If
> > your MFJ has been modified to charge NiMH properly (e.g. with a good
> > temperature or zero-delta-V cutoff circuit) they might be a good choice.
> >
> > --
> > Dave Platt <dplatt@radagast.org> AE6EO
> > Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> > I do _not_ wish to receive unsolicited commercial email, and I will
> > boycott any company which has the gall to send me such ads!

I've had the same set of NIMH 2100 maH Energizer cells in my 259B for over 3 years. I have had them on the internal charger 24x7, except when in use. I have had no trouble with the batteries overcharging with the internal charger in the 259B. (obviously, or I would have cooked them a long time ago).

One thing I've learned about NIMH batteries...they don't sit well. They do wonderfully if kept trickle charged, but if let to sit, they will self-discharge in less than two weeks. (at least for digital camera purposes)I've observed this on three different "sets" of NIMH AA batteries. All act the same way. Two weeks of sitting and they will only operate the camera a very short time. Left in the charger and put directly into service I can shoot well over 75 pictures in a row with no difficulty.

3921. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 14:04:09 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <kJidnVd89J_FqGvanZ2dneKdnZydnZ2d@bt.com>
Source record: 26393

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:TJ-dnV1WvLdVMWjanZ2dnUVZ_r6rnZ2d@easystreetonline...
> Mike Kaliski wrote:
>>>
>> Haines,
>>
>> The versions I used years ago relied purely on capacitive coupling. The
>> braid was broken and only the centre lead of the coax was connected to
>> the plates. The earth return was via the automobile chassis for vehicle
>> use, or via earth connections for domestic use. The metal frame of the
>> window might work if you have any means of getting a good connection,
>> otherwise you will need some form of reliable (low impedence) earth
>> connection inside and outside the building for the system to work
>> properly.
>>
>> The coupling through the glass should be purely capacitive although some
>> inductance effects will inevitably be introduced due to the size of the
>> plates.
>
> You'll have a considerable amount of inductance for another reason if you
> follow this approach.
>
> Consider what happens when you separate the two conductors of the coax as
> Mike suggests. One conductor continues more-or-less directly through the
> glass. The other conductor becomes the "ground" path from wherever the
> current leaves the inside of the coax shield on one side of the glass to
> where it again enters on the other side. These are the two conductors of a
> transmission line which you've inserted in series with your normal line.
> If you'll do a little rough calculating, you'll find that this line has a
> much higher impedance than 50 ohms. So, if electrically short, its effect
> will be that of a series inductance. If it's not so short, the impedance
> transformation will be a lot more interesting. Another thing that happens
> is that the length of the "ground" conductor is greater than the length of
> the center conductor. This will probably give rise to common mode
> currents, which will involve the outside of the coax in the active
> feedline.
>
>> As an alternative you might consider making up two matched tuned circuits
>> (coil and capacitor) set for the 10 metre band and try inductively
>> coupling the coils through the glass. To my mind that would be smaller
>> and easier to set up without the need to worry about earth feeds. A kind
>> of through glass balun if you like. Obviously you will need to keep a
>> reasonable distance away from the metal window frame, but a couple of
>> turns of wire and a couple of capacitors may be all you need.

>
> That might have a better chance of producing a smaller disturbance to the
> whole feed system. If you use direct capacitive coupling through the
> glass, however, you should remember that you have two conductors to deal
> with -- calling one "ground" doesn't give it magic properties. I'd use two
> coupling plates, one for each conductor, as close together as possible. A
> bit of intentional shunt capacitance would help compensate for the
> inevitable series inductance which would be created by even that setup.
>
> Roy Lewallen, W7EL

Roy

Very helpful and useful additional comments as usual. Thank you.

Mike G0ULI

3922. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 14:45:00 UTC
From: Haines Brown <brownh@teufel.hartford-hwp.com>
Message-ID: <87tzihhe6r.fsf@teufel.hartford-hwp.com>
Source record: 26394

"Mike Kaliski" <michael.kaliski@tesco.net> writes:

> I can't see any way of getting a magnetic loop antenna to work because
> you need a direct DC path for power and tuning commands from the
> tuning unit to the loop.

I must apologize for starting a thread that I realized would be for me a dead end. I've not used a magnetic loop before and so easily forgot about the need for a direct DC connection. However, the thread was interesting and hopefully worthwhile.

> Might be better to put your ingenuity to better use

Yes. Options are limited because I'm at the eighth story of a steel high-rise, and the enamled metal outside surface material doesn't lend itself to drilling. In any case, I don't own it and wouldn't feel right about destroying property not mine. The window is a casement window, and I'm now thinking of leaving it permanently ajar and gluing (silicone) on the inside frame a piece of plexiglass with a coax feedthrough. That way I can have light from the window, protection from the elements and not destroy anything. Ultimately it can be removed when necessary.

--

Haines Brown, KB1GRM

3923. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 15:22:02 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <947f45d8-2176-4eaa-9e51-5e68146bcb9d@m44g2000hsc.googlegroups.com>
Source record: 26395

On Apr 4, 8:08 am, derekbl...@gmail.com wrote:
> > On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
> > > > You are thinking wrong.
>
> > > > you might as well plonk him, he is either a persistent troll or totally
> > > > convinced that only he has the proper view of the world. in either case you
> > > > are fighting a losing battle.
>
> Two perfect examples of a closed mind, but not to worry
> enlightenment will be along shortly.
>
> Derek

I thought I would share with you my readings on the 160 M band
They are in order as follows Freq, resistance, reactance swr

1.8 105 0 2.1
1.81 105 0 2.0
1.82 105 0 2.0
1.83 105 0 2.0
1.84 102 0 2.0
1.85 98 0 1.9
1.86 92 0 1.8
1.87 88 6 1.7
1.88 83 7 1.7
1.89 84 8 1.7
1.9 81 12 1.6
1.91 78 13 1.6
1.92 75 12 1.5
1.93 72 13 1.5
1.94 68 11 1.4
1.95 67 10 1.4
1.96 66 10 1.3
1.97 64 9 1.3
1.98 62 9 1.3
1.99 62 9 1.3
2.0 62 7 1.2
The above figures are obtained by ensuring no external inductance and
capacitances
were introduced to the intrinsic radiation circuit during assembly.
As one would expect, the above figures would represent the features
through out the frequency range
Impedance values mainly resistance will change according to the point
of jumper connection of wire supplied.
This allows for lossless matching to the drive circuit regardles of

its impedance value.
Those you are familiar with antennas will see that the above figures
in no way
represent those of a dummy load
'The above figures show an excellent match to 75 ohm cable. Thge
figures were taken with a
mfj 259b which is designed for 50 ohm cables.
TGIF
Art Unwin

3924. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 15:41:50 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080404084150.aef956c6.rsparks@elltel.net>
Source record: 26396

```
On Fri, 4 Apr 2008 06:30:08 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 4, 1:29 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Wed, 2 Apr 2008 02:41:24 -0700 (PDT)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Apr 1, 8:08 am, Cecil Moore <nos...@w5dxp.com> wrote:
> > > > Keith Dysart wrote:
> > > > > Cecil Moore <nos...@w5dxp.com> wrote:
> > > > >> If the average interference is zero, the average
> > > > >> reflected power is dissipated in the source resistor.
> > > > >> All of your unethical lies, innuendo, and hand-waving
> > > > >> will not change that fact of physics.
> > >
> > > > > More precisely, the average value of the imputed reflected
> > > > > power is numerically equal to the increase in the average
> > > > > power dissipated in the source resistor.
> > >
> > > > More precisely, at the *exact* time of arrival of the
> > > > reflected wave, the average power dissipated in the
> > > > source resistor increases by *exactly* the magnitude
> > > > of the average reflected power. Do you think that is
> > > > just a coincidence?
> > >
> > > Not quite, but close. And averages can not change instantly.
> > >
> > > But your phraseology suggests another way to approach
> > > the problem. Let us consider what happens just after
> > > the arrival of the reflected wave. For computational
> > > convenience, we'll use a frequency of 1/360 hertz so
> > > that 1 degree of the wave is one second long.
> > >
> > > The reflected wave arrives at 90 seconds (or 90 degrees)
> > > after the source is turned on. If the line is
> > > terminated in 50 ohms, then no reflection arrives and
> > > during the one second between degree 90 and degree 91,
> > > the source resistor dissipates 0.01523 J of energy. The
> > > line also receives 0.01523 J of energy and the source
> > > provides 0.03046 J.
> > >   Esource.50[90..91] = 0.03046 J
> > >   Ers.50[90..91]     = 0.01523 J
> > >   Eline.50[90..91]   = 0.01523 J
> > >   Esource = Ers + Eline
```

> > > as expected.
> > >   Efor = Eline
> > > since Eref is 0.
> >
> > OK, Power at the source is found from (V^2)/50 = 0.03046w.
>
> Not quite.
>
> >Another way to figure the power to the source would be by using the voltage and current through the source.
>
> This is how I did it.
>
> Taking Esource.50[90..91] = 0.03046 J as an example ...
>
> Psource.50[90] = V * I
> = 0.000000 * 0.000000
> = 0 W
> Psource.50[91] = -2.468143 * -0.024681
> = 0.060917 W
>
> Using the trapezoid rule for numerical integration,
> Esource.50[90..91] = ((Psource.50[90]+Psource.50[91])/2) * interval
> = ((0+0.060917)/2)*1
> = 0.030459 J
>
> The other powers and energies in the spreadsheet are computed
> similarly.
>
> There was an error in the computation of the 'delta's; the sign was
> wrong.
> The spreadsheet available at http://keith.dysart.googlepages.com/radio6
> has
> now been corrected. (And, for Cecil, this spreadsheet no longer has
> macros
> so it may be downloadable.)
>
> To use this spreadsheet to compute my numbers above, set the formulae
> for Vr.g and Ir.g in the rows for degrees 90 and 91 to zero.
>
> > Using current and voltage, the power at time 91 degrees of the reflected wave is 1.234v*1.43868a= 1.775w. Over one second integrated, the energy should be 1.775 J.
>
> I could not match to the above data to any rows, so I can't comment.
> But
> perhaps the explanation above will correct the discrepancy.
>
I took a look at your revised spreadsheet entitled "Reflected45degrees-1.xls". Using the numbers from row 94 (91 degrees), the voltage developed at the source would be Vs = -2.468143v. The current folowing through the source would be found from Ig which is

1.389317a in todays version of the spreadsheet (it was 1.439a previously). The power flowing INTO the source is 2.468143* 1.389317 = 3.429032w. This is the power Ps found in Column 11.

This returning power is all from the reflected wave. The source is acting like a resistor with an impedance of 2.468143/1.389317 = 1.776 ohms. As a result, the returning reflection does not truely see 50 ohms but sees 50 + 1.776 = 51.776 ohms. Of course the result is a another reflection. Is this the idea you were trying to communicate Cecil?

To me, this is destructive interference at work, so all the power in the reflected wave does not simply disappear into the resistor Rs on the instant basis.

clip
> When using superposition, one has to pick a reference voltage and
> current
> direction for each component and then add or subtract the contributing
> voltage or current depending on whether it is in the reference
> direction
> or against the reference direction. Mistakes and confusion with
> relation
> to the signs are not uncommon. Careful choice of reference directions
> will
> sometimes help, but mostly it simply leads to some other voltage or
> current that needs to be subtracted instead of added.
>
> ...Keith

Yes. I don't want to force my conventions onto you, so I am trying to understand yours while insisting that the answers from each convention must be the same. I think we both agree that the reflections are carrying power now.
--
73, Roger, W7WKB

3925. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 16:22:19 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <ft5kjr$s34$1@news.jpl.nasa.gov>
Source record: 26399

rmoisescu@gmail.com wrote:
> On Mar 31, 8:52 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
>>rmoise...@gmail.com wrote:
>>
>>
>>Uhhh. actually there ARE laws of physics putting some pretty severe
>>constraints on it, if not actually forbidding it, if you also accept the
>>constraint that the material of which you make the antenna has finite
>>resistance.
>>
>>
>>Where ease might be defined in terms of being able to be made of
>>actually realizable materials?
>>
>
>
> The term 'actually realizable materials' seems to shift it's
> definition every time something new is discovered :)

Sure, but there are "laws of physics" which determine the limits, at
some level. No materials with negative conductivity, for instance.

And, by "realizable" here, I mean practical, and a bit beyond. If one's
new and novel widget requires a 30 Tesla magnetic field, that's within
the laws of physics, but somewhat challenging to produce in a practical
sense.

>>Also, even if you created a very small antenna with high efficiency
>>(e.g. with superconductors), the fields around such an antenna will be
>>quite intense, so while the antenna may be small, its near field will be
>>pretty much the same size as the dipole it replaces, so you'll need to
>>put that tiny antenna way up in the air with a non-conductive, non-lossy
>>support to get it away from everything else. Finding a feedline might be
>>a bit of a challenge. One has to be careful when one draws "the
>>boundary" of the antenna.
>
>
> Ok, it was my mistake to not clarify 'high efficiency'. By that I
> meant 'at the same order of efficiency as normal scale designs'.
> I am currenty interested by what I have seen claimed as 'compacted
> antennas', which behave similar to normal ones, except their
> dimensions are smaller, X-axis wise at least. That those designs do
> not perform as well or better than their counterparts is no problem
> to me, as long as the figures are in the same ballpark. That would

> mean they still are more efficient than previous designs which
> attempted to solve the problem of physical dimensions, which is an
> advancement in my book. That some other unexpected features as the
> broadband factor may appear is only a bonus, because we can achieve
> that with full scale antennas too.

Where you're basically defining "efficiency" as power radiated into the far field in a desired direction vs power into the feedline. That's a fair definition for most amateur applications, if not necessarily defensible in a rigorous analysis. Certainly, if you had two 40m band antennas that were 3 meters across, and one produced a far field that was twice that produced by the other, with the same transmitter power, you'd be justified in saying the first antenna was more efficient than the second, even if neither were particularly efficient in an absolute sense (i.e. 2% vs 1% is a big jump in practical terms).

> To be more specific, I was reffering to such designs that reduce the
> scale of antennas in at least one axis:
> http://adsabs.harvard.edu/abs/2004ITAP...52.1945P

This is an interesting paper.. I note that they use MoM to evaluate the performance. It's a special case of a general class of antennas where you have lots of little pieces that can be reconfigured by frequency selective traps or rf switches to achieve wide feedpoint match bandwidth in a small package. To a certain extent, the SteppIR is also in this same class. The thing where you hook multiple hamstick loaded elements onto one base is also similar. This paper addresses a moderately systematic way to generate candidate physical layouts. Others have done things like rectangular or hexagonal grids of wires or metallic patches.

> http://ctd.grc.nasa.gov/organization/branches/amosb/RCA_RESEARCH/RESEARCH_mini-antennas.
htm

A clever use of antenna layout to get multiband performance in a small package. The small comes from fairly traditional approaches(i.e. dielectric medium, bent and folded elements). I note that they don't claim that it's comparable in efficiency to a full size antenna for the same bands.

> http://ntrs.nasa.gov/details.jsp?R=362773

That one is titled: "Ten Commandments Revisited A Ten-Year Perspective on the Industrial Application of Formal Methods"

> http://ntrs.nasa.gov/details.jsp?R=470415

That one is the executive summary of a Optical Systems technology workshop held in 1991.

> I have seen some of them described as fractal trees, but the
> information is relatively scarce. I know research is continuing on
> this subject and even found some info at a website somewhere but I
> can't remember where. Since you probably know more about them than me,

> I would appreciate some guidance here too :)
>

The antenna literature of the last 10 years is FULL of various and sundry schemes for bending wires and brushes in one way or another (mostly enabled by cheap computation to see how well it will work, before fabricating a prototype). Check the IEEE Transactions on Antennas and Propagation.

3926. Re: W2AU Balun - 1:1 or 4:1

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 16:38:23 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <3QsJj.393$4O1.1@trnddc03>
Source record: 26397

"Buck" <usenet01@lumpuckeroo.com> wrote in message
news:a86av35jjnv4crg0n9cffpi83k3pj98kij@4ax.com...
>I have been given a W2AU balun. It is an older one with no markings
> other than W2AU BALUN on it. I am not sure which model it is, 1:1 or
> 4:1, but I am guessing it is 4:1.
>
> The balun has a metal bar that goes from the ground screw of the
> SO-239 connector to the support eyelet on the top of the balun.
>
> It is 6 inches long with about 1.5 inch diameter tubing. It has three
> eyelets, one on top and one on each side of the top for the dipole
> wires.
>
>
> Can anyone confirm what I have here?
>
> thanks
>
>
> --
> 73 for now
> Buck, N4PGW
>
Terminate it with 50 Ohms and put it on an antenna analyzer- if it reads a
low VSWR, it's 1:1. If not, try 200 Ohms- if that reads low then it's 4:1.
Dale W4OP

3927. Re: Suggestions for Intermittent Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 16:41:41 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <kOednTN7m5apx2vanZ2dnUVZ_gmdnZ2d@comcast.com>
Source record: 26398

"JIMMIE" <JIMMIEDEE123@yahoo.com> wrote in message
news:1e96fca5-d1ec-44ea-a424-c6e5c6d52ff6@24g2000hsh.googlegroups.com...
On Apr 3, 6:13 pm, "J. Mc Laughlin" <j...@power-net.net> wrote:
> Dear Bob: Great to hear from another of Kraus' boys. I had a similar
> problem with a large LPDA after it had been up for a while. Its pattern
> went backwards. It had to be taken down whereupon a loose connection was
> found. So many things to go wrong.
>
> At least better weather is coming. 73, Mac N8TT
> --
> J. McLaughlin; Michigan, USA
> Home: J...@power-net.net"Michael Coslo" <m...@psu.edu> wrote in message
>
> news:ft34er$14ue$1@f04n12.cac.psu.edu...
>
>
>
> > Dave wrote:
> >> what brand/model? the 40-2cd has a known problem with the loading coil
> >> connections becoming intermittant that gives symptoms just like that.
> >> other loading coils, baluns, or matching section connections may do the
> >> same thing on other models.
>
> >> "Bob Dixon" <dixo...@osu.edu> wrote in message
> >>news:dixon.8-1710E9.12523902042008@charm.magnus.acs.ohio-state.edu...
> >>> My 40M beam works only intermittently. Typically under normal
> >>> conditions, the received signals are weak and the SWR is very high.
> >>> If I rotate the antenna, it "comes alive" in some directions and works
> >>> fine for a while, then dies again. In all cases, if I transmit into it
> >>> with a KW is comes alive and works fine for a while (few minutes) and
> >>> then dies again. A single dit will fix it. 100W does not do it.
>
> >>> I replaced the coax which runs around the rotator and it made no
> >>> difference. I just recently learned that a local friend also has an
> >>> intermittent antenna which can be restored by transmitting a KW into
> >>> it.
>
> >>> Is this a common problem? is there a generic solution? Any hints
> >>> would be appreciated. Note that it is not too easy when up on the
> >>> tower
> >>> to jiggle things while someone on the ground tries to watch the SWR
> >>> and
> >>> shout back and forth. We tried that when we replaced the coax.
>

> > This antenna is probably going to have to come down for a look-see. I
> > would suspect something very near the area closest to the mast, but
> > those
> > coils are a suspect too.
>
> > Running high power into the antenna might fix it, or might burn a coil
> > or
> > other part up. I guess the rationale was to heat up an intermittent
> > connection, and "weld" it back together. Hoo boy, I'd pass on that.
>
> > Setting the antenna down will allow you to do some maintenance on the
> > whole thing. If you have one intermittent, problems can show up in other
> > places too, so its time to bite the bullet. Certainly not pleasant with
> > a
> > 40 meter beam.
>
> > - 73 de Mike N3LI -- Hide quoted text -
>
> - Show quoted text -

I had a problem like that with a little Yagi for 10M I bought at a
hamfest. The Aluminum rod for the gamma match was riveted to the coax
connector. Repair was to replace the Al tube with a brass one and a
new connector was soldered to the tube.

Jimmie

About the same here with a CushCraft 2m beam. Very intermittent. The SO239
shell was supposed to make contact by virtue of being screwed into an
aluminum angle iron. It didn't. Replaced the SO239.

Tam/WB2TT

3928. Re: Do receiver antennas need matching or not?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 17:54:47 UTC
From: You <you@shadow.orgs>
Message-ID: <you-D44C41.09550804042008@netnews.worldnet.att.net>
Source record: 26400
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design,sci.electronics.basics

In article
<32ac5bd0-2516-4fdd-b228-0261748785d0@u69g2000hse.googlegroups.com>,
terryS <tsanford@nf.sympatico.ca> wrote:

> For example; the broadcast band (North America) is roughly 550
> kilohertz (that's 545 metres wavelength) to about 1.7 megahertz (about
> 176 metres). That's 3:1 ratio!

HOWEVER, if you will look at the Antenna Design for a AM Broadcast
Receiver, using a Ferrite Loop Antenna, you WILL notice that the
Loop IS Tuned to the specific part of the band that the receiver is
being tuned to, by Linked Ganged Variable Capacitors, in the Receivers
Frontend. These designs have been around for MANY years, (1940's anyway)
and are a very mature technology.

3929. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 18:29:03 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A7674D391FDAHuckleberrybigvalley@198.186.192.196>
Source record: 26401

The window is a casement window, and
> I'm now thinking of leaving it permanently ajar and gluing (silicone) on
> the inside frame a piece of plexiglass with a coax feedthrough. That way
> I can have light from the window, protection from the elements and not
> destroy anything. Ultimately it can be removed when necessary.
>

If you are going to do it this way, I might suggest you use weather stripping (for doors, etc.) instead of Silicone sealer. It comes in a variety of thicknesses.... should provide a good seal for your slightly ajar window, easily allow some RG-8X type coax through, and be a lot easier to remove than the silicone in the future. Also, will still allow you to open your window if need be ... just a thought.

Ed K7AAT

3930. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 18:35:51 UTC
From: dplatt@radagast.org
Message-ID: <719ic5-m4s.ln1@radagast.org>
Source record: 26403

In article <ft5c3fpmf1@news.netins.net>, hasan <schiers@netins.net> wrote:

>I've had the same set of NIMH 2100 maH Energizer cells in my 259B for
>over 3 years. I have had them on the internal charger 24x7, except when
>in use. I have had no trouble with the batteries overcharging with the
>internal charger in the 259B. (obviously, or I would have cooked them a
>long time ago).

Good to know, thanks! Possibly the trickle charge is of a low enough
rate that the cells do not overcharge much and overheat. Heat is the
enemy of service life.

According to the battery-manufacturer literature I've read, NiMH cells
tend to have poor "charge acceptance" when trickle-charged at very low
rates. If you try to charge them at a rate of, say, .01C (20 mA, for
a 2000 mAh cell), almost none of this energy actually recharges the
cell - essentially all of it turns into heat.

One manufacturer's writeup I've read says that if it's necessary to
trickle-charge the cells to combat self-discharge, it's best done
through a periodic pulse-charging technique. Pulses of current in the
range of .05C through 1C, lasting for .1 to 60 seconds, are suggested,
with the time between pulses set so that the average rate of charge
delivered is around .02C per day. This is enough to combat
self-discharge, without overcharging.

>One thing I've learned about NIMH batteries...they don't sit well. They
>do wonderfully if kept trickle charged, but if let to sit, they will
>self-discharge in less than two weeks. (at least for digital camera
>purposes)I've observed this on three different "sets" of NIMH AA
>batteries. All act the same way. Two weeks of sitting and they will only
>operate the camera a very short time. Left in the charger and put
>directly into service I can shoot well over 75 pictures in a row with no
>difficulty.

High self-discharge rates are indeed an issue with the older NiMH
formulas (which account for most of the higher-capacity cells on the
market).

There seems to be a very real tradeoff between capacity and
self-discharge rate... it's a result of the different metal-hydride
alloy formulas used.

The new-generation "ultra-low self discharge" batteries are quite a
bit better in this regard. The Sanyo Eneloops and similar types are
billed as losing no more than around 10% of their total charge after a
month of storage, and still retaining as much as 60% after a year.

The price you pay for the longer holding time, is a reduced maximum capacity (typically 2000-2100 mAh for an AA, as opposed to 2500-2700 for the ultra-high-capacity type).

Many reports indicate that new NiMH cells, and older ones which have been sitting around unused for some time will exhibit reduced capacity, until they've been fully charged and discharged once or twice.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

3931. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 18:54:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <IPuJj.209$GE1.44@nlpi061.nbdc.sbc.com>
Source record: 26402

Roger Sparks wrote:
> Is this the idea you were trying to communicate Cecil?

What I am trying to communicate is that the distributed network model is closer to Maxwell's equations that is the lumped circuit model. If the lumped circuit model disagrees with the distributed network model, then it is wrong.

Steady-state conditions are identical whether the ideal transmission line is zero wavelength or one wavelength. If adding one wavelength of ideal transmission between the source voltage and the source resistance changes steady-state conditions in Keith's mind, then there is something wrong in Keith's mind.

> To me, this is destructive interference at work, so all the

power in the reflected wave does not simply disappear into the

resistor Rs on the instant basis.

90 degrees later, an exactly equal magnitude of constructive interference exists so it is obvious that the constructive interference energy has been delayed by 90 degrees from the destructive interference energy.

One advantage of moving the source voltage one wavelength away from the source resistor is that it is impossible for the source to respond instantaneously to the requirements of the source resistor thus making the energy flow easier to track. (I'll be glad when I get my sight back so I can read my calculator.)
--
73, Cecil http://www.w5dxp.com

3932. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 19:22:06 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <09f36082-d9e5-4850-9923-b6c9040f4142@y21g2000hsf.googlegroups.com>
Source record: 26404

On Apr 4, 1:54 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > Is this the idea you were trying to communicate Cecil?
>
> What I am trying to communicate is that the distributed
> network model is closer to Maxwell's equations that is
> the lumped circuit model. If the lumped circuit model
> disagrees with the distributed network model, then it
> is wrong.
>
snip>
> (I'll be glad when I get my sight back so I can
> read my calculator.)
> --
> 73, Cecil http://www.w5dxp.com

Yes Cecil, if the above is a sample of your auguement on this subject
I suggest you stop posting until you get your spectacles back
Regards
Art

3933. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 19:23:26 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <JevJj.1837$rk6.150@newsfet15.ams>
Source record: 26405

Can some one give me an idea on how long these 2600mA should last in the
MFJ-259 when left on without turning off?

Thanks

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:er6dncdfhrhSRGnanZ2dnUVZ8rKdnZ2d@pipex.net...
> Barrett wrote:
>> The jumper is on in the unit and all the batteries are in there correct
>> position. The link for the MFJ-259Z on the W&S site is
>> http://www.wsplc.com/cgi-bin/ss000001.pl?SS=MFJ-259Z&PR=-1&TB=A&SHOP=&ACTION.x=14&ACTIO
N.y=3
>>
>> They won't even charge in my Smart charger. They just shut down the
>> charging as if there no good, but they are supposed to be brand new. Just
>> borrowed some 1800mA and these are charging fine in the MFJ-259, so it
>> looks like the problem is with the batteries. I have never experienced
>> this with these type of batteries before only NiCad's.
> ====================================
> Suggest you allow a say 100 mA current to flow through the individual
> (new)batteries , monitoring the voltage across the battery.
> As soon as the voltage is 1.2 V you can further charge in your automatic
> charger.
> When fully charged , discharge either in your automatic charger or
> manually (with a 12 to 15 Ohms resistor) ,down to
> 1Volt and recharge. The (new) batteries should then work well.
>
> New NiMH batteries often need a few manually imposed charging
> /discharging cycles before working properly.
>
> Good Luck
>
> Frank GM0CSZ / KN6WH

3934. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 19:52:58 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <XZmdnehRq_yBGmvanZ2dnUVZ_oytnZ2d@easystreetonline>
Source record: 26406

hasan wrote:

> One thing I've learned about NIMH batteries...they don't sit well. They
> do wonderfully if kept trickle charged, but if let to sit, they will
> self-discharge in less than two weeks. (at least for digital camera
> purposes)I've observed this on three different "sets" of NIMH AA
> batteries. All act the same way. Two weeks of sitting and they will only
> operate the camera a very short time. Left in the charger and put
> directly into service I can shoot well over 75 pictures in a row with no
> difficulty.

This was true until a short while ago, but no longer is. A new chemistry is now being used for some NiMH cells which greatly reduces the self-discharge rate. Some of the more popular brands are Sanyo's Eneloop, Rayovac's Hybrid, and Sony's Cycle Energy, but there's a growing number of others. A bit of web searching will bring a great deal more information about this. "Low self discharge NiMH" is a good search string to start with.

So far, the LSD cells have a bit lower capacity than the very highest capacity conventional cells, with 2000 mAh typical for AA and 800 mAh for AAA. But they have almost as much capacity after sitting for an extended time. And the Eneloops, in particular, typically have a slightly higher voltage under discharge, and hold up very well under high discharge rates. They're very good cells -- I use them almost exclusively now.

Roy Lewallen, W7EL

3935. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 20:23:30 UTC
From: dplatt@radagast.org
Message-ID: <2bfic5-jr9.ln1@radagast.org>
Source record: 26410

In article <JevJj.1837$rk6.150@newsfet15.ams>,
Barrett <barrett@blueyounder.co.uk> wrote:

>Can some one give me an idea on how long these 2600mA should last in the
>MFJ-259 when left on without turning off?

One manufacturer's data writeup (for the Twicell batteries) says "The
amount of electricity which a [NiMH] battery loses through
self-discharge at 40 degrees C in one day following full charge is
approximately 5% of the rated capacity."

If it lost this same percentage of its total charge every day, the
battery would be completely self-discharged in about three weeks.

If it lost 5% of its current charge level per day, it'd be down to 50%
charge in a couple of weeks, maybe to 25% at the end of a month.

Even if the self-discharge rate is as low as 2% per day, you'd find
them with little charge remaining after a couple of months.

The high-capacity, fast-self-discharging NiMH cells seem to be a
reasonable choice for certain application - those in which you expect
to drain 'em within a few days of use, and will need to recharge them
regularly in any case. Photo-flash applications, or listen-and-talk
applications in a portable radio, or that sort of thing.

They're a poor choice for occasional-use or standby applications.

If you're using your MFJ-259 for several hours per week, standard 2600
NiMH cells may be a good choice. If you use the analyzer only
occasionally, I think you'll be happier with either NiCd, or
low-self-discharge 2000/2100 NiMH.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3936. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 20:24:46 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <ft62qe$1hg8$1@f04n12.cac.psu.edu>
Source record: 26407

derekbluey@gmail.com wrote:
>> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
>
>>>> You are thinking wrong.
>>> you might as well plonk him, he is either a persistent troll or totally
>>> convinced that only he has the proper view of the world. in either case you
>>> are fighting a losing battle.
>
>
> Two perfect examples of a closed mind, but not to worry
> enlightenment will be along shortly.

And always will be, just like modern washday miracles and Dishwashers
that don't leave spots on glasses. ;^)

An open mind does not mean suspension of all disbelief....

- 73 de Mike N3LI -

3937. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 20:56:31 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <4e6add56-9978-45f4-b4c2-5b038a98df32@b1g2000hsg.googlegroups.com>
Source record: 26408

On Apr 4, 3:24 pm, Michael Coslo <m...@psu.edu> wrote:
> derekbl...@gmail.com wrote:
> >> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
>
> >>>> You are thinking wrong.
> >>> you might as well plonk him, he is either a persistent troll or totally
> >>> convinced that only he has the proper view of the world. in either case you
> >>> are fighting a losing battle.
>
> > Two perfect examples of a closed mind, but not to worry
> > enlightenment will be along shortly.
>
> And always will be, just like modern washday miracles and Dishwashers
> that don't leave spots on glasses. ;^)
>
> An open mind does not mean suspension of all disbelief....
>
> - 73 de Mike N3LI -

Mike, you asked for a lot of details about the antenna such
that I thought you were going to make one. What happened>
I expected you to come forward with confirmation in a lot of areas!
I thought you were a doer not a talking head.
Art

3938. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 21:01:20 UTC
From: nm5k@wt.net
Message-ID: <a5f9d0cc-8db6-4f50-b369-113301193d5f@n14g2000pri.googlegroups.com>
Source record: 26409

On Apr 4, 9:22 am, Art Unwin <ArthurUn...@gmail.com> wrote:

>
> > Two perfect examples of a closed mind, but not to worry
> > enlightenment will be along shortly.
>
> > Derek

I already own a flashlight. Several in fact.

>
> I thought I would share with you my readings on the 160 M band
> They are in order as follows Freq, resistance, reactance swr
>
> 1.8 105 0 2.1
> 1.81 105 0 2.0
> 1.82 105 0 2.0
> 1.83 105 0 2.0
> 1.84 102 0 2.0
> 1.85 98 0 1.9
> 1.86 92 0 1.8
> 1.87 88 6 1.7
> 1.88 83 7 1.7
> 1.89 84 8 1.7
> 1.9 81 12 1.6
> 1.91 78 13 1.6
> 1.92 75 12 1.5
> 1.93 72 13 1.5
> 1.94 68 11 1.4
> 1.95 67 10 1.4
> 1.96 66 10 1.3
> 1.97 64 9 1.3
> 1.98 62 9 1.3
> 1.99 62 9 1.3
> 2.0 62 7 1.2
>
> Those you are familiar with antennas will see that the above figures
> in no way
> represent those of a dummy load

I've seen light bulbs act the same way
when rf was fed to them.
How many people do you know that use a light
bulb as an antenna?
I used one as a dummy load when I was a novice.

It was enlightening, I have to admit that... :/

3939. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 22:15:51 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <74b36773-3be2-4c7f-971a-71610551fd1e@a70g2000hsh.googlegroups.com>
Source record: 26411

On Apr 4, 4:01 pm, n...@wt.net wrote:
> On Apr 4, 9:22 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>
>
> > > Two perfect examples of a closed mind, but not to worry
> > > enlightenment will be along shortly.
>
> > > Derek
>
> I already own a flashlight. Several in fact.
>
>
>
>
>
> > I thought I would share with you my readings on the 160 M band
> > They are in order as follows Freq, resistance, reactance swr
>
> > 1.8 105 0 2.1
> > 1.81 105 0 2.0
> > 1.82 105 0 2.0
> > 1.83 105 0 2.0
> > 1.84 102 0 2.0
> > 1.85 98 0 1.9
> > 1.86 92 0 1.8
> > 1.87 88 6 1.7
> > 1.88 83 7 1.7
> > 1.89 84 8 1.7
> > 1.9 81 12 1.6
> > 1.91 78 13 1.6
> > 1.92 75 12 1.5
> > 1.93 72 13 1.5
> > 1.94 68 11 1.4
> > 1.95 67 10 1.4
> > 1.96 66 10 1.3
> > 1.97 64 9 1.3
> > 1.98 62 9 1.3
> > 1.99 62 9 1.3
> > 2.0 62 7 1.2
>
> > Those you are familiar with antennas will see that the above figures
> > in no way
> > represent those of a dummy load

>
> I've seen light bulbs act the same way
> when rf was fed to them.
> How many people do you know that use a light
> bulb as an antenna?
> I used one as a dummy load when I was a novice.
> It was enlightening, I have to admit that... :/

While listening to Europe coming in with 5/9 signasl,
I thought that everybody should be using "dummy loads"
Art

3940. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 22:51:38 UTC
From: Dave <noone@nowhere.com>
Message-ID: <_hyJj.30$XC1.22@trndny08>
Source record: 26413

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:74b36773-3be2-4c7f-971a-71610551fd1e@a70g2000hsh.googlegroups.com...
> On Apr 4, 4:01 pm, n...@wt.net wrote:
>> On Apr 4, 9:22 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>>
>>
>>
>> > > Two perfect examples of a closed mind, but not to worry
>> > > enlightenment will be along shortly.
>>
>> > > Derek
>>
>> I already own a flashlight. Several in fact.
>>
>>
>>
>>
>>
>> > I thought I would share with you my readings on the 160 M band
>> > They are in order as follows Freq, resistance, reactance swr
>>
>> > 1.8 105 0 2.1
>> > 1.81 105 0 2.0
>> > 1.82 105 0 2.0
>> > 1.83 105 0 2.0
>> > 1.84 102 0 2.0
>> > 1.85 98 0 1.9
>> > 1.86 92 0 1.8
>> > 1.87 88 6 1.7
>> > 1.88 83 7 1.7
>> > 1.89 84 8 1.7
>> > 1.9 81 12 1.6
>> > 1.91 78 13 1.6
>> > 1.92 75 12 1.5
>> > 1.93 72 13 1.5
>> > 1.94 68 11 1.4
>> > 1.95 67 10 1.4
>> > 1.96 66 10 1.3
>> > 1.97 64 9 1.3
>> > 1.98 62 9 1.3
>> > 1.99 62 9 1.3
>> > 2.0 62 7 1.2
>>
>> > Those you are familiar with antennas will see that the above figures

>> > in no way
>> > represent those of a dummy load
>>
>> I've seen light bulbs act the same way
>> when rf was fed to them.
>> How many people do you know that use a light
>> bulb as an antenna?
>> I used one as a dummy load when I was a novice.
>> It was enlightening, I have to admit that... :/
>
> While listening to Europe coming in with 5/9 signasl,
> I thought that everybody should be using "dummy loads"
> Art

one anecdote does not a good antenna make.

3941. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 23:13:37 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <9940f0b7-a734-42b6-87f5-792b03a2ada0@u69g2000hse.googlegroups.com>
Source record: 26414

On Apr 4, 5:51 pm, "Dave" <no...@nowhere.com> wrote:
> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> news:74b36773-3be2-4c7f-971a-71610551fd1e@a70g2000hsh.googlegroups.com...
>
>
>
> > On Apr 4, 4:01 pm, n...@wt.net wrote:
> >> On Apr 4, 9:22 am, Art Unwin <ArthurUn...@gmail.com> wrote:
>
> >> > > Two perfect examples of a closed mind, but not to worry
> >> > > enlightenment will be along shortly.
>
> >> > > Derek
>
> >> I already own a flashlight. Several in fact.
>
> >> > I thought I would share with you my readings on the 160 M band
> >> > They are in order as follows Freq, resistance, reactance swr
>
> >> > 1.8 105 0 2.1
> >> > 1.81 105 0 2.0
> >> > 1.82 105 0 2.0
> >> > 1.83 105 0 2.0
> >> > 1.84 102 0 2.0
> >> > 1.85 98 0 1.9
> >> > 1.86 92 0 1.8
> >> > 1.87 88 6 1.7
> >> > 1.88 83 7 1.7
> >> > 1.89 84 8 1.7
> >> > 1.9 81 12 1.6
> >> > 1.91 78 13 1.6
> >> > 1.92 75 12 1.5
> >> > 1.93 72 13 1.5
> >> > 1.94 68 11 1.4
> >> > 1.95 67 10 1.4
> >> > 1.96 66 10 1.3
> >> > 1.97 64 9 1.3
> >> > 1.98 62 9 1.3
> >> > 1.99 62 9 1.3
> >> > 2.0 62 7 1.2
>
> >> > Those you are familiar with antennas will see that the above figures
> >> > in no way

> >> > represent those of a dummy load
>
> >> I've seen light bulbs act the same way
> >> when rf was fed to them.
> >> How many people do you know that use a light
> >> bulb as an antenna?
> >> I used one as a dummy load when I was a novice.
> >> It was enlightening, I have to admit that... :/
>
> > While listening to Europe coming in with 5/9 signasl,
> > I thought that everybody should be using "dummy loads"
> > Art
>
> one anecdote does not a good antenna make.

I put that out to catch a juicy trout but instead I

captured two croutchy crabs

3942. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-04 23:39:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <fvedv3dirjg5sgoef5ob9hmig4hobrjusf@4ax.com>
Source record: 26412

On Fri, 4 Apr 2008 15:15:51 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>While listening to Europe coming in with 5/9 signasl,
>I thought that everybody should be using "dummy loads"

Hi Arthur,

My pocket radio can do better than that. You haven't given us any
signal reports from other stations listening to you from Europe.

73's
Richard Clark, KB7QHC

3943. W9INN Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 00:07:41 UTC
From: Ron <rons533@ptd.net>
Message-ID: <6eGdnXtOxZ1TX2vanZ2dnUVZ_uSgnZ2d@ptd.net>
Source record: 26415

I am looking for information on how to build a W9INN 42' dipole that is supossed to cover 10-15-20-40 meters. I understand that he is a silent key and that his antennas worked great. Googled and found a lot of information but nothing on measurments or how to build one.

3944. Re: W9INN Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 03:28:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qasdv3t1vhhevaqa1si350asm42oikmn2v@4ax.com>
Source record: 26416

On Fri, 4 Apr 2008 20:07:41 -0400, "Ron" <rons533@ptd.net> wrote:

>I am looking for information on how to build a W9INN 42' dipole that is
>supossed to cover 10-15-20-40 meters. I understand that he is a silent key
>and that his antennas worked great. Googled and found a lot of information
>but nothing on measurments or how to build one.

Couldn't have been that great then.

Look up G5RV and you will find plans till the cows come home, a life
history, and all the lore that could fill a library - and it isn't all
that great either.

73's
Richard Clark, KB7QHC

3945. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 09:28:52 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <95abdca0-7b38-443f-bd7a-fff1ad29aefb@p25g2000hsf.googlegroups.com>
Source record: 26417

On Apr 4, 12:01 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > It seems to me that this circuit is quite different.
>
> Yet, steady-state conditions are identical. That
> should tell us something about what is wrong
> with the analysis so far.

Please expand on what it tells us "about what is wrong
with the analysis so far".

...Keith

3946. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 10:06:18 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <d0b92131-bde9-4746-b694-024464856355@b1g2000hsg.googlegroups.com>
Source record: 26418

On Apr 4, 11:41 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Fri, 4 Apr 2008 06:30:08 -0700 (PDT)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Apr 4, 1:29 am, Roger Sparks <rspa...@elltel.net> wrote:
[snip]
> > >Another way to figure the power to the source would be by using the voltage and current through the source.
>
> > This is how I did it.
>
> > Taking Esource.50[90..91] = 0.03046 J as an example ...
>
> > Psource.50[90] = V * I
> >   = 0.000000 * 0.000000
> >   = 0 W
> > Psource.50[91] = -2.468143 * -0.024681
> >   = 0.060917 W
>
> > Using the trapezoid rule for numerical integration,
> > Esource.50[90..91] = ((Psource.50[90]+Psource.50[91])/2) * interval
> >   = ((0+0.060917)/2)*1
> >   = 0.030459 J
>
> > The other powers and energies in the spreadsheet are computed
> > similarly.
>
> > There was an error in the computation of the 'delta's; the sign was
> > wrong.
> > The spreadsheet available athttp://keith.dysart.googlepages.com/radio6
> > has
> > now been corrected. (And, for Cecil, this spreadsheet no longer has
> > macros
> > so it may be downloadable.)
>
> > To use this spreadsheet to compute my numbers above, set the formulae
> > for Vr.g and Ir.g in the rows for degrees 90 and 91 to zero.
>
> > > Using current and voltage, the power at time 91 degrees of the reflected wave is 1.234v*1.43868a= 1.775w. Over one second integrated, the energy should be 1.775 J.
>
> > I could not match to the above data to any rows, so I can't comment.
> > But
> > perhaps the explanation above will correct the discrepancy.

>
> I took a look at your revised spreadsheet entitled "Reflected45degrees-1.xls". Using the numbers from row 94 (91 degrees), the voltage developed at the source would be Vs = -2.468143v. The current folowing through the source would be found from Ig which is 1.389317a in todays version of the spreadsheet (it was 1.439a previously). The power flowing INTO the source is 2.468143* 1.389317 = 3.429032w. This is the power Ps found in Column 11.
>
> This returning power is all from the reflected wave.

I would not say this. The power *is* from the line, but this is Pg,
and it satisfies
the equation
Ps(t) = Prs(t) + Pg(t)

The imputed power in the reflected wave is Pr.g(t) and is equal to
-99.969541 W, at
91 degrees. This can not be accounted for in any combination of Ps(91)
(-3.429023 W)
and Prs(91) (96.510050 W). And recall that expressing Cecil's claim
using instantaneous
powers requires that the imputed reflected power be accounted for in
the source
resistor, and not the source. This is column 26 and would require that
Prs(91) equal
100 W (which it does not).

> The source is acting like a resistor with an impedance of 2.468143/1.389317 = 1.776 ohms.

This is not a good way to describe the source. The ratio of the
voltage to the current
is 1.776 but this is not a resistor since if circuit conditions were
to change, the
voltage would stay the same while the current could take on any value;
this being
the definition of a voltage source. Since the voltage does not change
when the current
does, deltaV/deltaI is always 0 so the voltage source is more properly
described as
having an impedance of 0.

> As a result, the returning reflection does not truely see 50 ohms but sees 50 + 1.776 = 51.776 ohms.

The returning reflection is affectively a change in the circuit
conditions. Using
the source impedance of 0 plus the 50 ohm resistor means the
reflection sees 50
ohms, so there is no reflection.

Using your approach of computing a resistance from the instantaneous
voltage and
current yeilds a constantly changing resistance. The reflection would
alter this
computed resistance. This change in resistance would then alter the
reflection
which would change the resistance. Would the answer converge?

The only approach that works is to use the conventional approach of
considering
that a voltage source has an impedance of 0.

> Of course the result is a another reflection. Is this the idea you were trying to
communicate Cecil?
>
> To me, this is destructive interference at work, so all the power in the reflected wave
does not simply disappear into the resistor Rs on the instant basis.

I agree with latter, but not for the reason expressed. Rather, because
the imputed
power of the reflected wave is a dubious concept. This being because
it is impossible
to account for this power.

> clip
>
> > When using superposition, one has to pick a reference voltage and
> > current
> > direction for each component and then add or subtract the contributing
> > voltage or current depending on whether it is in the reference
> > direction
> > or against the reference direction. Mistakes and confusion with
> > relation
> > to the signs are not uncommon. Careful choice of reference directions
> > will
> > sometimes help, but mostly it simply leads to some other voltage or
> > current that needs to be subtracted instead of added.
>
> > ...Keith
>
> Yes. I don't want to force my conventions onto you, so I am trying to understand yours
while insisting that the answers from each convention must be the same.

>I think we both agree that the reflections are carrying power now.

Not I. Not until the imputed power can be accounted for.

...Keith

3947. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 10:18:25 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <80f475e7-61ab-4f9c-98c9-d085f7039321@e39g2000hsf.googlegroups.com>
Source record: 26419

On Apr 4, 2:54 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > Is this the idea you were trying to communicate Cecil?
>
> What I am trying to communicate is that the distributed
> network model is closer to Maxwell's equations that is
> the lumped circuit model. If the lumped circuit model
> disagrees with the distributed network model, then it
> is wrong.

The joys of motherhood statements.

> Steady-state conditions are identical whether the
> ideal transmission line is zero wavelength or one
> wavelength. If adding one wavelength of ideal
> transmission between the source voltage and the
> source resistance changes steady-state conditions
> in Keith's mind, then there is something wrong in
> Keith's mind.

There was an 'if' there, wasn't there? Do you think
the 'if' is satisfied? Or not? The rest is useless
without knowing.

> > To me, this is destructive interference at work, so all the
> > power in the reflected wave does not simply disappear into the
> > resistor Rs on the instant basis.
>
> 90 degrees later, an exactly equal magnitude of
> constructive interference exists so it is obvious
> that the constructive interference energy has been
> delayed by 90 degrees from the destructive interference
> energy.

You still have to explain where this destructive energy is stored
for those 90 degrees. Please identify the element and its energy
flow as a function of time.

> One advantage of moving the source voltage one wavelength
> away from the source resistor is that it is impossible for
> the source to respond instantaneously

You have previously claimed that the steady-state conditions
are the same (which I agree), but now you have moved to discussing
transients, for which the behaviour is quite different.

If you want to claim similarity, then you need to allow the circuit to settle to steady state after any change. Instantaneous response is not required if the analysis is only steady-state.

If you wish to study transient responses, then the circuits do not behave similarly.

...Keith

3948. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 11:18:17 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <prmdnfFiSd1-wmranZ2dnUVZ8uudnZ2d@pipex.net>
Source record: 26420

> If you're using your MFJ-259 for several hours per week, standard 2600
> NiMH cells may be a good choice. If you use the analyzer only
> occasionally, I think you'll be happier with either NiCd, or
> low-self-discharge 2000/2100 NiMH.
==========
NiCad and NiMH batteries (usually having a capacity exceeding 400mAh)
which need to perform at all times I normally charge constantly with 10
mA when not in use. This trickle charge level keeps them in good condition.
I have a Wahl ISOTIP 2.4 V soldering iron which in this way is always
available. When in use I switch the charging current to 300 mA

Frank GM0CSZ / KN6WH

3949. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 12:04:40 UTC
From: Homer J <homerj@home.com>
Message-ID: <23755$47f76adb$ce947006$8832@DIALUPUSA.NET>
Source record: 26421

Here is a reference to a technical look at short loop antennas from the 1950's by Wheeler.

H. A. Wheeler, "Fundamental Limitations of Small Antennas", Proc. IRE, vol. 35, pp. 1479-1484

This is can found in a technical library with access to the IEEE publications web site (e.g. university or military tech library)

Thane-fer
Homer

"Dave Platt" <dplatt@radagast.org> wrote in message news:brbdc5-ru6.ln1@radagast.org...
>>> d. If a receiving signal is well polarized in
>>> one direction, say vertically, how much loss
>>> would one expect if the receiving antenna is
>>> oriented such that its preferred polarization is
>>> horiz. ?
>>
>>The usual figure one sees bandied about is 20 dB.
>
> I've seen it quoted as "up to 30 dB". That's probably under ideal
> (or ideally-bad) conditions, though.
>
>>> e.g., for a rubber-duckie scanner antenna ?
>>
>>There's an additional penalty of 20 dB imposed on
>>any antenna that has the word "duckie" in its name.
>> ;-) ;-) ;-)
>
> Heh. Yeah. Last weekend, my partner-in-repeater-crime and I ran some
> simple outdoor-range tests on a few 2-meter beams, using an HP signal
> generator and HP spectrum analyzer. We used a quarter-wave whip,
> mag-mounted on a sheet of steel, as the reference antenna.
>
> A two-element HB9CV beam was around 8 dB better than the reference
> antenna, with a front-to-back ratio of 6-8 dB.
>
> An Elk log-periodic 6-element beam measured out as quite similar to
> the HB9CV (but has a lower SWR across the band) - 8 dB up, and about 7
> dB front-to-back.
>
> A 3-element Yagi made out of PVC and steel measuring tape segments,
> designed for foxhunting, was 9-10 dB up and had about a 20 dB

> front-to-back ratio at its deepest null.
>
> Rubber duckies? Ugh. A Yaesu helically-wound duck was around 10 dB
> worse than the reference antenna. An RD-9 "high gain" base-loaded
> 2-meter/440 superflexible antenna was around 12 dB worse than the
> reference antenna.
>
> I'd always heard that rubber duckies were actually rubber dummy loads.
> Now I've actually seen the results for myself. Yeech.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

3950. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 13:05:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <VOKJj.220$mB3.48@nlpi068.nbdc.sbc.com>
Source record: 26422

Keith Dysart wrote:
> Please expand on what it tells us "about what is wrong
> with the analysis so far".

You have not been able to tell where the instantaneous
reflected energy goes. This new example should help
you solve your problem. If your steady-state equations
for the new example are not identical to the steady-
state equations for the previous example, then something
is wrong with your previous analysis. IMO, something
is obviously wrong with your previous analysis since
it requires reflected waves to contain something other
than ExH joules/sec, a violation of the laws of EM
wave physics.

feedline1 feedline2
source---1WL 50 ohm---Rs---1WL 50 ohm---+j50

The beauty of this example is that conditions at
the source resistor, Rs, are isolated from any
source of energy other than the ExH forward wave
energy in feedline1 and the ExH reflected wave
energy in feedline2. That's all the energy there
is available at Rs and that energy cannot be denied.
--
73, Cecil http://www.w5dxp.com

3951. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 13:37:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <QgLJj.963$GO4.308@newssvr19.news.prodigy.net>
Source record: 26423

Keith Dysart wrote:
> And recall that expressing Cecil's claim
> using instantaneous
> powers requires that the imputed reflected power be accounted for in
> the source
> resistor, and not the source.

Keith, I hope that Roger knows you are uttering falsehoods
about what I have said.

I. My Part 1 claim applies *ONLY* to a zero interference
precondition. Your example contains interference. Therefore,
my claim does NOT apply to your example. Examples containing
interference are yet to be covered in Parts 2 and 3 of
my series of articles. I am going to state my claims once
again.

1. If zero interference exists at the source resistor, all of
the reflected energy is dissipated in the source resistor.
Your example does NOT contain zero interference.

2. If interference exists at the source resistor, the energy
associated with the interference flows to/from the source
and/or to/from the load. This claim covers the present
example under discussion.

II. I have said many times that the source can adjust
its output to compensate for the destructive interference
and constructive interference in the system. It is ONLY
under zero interference conditions that all of the
reflected energy is dissipated in the source resistor.
You have failed to offer an example where that assertion
is not true GIVEN THE ZERO INTERFERENCE PRECONDITION.

The example under discussion is not covered by any of
my Part 1 claims.
--
73, Cecil http://www.w5dxp.com

3952. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 14:02:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9ELJj.965$GO4.1@newssvr19.news.prodigy.net>
Source record: 26424

Keith Dysart wrote:
> There was an 'if' there, wasn't there? Do you think
> the 'if' is satisfied? Or not? The rest is useless
> without knowing.

Under the laws of physics governing transmission lines
inserting an ideal 1WL line does not change the steady-
state conditions. If you think it does, you have invented
some new laws of physics.

> You still have to explain where this destructive energy is stored
> for those 90 degrees. Please identify the element and its energy
> flow as a function of time.

Your request is beyond the scope of my Part 1 article.
If interference exists at the source resistor, the energy
associated with the interference flows to/from the source
and/or to/from the load. That condition is NOT covered in
my Part 1 article. Please stand by for Part 2 which will
explain destructive interference and Part 3 which will
explain constructive interference.

>> One advantage of moving the source voltage one wavelength
>> away from the source resistor is that it is impossible for
>> the source to respond instantaneously
>
> You have previously claimed that the steady-state conditions
> are the same (which I agree),

Glad you agree so there is nothing stopping you from an
analysis of the following example:

source---1WL 50 ohm---Rs---1WL 50 ohm---+j50
Pfor1--> Pfor2-->
<--Pref1 <--Pref2

Make Rs a 4-terminal network and a standard s-parameter
analysis is possible.

> but now you have moved to discussing
> transients, for which the behaviour is quite different.

Nope, you are confused. I am saying absolutely nothing about
transients. Why do you think an instantaneous power analysis
during steady-state is not possible?

> If you want to claim similarity, then you need to allow the
> circuit to settle to steady state after any change. Instantaneous
> response is not required if the analysis is only steady-state.

Are you saying that an analysis of instantaneous power
does not apply during steady-state? If that is true,
then all of your earlier analysis involving transmission
lines is bogus.
--
73, Cecil http://www.w5dxp.com

3953. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 14:06:22 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080405070622.fc6479d2.rsparks@elltel.net>
Source record: 26425

On Sat, 5 Apr 2008 03:06:18 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 4, 11:41 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Fri, 4 Apr 2008 06:30:08 -0700 (PDT)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Apr 4, 1:29 am, Roger Sparks <rspa...@elltel.net> wrote:
> [snip]
> > > >Another way to figure the power to the source would be by using the voltage and
current through the source.
> >
> > > This is how I did it.
> >
> > > Taking Esource.50[90..91] = 0.03046 J as an example ...
> >
> > > Psource.50[90] = V * I
> > >   = 0.000000 * 0.000000
> > >   = 0 W
> > > Psource.50[91] = -2.468143 * -0.024681
> > >   = 0.060917 W
> >
> > > Using the trapezoid rule for numerical integration,
> > > Esource.50[90..91] = ((Psource.50[90]+Psource.50[91])/2) * interval
> > >   = ((0+0.060917)/2)*1
> > >   = 0.030459 J
> >
> > > The other powers and energies in the spreadsheet are computed
> > > similarly.
> >
> > > There was an error in the computation of the 'delta's; the sign was
> > > wrong.
> > > The spreadsheet available athttp://keith.dysart.googlepages.com/radio6
> > > has
> > > now been corrected. (And, for Cecil, this spreadsheet no longer has
> > > macros
> > > so it may be downloadable.)
> >
> > > To use this spreadsheet to compute my numbers above, set the formulae
> > > for Vr.g and Ir.g in the rows for degrees 90 and 91 to zero.
> >
> > > > Using current and voltage, the power at time 91 degrees of the reflected wave is
1.234v*1.43868a= 1.775w. Over one second integrated, the energy should be 1.775 J.
> >

> > > I could not match to the above data to any rows, so I can't comment.
> > > But
> > > perhaps the explanation above will correct the discrepancy.
> >
> > I took a look at your revised spreadsheet entitled "Reflected45degrees-1.xls". Using the numbers from row 94 (91 degrees), the voltage developed at the source would be Vs = -2.468143v. The current folowing through the source would be found from Ig which is 1.389317a in todays version of the spreadsheet (it was 1.439a previously). The power flowing INTO the source is 2.468143* 1.389317 = 3.429032w. This is the power Ps found in Column 11.
> >
> > This returning power is all from the reflected wave.
>
> I would not say this. The power *is* from the line, but this is Pg,
> and it satisfies
> the equation
> Ps(t) = Prs(t) + Pg(t)
>
> The imputed power in the reflected wave is Pr.g(t) and is equal to
> -99.969541 W, at
> 91 degrees. This can not be accounted for in any combination of Ps(91)
> (-3.429023 W)
> and Prs(91) (96.510050 W). And recall that expressing Cecil's claim
> using instantaneous
> powers requires that the imputed reflected power be accounted for in
> the source
> resistor, and not the source. This is column 26 and would require that
> Prs(91) equal
> 100 W (which it does not).

Taking these numbers and adding the Psource.50[91] = -2.468143 * -0.024681 = 0.060917 W found previously above,
we have Total = 0.060917 + 3.429023 + 96.510050 = 99.99999. Very close to 100w, but I am not sure of exactly what I am adding here.

I think you are right, that we should always be able to add the power on the line to 100w if we truely account for the power at any instant. This results from the trig identity that sin(x) + cos(x) = 1. Sin(x+90)= cos(x) so sin(x)+sin(x+90)= 1. This explains why the sum of the forward power and reflected power should always equal 100w.

Pg(t) is the result of a standing wave, containing power from Pf(x) and Pr(x+90). Only the power from Pr(x+90) is available to at a later time Prs(t+90+delta). Power from Pf(x+delta) is found in the transmission line.
> >
>
> > The source is acting like a resistor with an impedance of 2.468143/1.389317 = 1.776 ohms.
>
> This is not a good way to describe the source. The ratio of the
> voltage to the current
> is 1.776 but this is not a resistor since if circuit conditions were

> to change, the
> voltage would stay the same while the current could take on any value;
> this being
> the definition of a voltage source. Since the voltage does not change
> when the current
> does, deltaV/deltaI is always 0 so the voltage source is more properly
> described as
> having an impedance of 0.
>
> > As a result, the returning reflection does not truely see 50 ohms but sees 50 + 1.776 = 51.776 ohms.
>
> The returning reflection is affectively a change in the circuit
> conditions. Using
> the source impedance of 0 plus the 50 ohm resistor means the
> reflection sees 50
> ohms, so there is no reflection.
>
> Using your approach of computing a resistance from the instantaneous
> voltage and
> current yeilds a constantly changing resistance. The reflection would
> alter this
> computed resistance. This change in resistance would then alter the
> reflection
> which would change the resistance. Would the answer converge?
>
> The only approach that works is to use the conventional approach of
> considering
> that a voltage source has an impedance of 0.
>
The overriding issue is to account for all the power, which we are having a hard time doing. The current is flowing the wrong way for the source voltage at Ps(91) so the source is absorbing power. That negates the idea that the source has an impedance of zero when we also assign the source a voltage.

> > Of course the result is a another reflection. Is this the idea you were trying to communicate Cecil?
> >
> > To me, this is destructive interference at work, so all the power in the reflected wave does not simply disappear into the resistor Rs on the instant basis.
>
> I agree with latter, but not for the reason expressed. Rather, because
> the imputed
> power of the reflected wave is a dubious concept. This being because
> it is impossible
> to account for this power.

Does it help to notice that we are applying the power through two wires/paths. We then divide the power in half and say that the power to the resistor from the close half flows seamlessly from source to resistor. On the other hand, the second half of the source power flows through the transmission line and we say that it may never get to the resistor.

Something is wrong with this logic.

If we can't account for the power, it is because we are doing the accounting incorrectly.

>
> > clip
> >

> > Yes. I don't want to force my conventions onto you, so I am trying to understand yours while insisting that the answers from each convention must be the same.
>
> >I think we both agree that the reflections are carrying power now.
>
> Not I. Not until the imputed power can be accounted for.
>
> ...Keith

I am convinced that accounting for the power can be done on an instant basis, but neither of us has done it on a mutually acceptable basis yet. Maybe if we pursue the trig identity sin(x) + sin(x+90) = 1, we can have a constant reference and avoid mixing forward and reflected powers?
--
73, Roger, W7WKB

3954. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 14:10:22 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080405071022.9421cf66.rsparks@elltel.net>
Source record: 26426

correction
On Sat, 5 Apr 2008 07:06:22 -0700
Roger Sparks <rsparks@elltel.net> wrote:

> On Sat, 5 Apr 2008 03:06:18 -0700 (PDT)
> Keith Dysart <Keith.Dysart@gmail.com> wrote:
>
> > On Apr 4, 11:41 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Fri, 4 Apr 2008 06:30:08 -0700 (PDT)
> > >
> > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > On Apr 4, 1:29 am, Roger Sparks <rspa...@elltel.net> wrote:
> > [snip]
> > > > >Another way to figure the power to the source would be by using the voltage and
current through the source.
> > >
> > > > This is how I did it.
> > >
> > > > Taking Esource.50[90..91] = 0.03046 J as an example ...
> > >
> > > > Psource.50[90] = V * I
> > > >   = 0.000000 * 0.000000
> > > >   = 0 W
> > > > Psource.50[91] = -2.468143 * -0.024681
> > > >   = 0.060917 W
> > >
> > > > Using the trapezoid rule for numerical integration,
> > > > Esource.50[90..91] = ((Psource.50[90]+Psource.50[91])/2) * interval
> > > >   = ((0+0.060917)/2)*1
> > > >   = 0.030459 J
> > >
> > > > The other powers and energies in the spreadsheet are computed
> > > > similarly.
> > >
> > > > There was an error in the computation of the 'delta's; the sign was
> > > > wrong.
> > > > The spreadsheet available athttp://keith.dysart.googlepages.com/radio6
> > > > has
> > > > now been corrected. (And, for Cecil, this spreadsheet no longer has
> > > > macros
> > > > so it may be downloadable.)
> > >
> > > > To use this spreadsheet to compute my numbers above, set the formulae
> > > > for Vr.g and Ir.g in the rows for degrees 90 and 91 to zero.

> > >
> > > > > Using current and voltage, the power at time 91 degrees of the reflected wave is 1.234v*1.43868a= 1.775w. Over one second integrated, the energy should be 1.775 J.
> > >
> > > > I could not match to the above data to any rows, so I can't comment.
> > > > But
> > > > perhaps the explanation above will correct the discrepancy.
> > >
> > > I took a look at your revised spreadsheet entitled "Reflected45degrees-1.xls". Using the numbers from row 94 (91 degrees), the voltage developed at the source would be Vs = -2.468143v. The current folowing through the source would be found from Ig which is 1.389317a in todays version of the spreadsheet (it was 1.439a previously). The power flowing INTO the source is 2.468143* 1.389317 = 3.429032w. This is the power Ps found in Column 11.
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> > > This returning power is all from the reflected wave.
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> > I would not say this. The power *is* from the line, but this is Pg,
> > and it satisfies
> > the equation
> > Ps(t) = Prs(t) + Pg(t)
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> > The imputed power in the reflected wave is Pr.g(t) and is equal to
> > -99.969541 W, at
> > 91 degrees. This can not be accounted for in any combination of Ps(91)
> > (-3.429023 W)
> > and Prs(91) (96.510050 W). And recall that expressing Cecil's claim
> > using instantaneous
> > powers requires that the imputed reflected power be accounted for in
> > the source
> > resistor, and not the source. This is column 26 and would require that
> > Prs(91) equal
> > 100 W (which it does not).
>
> Taking these numbers and adding the Psource.50[91] = -2.468143 * -0.024681 = 0.060917 W found previously above,
> we have Total = 0.060917 + 3.429023 + 96.510050 = 99.99999. Very close to 100w, but I am not sure of exactly what I am adding here.
>
> I think you are right, that we should always be able to add the power on the line to 100w if we truely account for the power at any instant. This results from the trig identity that sin(x) + cos(x) = 1. Sin(x+90)= cos(x) so sin(x)+sin(x+90)= 1. This explains why the sum of the forward power and reflected power should always equal 100w.
>
> Pg(t) is the result of a standing wave, containing power from Pf(x) and Pr(x+90). Only the power from Pr(x+90) is available to Rs at a later time Prs(t+90+delta). Power from Pf(x+delta) is found in the transmission line.
I omitted the Rs in "available to Rs at a later time Prs(t+90+delta)" Sorry!
> > >
> >

> > > The source is acting like a resistor with an impedance of 2.468143/1.389317 = 1.776 ohms.
> >
> > This is not a good way to describe the source. The ratio of the
> > voltage to the current
> > is 1.776 but this is not a resistor since if circuit conditions were
> > to change, the
> > voltage would stay the same while the current could take on any value;
> > this being
> > the definition of a voltage source. Since the voltage does not change
> > when the current
> > does, deltaV/deltaI is always 0 so the voltage source is more properly
> > described as
> > having an impedance of 0.
> >
> > > As a result, the returning reflection does not truely see 50 ohms but sees 50 + 1.776 = 51.776 ohms.
> >
> > The returning reflection is affectively a change in the circuit
> > conditions. Using
> > the source impedance of 0 plus the 50 ohm resistor means the
> > reflection sees 50
> > ohms, so there is no reflection.
> >
> > Using your approach of computing a resistance from the instantaneous
> > voltage and
> > current yeilds a constantly changing resistance. The reflection would
> > alter this
> > computed resistance. This change in resistance would then alter the
> > reflection
> > which would change the resistance. Would the answer converge?
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> > The only approach that works is to use the conventional approach of
> > considering
> > that a voltage source has an impedance of 0.
> >
> The overriding issue is to account for all the power, which we are having a hard time doing. The current is flowing the wrong way for the source voltage at Ps(91) so the source is absorbing power. That negates the idea that the source has an impedance of zero when we also assign the source a voltage.
>
> > > Of course the result is a another reflection. Is this the idea you were trying to communicate Cecil?
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> > > To me, this is destructive interference at work, so all the power in the reflected wave does not simply disappear into the resistor Rs on the instant basis.
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> > I agree with latter, but not for the reason expressed. Rather, because
> > the imputed
> > power of the reflected wave is a dubious concept. This being because

> > it is impossible
> > to account for this power.
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> Does it help to notice that we are applying the power through two wires/paths. We then divide the power in half and say that the power to the resistor from the close half flows seamlessly from source to resistor. On the other hand, the second half of the source power flows through the transmission line and we say that it may never get to the resistor. Something is wrong with this logic.
>
> If we can't account for the power, it is because we are doing the accounting incorrectly.
>
> >
> > > clip
> > >
>
> > > Yes. I don't want to force my conventions onto you, so I am trying to understand yours while insisting that the answers from each convention must be the same.
> >
> > >I think we both agree that the reflections are carrying power now.
> >
> > Not I. Not until the imputed power can be accounted for.
> >
> > ...Keith
>
> I am convinced that accounting for the power can be done on an instant basis, but neither of us has done it on a mutually acceptable basis yet. Maybe if we pursue the trig identity
> sin(x) + sin(x+90) = 1, we can have a constant reference and avoid mixing forward and reflected powers?
> --
> 73, Roger, W7WKB

--
73, Roger, W7WKB

3955. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 15:01:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <YuMJj.290$GE1.197@nlpi061.nbdc.sbc.com>
Source record: 26427

Roger Sparks wrote:
> The overriding issue is to account for all the power, which we are having a hard time doing. The current is flowing the wrong way for the source voltage at Ps(91) so the source is absorbing power. That negates the idea that the source has an impedance of zero when we also assign the source a voltage.

Consider that what you are seeing is the flip side of the interference at the source resistor. When a local source is present, it can certainly absorb destructive interference energy and supply constructive interference energy. The following example has identical steady-state conditions but brings Pfor1 and Pref1 into play for the instantaneous values. I suspect that Pref1 is being completely ignored in the present analysis.

Vs(t)---1WL 50 ohm---Rs---1WL 50 ohm---+j50
Pfor1--> Pfor2-->
<--Pref1 <--Pref2

> If we can't account for the power, it is because we are doing the accounting incorrectly.

Try the above example and maybe it will become clear.

Pref1 = Pfor1(rho1^2) + Pref2(1-rho2^2) + interference1

Pfor2 = Pfor1(1-rho1^2) + Pref2(rho2^2) + interference2

The source power doesn't appear directly in the equations and need not be considered at all.

Pfor1 + Pref2 + P.Rs = Pfor2 + Pref1 (all average)

I suspect the above equation will account for all the energy components even at the instantaneous level such that:

Pfor1(t) + Pref2(t) + P.Rs(t) = Pfor2(t) + Pref1(t)

Please note that all of these power components exist when the two transmission lines are removed so this analysis is probably the key to understanding what is wrong with the earlier analysis.
--
73, Cecil http://www.w5dxp.com

3956. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 15:40:21 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <47f79d66$0$1107$4c368faf@roadrunner.com>
Source record: 26428

<derekbluey@gmail.com> wrote in message
news:927ebca3-724e-4394-b7cd-0b8ef317731f@i36g2000prf.googlegroups.com...
>
>> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
>
>> > > You are thinking wrong.
>>
>> > you might as well plonk him, he is either a persistent troll or totally
>> > convinced that only he has the proper view of the world. in either
>> > case you
>> > are fighting a losing battle.
>
>
> Two perfect examples of a closed mind, but not to worry
> enlightenment will be along shortly.
>
> Derek

Enlightenment will surely come if Art connects that antenna to the KW amp he
claims to have.

Go back to Art discription of his antenna.IT sounds to me as if it evolved
from a double bazooka.

Make a bazooka antenna with these mods:
.
Forget about the ladder line part of the dipole and make it all like the
center coax section.

Replace the coax section with lamp cord

Now make it fit in a couple of shoe boxes by coiling it all up.

Isnt this a good discription of Art's antenna?

Jimmie

3957. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 17:14:24 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <a3ad78ed-17c2-4802-8188-8211a52ee4e2@24g2000hsh.googlegroups.com>
Source record: 26429

On Apr 5, 10:40 am, "Jimmie D" <GFEN...@carolina.rr.com> wrote:
> <derekbl...@gmail.com> wrote in message
>
> news:927ebca3-724e-4394-b7cd-0b8ef317731f@i36g2000prf.googlegroups.com...
>
>
>
> >> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
>
> >> > > You are thinking wrong.
>
> >> > you might as well plonk him, he is either a persistent troll or totally
> >> > convinced that only he has the proper view of the world. in either
> >> > case you
> >> > are fighting a losing battle.
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> > Two perfect examples of a closed mind, but not to worry
> > enlightenment will be along shortly.
>
> > Derek
>
> Enlightenment will surely come if Art connects that antenna to the KW amp he
> claims to have.
>
> Go back to Art discription of his antenna.IT sounds to me as if it evolved
> from a double bazooka.
>
> Make a bazooka antenna with these mods:
> .
> Forget about the ladder line part of the dipole and make it all like the
> center coax section.
>
> Replace the coax section with lamp cord
>
> Now make it fit in a couple of shoe boxes by coiling it all up.
>
> Isnt this a good discription of Art's antenna?
>
> Jimmie

Oh my! My antenna has been revealed to allI .
You just can't stop progress from inquisitive eyes
Now Jimmy, go ahead and make that antenna
and surprise the World

Art

3958. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 18:25:42 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <YTk3L0AmQ89HFwNe@b-howie.demon.co.uk>
Source record: 26430

In message <6jSIj.25050$6J3.10697@newsfe13.phx>, "Jim, K7JEB"
<k7jeb_2@yahoo.com> writes
>
>Land mobile and aircraft radios almost invariably
>use vertically polarized antennas. That wave
>polarization is generally maintained under conditions
>of reflection and refraction over short- and long-
>distance paths. For polarization rotation to occur
>during propagation, the medium generally must be
>birefringent (eg: the ionosphere). This rarely occurs
>with terrestrial waves.

The local 2m beacon (about 80 miles north and shielded by a local hill
) here is horizontally polarised. However if I beam south it is much
stronger on vertical polarisation. I have no idea why.

Brian GM4DIJ
--
Brian Howie

3959. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 19:10:15 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080405121015.858a00d4.rsparks@elltel.net>
Source record: 26431

On Sat, 05 Apr 2008 10:01:13 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > The overriding issue is to account for all the power, which we are having a hard time doing. The current is flowing the wrong way for the source voltage at Ps(91) so
> the source is absorbing power. That negates the idea that the source
> has an impedance of zero when we also assign the source a voltage.
>
> Consider that what you are seeing is the flip side of the
> interference at the source resistor. When a local source is
> present, it can certainly absorb destructive interference
> energy and supply constructive interference energy. The
> following example has identical steady-state conditions
> but brings Pfor1 and Pref1 into play for the instantaneous
> values. I suspect that Pref1 is being completely ignored
> in the present analysis.
>
> Vs(t)---1WL 50 ohm---Rs---1WL 50 ohm---+j50
> Pfor1--> Pfor2-->
> <--Pref1 <--Pref2
>

I think this would be right on the average basis. Because any sine waves of identical frequency can ultimately be added to make one wave, we can describe a single sine wave on the source side and another wave on the load/reflection side. There is no need for constructive or destructive interference as part of the final sine wave description.

On the other hand, if we want to understand how the final wave is assembled for each side of the resistor, we need the idea of constructive and destructive interference. Your pictorial showed only the single reflection, but as you have explained previously, there are many more reflections between the resistor and +j50 points until the power on the +j50 side finally stabalizes to some power level.

It seems to me like my spreadsheet found at

http://www.fairpoint.net/~rsparks/Smooth%20Power%20Reflection.pdf

captures a description of the forward and reflected waves as a single equation for each side of the resistor. The forward wave is y*sin(t) and reflected wave is y*sin(t+90).

If we want to learn how to find out how the source load begins at 100 ohms resistive and changes to 70.7 ohms reactive, we can either notice how the peak current has shifted from resistive to reactive (45 degree) from the combined waves described on my spreadsheet, or we can add all the reflections on each side of the resistor and come to the combined wave after many additions of ever smaller reflections.

> > If we can't account for the power, it is because we are doing the accounting incorrectly.
>
> Try the above example and maybe it will become clear.
>
> Pref1 = Pfor1(rho1^2) + Pref2(1-rho2^2) + interference1
>
> Pfor2 = Pfor1(1-rho1^2) + Pref2(rho2^2) + interference2
>
Interference1 and interference2 would be the combined effects of successive ever smaller reflections. Frankly, I don't see that combining the smaller reflections in this way to be of much value. It is like saying that the first reflection is special and the subsequent reflections equally special so we will give subsequent refections a group name, "interference". To me, all the reflections are "interference" and must be either added or subtracted in the same manner.

> The source power doesn't appear directly in the equations
> and need not be considered at all.

We have to have a starting point, which must be the source power. How could we avoid having a starting point?
>
> Pfor1 + Pref2 + P.Rs = Pfor2 + Pref1 (all average)
>
> I suspect the above equation will account for all the
> energy components even at the instantaneous level such
> that:
>
> Pfor1(t) + Pref2(t) + P.Rs(t) = Pfor2(t) + Pref1(t)
>
> Please note that all of these power components exist
> when the two transmission lines are removed so this
> analysis is probably the key to understanding what
> is wrong with the earlier analysis.
> --

I think this equation is missing some terms, reflections 2,3,4...n.

--
73, Roger, W7WKB

3960. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 19:41:00 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <xBQJj.28314$6J3.27277@newsfe13.phx>
Source record: 26432

Brian Howie, GM4DIJ, wrote:
> The local 2m beacon (about 80 miles north and
> shielded by a local hill) here is horizontally
> polarised. However if I beam south it is much
> stronger on vertical polarisation. I have no idea
> why.

Nor do I, really. It could be that a close-by
piece of metal is oriented just-so to act as a
passive re-radiator for both horizontally and
vertically polarised waves (ie: it's at a
45-degree angle to both). It could be that your
beam actually has a relatively large, horizontally
polarised response in its back lobe. Or that
there is some interaction between the beam and its
(randomly polarised) feedline. Or that you live
in an anomalous neighborhood. ;-) ;-) ;-)

The sweepingly general statement I made about
radio waves not changing their polarity with
distance was made with the unstated assumption of
a propagation path relatively free of scattering
objects (re-radiators) and having a direct
line-of-sight path between transmitting and
receiving antennas.

Jim, K7JEB

3961. Re: W9INN Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 19:52:16 UTC
From: ahso#1 <columbus@evuygt.com>
Message-ID: <QLQJj.112$N62.103@trndny07>
Source record: 26433

"Ron" <rons533@ptd.net> wrote in message
news:6eGdnXtOxZ1TX2vanZ2dnUVZ_uSgnZ2d@ptd.net...
>I am looking for information on how to build a W9INN 42' dipole that is
>supossed to cover 10-15-20-40 meters. I understand that he is a silent key
>and that his antennas worked great. Googled and found a lot of
>information but nothing on measurments or how to build one.

Try an extended double zepp for 10 meters it works on 10-40 with a tuner .

3962. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 19:56:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <SPQJj.252$mB3.214@nlpi068.nbdc.sbc.com>
Source record: 26434

Roger Sparks wrote:
> We have to have a starting point, which must be the source power. How could we avoid having a starting point?

We are analyzing a resistor isolated from the source and load
by 1WL of ideal feedline on each side. All we need are the
steady-state values of Pfor1, Pref1, Pfor2, and Pref2. It's
much like an s-parameter analysis of a 4-terminal box with
a 50 ohm series resistor. If we know a1 (Vfor1) and a2 (Vref2),
that is all that needs to be known to complete the analysis.
We don't actually need to know anything about the source and
the load if a1 and a2 are given.

> I think this equation is missing some terms, reflections 2,3,4...n.

The equation already contains all of those "missing'
terms because it is steady-state and all of those
terms have already been added in to the total.
--
73, Cecil http://www.w5dxp.com

3963. Re: W9INN Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 20:00:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vTQJj.253$mB3.43@nlpi068.nbdc.sbc.com>
Source record: 26435

ahso#1 wrote:
> "Ron" <rons533@ptd.net> wrote in message
> news:6eGdnXtOxZ1TX2vanZ2dnUVZ_uSgnZ2d@ptd.net...
>> I am looking for information on how to build a W9INN 42' dipole that is
>> supossed to cover 10-15-20-40 meters. I understand that he is a silent key
>> and that his antennas worked great. Googled and found a lot of
>> information but nothing on measurments or how to build one.
>
> Try an extended double zepp for 10 meters it works on 10-40 with a tuner .

A G5RVjr will perform slightly better on 40m and
also perform well on 20m, 10m, and 6m.
--
73, Cecil http://www.w5dxp.com

3964. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-05 22:28:59 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080405152859.fe322ecb.rsparks@elltel.net>
Source record: 26436

On Sat, 05 Apr 2008 14:56:35 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > We have to have a starting point, which must be the source power. How could we avoid having a starting point?
>
> We are analyzing a resistor isolated from the source and load
> by 1WL of ideal feedline on each side. All we need are the
> steady-state values of Pfor1, Pref1, Pfor2, and Pref2. It's
> much like an s-parameter analysis of a 4-terminal box with
> a 50 ohm series resistor. If we know a1 (Vfor1) and a2 (Vref2),
> that is all that needs to be known to complete the analysis.
> We don't actually need to know anything about the source and
> the load if a1 and a2 are given.
>
> > I think this equation is missing some terms, reflections 2,3,4...n.
>
> The equation already contains all of those "missing'
> terms because it is steady-state and all of those
> terms have already been added in to the total.
> --
> 73, Cecil http://www.w5dxp.com

From your previous posting, you gave the equation

Pfor1 + Pref2 + P.Rs = Pfor2 + Pref1 (all average)

Where Pfor1 and Pref2 were toward the resistor, and Pfor2 and Pref1 were away from the resistor. This equation seems to assume that the power to the resistor is zero. This is because the same current must flow in Pfor1 and Pfor2, and the same current in Pref2 and Pref1. The voltage drop through the resistor only happens when the circuit is complete on both sides of the resistor.

If we try to separate them as you are suggesting, we would have to recognize that it is also correct to say that

Pfor1 + Pref2 = Pfor2 + Pref1 + P.Rs (all average)

This is true because power only flows when the circuit is complete, and we can not say all the power comes from the left, or from the right. The power only flows when both are connected so the power must come from both sides.

There will never be one answer for your equation, unless, as you suggest, a1 and a2 are given.

--
73, Roger, W7WKB

3965. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 03:52:44 UTC
From: "Bruce W. Ellis" <ellis@means.net>
Message-ID: <xOXJj.55$6B1.40@newsfe06.lga>
Source record: 26437

On Sat, 5 Apr 2008 15:28:59 -0700, Roger Sparks <rsparks@elltel.net>
wrote:

>BIG SNIPPAGE

Why don't you two take this to private email?

3966. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 10:17:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6r1Kj.185$FF6.118@newssvr29.news.prodigy.net>
Source record: 26438

Roger Sparks wrote:
> Pfor1 + Pref2 + P.Rs = Pfor2 + Pref1 (all average)

Sorry for the obvious typo. The sign of P.Rs should
have been minus.

> This equation seems to assume that the power to the resistor is zero.

No, these are really basic concepts. The energy flow away
from a junction is equal to the energy flow into the
junction minus the dissipation in the junction.

(Pfor1 + Pref2) is the energy flow into the junction

P.Rs is the dissipation in Rs

(Pfor2 + Pref1) is the energy flow away from the junction.

(Pfor1 + Pref2) - P.Rs = (Pfor2 + Pref1) or

(Pfor1 + Pref2) = (Pfor2 + Pref1) + P.Rs

> There will never be one answer for your equation, unless, as you suggest, a1 and a2 are
given.

a1 and a2 *are* given - at least indirectly so they can be
calculated. Since we know Vs, Rs, and ZL, and given the two
1WL feedlines, we can easily calculate a1 and a2.
--
73, Cecil http://www.w5dxp.com

3967. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 11:02:55 UTC
From: Mike <emce@iinet.net.au>
Message-ID: <47f8ade4$0$13270$5a62ac22@per-qv1-newsreader-01.iinet.net.au>
Source record: 26439

Lets put the 'Rest of the Story' to bed before it becomes 'The Never Ending
Story' or are we too late already.
Mike. VK6MO
"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:6r1Kj.185$FF6.118@newssvr29.news.prodigy.net...
> Roger Sparks wrote:
>> Pfor1 + Pref2 + P.Rs = Pfor2 + Pref1 (all average)
>
> Sorry for the obvious typo. The sign of P.Rs should
> have been minus.
>
>> This equation seems to assume that the power to the resistor is zero.
>
> No, these are really basic concepts. The energy flow away
> from a junction is equal to the energy flow into the
> junction minus the dissipation in the junction.
>
> (Pfor1 + Pref2) is the energy flow into the junction
>
> P.Rs is the dissipation in Rs
>
> (Pfor2 + Pref1) is the energy flow away from the junction.
>
> (Pfor1 + Pref2) - P.Rs = (Pfor2 + Pref1) or
>
> (Pfor1 + Pref2) = (Pfor2 + Pref1) + P.Rs
>
>> There will never be one answer for your equation, unless, as you suggest,
>> a1 and a2 are given.
>
> a1 and a2 *are* given - at least indirectly so they can be
> calculated. Since we know Vs, Rs, and ZL, and given the two
> 1WL feedlines, we can easily calculate a1 and a2.
> --
> 73, Cecil http://www.w5dxp.com

3968. Re: through glass coax coupling

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 11:12:02 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <65rphlFhhkvoU1@mid.individual.net>
Source record: 26440

Haines Brown wrote:
> ... Options are limited because I'm at the eighth story of a steel
> high-rise, and the enamled metal outside surface material doesn't lend
> itself to drilling. In any case, I don't own it and wouldn't feel
> right about destroying property not mine...

Have the window replaced and leave a space at the bottom
of the pane for a plexiglas feed through panel.

When you move, have the window replaced again.

Couple hundred bucks, it's done right, nothing
is destroyed.

Craig 'Lumpy' Lemke

www.n0eq.com

3969. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 12:48:10 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <8ef0b714-a07c-4d54-bb10-531b301a59cf@z24g2000prf.googlegroups.com>
Source record: 26441

On Apr 6, 7:02 am, "Mike" <e...@iinet.net.au> wrote:
> Lets put the 'Rest of the Story' to bed before it becomes 'The Never Ending
> Story' or are we too late already.

Too late. The first reference I could find in which Cecil is
chasing the imputed energy in reflected waves is "Is Maxwell
wrong?", posted December 31, 1994.

Soon to be a decade and a half.

...Keith

3970. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 13:38:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <1o4Kj.328$%41.119@nlpi064.nbdc.sbc.com>
Source record: 26442

Mike wrote:
> Lets put the 'Rest of the Story' to bed before it becomes 'The Never Ending
> Story' or are we too late already.

Do you have anything technical to contribute to
resolving the on-topic thread issues? If not,
it is very likely to continue until it is
resolved.
--
73, Cecil http://www.w5dxp.com

3971. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 13:42:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pr4Kj.329$%41.71@nlpi064.nbdc.sbc.com>
Source record: 26443

Keith Dysart wrote:
> Soon to be a decade and a half.

One would think that by now someone would have
figured it out.
--
73, Cecil http://www.w5dxp.com

3972. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 18:09:47 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a1e12ac3-cc03-4a10-a969-f9bfc64b8fa2@8g2000hse.googlegroups.com>
Source record: 26444

On Apr 6, 9:42 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Soon to be a decade and a half.
>
> One would think that by now someone would have
> figured it out.

Perhaps, like the search for Sasquatch*, doomed to failure
because of the object's non-existance.

...Keith

* Substitute any of: Yeti, Nessie, Champ, Bigfoot,
Memphremagog Monster, Ogopogo, Reflected Wave Power.

3973. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 19:28:50 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <Jv9Kj.21956$zG4.6229@newsfe22.ams2>
Source record: 26445

Finally got the batteries charged, discharged and charged again. I have
managed to fully charge them now.

How long should they last for with the MFJ-259 left on continuously being
used?

Is it normal to only get 10 - 15 minutes worth of on time before getting the
low battery warning on the MFJ?

Also the MFJ-259 is new. What is the best ways to check it to make sure its
working properly?

Thanks

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:prmdnfFiSd1-wmranZ2dnUVZ8uudnZ2d@pipex.net...
>> If you're using your MFJ-259 for several hours per week, standard 2600
>> NiMH cells may be a good choice. If you use the analyzer only
>> occasionally, I think you'll be happier with either NiCd, or
>> low-self-discharge 2000/2100 NiMH.
> ==
> NiCad and NiMH batteries (usually having a capacity exceeding 400mAh)
> which need to perform at all times I normally charge constantly with 10
> mA when not in use. This trickle charge level keeps them in good
> condition.
> I have a Wahl ISOTIP 2.4 V soldering iron which in this way is always
> available. When in use I switch the charging current to 300 mA
>
> Frank GM0CSZ / KN6WH
>

3974. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 19:49:44 UTC
From: nm5k@wt.net
Message-ID: <fd057791-bb34-4ec6-a732-c5fd4826037d@1g2000prg.googlegroups.com>
Source record: 26446

On Apr 2, 11:54 am, dpl...@radagast.org (Dave Platt) wrote:

> Another possibilty is that the 2600 mAh cells are actually OK, but
> were delivered to you in a completely-run-down state.

That could well be the case. I just got a new cell phone
that had batteries that had no charge whatsoever.
At first the phone would not recognize them and start
charging. I'd check the voltage and zero.
I tried manually charging a small bit with a couple
of wires from a power source to see if I could kick start
em.
I'm not sure if that did the trick, but the phone finally
noticed the batteries and started charging.
There was nothing wrong with them, as when fully
charged, they last as long or longer than any of
my others.

3975. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 20:21:00 UTC
From: dplatt@radagast.org
Message-ID: <cunnc5-7hf.ln1@radagast.org>
Source record: 26447

In article <Jv9Kj.21956$zG4.6229@newsfe22.ams2>,
Barrett <barrett@blueyounder.co.uk> wrote:

>Finally got the batteries charged, discharged and charged again. I have
>managed to fully charge them now.

>How long should they last for with the MFJ-259 left on continuously being
>used?

The MFJ 269 manual says that it draws a maximum of 150 mA on HF and
VHF, and max 250 mA on UHF. Given the similarity of the instruments
I'd guess that the 259's current drain is similar to that of the 269
on HF/VHF.

This would suggest a useful run-time of around 12 hours for
fully-charged 2000 mAh cells, and perhaps 16 hours for the
larger-capacity 2500 mAh types. You'll get more time if the MFJ goes
into power-saving mode.

>Is it normal to only get 10 - 15 minutes worth of on time before getting the
>low battery warning on the MFJ?

If you're getting a flashing low-battery warning after only 10-15
minutes of use with freshly-charged cells - no, that's not good. It
would suggest to me that either one (or more) of the cells in the
battery stack is defective (or not fully charged) or that the MFJ's
low-battery detector is misadjusted.

Don't mistake the flashing low-battery warning, with the "display goes
mostly blank" sleep mode. The latter would be expected after some
minutes of non-use, while the former should not appear for hours.

NiCd and NiMH cells have a rather flat discharge characteristic - the
voltage remains almost the same across a broad part of the discharge
curve (from 90% charged to 10% charged). By the time that the voltage
starts to drop off, there's very little charge left in the cell, and
you have little warning.

Well-designed devices which were designed to run on NiCd batteries
will often have a low-voltage shutoff circuit, which deliberately
turns off the device once the voltage hits the "almost drained" knee
point of the curve (nominally 1.0 volts per cell or so). This is done
to avoid "over-discharging" some cells in the battery (continuing to
pull current through them after they're completely exhausted, but
while other cells in the battery still have some charge left).
Overdischarging can permanently damage a NiCd or NiMH cell.

I suggest that you try this: fully charge the cells. Put 'em in the MFJ. Turn it on. Let it run until the low-battery warning appears. Then, with the MFJ still turned on, use a digital voltmeter to carefully measure the voltage appearing across each of the cells in the battery, and across the full battery stack.

Under these conditions (fresh charge, little discharging, and a low current drain) the stack ought to be reading at least 12 volts, and probably more than that.

If you find a "freshly-charged" cell that is not reading at least 1.2 volts under these conditions, it's probably bad.

>Also the MFJ-259 is new. What is the best ways to check it to make sure its
>working properly?

Test a variety of known-value loads (e.g. 25, 50, and 100-ohm resistors) and confirm that the MFJ's readings are not unreasonably wrong.

Cut a length of coax of a known type, short the far end, perform the "velocity of propagation" tests shown in the manual. Typically a coax with a solid polyethylene dielectric will have a VOP of around 0.66, while a foamed-poly dielectric cable will calculate out at around 0.8 or so.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

3976. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 21:39:07 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%pbKj.277$7Z2.120@newssvr12.news.prodigy.net>
Source record: 26448

Keith Dysart wrote:
> Perhaps, like the search for Sasquatch*, doomed to failure
> because of the object's non-existance.

I agree that the conjugate of Sasquatch is
probably non-existent. :-)
--
73, Cecil http://www.w5dxp.com

3977. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 21:40:37 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <prbKj.278$7Z2.257@newssvr12.news.prodigy.net>
Source record: 26449

Barrett wrote:
> Is it normal to only get 10 - 15 minutes worth of on time before getting the
> low battery warning on the MFJ?

That's exactly why I went to a gelcell for my
MFJ-259B. It will last all day.
--
73, Cecil http://www.w5dxp.com

3978. Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 21:43:51 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47f9440d$0$36449$4fafbaef@reader5.news.tin.it>
Source record: 26450

I have recently mounted a 6-meter long Yagi. The driven element is a (non-folded) dipole whose impedance is brought up to 200 ohm by significantly shortening it (so introducing a high series capacitive reactance) and using a (rather small) hairpin to resonate the residual reactance. The system is fed by a 4-to-1 balun (200-to-50 ohm) made of a half-wavelength cable. The SWR at resonance is almost perfect, but the SWR response vs. frequency is very sharp, this meaning that the system has a high Q. I am wondering whether such a 200-ohm feed technique could cause non negligible losses caused by the higher current circulating in the hairpin (due to its low reactance as well as to the high voltage on the high-impedance feed point, that is 200 ohm + reactance of the shortened driven element). 73 Tony I0JX

3979. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 22:09:04 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <9339500f-de53-4269-91d2-4a6a75a2b5a3@j1g2000prb.googlegroups.com>
Source record: 26301

On 6 abr, 23:43, "Antonio Vernucci" <vernu...@tin.it> wrote:
> I have recently mounted a 6-meter long Yagi. The driven element is a
> (non-folded) dipole whose impedance is brought up to 200 ohm by significantly
> shortening it (so introducing a high series capacitive reactance) and using a
> (rather small) hairpin to resonate the residual reactance. The system is fed by
> a 4-to-1 balun (200-to-50 ohm) made of a half-wavelength cable. The SWR at
> resonance is almost perfect, but the SWR response vs. frequency is very sharp,
> this meaning that the system has a high Q. I am wondering whether such a 200-ohm
> feed technique could cause non negligible losses caused by the higher current
> circulating in the hairpin (due to its low reactance as well as to the high
> voltage on the high-impedance feed point, that is 200 ohm + reactance of the
> shortened driven element). 73 Tony I0JX

Hello Antonio,

When I understand you correctly, the series component of the dipole input impedance is 200 Ohm? I would expect value lower then 70 Ohms.

When 200 Ohms real component of Zi, you used a series hairpin to cancel the capacitive component. You can guess the loss by calculating the AC resistance of the pin.

Assuming homogeneous current distribution around the circumference, you can calculate the AC resistance with (assuming length of hairpin < 0.15 lambda):

Rac = 80*10^-9*sqrt(f)*le/d , Rac in Ohm, f in Hz, le (wire length) in m, d (diameter of wire) in m, valid for copper. For other materials (non magnetic), when conductance is factor 4 less (so 4 times higher spec. resistance), Rac doubles.

When the result for your hairpin << 200 Ohm, the loss is negligible.

In case of a parallel pin, you can use same technique, but in that case you have to calculate the inductance of the pin. With the inductance you know the reactance and the current that runs through it (for example with 100Vrms across it). With Rac you can calculate the power loss.

Hope this helps a bit.

Best regards,

Wim
PA3DJS
www.tetech.nl

remove abc from the mail address.

3980. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-06 22:33:35 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47f94fb5$0$36448$4fafbaef@reader5.news.tin.it>
Source record: 26302

> When I understand you correctly, the series component of the dipole
> input impedance is 200 Ohm? I would expect value lower then 70
> Ohms.

the series component is probably just 25 ohm or so (due to the effect of the parasitic elements), but it is brought up to 200 ohm by shortening the dipole length and putting an hairpin in parallel (very well known technique to increase impedance). As a matter fact it matches very well with a 4-to-1 balun

> When 200 Ohms real component of Zi, you used a series hairpin to
> cancel the capacitive component.

No, the hairpin is in parallel to the dipole

> You can guess the loss by calculating
> the AC resistance of the pin.
>
> Assuming homogeneous current distribution around the circumference,
> you can calculate the AC resistance with (assuming length of hairpin <
> 0.15 lambda):
>
> Rac = 80*10^-9*sqrt(f)*le/d , Rac in Ohm, f in Hz, le (wire length)
> in m, d (diameter of wire) in m, valid for copper. For other
> materials (non magnetic), when conductance is factor 4 less (so 4
> times higher spec. resistance), Rac doubles.
>
> When the result for your hairpin << 200 Ohm, the loss is negligible.
>
> In case of a parallel pin, you can use same technique, but in that
> case you have to calculate the inductance of the pin. With the
> inductance you know the reactance and the current that runs through it
> (for example with 100Vrms across it). With Rac you can calculate the
> power loss.

Having all data available, it is clearly possible to calculate losses using the Ohm law. Mine was a question of more general nature. Does anyone have direct experience on whether the extra loss of a 200-ohm hairpin match (with respect to the more conventional 50-ohm hairpin match) is in pratice noticeable?

Thanks & 73

Tony I0JX

3981. china wholesale cheap mauri shoes louis vuitton gucci handbags & wallets china suppliers www.voguesonline.net

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 01:07:09 UTC
From: cnsneakers86@yahoo.com.cn
Message-ID: <2d331c56-5dd7-42fb-80fe-e45d7e812238@v32g2000prd.googlegroups.com>
Source record: 26303

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3982. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 01:25:48 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <fJ6dnVn0S5Oa5WTanZ2dnUVZ_quhnZ2d@comcast.com>
Source record: 26304

"Antonio Vernucci" <vernucci@tin.it> wrote in message
news:47f9440d$0$36449$4fafbaef@reader5.news.tin.it...
>I have recently mounted a 6-meter long Yagi. The driven element is a
>(non-folded) dipole whose impedance is brought up to 200 ohm by
>significantly shortening it (so introducing a high series capacitive
>reactance) and using a (rather small) hairpin to resonate the residual
>reactance. The system is fed by a 4-to-1 balun (200-to-50 ohm) made of a
>half-wavelength cable. The SWR at resonance is almost perfect, but the SWR
>response vs. frequency is very sharp, this meaning that the system has a
>high Q. I am wondering whether such a 200-ohm feed technique could cause
>non negligible losses caused by the higher current circulating in the
>hairpin (due to its low reactance as well as to the high voltage on the
>high-impedance feed point, that is 200 ohm + reactance of the shortened
>driven element). 73 Tony I0JX
>
I wonder what you consider narrow bandwidth. 500 KHz seems to be about par
for a decent 6 m beam.

Tam/WB2TT

3983. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 02:09:40 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <dNednVZ6yqDSH2TanZ2dnUVZ_gOdnZ2d@comcast.com>
Source record: 26305

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:Jv9Kj.21956$zG4.6229@newsfe22.ams2...
> Finally got the batteries charged, discharged and charged again. I have
> managed to fully charge them now.
>
> How long should they last for with the MFJ-259 left on continuously being
> used?
>
> Is it normal to only get 10 - 15 minutes worth of on time before getting
> the low battery warning on the MFJ?
>
> Also the MFJ-259 is new. What is the best ways to check it to make sure
> its working properly?
>
> Thanks
>
For what it'sworth, I looked at an MFJ-269 manual, and it claims to trickle charge at 10 - 20 ma. At that rate it will take a long time to charge a 2600 maH battery. They say minimum Vbat is 11V, but mine gets flakey below 12. You might want to measure the under load battery voltage when it fails and when you think it is fully charged.

Tam/WB2TT

3984. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 02:20:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <-qidnTDq7ap4GWTanZ2dnUVZ_jKdnZ2d@easystreetonline>
Source record: 26306

Tam wrote:
> For what it'sworth, I looked at an MFJ-269 manual, and it claims to
> trickle charge at 10 - 20 ma. At that rate it will take a long time to
> charge a 2600 maH battery. They say minimum Vbat is 11V, but mine gets
> flakey below 12. You might want to measure the under load battery
> voltage when it fails and when you think it is fully charged.
>
> Tam/WB2TT

I don't think a 2600 mAh cell will ever become anywhere near fully charged at that charge rate. That's barely enough to maintain an existing charge.

Roy Lewallen, W7EL

3985. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 02:20:21 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <7dbe8f21-048b-4771-bcc6-0202f963bd6f@k37g2000hsf.googlegroups.com>
Source record: 26307

On Apr 5, 9:05 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Please expand on what it tells us "about what is wrong
> > with the analysis so far".
>
> You have not been able to tell where the instantaneous
> reflected energy goes. This new example should help
> you solve your problem.

It is not really my problem. It is only a problem for
those who expect the imputed power of a partial contributor
to superposition to represent a real energy flow.

> If your steady-state equations
> for the new example are not identical to the steady-
> state equations for the previous example, then something
> is wrong with your previous analysis.

I would fully expect the same results.

> IMO, something
> is obviously wrong with your previous analysis since
> it requires reflected waves to contain something other
> than ExH joules/sec, a violation of the laws of EM
> wave physics.

Not at all a violation. Just as one does not expect the
partial values of volts and currents during superposition
to produce a power value that represents a real energy
flow, one should not expect it from Es and Hs which are
the partial values being superposed.

>   feedline1   feedline2
> source---1WL 50 ohm---Rs---1WL 50 ohm---+j50
>
> The beauty of this example is that conditions at
> the source resistor, Rs, are isolated from any
> source of energy other than the ExH forward wave
> energy in feedline1 and the ExH reflected wave
> energy in feedline2. That's all the energy there
> is available at Rs and that energy cannot be denied.

I suppose we shall see when you complete the arithmetic.

...Keith

3986. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 02:20:43 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a75987e5-1279-470e-90ca-30f31d83f811@a1g2000hsb.googlegroups.com>
Source record: 26308

On Apr 5, 10:02 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > There was an 'if' there, wasn't there? Do you think
> > the 'if' is satisfied? Or not? The rest is useless
> > without knowing.
>
> Under the laws of physics governing transmission lines
> inserting an ideal 1WL line does not change the steady-
> state conditions. If you think it does, you have invented
> some new laws of physics.
>
> > You still have to explain where this destructive energy is stored
> > for those 90 degrees. Please identify the element and its energy
> > flow as a function of time.
>
> Your request is beyond the scope of my Part 1 article.
> If interference exists at the source resistor, the energy
> associated with the interference flows to/from the source
> and/or to/from the load. That condition is NOT covered in
> my Part 1 article. Please stand by for Part 2 which will
> explain destructive interference and Part 3 which will
> explain constructive interference.
>
> >> One advantage of moving the source voltage one wavelength
> >> away from the source resistor is that it is impossible for
> >> the source to respond instantaneously
>
> > You have previously claimed that the steady-state conditions
> > are the same (which I agree),
>
> Glad you agree so there is nothing stopping you from an
> analysis of the following example:

True, but as you say, the results will be the same.

> source---1WL 50 ohm---Rs---1WL 50 ohm---+j50
>   Pfor1-->   Pfor2-->
>   <--Pref1   <--Pref2
>
> Make Rs a 4-terminal network and a standard s-parameter
> analysis is possible.

Yes, but that would be an average analysis and we have already
seen how averages mislead.

> > but now you have moved to discussing
> > transients, for which the behaviour is quite different.
>
> Nope, you are confused. I am saying absolutely nothing about
> transients.

You did say: "One advantage of moving the source voltage one
wavelength away from the source resistor is that it is impossible
for the source to respond instantaneously."

The words "respond instantaneously" suggested transient, rather
than waiting for the system to settle.

> Why do you think an instantaneous power analysis
> during steady-state is not possible?

Haven't said that. In fact, I think that is what I have been
doing.

> > If you want to claim similarity, then you need to allow the
> > circuit to settle to steady state after any change. Instantaneous
> > response is not required if the analysis is only steady-state.

...Keith

3987. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 02:21:00 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <cc26a4a4-744e-4482-a2de-7fafcf56421a@m36g2000hse.googlegroups.com>
Source record: 26309

On Apr 5, 10:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> On Sat, 5 Apr 2008 03:06:18 -0700 (PDT)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Apr 4, 11:41 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Fri, 4 Apr 2008 06:30:08 -0700 (PDT)
>
> > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > On Apr 4, 1:29 am, Roger Sparks <rspa...@elltel.net> wrote:
> > [snip]
> > > > >Another way to figure the power to the source would be by using the voltage and
current through the source.
>
> > > > This is how I did it.
>
> > > > Taking Esource.50[90..91] = 0.03046 J as an example ...
>
> > > > Psource.50[90] = V * I
> > > >   = 0.000000 * 0.000000
> > > >   = 0 W
> > > > Psource.50[91] = -2.468143 * -0.024681
> > > >   = 0.060917 W
>
> > > > Using the trapezoid rule for numerical integration,
> > > > Esource.50[90..91] = ((Psource.50[90]+Psource.50[91])/2) * interval
> > > >   = ((0+0.060917)/2)*1
> > > >   = 0.030459 J
>
> > > > The other powers and energies in the spreadsheet are computed
> > > > similarly.
>
> > > > There was an error in the computation of the 'delta's; the sign was
> > > > wrong.
> > > > The spreadsheet available athttp://keith.dysart.googlepages.com/radio6
> > > > has
> > > > now been corrected. (And, for Cecil, this spreadsheet no longer has
> > > > macros
> > > > so it may be downloadable.)
>
> > > > To use this spreadsheet to compute my numbers above, set the formulae
> > > > for Vr.g and Ir.g in the rows for degrees 90 and 91 to zero.
>
> > > > > Using current and voltage, the power at time 91 degrees of the reflected wave is
1.234v*1.43868a= 1.775w. Over one second integrated, the energy should be 1.775 J.

>
> > > > I could not match to the above data to any rows, so I can't comment.
> > > > But
> > > > perhaps the explanation above will correct the discrepancy.
>
> > > I took a look at your revised spreadsheet entitled "Reflected45degrees-1.xls". Using the numbers from row 94 (91 degrees), the voltage developed at the source would be Vs = -2.468143v. The current folowing through the source would be found from Ig which is 1.389317a in todays version of the spreadsheet (it was 1.439a previously). The power flowing INTO the source is 2.468143* 1.389317 = 3.429032w. This is the power Ps found in Column 11.
>
> > > This returning power is all from the reflected wave.
>
> > I would not say this. The power *is* from the line, but this is Pg,
> > and it satisfies
> > the equation
> > Ps(t) = Prs(t) + Pg(t)
>
> > The imputed power in the reflected wave is Pr.g(t) and is equal to
> > -99.969541 W, at
> > 91 degrees. This can not be accounted for in any combination of Ps(91)
> > (-3.429023 W)
> > and Prs(91) (96.510050 W). And recall that expressing Cecil's claim
> > using instantaneous
> > powers requires that the imputed reflected power be accounted for in
> > the source
> > resistor, and not the source. This is column 26 and would require that
> > Prs(91) equal
> > 100 W (which it does not).
>
> Taking these numbers and adding the Psource.50[91] = -2.468143 * -0.024681 = 0.060917 W found previously above,
> we have Total = 0.060917 + 3.429023 + 96.510050 = 99.99999. Very close to 100w, but I am not sure of exactly what I am adding here.

Using my notation where Ptot = Pfor + Pref we have
Pg(t) = Pf.g(t) + Pr.g(t)
= 50 + 50 cos(2wt) + (-50 + 50 cow(2wt))
= 100 cos(2wt)
If you subtract Pr.g from Pf.g(t) you get 100. If you follow through
the math, you will
find that this is what you have done.
Ps.50[91] + (- Ps.0[91]) + Prs[91]
which is
2 * Pf.g[91] + (-Prs[91] - Pg[91]) + Prs[91]
which is
Pf.g[91] + Pf.g[91] - prs[91] - Pf.g[91] - Pr.g[91] + Prs[91]
which is
Pf.g[91] - Pr.g[91]

which is
100

> I think you are right, that we should always be able to add the power on the line to 100w if we truely account for the power at any instant. This results from the trig identity that sin(x) + cos(x) = 1. Sin(x+90)= cos(x) so sin(x)+sin(x+90)= 1. This explains why the sum of the forward power and reflected power should always equal 100w.

If I recall correctly, it is sin**2 + cos**2 = 1.

> Pg(t) is the result of a standing wave, containing power from Pf(x) and Pr(x+90).

This is one way of thinking of it, but it is less misleading to
consider
that Pg(t) describes the actual energy flow, just as Vg(t) describes
the
actual voltage and Ig(t) describes the actual current. Using
superposition
Vf, If, Vr and Ir can be derived and from these Pf and Pr.

> Only the power from Pr(x+90) is available to at a later time Prs(t+90+delta). Power from Pf(x+delta) is found in the transmission line.
>
> > > The source is acting like a resistor with an impedance of 2.468143/1.389317 = 1.776 ohms.
>
> > This is not a good way to describe the source. The ratio of the
> > voltage to the current
> > is 1.776 but this is not a resistor since if circuit conditions were
> > to change, the
> > voltage would stay the same while the current could take on any value;
> > this being
> > the definition of a voltage source. Since the voltage does not change
> > when the current
> > does, deltaV/deltaI is always 0 so the voltage source is more properly
> > described as
> > having an impedance of 0.
>
> > > As a result, the returning reflection does not truely see 50 ohms but sees 50 + 1.776 = 51.776 ohms.
>
> > The returning reflection is affectively a change in the circuit
> > conditions. Using
> > the source impedance of 0 plus the 50 ohm resistor means the
> > reflection sees 50
> > ohms, so there is no reflection.
>
> > Using your approach of computing a resistance from the instantaneous
> > voltage and
> > current yeilds a constantly changing resistance. The reflection would
> > alter this
> > computed resistance. This change in resistance would then alter the

> > reflection
> > which would change the resistance. Would the answer converge?
>
> > The only approach that works is to use the conventional approach of
> > considering
> > that a voltage source has an impedance of 0.
>
> The overriding issue is to account for all the power, which we are having a hard time doing. The current is flowing the wrong way for the source voltage at Ps(91) so the source is absorbing power. That negates the idea that the source has an impedance of zero when we also assign the source a voltage.

When a current flows out of a voltage source, the source is providing
energy. When
the current flows into it, the voltage source is absorbing energy. A
charging
battery is reasonable real world example.

> > > Of course the result is a another reflection. Is this the idea you were trying to communicate Cecil?
>
> > > To me, this is destructive interference at work, so all the power in the reflected wave does not simply disappear into the resistor Rs on the instant basis.
>
> > I agree with latter, but not for the reason expressed. Rather, because
> > the imputed
> > power of the reflected wave is a dubious concept. This being because
> > it is impossible
> > to account for this power.
>
> Does it help to notice that we are applying the power through two wires/paths. We then divide the power in half and say that the power to the resistor from the close half flows seamlessly from source to resistor. On the other hand, the second half of the source power flows through the transmission line and we say that it may never get to the resistor.
> Something is wrong with this logic.
>
> If we can't account for the power, it is because we are doing the accounting incorrectly.

And the error in the accounting may be the expectation that the
particular set of powers chosen should balance. Attempting to
account for Pr fails when Pr is the imputed power from a partial
voltage and current because such computations do not yield powers
which exist.

> > > clip
>
> > > Yes. I don't want to force my conventions onto you, so I am trying to understand yours while insisting that the answers from each convention must be the same.
>
> > >I think we both agree that the reflections are carrying power now.
>

> > Not I. Not until the imputed power can be accounted for.
>
> > ...Keith
>
> I am convinced that accounting for the power can be done on an instant basis, but neither of us has done it on a mutually acceptable basis yet. Maybe if we pursue the trig identity
> sin(x) + sin(x+90) = 1, we can have a constant reference and avoid mixing forward and reflected powers?

Except that it is sin squared + cos squared that equals one.

...Keith

3988. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 02:21:30 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <880e2e09-9441-4dd1-af9a-7e4ab7e565ea@m44g2000hsc.googlegroups.com>
Source record: 26310

On Apr 5, 11:01 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > The overriding issue is to account for all the power, which we are having a hard time doing. The current is flowing the wrong way for the source voltage at Ps(91) so
>
> the source is absorbing power. That negates the idea that the source
> has an impedance of zero when we also assign the source a voltage.
>
> Consider that what you are seeing is the flip side of the
> interference at the source resistor. When a local source is
> present, it can certainly absorb destructive interference
> energy and supply constructive interference energy. The
> following example has identical steady-state conditions
> but brings Pfor1 and Pref1 into play for the instantaneous
> values. I suspect that Pref1 is being completely ignored
> in the present analysis.
>
> Vs(t)---1WL 50 ohm---Rs---1WL 50 ohm---+j50
>   Pfor1-->   Pfor2-->
>   <--Pref1   <--Pref2
>
> > If we can't account for the power, it is because we are doing the accounting incorrectly.
>
> Try the above example and maybe it will become clear.
>
> Pref1 = Pfor1(rho1^2) + Pref2(1-rho2^2) + interference1
>
> Pfor2 = Pfor1(1-rho1^2) + Pref2(rho2^2) + interference2
>
> The source power doesn't appear directly in the equations
> and need not be considered at all.
>
> Pfor1 + Pref2 + P.Rs = Pfor2 + Pref1   (all average)
>
> I suspect the above equation will account for all the
> energy components even at the instantaneous level such
> that:
>
> Pfor1(t) + Pref2(t) + P.Rs(t) = Pfor2(t) + Pref1(t)
>
> Please note that all of these power components exist
> when the two transmission lines are removed so this
> analysis is probably the key to understanding what

> is wrong with the earlier analysis.

When the two transmission lines are removed, how can these imputed powers exist? What impedance did you assign to the non-existant section of line to permit you to compute these powers?

...Keith

3989. Seeking New FAQ/Intro Maintainers for rec.radio.amateur.*

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 06:05:01 UTC
From: rram@panix.com
Message-ID: <radio/ham-radio/recruitment-1-1207548301@panix.com>
Source record: 26311
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.info

```
Posted-By: auto-faq 3.3.2 beta (PGPMoose V2.0, Perl 5.005)
Archive-name: radio/ham-radio/recruitment
Revision: 1.1 2007/09/29 18:42:47
Posting-Frequency: posted monthly
URL: http://www.faqs.org/faqs/radio/personal-intro/

Changes followed by "|".

The rec.radio.info newsgroup, first established in 1993, has been
recently revived by an active moderation team. We are currently seeking
suitable information, FAQ, and bulletin articles from the entire
rec.radio.* newsgroup hierarchy for simultaneous cross-posting to our
newsgroup.

We are seeking a replacement maintainer for the following information
bulletin formerly posted to rec.radio.amateur.* (and currently archived
at http://www.faqs.org/faqs/radio/personal-intro/ ):

radio/personal-intro
Subject: Guide to the rec.radio Newsgroups
Maintainer: jeffreyh@Hawaii.Edu (Jeffrey Herman)
Last Posted: 9 Nov 2001 06:18:17 GMT
Posting-Frequency: 15th of each month

We are willing to provide any technical support necessary to get this
article updated and automatically posted again at a regular interval.
This would include establishing contact with the original maintainer for
any necessary permissions. We would prefer to seek a new, dedicated
maintainer at this time, rather than start auto-posting the original
article ourselves.

For more information about our newsgroup, see:

http://www.panix.com/~rram/usenet/rri/index.html

Please direct any comments, questions, or criticisms to
rec-radio-info-request@panix.com.
```

3990. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 09:05:14 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <14277847-0592-40fe-8bb3-cc675459671f@p25g2000hsf.googlegroups.com>
Source record: 26312

On 7 abr, 00:33, "Antonio Vernucci" <vernu...@tin.it> wrote:
> > When I understand you correctly, the series component of the dipole
> > input impedance is 200 Ohm? I would expect value lower then 70
> > Ohms.
>
> the series component is probably just 25 ohm or so (due to the effect of the
> parasitic elements), but it is brought up to 200 ohm by shortening the dipole
> length and putting an hairpin in parallel (very well known technique to increase
> impedance). As a matter fact it matches very well with a 4-to-1 balun
>
> > When 200 Ohms real component of Zi, you used a series hairpin to
> > cancel the capacitive component.
>
> No, the hairpin is in parallel to the dipole
>
>
>
> > You can guess the loss by calculating
> > the AC resistance of the pin.
>
> > Assuming homogeneous current distribution around the circumference,
> > you can calculate the AC resistance with (assuming length of hairpin <
> > 0.15 lambda):
>
> > Rac = 80*10^-9*sqrt(f)*le/d , Rac in Ohm, f in Hz, le (wire length)
> > in m, d (diameter of wire) in m, valid for copper. For other
> > materials (non magnetic), when conductance is factor 4 less (so 4
> > times higher spec. resistance), Rac doubles.
>
> > When the result for your hairpin << 200 Ohm, the loss is negligible.
>
> > In case of a parallel pin, you can use same technique, but in that
> > case you have to calculate the inductance of the pin. With the
> > inductance you know the reactance and the current that runs through it
> > (for example with 100Vrms across it). With Rac you can calculate the
> > power loss.
>
> Having all data available, it is clearly possible to calculate losses using the
> Ohm law. Mine was a question of more general nature. Does anyone have direct
> experience on whether the extra loss of a 200-ohm hairpin match (with respect to
> the more conventional 50-ohm hairpin match) is in pratice noticeable?
>
> Thanks & 73
>

> Tony I0JX

Hello Tony,

Given your data and some assumptions about hairpin construction and
use, loss is negligible.

Best regards,

Wim
PA3DJS
www.tetech.nl
please remove abc from the mail address.

3991. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 12:27:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GqoKj.1129$h75.548@newssvr27.news.prodigy.net>
Source record: 26313

Keith Dysart wrote:
> Just as one does not expect the
> partial values of volts and currents during superposition
> to produce a power value that represents a real energy
> flow, one should not expect it from Es and Hs which are
> the partial values being superposed.

Given two coherent EM waves, W1 and W2, we know
that the power in W1 is E1xH1 and the power
in W2 is E2xH2. That is simple physics.

No matter what the results of superposition
of those two waves, the total energy in both
waves must be conserved. That is simple physics.

If you would think about what happens to two
coherent light waves in free space, you wouldn't
be able to justify your assertion above.
--
73, Cecil http://www.w5dxp.com

3992. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 12:48:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FKoKj.911$V14.668@nlpi070.nbdc.sbc.com>
Source record: 26314

Keith Dysart wrote:
> When the two transmission lines are removed, how can
> these imputed powers exist? What impedance did you
> assign to the non-existant section of line to permit
> you to compute these powers?

I have very deliberately chosen and limited the
scope of the examples to a 50 ohm environment.
Those imputed powers are therefore whatever an
ideal 50 ohm directional wattmeter indicates.

The distributed network model also works for circuits
as it is a superset of the lumped circuit model.
--
73, Cecil http://www.w5dxp.com

3993. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 14:31:18 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <aa0e511e-13de-4363-b841-b8a2d1427e48@s33g2000pri.googlegroups.com>
Source record: 26315

On Apr 7, 8:27 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Just as one does not expect the
> > partial values of volts and currents during superposition
> > to produce a power value that represents a real energy
> > flow, one should not expect it from Es and Hs which are
> > the partial values being superposed.
>
> Given two coherent EM waves, W1 and W2, we know
> that the power in W1 is E1xH1 and the power
> in W2 is E2xH2. That is simple physics.
>
> No matter what the results of superposition
> of those two waves, the total energy in both
> waves must be conserved. That is simple physics.
>
> If you would think about what happens to two
> coherent light waves in free space, you wouldn't
> be able to justify your assertion above.

I did not expect you would be happy with the answer.

As long as you stick with simple assertions, followed
by sentences such as, "That is simple physics.",
spoken in a tone which says no further understanding
is necessary, you will be locked in the fruitless
search for the imputed reflected energy flow.

...Keith

3994. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 14:31:36 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <8d3d591e-8f8f-4ffe-ba04-ba28ab6a5a59@q27g2000prf.googlegroups.com>
Source record: 26316

On Apr 7, 8:48 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > When the two transmission lines are removed, how can
> > these imputed powers exist? What impedance did you
> > assign to the non-existant section of line to permit
> > you to compute these powers?
>
> I have very deliberately chosen and limited the
> scope of the examples to a 50 ohm environment.
> Those imputed powers are therefore whatever an
> ideal 50 ohm directional wattmeter indicates.

You seem to be saying that the answers would be
completely different if you chose a different
impedance for the non-existant transmission line.

Or even for the one wavelength line.

That does not make a very robust explanation.

...Keith

3995. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 15:00:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nGqKj.1138$h75.644@newssvr27.news.prodigy.net>
Source record: 26317

Keith Dysart wrote:
> I did not expect you would be happy with the answer.

If you ever comprehend that those RF waves in a
transmission line could just as easily be light
waves in free space, you will realize that your
"answer" violates the existing laws of physics,
i.e. EM waves whose energy content varies
according to your whim.
--
73, Cecil http://www.w5dxp.com

3996. Re: W9INN Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 15:05:24 UTC
From: Uncle_Tom_Bill@ureach.com
Message-ID: <c2662f44-23cd-4b06-b9cc-45e522181515@k37g2000hsf.googlegroups.com>
Source record: 26318

On Apr 4, 8:07 pm, "Ron" <rons...@ptd.net> wrote:
> I am looking for information on how to build a W9INN 42' dipole that is
> supossed to cover 10-15-20-40 meters. I understand that he is a silent key
> and that his antennas worked great. Googled and found a lot of information
> but nothing on measurments or how to build one.

You should be able to downl;oad the PDF file from this site with no
problem.

http://www.qsl.net/n0nv/w9inn.html

3997. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 15:36:23 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fa3f6d$0$36440$4fafbaef@reader5.news.tin.it>
Source record: 26319

> I wonder what you consider narrow bandwidth. 500 KHz seems to be about par
> for a decent 6 m beam.
>

This antenna shows an SWR of 1.7 at 150 kHz below the resonant frequency, where the SWR is just 1, so I consider it narrow. Another antenna I have, also using an hairpin match but at 50 ohm instead of 200 ohm, is by far broader. On both antennas I have about 100 feet of low-loss 1/4" Andrew hardline, so the SWR is only slightly influenced by cable loss.

Talking with the manfacturer, he told me that he preferred rasing the antenna impedance up to 200 ohm, instead than to 50 ohm, because a 4:1 cable balun can me more easily realized than a 1:1 balun. But doing so the feed system Q factor increases quite a lot, causing a significant bandwidth reduction. Moreover ohmic losses increase, due to the higher circulating currents (for a given RF power), but I am not able to predict whether such extra losses are significant or can be disregarded for all practical purposes.

73

Tony I0JX

3998. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 15:48:56 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <ftdfp8mnh1@news.jpl.nasa.gov>
Source record: 26320

Homer J wrote:
> Here is a reference to a technical look at short loop antennas from the
> 1950's by Wheeler.
>
> H. A. Wheeler, "Fundamental Limitations of Small Antennas", Proc. IRE,
> vol. 35, pp. 1479-1484
>

More specifically, the December 1947 issue

From a practical standpoint, this paper is quite useful, although it mixes effects of the matching network in with the antenna, which the more rigorous analyses don't. It also doesn't provide any backup for its assertion of the validity of the "radiansphere" or "radianlength", hence the equations might not be valid over all possible antennas.

Wheeler's 1975 paper ("Small Antennas", IEEE Trans Ant & Prop, V AP-23, #4, July 1975, pp462-469) revisits some of the stuff in the earlier paper and provides more backup and describes the limitations of the "radian sphere" model (which he defines as the volume within which the reactive power density is higher than the radiation power density).

Of particular interest to would-be miracle small antenna builders is that he specifically mentions the problems if there is anything conductive or magnetic within the empty space oustide the "antenna" but within the radiansphere (defined as lambda/2pi). The latter paper also discusses some electrically small antennas (for 15 kHz, lambda=20km)

> This is can found in a technical library with access to the IEEE
> publications web site (e.g. university or military tech library)
>
>
> Thane-fer
> Homer
>
>
> "Dave Platt" <dplatt@radagast.org> wrote in message
> news:brbdc5-ru6.ln1@radagast.org...
>
>>>> d. If a receiving signal is well polarized in
>>>> one direction, say vertically, how much loss
>>>> would one expect if the receiving antenna is
>>>> oriented such that its preferred polarization is
>>>> horiz. ?
>>>
>>>

>>> The usual figure one sees bandied about is 20 dB.
>>
>>
>> I've seen it quoted as "up to 30 dB". That's probably under ideal
>> (or ideally-bad) conditions, though.
>>

20 dB is probably representative of the "polarization purity" of a run
of the mill antenna in its preferred direction.

3999. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 16:09:04 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <d181a03b-aabf-4c84-a544-1e1d339dcae8@s13g2000prd.googlegroups.com>
Source record: 26321

On Apr 7, 10:48 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Homer J wrote:
> > Here is a reference to a technical look at short loop antennas from the
> > 1950's by Wheeler.
>
> > H. A. Wheeler, "Fundamental Limitations of Small Antennas", Proc. IRE,
> > vol. 35, pp. 1479-1484
>
> More specifically, the December 1947 issue
>
> From a practical standpoint, this paper is quite useful, although it
> mixes effects of the matching network in with the antenna, which the
> more rigorous analyses don't. It also doesn't provide any backup for
> its assertion of the validity of the "radiansphere" or "radianlength",
> hence the equations might not be valid over all possible antennas.
>
> Wheeler's 1975 paper ("Small Antennas", IEEE Trans Ant & Prop, V AP-23,
> #4, July 1975, pp462-469) revisits some of the stuff in the earlier
> paper and provides more backup and describes the limitations of the
> "radian sphere" model (which he defines as the volume within which the
> reactive power density is higher than the radiation power density).
>
> Of particular interest to would-be miracle small antenna builders is
> that he specifically mentions the problems if there is anything
> conductive or magnetic within the empty space oustide the "antenna" but
> within the radiansphere (defined as lambda/2pi). The latter paper also
> discusses some electrically small antennas (for 15 kHz, lambda=20km)
>
>
>
> > This is can found in a technical library with access to the IEEE
> > publications web site (e.g. university or military tech library)
>
> > Thane-fer
> > Homer
>
> > "Dave Platt" <dpl...@radagast.org> wrote in message
> >news:brbdc5-ru6.ln1@radagast.org...
>
> >>>> d. If a receiving signal is well polarized in
> >>>> one direction, say vertically, how much loss
> >>>> would one expect if the receiving antenna is
> >>>> oriented such that its preferred polarization is
> >>>> horiz. ?

>
> >>> The usual figure one sees bandied about is 20 dB.
>
> >> I've seen it quoted as "up to 30 dB". That's probably under ideal
> >> (or ideally-bad) conditions, though.
>
> 20 dB is probably representative of the "polarization purity" of a run
> of the mill antenna in its preferred direction.

To be more specific is Wheeler refering to small FULL wave
antennas or smal fractional wave antennas.?
These are very different and one must be absolutely clear with
what Wheeler is dealing with.
My guess is that he is refering to fractional wave antennas
which is very common in the communication field
Regards
Art Unwin KB9mx xg (uk)

4000. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 16:14:49 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080407091449.4b6089c6.rsparks@elltel.net>
Source record: 26322

On Sun, 6 Apr 2008 19:21:00 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 5, 10:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > On Sat, 5 Apr 2008 03:06:18 -0700 (PDT)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Apr 4, 11:41 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > On Fri, 4 Apr 2008 06:30:08 -0700 (PDT)
> > >
> > > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > > On Apr 4, 1:29 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > [snip]
> > > > > >Another way to figure the power to the source would be by using the voltage and
current through the source.
> >
> > > > > This is how I did it.
> >
> > > > > Taking Esource.50[90..91] = 0.03046 J as an example ...
> >
> > > > > Psource.50[90] = V * I
> > > > >   = 0.000000 * 0.000000
> > > > >   = 0 W
> > > > > Psource.50[91] = -2.468143 * -0.024681
> > > > >   = 0.060917 W
> >
> > > > > Using the trapezoid rule for numerical integration,
> > > > > Esource.50[90..91] = ((Psource.50[90]+Psource.50[91])/2) * interval
> > > > >   = ((0+0.060917)/2)*1
> > > > >   = 0.030459 J
> >
> > > > > The other powers and energies in the spreadsheet are computed
> > > > > similarly.
> >
> > > > > There was an error in the computation of the 'delta's; the sign was
> > > > > wrong.
> > > > > The spreadsheet available athttp://keith.dysart.googlepages.com/radio6
> > > > > has
> > > > > now been corrected. (And, for Cecil, this spreadsheet no longer has
> > > > > macros
> > > > > so it may be downloadable.)
> >
> > > > > To use this spreadsheet to compute my numbers above, set the formulae
> > > > > for Vr.g and Ir.g in the rows for degrees 90 and 91 to zero.

> >
> > > > > > Using current and voltage, the power at time 91 degrees of the reflected wave is 1.234v*1.43868a= 1.775w. Over one second integrated, the energy should be 1.775 J.
> >
> > > > > I could not match to the above data to any rows, so I can't comment.
> > > > > But
> > > > > perhaps the explanation above will correct the discrepancy.
> >
> > > > I took a look at your revised spreadsheet entitled "Reflected45degrees-1.xls". Using the numbers from row 94 (91 degrees), the voltage developed at the source would be Vs = -2.468143v. The current folowing through the source would be found from Ig which is 1.389317a in todays version of the spreadsheet (it was 1.439a previously). The power flowing INTO the source is 2.468143* 1.389317 = 3.429032w. This is the power Ps found in Column 11.
> >
> > > > This returning power is all from the reflected wave.
> >
> > > I would not say this. The power *is* from the line, but this is Pg,
> > > and it satisfies
> > > the equation
> > >   Ps(t) = Prs(t) + Pg(t)
> >
> > > The imputed power in the reflected wave is Pr.g(t) and is equal to
> > > -99.969541 W, at
> > > 91 degrees. This can not be accounted for in any combination of Ps(91)
> > > (-3.429023 W)
> > > and Prs(91) (96.510050 W). And recall that expressing Cecil's claim
> > > using instantaneous
> > > powers requires that the imputed reflected power be accounted for in
> > > the source
> > > resistor, and not the source. This is column 26 and would require that
> > > Prs(91) equal
> > > 100 W (which it does not).
> >
> > Taking these numbers and adding the Psource.50[91] = -2.468143 * -0.024681 = 0.060917 W found previously above,
> > we have Total = 0.060917 + 3.429023 + 96.510050 = 99.99999. Very close to 100w, but I am not sure of exactly what I am adding here.
>
> Using my notation where Ptot = Pfor + Pref we have
> Pg(t) = Pf.g(t) + Pr.g(t)
> = 50 + 50 cos(2wt) + (-50 + 50 cow(2wt))
> = 100 cos(2wt)
> If you subtract Pr.g from Pf.g(t) you get 100. If you follow through
> the math, you will
> find that this is what you have done.
> Ps.50[91] + (- Ps.0[91]) + Prs[91]
> which is
> 2 * Pf.g[91] + (-Prs[91] - Pg[91]) + Prs[91]
> which is

> Pf.g[91] + Pf.g[91] - prs[91] - Pf.g[91] - Pr.g[91] + Prs[91]
> which is
> Pf.g[91] - Pr.g[91]
> which is
> 100

OK.

> > I think you are right, that we should always be able to add the power on the line to 100w if we truely account for the power at any instant. This results from the trig identity that sin(x) + cos(x) = 1. Sin(x+90)= cos(x) so sin(x)+sin(x+90)= 1. This explains why the sum of the forward power and reflected power should always equal 100w.
>
> If I recall correctly, it is sin**2 + cos**2 = 1.
>

You are correct. My error.

> > Pg(t) is the result of a standing wave, containing power from Pf(x) and Pr(x+90).
>
> This is one way of thinking of it, but it is less misleading to
> consider
> that Pg(t) describes the actual energy flow, just as Vg(t) describes
> the
> actual voltage and Ig(t) describes the actual current. Using
> superposition
> Vf, If, Vr and Ir can be derived and from these Pf and Pr.
>

Your argument is correct to the extent that the power you describe is passing point Pg(t) at the instant (t). It is the equivalent statement that an observer watching cars pass on the freeway would make, saying "one blue car moving left and one red car moving right, so two cars are passing". Not wrong, just "how is the information useful"?

> > Only the power from Pr(x+90) is available to at a later time Prs(t+90+delta). Power from Pf(x+delta) is found in the transmission line.
> >
> > > > The source is acting like a resistor with an impedance of 2.468143/1.389317 = 1.776 ohms.
> >
> > > This is not a good way to describe the source. The ratio of the
> > > voltage to the current
> > > is 1.776 but this is not a resistor since if circuit conditions were
> > > to change, the
> > > voltage would stay the same while the current could take on any value;
> > > this being
> > > the definition of a voltage source. Since the voltage does not change
> > > when the current
> > > does, deltaV/deltaI is always 0 so the voltage source is more properly
> > > described as
> > > having an impedance of 0.
> >

> > > > As a result, the returning reflection does not truely see 50 ohms but sees 50 + 1.776 = 51.776 ohms.
> >
> > > The returning reflection is affectively a change in the circuit
> > > conditions. Using
> > > the source impedance of 0 plus the 50 ohm resistor means the
> > > reflection sees 50
> > > ohms, so there is no reflection.
> >
> > > Using your approach of computing a resistance from the instantaneous
> > > voltage and
> > > current yeilds a constantly changing resistance. The reflection would
> > > alter this
> > > computed resistance. This change in resistance would then alter the
> > > reflection
> > > which would change the resistance. Would the answer converge?
> >
> > > The only approach that works is to use the conventional approach of
> > > considering
> > > that a voltage source has an impedance of 0.
> >
> > The overriding issue is to account for all the power, which we are having a hard time doing. The current is flowing the wrong way for the source voltage at Ps(91) so the source is absorbing power. That negates the idea that the source has an impedance of zero when we also assign the source a voltage.
>
> When a current flows out of a voltage source, the source is providing
> energy. When
> the current flows into it, the voltage source is absorbing energy. A
> charging
> battery is reasonable real world example.
>
Yes.

> > > > Of course the result is a another reflection. Is this the idea you were trying to communicate Cecil?
> >
> > > > To me, this is destructive interference at work, so all the power in the reflected wave does not simply disappear into the resistor Rs on the instant basis.
> >
> > > I agree with latter, but not for the reason expressed. Rather, because
> > > the imputed
> > > power of the reflected wave is a dubious concept. This being because
> > > it is impossible
> > > to account for this power.
> >
> > Does it help to notice that we are applying the power through two wires/paths. We then divide the power in half and say that the power to the resistor from the close half flows seamlessly from source to resistor. On the other hand, the second half of the source power flows through the transmission line and we say that it may never get to the resistor.

Something is wrong with this logic.
> >
> > If we can't account for the power, it is because we are doing the accounting incorrectly.
>
> And the error in the accounting may be the expectation that the
> particular set of powers chosen should balance. Attempting to
> account for Pr fails when Pr is the imputed power from a partial
> voltage and current because such computations do not yield powers
> which exist.
>
If we remove the transmission line from the circuit, we have an open circuit with no current. Without current, there can be no power. How can power arrive at Rs if there is no power coming through the transmission line?

Would it help to consider that before the "reflection from the short" arrives, power arrives via the transmission line path but the impedance is 100 ohms for our example, composed of Rs = 50 ohms and transmission line = 50 ohms? After the "reflection from the short" arrives, the impedance drops to 70.7 ohms so the power to the circuit goes up (assuming a constant voltage source). How can this happen if power is not carried via the "reflection from the short"?

> > > > clip
> >
> > > > Yes. I don't want to force my conventions onto you, so I am trying to understand yours while insisting that the answers from each convention must be the same.
> >
> > > >I think we both agree that the reflections are carrying power now.
> >
> > > Not I. Not until the imputed power can be accounted for.
> >
> > > ...Keith
> >
> > I am convinced that accounting for the power can be done on an instant basis, but neither of us has done it on a mutually acceptable basis yet. Maybe if we pursue the trig identity
> > sin(x) + sin(x+90) = 1, we can have a constant reference and avoid mixing forward and reflected powers?
>
> Except that it is sin squared + cos squared that equals one.
>
You are right, the trig identity "sin(x) + sin(x+90) = 1" does not exist. Not a good idea.

--
73, Roger, W7WKB

4001. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 17:19:40 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <snlkv35cqrq3c196d0382cqgen5svpdq96@4ax.com>
Source record: 26323

On Mon, 7 Apr 2008 09:09:04 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>To be more specific is Wheeler refering to small FULL wave
>antennas or smal fractional wave antennas.?
>These are very different and one must be absolutely clear with
>what Wheeler is dealing with.
>My guess is that he is refering to fractional wave antennas
> which is very common in the communication field

hi Arthru,

But even more meaningful, are you speaking of large FRACTIONAL wave
antennas, or small WAVE full antennas? My guess is probably both
which is common in your communication.

73's
Richard Clark, KB7QHC

4002. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 17:34:28 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <ftdlv4ksr1@news.jpl.nasa.gov>
Source record: 26326

Art Unwin wrote:
> On Apr 7, 10:48 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
>>Homer J wrote:
>>
>>>Here is a reference to a technical look at short loop antennas from the
>>>1950's by Wheeler.
>>
>>>H. A. Wheeler, "Fundamental Limitations of Small Antennas", Proc. IRE,
>>>vol. 35, pp. 1479-1484
>>
>>More specifically, the December 1947 issue
>>
>> From a practical standpoint, this paper is quite useful, although it
>>mixes effects of the matching network in with the antenna, which the
>>more rigorous analyses don't. It also doesn't provide any backup for
>>its assertion of the validity of the "radiansphere" or "radianlength",
>>hence the equations might not be valid over all possible antennas.
>>
>>Wheeler's 1975 paper ("Small Antennas", IEEE Trans Ant & Prop, V AP-23,
>>#4, July 1975, pp462-469) revisits some of the stuff in the earlier
>>paper and provides more backup and describes the limitations of the
>>"radian sphere" model (which he defines as the volume within which the
>>reactive power density is higher than the radiation power density).
>>
>>Of particular interest to would-be miracle small antenna builders is
>>that he specifically mentions the problems if there is anything
>>conductive or magnetic within the empty space oustide the "antenna" but
>>within the radiansphere (defined as lambda/2pi). The latter paper also
>>discusses some electrically small antennas (for 15 kHz, lambda=20km)
>>
>>
>>
> To be more specific is Wheeler refering to small FULL wave
> antennas or smal fractional wave antennas.?

Any size antennas... Wheeler's analysis essentially points out that when talking about "size" of an antenna, it's not just the mechanical dimensions of the metal that counts. You also have to account for stored energy in the fields around the antenna.

here's the abstract from the 1947 paper:
"A capacitor of inductor operating as a small antenna is theoretcially capable of intercepting a certain amount of power, independent of its size, on the assumption of tuning without circuit loss. The practical

efficiency relative to this ideal is limited by the "radiation power factor" of the antenna as compared with the power factor and bandwidth of the antenna tuning. The radiation power factor of either kind of antenna is somewhat greater than
1/(6*pi)* A*b/L^2
in which Ab is the cylindrical volume occupied by the antenna, and L is the radianlength (defined as 1/(2*pi) wavelength) at the operating frequency. The efficiency is further limited by the closeness of coupling of the antenna with its tuner. Other simple formulas are given for the more fundamental properties of small antnenas and their behavior in a simple circuit. Examples for 1-Mc. operation in typical circuits indicate a loss of aboute 35 db for the I.R.E. standard capacitive antenna, 43 db for a large loop occupying a volume of 1 meter square by 0.5 meter axial length, and 64 db for a loop of 1/5 these dimensions.
"
(forgive the typos when I copied it)

I would suggest that nobody attempt to argue the applicability or not of this paper from just the abstract. Get the paper, and the one from 1975 (and the ones by the other authors he cites: Chu, Fano, Wait, etc.). The maturity of the analysis of this sort of problem has advanced significantly over the last 60 years.

4003. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 17:42:45 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <80f8d6bb-d21d-4fc1-bc06-60434b84ebfc@c65g2000hsa.googlegroups.com>
Source record: 26324

On Apr 7, 12:19 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Mon, 7 Apr 2008 09:09:04 -0700 (PDT), Art Unwin
>
> <ArthurUn...@gmail.com> wrote:
> >To be more specific is Wheeler refering to small FULL wave
> >antennas or smal fractional wave antennas.?
> >These are very different and one must be absolutely clear with
> >what Wheeler is dealing with.
> >My guess is that he is refering to fractional wave antennas
> > which is very common in the communication field
>
> hi Arthru,
>
> But even more meaningful, are you speaking of large FRACTIONAL wave
> antennas, or small WAVE full antennas? My guess is probably both
> which is common in your communication.
>
> 73's
> Richard Clark, KB7QHC

Wheeler is known for his work on small electricaly or fractional
wavelength antennas.
I was enquiring if the referred paper on limits were of small
electrical or fractional
wavelength antennas or has he broardened out to include small full
wave antennas.
Big difference

4004. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 17:49:46 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <ftdmrq$u0s$1@f04n12.cac.psu.edu>
Source record: 26325

Art Unwin wrote:
> On Apr 4, 3:24 pm, Michael Coslo <m...@psu.edu> wrote:
>> derekbl...@gmail.com wrote:
>>>> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
>>>>>> You are thinking wrong.
>>>>> you might as well plonk him, he is either a persistent troll or totally
>>>>> convinced that only he has the proper view of the world. in either case you
>>>>> are fighting a losing battle.
>>> Two perfect examples of a closed mind, but not to worry
>>> enlightenment will be along shortly.
>> And always will be, just like modern washday miracles and Dishwashers
>> that don't leave spots on glasses. ;^)
>>
>> An open mind does not mean suspension of all disbelief....
>>
>> - 73 de Mike N3LI -
>
> Mike, you asked for a lot of details about the antenna such
> that I thought you were going to make one. What happened>
> I expected you to come forward with confirmation in a lot of areas!
> I thought you were a doer not a talking head.

I'm indeed looking into this.

But sometimes I get a little interested when people invoke the "closed
mind" statement.

- 73 de Mike N3LI -

4005. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 18:06:17 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <5bac3237-134b-4882-af0f-ca75484d27f9@k37g2000hsf.googlegroups.com>
Source record: 26327

On Apr 7, 12:42 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Apr 7, 12:19 pm, Richard Clark <kb7...@comcast.net> wrote:
>
>
>
> > On Mon, 7 Apr 2008 09:09:04 -0700 (PDT), Art Unwin
>
> > <ArthurUn...@gmail.com> wrote:
> > >To be more specific is Wheeler refering to small FULL wave
> > >antennas or smal fractional wave antennas.?
> > >These are very different and one must be absolutely clear with
> > >what Wheeler is dealing with.
> > >My guess is that he is refering to fractional wave antennas
> > > which is very common in the communication field
>
> > hi Arthru,
>
> > But even more meaningful, are you speaking of large FRACTIONAL wave
> > antennas, or small WAVE full antennas? My guess is probably both
> > which is common in your communication.
>
> > 73's
> > Richard Clark, KB7QHC
>
> Wheeler is known for his work on small electricaly or fractional
> wavelength antennas.
> I was enquiring if the referred paper on limits were of small
> electrical or fractional
> wavelength antennas or has he broardened out to include small full
> wave antennas.
> Big difference

The big difference I refer to is that a fractional wavelength antenna
has limits on the
"Q" factor where a full wave antenna does not have any limits on ":Q"
since bandwidth is unlimited.
Obviously Chu,Wheeler and others are refering to fractional wavelength
antennas.
where my interest is small full wave antennas.
Frankly I feel that Chu and others are in error by pursuing the
integration of a small electrical
wave antenna in a closed arbitary border when Maxwells law,s requires
equilibrium within
the enclosed borders.

4006. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 18:07:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <veokv3liaflm67aq0uatro8kjum4aavlul@4ax.com>
Source record: 26328

On Mon, 7 Apr 2008 10:42:45 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>On Apr 7, 12:19 pm, Richard Clark <kb7...@comcast.net> wrote:
>> On Mon, 7 Apr 2008 09:09:04 -0700 (PDT), Art Unwin
>>
>> <ArthurUn...@gmail.com> wrote:
>> >To be more specific is Wheeler refering to small FULL wave
>> >antennas or smal fractional wave antennas.?
>> >These are very different and one must be absolutely clear with
>> >what Wheeler is dealing with.
>> >My guess is that he is refering to fractional wave antennas
>> > which is very common in the communication field
>>
>> hi Arthru,
>>
>> But even more meaningful, are you speaking of large FRACTIONAL wave
>> antennas, or small WAVE full antennas? My guess is probably both
>> which is common in your communication.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Wheeler is known for his work on small electricaly or fractional
>wavelength antennas.
>I was enquiring if the referred paper on limits were of small
>electrical or fractional
>wavelength antennas or has he broardened out to include small full
>wave antennas.
>Big difference

Wheeler worked with Woolsey and I believe they did seminal research on
the risible nature of fractional small wave large antennas when put
into a Skinner box to test stress levels. Fractional small wave large
antennas have the characteristic of being wide banded across a very
small percentage of frequencies with efficient operation in the low
teens to single digits on a length basis per unit charge.

73's
Richard Clark, KB7QHC

4007. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 19:38:20 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <ftdt7btbr1@news.jpl.nasa.gov>
Source record: 26331

Richard Clark wrote:

>
>
> Wheeler worked with Woolsey and I believe they did seminal research on
> the risible nature of fractional small wave large antennas when put
> into a Skinner box to test stress levels. Fractional small wave large
> antennas have the characteristic of being wide banded across a very
> small percentage of frequencies with efficient operation in the low
> teens to single digits on a length basis per unit charge.
>
> 73's
> Richard Clark, KB7QHC

You bring up the Skinner box. Are you not omitting the work of
Bedevere? Intercontinental speciation (viz African vs European) could
have an effect that should be considered.

4008. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 19:45:22 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <lOadnZGzhuch5GfanZ2dnUVZ_gGdnZ2d@comcast.com>
Source record: 26329

"Antonio Vernucci" <vernucci@tin.it> wrote in message
news:47fa3f6d$0$36440$4fafbaef@reader5.news.tin.it...
>> I wonder what you consider narrow bandwidth. 500 KHz seems to be about
>> par for a decent 6 m beam.
>>
>
> This antenna shows an SWR of 1.7 at 150 kHz below the resonant frequency,
> where the SWR is just 1, so I consider it narrow. Another antenna I have,
> also using an hairpin match but at 50 ohm instead of 200 ohm, is by far
> broader. On both antennas I have about 100 feet of low-loss 1/4" Andrew
> hardline, so the SWR is only slightly influenced by cable loss.
>
> Talking with the manfacturer, he told me that he preferred rasing the
> antenna impedance up to 200 ohm, instead than to 50 ohm, because a 4:1
> cable balun can me more easily realized than a 1:1 balun. But doing so the
> feed system Q factor increases quite a lot, causing a significant
> bandwidth reduction. Moreover ohmic losses increase, due to the higher
> circulating currents (for a given RF power), but I am not able to predict
> whether such extra losses are significant or can be disregarded for all
> practical purposes.
>
> 73
>
> Tony I0JX
I don't think it is the balun. I measured a 4:1, 1/2 wave 6m balun made of
LMR240 and got a 2:1 SWR bandwidth from 40 to 60 MHz. This was with an
MFJ-269 and about a foot of 50 Ohm coax. Load was a 1/2 W 180 Ohm resistor
(measured high).

Tam/WB2TT

4009. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 19:59:25 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <8a3eca18-f06a-4c15-979f-53eb25234ab2@m1g2000pre.googlegroups.com>
Source record: 26330

On Apr 7, 8:36 am, "Antonio Vernucci" <vernu...@tin.it> wrote:
> > I wonder what you consider narrow bandwidth. 500 KHz seems to be about par
> > for a decent 6 m beam.
>
> This antenna shows an SWR of 1.7 at 150 kHz below the resonant frequency, where
> the SWR is just 1, so I consider it narrow. Another antenna I have, also using
> an hairpin match but at 50 ohm instead of 200 ohm, is by far broader. On both
> antennas I have about 100 feet of low-loss 1/4" Andrew hardline, so the SWR is
> only slightly influenced by cable loss.
>
> Talking with the manfacturer, he told me that he preferred rasing the antenna
> impedance up to 200 ohm, instead than to 50 ohm, because a 4:1 cable balun can
> me more easily realized than a 1:1 balun. But doing so the feed system Q factor
> increases quite a lot, causing a significant bandwidth reduction. Moreover ohmic
> losses increase, due to the higher circulating currents (for a given RF power),
> but I am not able to predict whether such extra losses are significant or can be
> disregarded for all practical purposes.
>
> 73
>
> Tony I0JX

I'm trying to find a good way to wrap my mind around this "general"
problem. I'm not at a point I'm really comfortable with yet, but I
offer the following ideas as "food for thought."

First, the matching is being done essentially with an "L" network (or
rather the balanced version of an "L" network), where there is a load
resistance (the resistive part of the feedpoint impedance, which
includes radiation resistance and element loss resistance reflected to
the feedpoint), the series capacitive reactance of the feedpoing
element, and a shunt inductive reactance, provided by the hairpin.

Because shortening the driven element causes a decrease in resistance
and an increase in capacitive reactance, it's possible to find a
length that allows matching to any of a wide range of resistances.
But the higher the resistance to which you match, the shorter you need
to make the element and the lower the feedpoint resistance. The ratio
of feedpoint resistance to matched resistance determines the loaded Q
of the matching network; as you make the matched resistance higher,
the loaded Q goes up rather quickly. If you know the loaded Q and the
unloaded Q of the hairpin, you have a good handle on the amount lost
to heat in the hairpin: if the hairpin Q is two times the loaded Q,
half the power is dissipated in the hairpin, for example.

However, unless you build an antenna with a very low feedpoint resistance at resonance, there almost certainly won't be an efficiency problem: the reactance changes quickly enough with changes in driven element length that the resistance won't drop much by the time you reach enough reactance to get a match to 200 ohms. It appears that the loaded Q of the match to 200 ohms for your case will be less than 4. I would think unless you really messed up badly, the hairpin unloaded Q should be well in excess of 100, and if that's the case, the power lost in the hairpin would correspond to well under 0.1dB signal level change.

On the other hand, I'm surprised by the comment from the manufacturer about difficulties making a 1:1 balun. I have had good luck using ferrites and/or self-resonant coils of feedline and/or coils of feedline specifically resonated with additional capacitance. A 4:1 balun from a "hairpin" of 1/2 wave of coax, arranged symmetrically, is easy enough to make, but I would not rule out using a 1:1, if it has advantages for you.

Cheers,
Tom

4010. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 20:19:38 UTC
From: Homer J <homerj@home.com>
Message-ID: <e890$47fa81da$ce947008$3732@DIALUPUSA.NET>
Source record: 26332

Wow,

Cannot believe Wheeler has such a following, what he was dealing with at the time was low frequency loop antennas for navigation (e.g. LORAN, aircraft Omni stations) down around 300 to 500 KHz. If I remember correctly he made a statement in his paper that antenna was less than 1/6 of a wavelength in length.

I was interested because my design requirements for our customer was for a fairly wide bandwidth but with a shorten radiator rod to be canceled in a ordinary looking plastic housing for aesthetic reasons.

Homer J.

"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:ftdlv4ksr1@news.jpl.nasa.gov...
> Art Unwin wrote:
>> On Apr 7, 10:48 am, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>>
>>>Homer J wrote:
>>>
>>>>Here is a reference to a technical look at short loop antennas from the
>>>>1950's by Wheeler.
>>>
>>>>H. A. Wheeler, "Fundamental Limitations of Small Antennas", Proc. IRE,
>>>>vol. 35, pp. 1479-1484
>>>
>>>More specifically, the December 1947 issue
>>>
>>> From a practical standpoint, this paper is quite useful, although it
>>>mixes effects of the matching network in with the antenna, which the
>>>more rigorous analyses don't. It also doesn't provide any backup for
>>>its assertion of the validity of the "radiansphere" or "radianlength",
>>>hence the equations might not be valid over all possible antennas.
>>>
>>>Wheeler's 1975 paper ("Small Antennas", IEEE Trans Ant & Prop, V AP-23,
>>>#4, July 1975, pp462-469) revisits some of the stuff in the earlier
>>>paper and provides more backup and describes the limitations of the
>>>"radian sphere" model (which he defines as the volume within which the
>>>reactive power density is higher than the radiation power density).
>>>
>>>Of particular interest to would-be miracle small antenna builders is
>>>that he specifically mentions the problems if there is anything
>>>conductive or magnetic within the empty space oustide the "antenna" but
>>>within the radiansphere (defined as lambda/2pi). The latter paper also

>>>discusses some electrically small antennas (for 15 kHz, lambda=20km)
>>>
>>>
>>>
>> To be more specific is Wheeler refering to small FULL wave
>> antennas or smal fractional wave antennas.?
>
> Any size antennas... Wheeler's analysis essentially points out that when
> talking about "size" of an antenna, it's not just the mechanical
> dimensions of the metal that counts. You also have to account for stored
> energy in the fields around the antenna.
>
> here's the abstract from the 1947 paper:
> "A capacitor of inductor operating as a small antenna is theoretcially
> capable of intercepting a certain amount of power, independent of its
> size, on the assumption of tuning without circuit loss. The practical
> efficiency relative to this ideal is limited by the "radiation power
> factor" of the antenna as compared with the power factor and bandwidth of
> the antenna tuning. The radiation power factor of either kind of antenna
> is somewhat greater than
> 1/(6*pi)* A*b/L^2
> in which Ab is the cylindrical volume occupied by the antenna, and L is
> the radianlength (defined as 1/(2*pi) wavelength) at the operating
> frequency. The efficiency is further limited by the closeness of coupling
> of the antenna with its tuner. Other simple formulas are given for the
> more fundamental properties of small antnenas and their behavior in a
> simple circuit. Examples for 1-Mc. operation in typical circuits indicate
> a loss of aboute 35 db for the I.R.E. standard capacitive antenna, 43 db
> for a large loop occupying a volume of 1 meter square by 0.5 meter axial
> length, and 64 db for a loop of 1/5 these dimensions.
> "
> (forgive the typos when I copied it)
>
>
>
> I would suggest that nobody attempt to argue the applicability or not of
> this paper from just the abstract. Get the paper, and the one from 1975
> (and the ones by the other authors he cites: Chu, Fano, Wait, etc.). The
> maturity of the analysis of this sort of problem has advanced
> significantly over the last 60 years.

4011. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 20:57:27 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fa8aad$0$37204$4fafbaef@reader3.news.tin.it>
Source record: 26333

>> Tony I0JX
> I don't think it is the balun. I measured a 4:1, 1/2 wave 6m balun made of
> LMR240 and got a 2:1 SWR bandwidth from 40 to 60 MHz. This was with an MFJ-269
> and about a foot of 50 Ohm coax. Load was a 1/2 W 180 Ohm resistor (measured
> high).
>
You are right, it is not a balun problem. It is a problem due to the reasons I
had explained in my post, which had nothing to do with the balun.

73

Tony I0JX.

4012. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 20:57:31 UTC
From: dplatt@radagast.org
Message-ID: <reeqc5-1m3.ln1@radagast.org>
Source record: 26334

In article <ftdt7btbr1@news.jpl.nasa.gov>,
Jim Lux <james.p.lux@jpl.nasa.gov> wrote:

>You bring up the Skinner box. Are you not omitting the work of
>Bedevere? Intercontinental speciation (viz African vs European) could
>have an effect that should be considered.

Do you actually expect us to swallow that old coconut?

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4013. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 21:15:28 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fa8ee6$0$37200$4fafbaef@reader3.news.tin.it>
Source record: 26335

Hello Tom,

> First, the matching is being done essentially with an "L" network (or
> rather the balanced version of an "L" network), where there is a load
> resistance (the resistive part of the feedpoint impedance, which
> includes radiation resistance and element loss resistance reflected to
> the feedpoint), the series capacitive reactance of the feedpoing
> element, and a shunt inductive reactance, provided by the hairpin.
> Because shortening the driven element causes a decrease in resistance
> and an increase in capacitive reactance, it's possible to find a
> length that allows matching to any of a wide range of resistances.
> But the higher the resistance to which you match, the shorter you need
> to make the element and the lower the feedpoint resistance. The ratio
> of feedpoint resistance to matched resistance determines the loaded Q
> of the matching network; as you make the matched resistance higher,
> the loaded Q goes up rather quickly. If you know the loaded Q and the
> unloaded Q of the hairpin, you have a good handle on the amount lost
> to heat in the hairpin: if the hairpin Q is two times the loaded Q,
> half the power is dissipated in the hairpin, for example.
>
> However, unless you build an antenna with a very low feedpoint
> resistance at resonance, there almost certainly won't be an efficiency
> problem: the reactance changes quickly enough with changes in driven
> element length that the resistance won't drop much by the time you
> reach enough reactance to get a match to 200 ohms. It appears that
> the loaded Q of the match to 200 ohms for your case will be less than
> 4. I would think unless you really messed up badly, the hairpin
> unloaded Q should be well in excess of 100, and if that's the case,
> the power lost in the hairpin would correspond to well under 0.1dB
> signal level change.

All OK. I however reckon that, due to the parasitic elements effect, the
radiation resistance of the driven element (before shortening it) would be in
the order of 20 ohm. So, impedance gets brought up by a factor of 10 or so.

> On the other hand, I'm surprised by the comment from the manufacturer
> about difficulties making a 1:1 balun. I have had good luck using
> ferrites and/or self-resonant coils of feedline and/or coils of
> feedline specifically resonated with additional capacitance. A 4:1
> balun from a "hairpin" of 1/2 wave of coax, arranged symmetrically, is
> easy enough to make, but I would not rule out using a 1:1, if it has
> advantages for you.

His argument is that, for high-power operation (say 1500W), it is more
convenient for him to provide a quarter-wavelength 4:1 balun made of RG-142

teflon cable than a sealed box with a 1:1 coil on an ironpowder toroidal core. I mentioned him that, just using some extra length of RG-142 cable, he can easily build a 1:1 balun, and hence design the antenna matching system for 50 ohm instead of 200 ohm.

I hope he will listen to me, because that antenna is really narrowband!

73

Tony I0JX

4014. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 21:26:42 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <edWdna0pG5EFZWbanZ2dnUVZ_t-nnZ2d@comcast.com>
Source record: 26267

"K7ITM" <k7itm@msn.com> wrote in message
news:8a3eca18-f06a-4c15-979f-53eb25234ab2@m1g2000pre.googlegroups.com...
> On Apr 7, 8:36 am, "Antonio Vernucci" <vernu...@tin.it> wrote:
> .....
> On the other hand, I'm surprised by the comment from the manufacturer
> about difficulties making a 1:1 balun. I have had good luck using
> ferrites and/or self-resonant coils of feedline and/or coils of
> feedline specifically resonated with additional capacitance. A 4:1
> balun from a "hairpin" of 1/2 wave of coax, arranged symmetrically, is
> easy enough to make, but I would not rule out using a 1:1, if it has
> advantages for you.
>
> Cheers,
> Tom
Also, I think the 4:1 , 1/2 wave would be a voltage balun. I am considering adding a ferrite 1:1 on the feedline side of the the coax balun. There is some feedline radiation right now.

Tam/WB2TT

4015. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 21:31:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <UowKj.364$FF6.54@newssvr29.news.prodigy.net>
Source record: 26336

Keith Dysart wrote:
> As long as you stick with simple assertions, followed
> by sentences such as, "That is simple physics.",
> spoken in a tone which says no further understanding
> is necessary, you will be locked in the fruitless
> search for the imputed reflected energy flow.

My vision is returning and could turn out to be
the best vision that I've ever had in my life. :-)

You have been asking for the mechanism for storage
and return of the interference energy in the system.
That mechanism is standing waves. Are you aware that
standing waves store energy and return it to the
system every 90 degrees? In the examples being discussed,
there are standing waves inside the source. For the 1/8WL
shorted line, there appears to be 125 watts of forward
power and 25 watts of reflected power at points on each
side of the source.

With powers given in average values, the circuit that
you should be using for your instantaneous power
equations is:

```
50 ohm
----50-ohm----/\/\/\/\----50-ohm----
125w--> 100w 50w-->
<--25w <--50w
```

I will be very surprised if the instantaneous
powers don't balance.

Your previous problem is that you were using net
power values on one side of Rs and component power
values on the other side of Rs. That's apples and
oranges, a known no-no.
--
73, Cecil http://www.w5dxp.com

4016. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 23:02:53 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <5f029d45-928f-4f71-b604-ebd1a05903e0@r9g2000prd.googlegroups.com>
Source record: 26337

On 7 abr, 23:15, "Antonio Vernucci" <vernu...@tin.it> wrote:
> Hello Tom,
>
>
>
> > First, the matching is being done essentially with an "L" network (or
> > rather the balanced version of an "L" network), where there is a load
> > resistance (the resistive part of the feedpoint impedance, which
> > includes radiation resistance and element loss resistance reflected to
> > the feedpoint), the series capacitive reactance of the feedpoing
> > element, and a shunt inductive reactance, provided by the hairpin.
> > Because shortening the driven element causes a decrease in resistance
> > and an increase in capacitive reactance, it's possible to find a
> > length that allows matching to any of a wide range of resistances.
> > But the higher the resistance to which you match, the shorter you need
> > to make the element and the lower the feedpoint resistance. The ratio
> > of feedpoint resistance to matched resistance determines the loaded Q
> > of the matching network; as you make the matched resistance higher,
> > the loaded Q goes up rather quickly. If you know the loaded Q and the
> > unloaded Q of the hairpin, you have a good handle on the amount lost
> > to heat in the hairpin: if the hairpin Q is two times the loaded Q,
> > half the power is dissipated in the hairpin, for example.
>
> > However, unless you build an antenna with a very low feedpoint
> > resistance at resonance, there almost certainly won't be an efficiency
> > problem: the reactance changes quickly enough with changes in driven
> > element length that the resistance won't drop much by the time you
> > reach enough reactance to get a match to 200 ohms. It appears that
> > the loaded Q of the match to 200 ohms for your case will be less than
> > 4. I would think unless you really messed up badly, the hairpin
> > unloaded Q should be well in excess of 100, and if that's the case,
> > the power lost in the hairpin would correspond to well under 0.1dB
> > signal level change.
>
> All OK. I however reckon that, due to the parasitic elements effect, the
> radiation resistance of the driven element (before shortening it) would be in
> the order of 20 ohm. So, impedance gets brought up by a factor of 10 or so.
>
> > On the other hand, I'm surprised by the comment from the manufacturer
> > about difficulties making a 1:1 balun. I have had good luck using
> > ferrites and/or self-resonant coils of feedline and/or coils of
> > feedline specifically resonated with additional capacitance. A 4:1
> > balun from a "hairpin" of 1/2 wave of coax, arranged symmetrically, is
> > easy enough to make, but I would not rule out using a 1:1, if it has

> > advantages for you.
>
> His argument is that, for high-power operation (say 1500W), it is more
> convenient for him to provide a quarter-wavelength 4:1 balun made of RG-142
> teflon cable than a sealed box with a 1:1 coil on an ironpowder toroidal core. I
> mentioned him that, just using some extra length of RG-142 cable, he can easily
> build a 1:1 balun, and hence design the antenna matching system for 50 ohm
> instead of 200 ohm.
>
> I hope he will listen to me, because that antenna is really narrowband!
>
> 73
>
> Tony I0JX

Hello,

Imagine 10 Ohms radiation resistance + capacitive component after shortening the open dipole radiator. When you convert that to 200 Ohms via a parallel inductance (hairpin), the Q factor of such a network is about 4.4. At 50 MHz that will result in a bandwidth (VSWR=2) of 8 MHz.

A 200 Ohms to 50 Ohms coaxial balun will have a lower Q factor. So the combination of balun and L-network will certainly have a useful bandwidth >> 340 kHz.

Maybe the radiation resistance is less (you can derive that from the hairpin inductance) and/or the antenna is by nature (very) narrow band.

Best regards,

Wim
PA3DJS
www.tetech.nl
remove abc from the address.

4017. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 23:10:55 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fte9luqgo1@news.jpl.nasa.gov>
Source record: 26341

Dave Platt wrote:
> In article <ftdt7btbr1@news.jpl.nasa.gov>,
> Jim Lux <james.p.lux@jpl.nasa.gov> wrote:
>
>
>>You bring up the Skinner box. Are you not omitting the work of
>>Bedevere? Intercontinental speciation (viz African vs European) could
>>have an effect that should be considered.
>
>
> Do you actually expect us to swallow that old coconut?
>
No, just grip it by the husk.

4018. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 23:15:09 UTC
From: hasan <schiers@netins.net>
Message-ID: <fte9tu$oi7$1@news.netins.net>
Source record: 26338

Roy Lewallen wrote:
> hasan wrote:
>
>> One thing I've learned about NIMH batteries...they don't sit well.
>> They do wonderfully if kept trickle charged, but if let to sit, they
>> will self-discharge in less than two weeks. (at least for digital
>> camera purposes)I've observed this on three different "sets" of NIMH
>> AA batteries. All act the same way. Two weeks of sitting and they will
>> only operate the camera a very short time. Left in the charger and put
>> directly into service I can shoot well over 75 pictures in a row with
>> no difficulty.
>
> This was true until a short while ago, but no longer is. A new chemistry
> is now being used for some NiMH cells which greatly reduces the
> self-discharge rate. Some of the more popular brands are Sanyo's
> Eneloop, Rayovac's Hybrid, and Sony's Cycle Energy, but there's a
> growing number of others. A bit of web searching will bring a great deal
> more information about this. "Low self discharge NiMH" is a good search
> string to start with.
>
> So far, the LSD cells have a bit lower capacity than the very highest
> capacity conventional cells, with 2000 mAh typical for AA and 800 mAh
> for AAA. But they have almost as much capacity after sitting for an
> extended time. And the Eneloops, in particular, typically have a
> slightly higher voltage under discharge, and hold up very well under
> high discharge rates. They're very good cells -- I use them almost
> exclusively now.
>
> Roy Lewallen, W7EL

Can they (Eneloops) be charged in a conventional NiMH charger, or do
they require a proprietary charger?

4019. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 23:55:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <CJudnTukBJnHKWfanZ2dnUVZ_jCdnZ2d@easystreetonline>
Source record: 26339

Roger Sparks wrote:
>. . .
> If we remove the transmission line from the circuit, we have an open circuit with no current. Without current, there can be no power. How can power arrive at Rs if there is no power coming through the transmission line?
> . . .

I regret that I haven't been able to take the time to contribute to or even follow this very interesting thread. So please pardon me if the following comment isn't relevant.

The quoted statement reminded me of an earlier thread where Keith asked a similar question, and proposed some interesting alternative explanations. The point in question was a current node in a lossless line which had infinite SWR, e.g., an open circuited line. A look at the energy flow in the vicinity of the node reveals a plausible explanation. It turns out that energy is being stored at the node, in the line's capacitance, to the tune of C*V^2/2. For half the cycle, energy is flowing into the node equally from both directions, so the power measured at that node is zero. During the other half of the cycle, energy is flowing out of the node equally in both directions. So the power remains zero at the node for the entire cycle. This is, of course, consistent with the zero current at the node. The node's energy increases to a maximum and down to zero periodically in step with the square of the node voltage.

Now, I don't know of any way to assign "ownership" to bundles of energy. But let's suppose that the energy which flows into the node from the left side during the "inhalation" part of the cycle is the energy which flows out to the right during the "exhalation" part of the cycle, and the energy flowing into the node from the right exits on the left. So now we've managed to get energy past the node going in both directions while maintaining zero power and current at the node and conserving energy as we must.

This can be seen graphically with the little TLVis1 program I made up a while back -- see the thread of that name for more info. The phenomenon I'm describing can be seen in demo 4, one cycle from the output (right) end of the line.

Roy Lewallen, W7EL

4020. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-07 23:59:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <CJudnTqkBJnJKGfanZ2dnUVZ_jCdnZ2d@easystreetonline>
Source record: 26340

hasan wrote:
>
> Can they (Eneloops) be charged in a conventional NiMH charger, or do
> they require a proprietary charger?

They can be charged and otherwise treated the same as any other NiMH cells.

Roy Lewallen, W7EL

4021. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 00:41:37 UTC
From: dplatt@radagast.org
Message-ID: <1jrqc5-t61.ln1@radagast.org>
Source record: 26343

In article <fte9tu$oi7$1@news.netins.net>, hasan <schiers@netins.net> wrote:

>Can they (Eneloops) be charged in a conventional NiMH charger, or do
>they require a proprietary charger?

Sanyo's own words:

"Basically eneloop is a modern Ni-MH battery, which can be charged
like any other Ni-MH battery.

Therefore eneloop can be charged also with other, modern chargers,
which are suitable to charge Ni-MH batteries.

However, SANYO cannot accept any liability for the function or safety
of chargers made by other manufacturers.

Also SANYO cannot be held responsible for any damage to eneloop
batteries caused by unsuitable chargers."

On a different Sanyo page (http://www.eneloopusa.com/eneloop.html) they
say that they only provide warranty on the batteries if an Eneloop
or other Sanyo-branded NiMH charger is used. "Quick" chargers (those
charging in under 2 hours) should not be used, as these may reduce the
life of the battery... "2 hours or more" charging rate is recommended
(e.g. 0.5C or so).

A lot of people seem to like the various Maha chargers. One of my
friends here uses a Maha MH-C9000, which is relatively expensive
(currently $60 from Thomas Distributing) but is *extremely* flexible
and adaptable... you can select the charging and discharging rate for
each battery, perform one or more break-in or discharge/recharge
exercise cycles, etc. I have one on order and plan to try it out with
my various NiMH cells.

Seems to me that almost any modern NiMH charger, with a charge rate of
around 500 - 1000 mA per cell, and an effective full-charge cutoff
circuit (thermal and delta-V) would work fine with Eneloops and
similar low-self-discharge NiMH cells.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4022. Dayton Hamvention

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 00:54:08 UTC
From: SWLer <French@comcast.net>
Message-ID: <47FAC26F.2060108@comcast.net>
Source record: 26342

What's going on??

I haven't received anything about reserving my tailgate
space, tickets, etc.

4023. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 01:00:11 UTC
From: Fred McKenzie <fmmck@aol.com>
Message-ID: <fmmck-B3AE17.21001007042008@nntp.aioe.org>
Source record: 26344

In article <U7YGj.9289$Oj5.166@trnddc06>,
"usmcbrat" <president@whitehouse.gov> wrote:

> "Mark" <makolber@yahoo.com> wrote in message
> news:a5ca8995-beef-4330-954b-4890e968c425@d4g2000prg.googlegroups.com...
>
> >>How about a small Yagi made with "rubber duckies"?
>
> I admit it, I don't know what you mean. :)

USMCBrat-

I think the cubical quad may be the best antenna for your situation, but
there are other options.

"Rubber duckie" refers to the shortened rubber-coated antenna on a
walkie talkie. If several of these were arranged as a yagi, they would
not have the sharp points your full size yagi has.

Another is called a "Doppler Direction Finder", and requires an
electronics package. It has 4 vertical antennas arranged in a square on
a metal plate. Take a look at
<http://www.ramseyelectronics.com/cgi-bin/commerce.exe?preadd=action&key=
DDF1>
for an example of this kind of system. The vertical antennas might be
"rubber duckies" as well.

Fred
K4DII

4024. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 01:38:44 UTC
From: Fred McKenzie <fmmck@aol.com>
Message-ID: <fmmck-96868B.21384407042008@nntp.aioe.org>
Source record: 26345

In article <yfVGj.3349$n8.139@news-server.bigpond.net.au>,
"HRBE" <hrbe@bigpond.net.au> wrote:

> I made up a 4 band "spider" mount, to which you can screw in 4 sets of
> hamsticks. I have a full set of hamstick whips from 80m down to 6m.
>
> So I have a multiband hamstick dipole array!

HRBE-

I think it was the December, 2007, issue of QST that had an article on the "Octopus" antenna made of 4 pairs of mobile whips for 75/40/20/15 meters. I plan to also add a vertical 10 Meter whip.

I've collected the parts but haven't assembled it yet. It will be interesting to see how the monstrosity works!

Fred
K4DII

4025. Re: Polarization Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 02:23:19 UTC
From: richardharrison@webtv.net
Message-ID: <27720-47FAD717-1290@storefull-3258.bay.webtv.net>
Source record: 26346

Robert wrote:
"Anyone have any idea if a Disconne type of antenna is Polarized horiz.
or vert.?"

Bill Orr, W6SAI wrote on page 25.15 of the 1972 edition of "Radio
Handbook":
"The discone antenna radiates a vertically polarized wave and has a very
low angle of radiation."

Best regards, Richard Harrison, KB5WZI

4026. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 03:21:39 UTC
From: richardharrison@webtv.net
Message-ID: <18027-47FAE4C3-115@storefull-3252.bay.webtv.net>
Source record: 26347

Art wrote:
"Oh my! My antenna has been revealed to all."

Size matters and so does the power fed to an antenna. The laws of physics can`t be violated.

King Mimno & Wing say on page 300 of "Thansmission Lines Antennas and Wave Guides":

"---a radio wave originates in a systematic mass movement of many millions of electrons all guided in the same general path and executing related motions."

Best regards, Richard Harrison, KB5WZI

4027. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 08:03:59 UTC
From: richardharrison@webtv.net
Message-ID: <21021-47FB26EF-1092@storefull-3255.bay.webtv.net>
Source record: 26349

Art wrote:
"Where must the "curl" vector be placed in general to justify the right angle radiation statement that all your books apparently parrot?"

Look up divergence and curl for yourself as I have no special characters on my keyboard and I am a lousy typist too. You can find what you seek in the chapter on Maxwell`s equations in ITT`s handbook "Reference Data for Radio Engineers" This starts on page 43-1 in my 5th edition.

No contradiction to Kraus or Terman is to be found. The right or left hand rules are good. Magnetic lines of force encircle the current and electric lines are perpendicular to them as they begin and end on the wire in their radial attachments. Both fields are at right angles to each other and both are also at right angles to the current flow.

There is no abberation for diamagnetic materials. The fields are the same if the wire is lead instead of copper. Diamagnetic distortion is a myth. Velocity and loss are hardly different. You need to coat the conductor with a diecectric if you would get more wavelength in a given length of wire.

Best regards, Richard Harrison, KB5WZI

4028. Re: Directional antenna in the 215 to 218 MHz band

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 08:04:30 UTC
From: Jeff <jeff@local.host>
Message-ID: <47fb2726$0$6429$834e42db@reader.greatnowhere.com>
Source record: 26348

> Another is called a "Doppler Direction Finder", and requires an
> electronics package. It has 4 vertical antennas arranged in a square on
> a metal plate. Take a look at
> <http://www.ramseyelectronics.com/cgi-bin/commerce.exe?preadd=action&key=
> DDF1>
> for an example of this kind of system. The vertical antennas might be
> "rubber duckies" as well.
>
> Fred
> K4DII

I would also have a search for 'Handifinder', it is a simplified version of the above that uses 2 small loop antennas and is easily hand portable. It is cheap and easy to build and I think kits are available. It does have a 180 degree ambiguity but in real use that is not a great problem.

73
Jeff

4029. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 12:19:01 UTC
From: hasan <schiers@netins.net>
Message-ID: <ftfnrmlkh1@news.netins.net>
Source record: 26350

Dave Platt wrote:

> On a different Sanyo page (http://www.eneloopusa.com/eneloop.html) they
> say that they only provide warranty on the batteries if an Eneloop
> or other Sanyo-branded NiMH charger is used. "Quick" chargers (those
> charging in under 2 hours) should not be used, as these may reduce the
> life of the battery... "2 hours or more" charging rate is recommended
> (e.g. 0.5C or so).
>

That is very helpful, Dave, especially since I have a very fast charger
that would be very hard on these cells.

I'll get a set and use them on my slower chargers, and also warn people,
no faster than a two-hour charger for the new chemistry cells. (I have a
15 min Energizer charger that does well with Energizer AA and AAA cells,
but have not had a chance to evaluate lifetime. The cells charge nicely,
but 15 seems very hard charging.

4030. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 12:19:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <XoJKj.1009$2g1.803@nlpi068.nbdc.sbc.com>
Source record: 26251

Fred McKenzie wrote:
> I've collected the parts but haven't assembled it yet. It will be
> interesting to see how the monstrosity works!

Hope you enjoy 75m QRP.
--
73, Cecil http://www.w5dxp.com

4031. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 12:51:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9TJKj.3040$vF.671@newssvr21.news.prodigy.net>
Source record: 26252

Roy Lewallen wrote:
> Now, I don't know of any way to assign "ownership" to bundles of energy.

One way is to add a unique bit of modulation to each
bundle of wave energy. I am fond of using a TV signal
and observing ghosting on the screen. This, of course,
assumes that the modulation stays with the same component
wave to which it was originally associated.

> But let's suppose that the energy which flows into the node from the
> left side during the "inhalation" part of the cycle is the energy which
> flows out to the right during the "exhalation" part of the cycle, and
> the energy flowing into the node from the right exits on the left. So
> now we've managed to get energy past the node going in both directions
> while maintaining zero power and current at the node and conserving
> energy as we must.

This agrees with the distributed network model. Since
there is no impedance discontinuity and no impedor at
the node, there can be no reflections at the node. The
forward wave flows unimpeded through the node as does
the equal magnitude reflected wave. The net energy flow
is zero. The average energy flow is zero.

Anyone who believes there is zero energy at a standing-
wave current node should touch that point on a transmission
line (which just happens to be the same point as the
maximum voltage anti-node).

One must be careful not to confuse the net signal with the
component signals. One must be careful not to confuse the
average values with the instantaneous values.

This can best be visualized using light waves in free
space. Unimpeded EM waves do not bounce off of each other.
--
73, Cecil http://www.w5dxp.com

4032. Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 14:50:35 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <cf39b581-631f-4cc6-a6bf-5ab4ff1ab1d8@8g2000hse.googlegroups.com>
Source record: 26253

Having made small full wave antenna with a swr in Sino soidal form
ie reactance which is quite normal I decided to get back to basics
and
view it as a pendulum ala a tank circuit equivalent
lwhere lengthening the pendulum changes the peried.with consequent
damping
via incresing of "slow wave"
Doing this to the antenna structure provided an antenna that did not
exceed
a swr of 4 from 2 mhz upto a 100 Mhz.plus (very few deviations above
3:1)
What the dampening did was to smooth out the resistive and reactive
values
to produce a response very similar to a log periodic except, of
course. it was
a small full wave electric antenna with a omni directional response.
(it can be made directional)
Tried it also on the local TV stations (60 miles away) and it worked
extremely well
such that it looked like HDTV! Again this points out the requirement
for equilibrium
of antennas in tank circuit form. With care, an antenna can now be
made
with extremely flat response for ALL frequencies since the impedance
can be made near constant.By the way the antenna took 200 watts key
down for 1 min
without any hint of failure.(the impedance reference value was 50
ohms
and a MFJ 259B was used tho any datum impedance can be chosen)
Whether my theories are correct or not with respect to academia, to
have such antennas
in practice where responses can be measured it would behove hams to
replicate them
and allow the academics to follow up later. Will now modify some
rubber duckies
for the local police force to extend the distance range as our county
is quite large.
Regards
Art Unwin KB9MZ......XG (uk)

4033. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 15:44:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <rpMKj.2295$IF7.2169@newssvr25.news.prodigy.net>
Source record: 26254

Keith Dysart wrote:
> You seem to be saying that the answers would be
> completely different if you chose a different
> impedance for the non-existant transmission line.

There you go again, trying to shove your words
into my mouth. (Pattooieee!) Please don't do that.

You have apparently done the math and found it
to be valid so, once again, you have to change
the specified conditions in order to try to make
your point.

A Z0 of 50 ohms is the *only* characteristic
impedance that will meet the specified precondition
of zero average interference. Choosing any other
characteristic impedance will move the example
outside of the scope of my Part 1 article. I
understand why you want to do such a thing but
obfuscation, diversions, and straw men are not
part of the scientific method. My Part 1 article
has a very narrow scope. Please abide by it.

Killing a snake and using it for the transmission
line would likewise violate the same specified
preconditions. Please feel free to do that and
report the results.
--
73, Cecil http://www.w5dxp.com

4034. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 16:52:23 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <c4d1f9f0-42b2-486a-a76b-576205b50799@v26g2000prm.googlegroups.com>
Source record: 26255

On Apr 7, 4:02 pm, Wimpie <wimabc...@tetech.nl> wrote:
> On 7 abr, 23:15, "Antonio Vernucci" <vernu...@tin.it> wrote:
>
>
>
> > Hello Tom,
>
> > > First, the matching is being done essentially with an "L" network (or
> > > rather the balanced version of an "L" network), where there is a load
> > > resistance (the resistive part of the feedpoint impedance, which
> > > includes radiation resistance and element loss resistance reflected to
> > > the feedpoint), the series capacitive reactance of the feedpoing
> > > element, and a shunt inductive reactance, provided by the hairpin.
> > > Because shortening the driven element causes a decrease in resistance
> > > and an increase in capacitive reactance, it's possible to find a
> > > length that allows matching to any of a wide range of resistances.
> > > But the higher the resistance to which you match, the shorter you need
> > > to make the element and the lower the feedpoint resistance. The ratio
> > > of feedpoint resistance to matched resistance determines the loaded Q
> > > of the matching network; as you make the matched resistance higher,
> > > the loaded Q goes up rather quickly. If you know the loaded Q and the
> > > unloaded Q of the hairpin, you have a good handle on the amount lost
> > > to heat in the hairpin: if the hairpin Q is two times the loaded Q,
> > > half the power is dissipated in the hairpin, for example.
>
> > > However, unless you build an antenna with a very low feedpoint
> > > resistance at resonance, there almost certainly won't be an efficiency
> > > problem: the reactance changes quickly enough with changes in driven
> > > element length that the resistance won't drop much by the time you
> > > reach enough reactance to get a match to 200 ohms. It appears that
> > > the loaded Q of the match to 200 ohms for your case will be less than
> > > 4. I would think unless you really messed up badly, the hairpin
> > > unloaded Q should be well in excess of 100, and if that's the case,
> > > the power lost in the hairpin would correspond to well under 0.1dB
> > > signal level change.
>
> > All OK. I however reckon that, due to the parasitic elements effect, the
> > radiation resistance of the driven element (before shortening it) would be in
> > the order of 20 ohm. So, impedance gets brought up by a factor of 10 or so.
>
> > > On the other hand, I'm surprised by the comment from the manufacturer
> > > about difficulties making a 1:1 balun. I have had good luck using
> > > ferrites and/or self-resonant coils of feedline and/or coils of
> > > feedline specifically resonated with additional capacitance. A 4:1

> > > balun from a "hairpin" of 1/2 wave of coax, arranged symmetrically, is
> > > easy enough to make, but I would not rule out using a 1:1, if it has
> > > advantages for you.
>
> > His argument is that, for high-power operation (say 1500W), it is more
> > convenient for him to provide a quarter-wavelength 4:1 balun made of RG-142
> > teflon cable than a sealed box with a 1:1 coil on an ironpowder toroidal core. I
> > mentioned him that, just using some extra length of RG-142 cable, he can easily
> > build a 1:1 balun, and hence design the antenna matching system for 50 ohm
> > instead of 200 ohm.
>
> > I hope he will listen to me, because that antenna is really narrowband!
>
> > 73
>
> > Tony I0JX
>
> Hello,
>
> Imagine 10 Ohms radiation resistance + capacitive component after
> shortening the open dipole radiator. When you convert that to 200 Ohms
> via a parallel inductance (hairpin), the Q factor of such a network is
> about 4.4. At 50 MHz that will result in a bandwidth (VSWR=2) of 8
> MHz.
>
> A 200 Ohms to 50 Ohms coaxial balun will have a lower Q factor. So the
> combination of balun and L-network will certainly have a useful
> bandwidth >> 340 kHz.
>
> Maybe the radiation resistance is less (you can derive that from the
> hairpin inductance) and/or the antenna is by nature (very) narrow
> band.
>
> Best regards,
>
> Wim
> PA3DJSwww.tetech.nl
> remove abc from the address.

Yes, I had similar thoughts, but a bit different. First, I think it's safe to say that if, at resonance, the driven element presents about 20 ohms at the feedpoint, shortening the D.E. only a little will give enough capacitive reactance to allow the hairpin match to 200 ohms. Even if the D.E. looks like 5 ohms, the "L" network match still gives a 3dB bandwidth of 8MHz at a 50MHz center, or 3MHz 1.5:1 SWR bandwidth. I think we need to look somewhere else for the answer to the narrow bandwidth. My working hypothesis at the moment is that it's in the antenna, or perhaps rather in the combination of antenna and matching network. Note that the calc for the L match assumed a constant capacitance, but the antenna will not, in general, look

anything like a constant C even over a fairly narrow frequency range. I just ran EZNEC on a frequency-scaled version of the 14MHz 5 element Yagi included in the sample files, with the D.E. slightly shortened to allow a decent hairpin match to 200 ohms at the design center frequency. I did a frequency sweep, 49 to 51 MHz, in 0.25MHz steps. Over that range, the equivalent series capacitance changes from 59pF at the low end to 138pF at the high end, and at least by NEC2's prediction, the impedance changes especially quickly around 51MHz--both reactive and resistive parts. 50.75MHz: 10.3-j31.76; 51MHz: 3.91-j22.56, quite a large percentage change in 250kHz. Having the effective series capacitance change that quickly will cause the matching network to behave very differently than it would with a capacitance element that is fixed.

Is it possible to lengthen the D.E., causing it to present an inductive reactance at the feedpoint, and match that (to 200 ohms, or to 50 ohms) with a shunt capacitance? That may work better, giving a broader SWR bandwidth. The resistive component should be higher, further lowering the Q, and I suspect the reactance won't change so quickly with frequency. I don't have time at the moment to compare the two, but may this evening. It may also be possible to raise the resistive part to 50 ohms and match to 50 with a series capacitance.

Cheers,
Tom

4035. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 17:31:18 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <rZNKj.66317$833.66280@newsfe17.ams2>
Source record: 26256

After charging and discharging over the past few days they are finally keeping there charge. I have had the MFJ-259Z switched on with the power save turned off for the past 10 hours and still have 12.6V left in the batteries. A big difference from the 10-15 minutes I was getting from them when I purchased it. All I have to do now is to learn and then test the unit to make sure it is working ok. As I am new to using a Analyzer.

Many thanks all for your help.

73 Barrett

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:-qidnTDq7ap4GWTanZ2dnUVZ_jKdnZ2d@easystreetonline...
> Tam wrote:
>> For what it'sworth, I looked at an MFJ-269 manual, and it claims to
>> trickle charge at 10 - 20 ma. At that rate it will take a long time to
>> charge a 2600 maH battery. They say minimum Vbat is 11V, but mine gets
>> flakey below 12. You might want to measure the under load battery voltage
>> when it fails and when you think it is fully charged.
>>
>> Tam/WB2TT
>
> I don't think a 2600 mAh cell will ever become anywhere near fully charged
> at that charge rate. That's barely enough to maintain an existing charge.
>
> Roy Lewallen, W7EL

4036. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 17:47:41 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <47FBAFBD.4090006@yahoo.com>
Source record: 26257

K7ITM wrote:

> Is it possible to lengthen the D.E., causing it to present an
> inductive reactance at the feedpoint, and match that (to 200 ohms, or
> to 50 ohms) with a shunt capacitance? That may work better, giving a
> broader SWR bandwidth....

Good, constructive suggestion, Tom. Kudos for putting in a bit
of design/analysis effort on this rather than just shooting from
the hip. This is definitely a weird way of driving a yagi. It makes
me yearn for the old TV-antenna schemes that used folded
dipoles for the driven element, suitably split-up between upper
and lower wires so as to give a 300-ohm terminal impedance even
with the resistance-lowering effects of the reflector and directors.

Jim, K7JEB

4037. Re: Re:MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 17:58:54 UTC
From: kuzen001@duke.edu
Message-ID: <ftgbou$8be$1@gargoyle.oit.duke.edu>
Source record: 26258

Barrett <barrett@blueyounder.co.uk> wrote:
> I don't think that my MFJ-259Z is charging properly. Its new and it has been
> on charge for over 6 hours and all the batteries are still reading 0 Volts.
> I'm using the PSU that came with it. It works fine from the PSU but doesn't
> seem to be charging. The switch inside for charging is turned on.. Can some

I'm not familiar with that analyzer but the websites indicate it uses AA cells--presumably rechargable ones have been supplied with your 259Z. One thing to check is that the cells are correctly inserted (sorry but it happens often!) and that they're not protected by little plastic covers on the positive terminals. Rechargable batteries that come with new equipment often have tiny bits of plastic that have to be removed by the end user. This isn't always mentioned in manuals.

If it's brand new and has never worked with the batteries alone, you might have a manufacturing defect--they're not unknown in MFJ gear, not that I'm knocking MFJ. You'd want to take a quick look at the charge/no-charge switch, the bypass (if there is one) on the connector for the PSU on the radio, etc.--simple things easily visible. You might also try charging the AA cells in a standard charger, and seeing if the 259Z then works properly with the batteries--if that doesn't work, it might be the cells you have and not the analyzer itself.

HTH! 73 de AC4RD

Ken Kuzenski AC4RD atsign mindspring dotsign com

All disclaimers apply, see? www.duke.edu/~kuzen001

4038. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 19:31:15 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fbc7f9$0$17940$4fafbaef@reader1.news.tin.it>
Source record: 26259

> Over that range, the equivalent series capacitance changes from 59pF
> at the low end to 138pF at the high end, and at least by NEC2's
> prediction, the impedance changes especially quickly around 51MHz--
> both reactive and resistive parts. 50.75MHz: 10.3-j31.76; 51MHz: 3.91-
> j22.56, quite a large percentage change in 250kHz. Having the
> effective series capacitance change that quickly will cause the
> matching network to behave very differently than it would with a
> capacitance element that is fixed.

That is exactly the point! It would not be correct to calculate bandwidth on the basis of the Q factor at resonance and assuming that the capacitive antenna reactance is equivalent to that of a fixed capacitor.

Today I have discovered another shortcoming of that antenna. After raining cats and dogs, the antenna resonant frequency gets lowered by about 130 kHz due to the influence of the wet terrain. That is really a lot if you consider that, after making very accurate measurements with a Bird wattmeter, the antenna bandwidth is only 100 kHz at 1.4 SWR!

I am considering to re-build the driven element for 50-ohm match, by using a longer driven element and a 1:1 balun. However it will not be easy to find the optimum situation because there are two variables to be adjusted, that is the driven element length and the hairpin length.

Also, I am not too sure on to which extent using a longer driven element would influence the antenna radiation pattern.

Any comment?

73

Tony I0JX

4039. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 19:33:00 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fbc861$0$17940$4fafbaef@reader1.news.tin.it>
Source record: 26260

> Over that range, the equivalent series capacitance changes from 59pF
> at the low end to 138pF at the high end, and at least by NEC2's
> prediction, the impedance changes especially quickly around 51MHz--
> both reactive and resistive parts. 50.75MHz: 10.3-j31.76; 51MHz: 3.91-
> j22.56, quite a large percentage change in 250kHz. Having the
> effective series capacitance change that quickly will cause the
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> capacitance element that is fixed.

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I am considering to re-build the driven element for 50-ohm match, by using a longer driven element and a 1:1 balun. However it will not be easy to find the optimum situation because there are two variables to be adjusted, that is the driven element length and the hairpin length.

Also, I am not too sure on to which extent using a longer driven element would influence the antenna radiation pattern.

Any comment?

73

Tony I0JX

4040. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 19:33:26 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fbc87b$0$17953$4fafbaef@reader1.news.tin.it>
Source record: 26261

> Over that range, the equivalent series capacitance changes from 59pF
> at the low end to 138pF at the high end, and at least by NEC2's
> prediction, the impedance changes especially quickly around 51MHz--
> both reactive and resistive parts. 50.75MHz: 10.3-j31.76; 51MHz: 3.91-
> j22.56, quite a large percentage change in 250kHz. Having the
> effective series capacitance change that quickly will cause the
> matching network to behave very differently than it would with a
> capacitance element that is fixed.

That is exactly the point! It would not be correct to calculate bandwidth on the basis of the Q factor at resonance and assuming that the capacitive antenna reactance is equivalent to that of a fixed capacitor.

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I am considering to re-build the driven element for 50-ohm match, by using a longer driven element and a 1:1 balun. However it will not be easy to find the optimum situation because there are two variables to be adjusted, that is the driven element length and the hairpin length.

Also, I am not too sure on to which extent using a longer driven element would influence the antenna radiation pattern.

Any comment?

73

Tony I0JX

4041. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 20:24:56 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <52db2478-d599-4b10-a638-0545cb1f639c@l64g2000hse.googlegroups.com>
Source record: 26262

On Apr 8, 12:31 pm, "Antonio Vernucci" <vernu...@tin.it> wrote:
> > Over that range, the equivalent series capacitance changes from 59pF
> > at the low end to 138pF at the high end, and at least by NEC2's
> > prediction, the impedance changes especially quickly around 51MHz--
> > both reactive and resistive parts. 50.75MHz: 10.3-j31.76; 51MHz: 3.91-
> > j22.56, quite a large percentage change in 250kHz. Having the
> > effective series capacitance change that quickly will cause the
> > matching network to behave very differently than it would with a
> > capacitance element that is fixed.
>
> That is exactly the point! It would not be correct to calculate bandwidth on the
> basis of the Q factor at resonance and assuming that the capacitive antenna
> reactance is equivalent to that of a fixed capacitor.
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> Today I have discovered another shortcoming of that antenna. After raining cats
> and dogs, the antenna resonant frequency gets lowered by about 130 kHz due to
> the influence of the wet terrain. That is really a lot if you consider that,
> after making very accurate measurements with a Bird wattmeter, the antenna
> bandwidth is only 100 kHz at 1.4 SWR!
>
> I am considering to re-build the driven element for 50-ohm match, by using a
> longer driven element and a 1:1 balun. However it will not be easy to find the
> optimum situation because there are two variables to be adjusted, that is the
> driven element length and the hairpin length.
>
> Also, I am not too sure on to which extent using a longer driven element would
> influence the antenna radiation pattern.
>
> Any comment?
>
> 73
>
> Tony I0JX

Though the Q calculation doesn't give the right SWR bandwidth for the
antenna/matching system, it does tell you that (with such a low loaded
Q), it should not be difficult to make a hairpin or even standard
helical coil inductor that has low enough loss that you can ignore the
effect.

I believe that the physical length of the driven element in a Yagi is
much less important than the tuning and spacing of the parasitic
elements. The question becomes something like this: what is the
relative amplitude and phase of the current in each parasitic element,
for some excitation of the driven element? A Yagi is a system of

coupled resonators, like a system of coupled pendulums. If one of the pendulums is driven at a particular amplitude and frequency, even if it's not that pendulum's natural frequency, the rest of the pendulums will follow along pretty much the same as if the driven pendulum was tuned to have that natural frequency. In the antenna, the difference will only be in the coupling from the driven element to the others, and I believe that changes only slightly as the length of the driven element changes.

But I may be wrong about that, and await my re-education. ;-) But I just ran EZNec on the example "NBS" 3-element 50.1MHz Yagi, varying the nominal 110 inch long D.E. by +/- 10 inches, and saw the expected fairly large variation in impedance, but only 0.02dB change in gain over that whole range, with similarly small variation in F/B ratio and beam width. The longest D.E. I ran was also the highest gain (by that tiny amount), and provided enough inductive reactance that the feedpoint could be tuned to resonance and present 200 ohms by shunting with about 55pF capacitance. Next to try: compare the SWR bandwidths of the hairpin (inductive) shunt of a shortened D.E. and the capacitive shunt of a lengthened D.E.. Unless someone offers a better test case, I'll use the NBS 3 element Yagi...

Cheers,
Tom

4042. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 20:56:37 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fbdbfa$0$10616$4fafbaef@reader2.news.tin.it>
Source record: 26263

> I believe that the physical length of the driven element in a Yagi is
> much less important than the tuning and spacing of the parasitic
> elements. The question becomes something like this: what is the
> relative amplitude and phase of the current in each parasitic element,
> for some excitation of the driven element? A Yagi is a system of
> coupled resonators, like a system of coupled pendulums. If one of the
> pendulums is driven at a particular amplitude and frequency, even if
> it's not that pendulum's natural frequency, the rest of the pendulums
> will follow along pretty much the same as if the driven pendulum was
> tuned to have that natural frequency. In the antenna, the difference
> will only be in the coupling from the driven element to the others,
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> feedpoint could be tuned to resonance and present 200 ohms by shunting
> with about 55pF capacitance. Next to try: compare the SWR bandwidths
> of the hairpin (inductive) shunt of a shortened D.E. and the
> capacitive shunt of a lengthened D.E.. Unless someone offers a better
> test case, I'll use the NBS 3 element Yagi...
>
> Cheers,
> Tom
>

Hi Tom,

the results you got on EZNEC are encouraging. Nevertheless I would not like to try using a lengthened element in conjunction with a capacitor, as the difference between that configuration and the original configuration would be the maximum (although it would be much easier to adjust a capacitor than the inductance of an hairpin).

What puzzles me is that the antenna manufacturer reported me having sold several hundreds of those antennas, and no one has reported him the bandwidth being too narrow or the exagerated wet terrain influence.

I am not sure on what I am going to do, also because I am not 100% sure on whether the bandwidth problem is only due to the matching system, or it is also

due to the particular antenna design.

My original intention was to compare this 50-MHz long Yagi antenna (32-foot boom) against a smaller antenna (11-foot boom) I have on another tower, so as to determine how much a bigger antenna really helps during multiple-hop sporadic openings to US and Japan.

Probably for the forecoming sporadic-E season (May-August) I will leave things as they are, and just try to assess the practical advantages of the bigger antenna. After that I will see what I shall do.

Thanks very much for the useful discussion.

73

Tony I0JX

4043. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 20:56:51 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <fc65cc0d-583c-4e28-b419-72b95e806f21@n14g2000pri.googlegroups.com>
Source record: 26264

On 8 abr, 18:52, K7ITM <k7...@msn.com> wrote:
> On Apr 7, 4:02 pm, Wimpie <wimabc...@tetech.nl> wrote:
>
>
>
> > On 7 abr, 23:15, "Antonio Vernucci" <vernu...@tin.it> wrote:
>
> > > Hello Tom,
>
> > > > First, the matching is being done essentially with an "L" network (or
> > > > rather the balanced version of an "L" network), where there is a load
> > > > resistance (the resistive part of the feedpoint impedance, which
> > > > includes radiation resistance and element loss resistance reflected to
> > > > the feedpoint), the series capacitive reactance of the feedpoing
> > > > element, and a shunt inductive reactance, provided by the hairpin.
> > > > Because shortening the driven element causes a decrease in resistance
> > > > and an increase in capacitive reactance, it's possible to find a
> > > > length that allows matching to any of a wide range of resistances.
> > > > But the higher the resistance to which you match, the shorter you need
> > > > to make the element and the lower the feedpoint resistance. The ratio
> > > > of feedpoint resistance to matched resistance determines the loaded Q
> > > > of the matching network; as you make the matched resistance higher,
> > > > the loaded Q goes up rather quickly. If you know the loaded Q and the
> > > > unloaded Q of the hairpin, you have a good handle on the amount lost
> > > > to heat in the hairpin: if the hairpin Q is two times the loaded Q,
> > > > half the power is dissipated in the hairpin, for example.
>
> > > > However, unless you build an antenna with a very low feedpoint
> > > > resistance at resonance, there almost certainly won't be an efficiency
> > > > problem: the reactance changes quickly enough with changes in driven
> > > > element length that the resistance won't drop much by the time you
> > > > reach enough reactance to get a match to 200 ohms. It appears that
> > > > the loaded Q of the match to 200 ohms for your case will be less than
> > > > 4. I would think unless you really messed up badly, the hairpin
> > > > unloaded Q should be well in excess of 100, and if that's the case,
> > > > the power lost in the hairpin would correspond to well under 0.1dB
> > > > signal level change.
>
> > > All OK. I however reckon that, due to the parasitic elements effect, the
> > > radiation resistance of the driven element (before shortening it) would be in
> > > the order of 20 ohm. So, impedance gets brought up by a factor of 10 or so.
>
> > > > On the other hand, I'm surprised by the comment from the manufacturer
> > > > about difficulties making a 1:1 balun. I have had good luck using

> > > > ferrites and/or self-resonant coils of feedline and/or coils of
> > > > feedline specifically resonated with additional capacitance. A 4:1
> > > > balun from a "hairpin" of 1/2 wave of coax, arranged symmetrically, is
> > > > easy enough to make, but I would not rule out using a 1:1, if it has
> > > > advantages for you.
>
> > > His argument is that, for high-power operation (say 1500W), it is more
> > > convenient for him to provide a quarter-wavelength 4:1 balun made of RG-142
> > > teflon cable than a sealed box with a 1:1 coil on an ironpowder toroidal core. I
> > > mentioned him that, just using some extra length of RG-142 cable, he can easily
> > > build a 1:1 balun, and hence design the antenna matching system for 50 ohm
> > > instead of 200 ohm.
>
> > > I hope he will listen to me, because that antenna is really narrowband!
>
> > > 73
>
> > > Tony I0JX
>
> > Hello,
>
> > Imagine 10 Ohms radiation resistance + capacitive component after
> > shortening the open dipole radiator. When you convert that to 200 Ohms
> > via a parallel inductance (hairpin), the Q factor of such a network is
> > about 4.4. At 50 MHz that will result in a bandwidth (VSWR=2) of 8
> > MHz.
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> > A 200 Ohms to 50 Ohms coaxial balun will have a lower Q factor. So the
> > combination of balun and L-network will certainly have a useful
> > bandwidth >> 340 kHz.
>
> > Maybe the radiation resistance is less (you can derive that from the
> > hairpin inductance) and/or the antenna is by nature (very) narrow
> > band.
>
> > Best regards,
>
> > Wim
> > PA3DJSwww.tetech.nl
> > remove abc from the address.
>
> Yes, I had similar thoughts, but a bit different. First, I think it's
> safe to say that if, at resonance, the driven element presents about
> 20 ohms at the feedpoint, shortening the D.E. only a little will give
> enough capacitive reactance to allow the hairpin match to 200 ohms.
> Even if the D.E. looks like 5 ohms, the "L" network match still gives
> a 3dB bandwidth of 8MHz at a 50MHz center, or 3MHz 1.5:1 SWR
> bandwidth.

Hello Tom,

Fully agree with you. I gave the values for a 20 to 200 Ohms match to show that the problem is not in the matching, but in the antenna. Even matching from 20 to 50 Ohms will not give sufficient bandwidth, because actual BW is far below the BW of the matching network (with 20 Ohms termination).

I think we need to look somewhere else for the answer to
> the narrow bandwidth. My working hypothesis at the moment is that
> it's in the antenna, or perhaps rather in the combination of antenna
> and matching network. Note that the calc for the L match assumed a
> constant capacitance, but the antenna will not, in general, look
> anything like a constant C even over a fairly narrow frequency range.

That rapid Im(Zant) change is the reason for the narrow BW.

> I just ran EZNEC on a frequency-scaled version of the 14MHz 5 element
> Yagi included in the sample files, with the D.E. slightly shortened to
> allow a decent hairpin match to 200 ohms at the design center
> frequency.

Did you also scale the thickness of the elements?

I did a frequency sweep, 49 to 51 MHz, in 0.25MHz steps.
> Over that range, the equivalent series capacitance changes from 59pF
> at the low end to 138pF at the high end, and at least by NEC2's
> prediction, the impedance changes especially quickly around 51MHz--
> both reactive and resistive parts. 50.75MHz: 10.3-j31.76; 51MHz: 3.91-
> j22.56, quite a large percentage change in 250kHz. Having the
> effective series capacitance change that quickly will cause the
> matching network to behave very differently than it would with a
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> inductive reactance at the feedpoint, and match that (to 200 ohms, or
> to 50 ohms) with a shunt capacitance? That may work better, giving a
> broader SWR bandwidth. The resistive component should be higher,
> further lowering the Q, and I suspect the reactance won't change so
> quickly with frequency. I don't have time at the moment to compare
> the two, but may this evening. It may also be possible to raise the
> resistive part to 50 ohms and match to 50 with a series capacitance.

I did use length extension for very thick mesh dipoles for VHF air band. Their resonant impedance is less then 50 Ohms (because they become short). Some additional length gives some inductance to use a parallel capacitor match and (most important) bandwidth increase.

I don't know whether this will give sufficient BW improvement for the Yagi as the Q is also determined by the reflector en directors. I am looking forward to your simulation results.

>
> Cheers,
> Tom

Wim
PA3DJS
www.tetech.nl
Please remove abc from the address.

4044. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 21:37:43 UTC
From: richardharrison@webtv.net
Message-ID: <11127-47FBE5A7-1203@storefull-3256.bay.webtv.net>
Source record: 26265

Art wrote:
"But ham radio and the Navy have proved him (Terman) wrong with T2FD testing."

Art has likely tried a VHF or UHF antenna by rotation within a linearly polarized wavefront. If so, he has experienced cross-polarization and noted about 20 dB loss when cross-polarized in the field.

My WW-2 navy ship used a Marconi (inverted L) antenna for HF communications with a Collins TCS. A signal reflected by the ionosphere gains random polarization in the process. The vertically polarized Marconi does well with a ground wave over short distances even at HF over sea water. We had no slopers. The VHF and UHF antennas were all vertical whips to cover all azimuths. Art`s inclined antenna is in general a myth.

For rntertainment, we had a broadcast receiver called the RBO. It too used a Marconi antenna as all medium wave broadcasts are launched from vertical antennas. It worked well as would be expected of a broadcast receiver.

Best regards, Richard Harrison, KB5WZI

4045. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 21:55:29 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bcqnv39i8m9ju6il773nban56sb98bd805@4ax.com>
Source record: 26266

On Tue, 8 Apr 2008 07:50:35 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>By the way the antenna took 200 watts key
>down for 1 min
>without any hint of failure.

Nobody answered, hmmm?

Try again at night and see if airplanes use it as a beacon.

73's
Richard Clark, KB7QHC

4046. antenna ccr site?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 23:05:22 UTC
From: ml <m@di.net>
Message-ID: <m-C68F99.19052208042008@news.optonline.net>
Source record: 26268

hi

Is there any good site that i can check with prior to moving to
investigate if a particular town/city is going to be tower
friendly

for example a job might open up for me in tampa, fl so i
wanted to check the good/bad places around there to see what is
good

typically i wanted to check:

a) tower friendly
b) no power over ethernet
c) strange but known rf stuff that might cause ham interference

any tips /links appreciated

4047. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 23:17:18 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A7B5E7B7174Fnonenowhere@61.9.191.5>
Source record: 26269

"Antonio Vernucci" <vernucci@tin.it> wrote in
news:47fbdbfa$0$10616$4fafbaef@reader2.news.tin.it:

...
> the results you got on EZNEC are encouraging. Nevertheless I would not
> like to try using a lengthened element in conjunction with a
> capacitor, as the difference between that configuration and the
> original configuration would be the maximum (although it would be much
> easier to adjust a capacitor than the inductance of an hairpin).

Tony,

Some thoughts.

You are suggesting that it is easier to make a low loss capacitor that is located at the feedpoint in a hostile environment, than it is to make a low loss inductor (the hairpin).

Just as the hairpin is a s/c stub for inductive reactance, you could use an o/c stub... but remember that transmission line elements are a path to low Q reactors, use thick conductors for the transmision line (which for an o/c stub will need to be much longer than for the s/c stub).

>
> What puzzles me is that the antenna manufacturer reported me having
> sold several hundreds of those antennas, and no one has reported him
> the bandwidth being too narrow or the exagerated wet terrain
> influence.

Only hundreds?

Hy-Gain have used this feed system on 2m antennas for a very long time. Yes, their gain figures seem a bit generous, but the hairpin is a viable commercial option.
>
> I am not sure on what I am going to do, also because I am not 100%
> sure on whether the bandwidth problem is only due to the matching
> system, or it is also due to the particular antenna design.

My gut feeling is that optimised long Yagis have narrow bandwidth because of the large number of elements with role that is frequency critical. A short Yagi has wider bandwidth with the same feed system.

It is a long time since I read your first post, but narrow bandwidth can be an advantage. It reduces out of band signal reach your first amplifier where it will mix and produce IMD products that may be in-band. Narrow band antennas help to provide the selectivity that is lacking in many /

most modern radios.

Owen

4048. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 23:26:01 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <6084a390-adb7-445a-bbec-b1f3a142f0d1@q24g2000prf.googlegroups.com>
Source record: 26270

Hi Wim (and lurkers),

On Apr 8, 1:56 pm, Wimpie <wimabc...@tetech.nl> wrote:
> On 8 abr, 18:52, K7ITM <k7...@msn.com> wrote:

...
>
> > I just ran EZNEC on a frequency-scaled version of the 14MHz 5 element
> > Yagi included in the sample files, with the D.E. slightly shortened to
> > allow a decent hairpin match to 200 ohms at the design center
> > frequency.
>
> Did you also scale the thickness of the elements?

Yes, EZNEC lets you scale everything in the same proportion in one
quick operation.

>
> I did a frequency sweep, 49 to 51 MHz, in 0.25MHz steps.
>
>
>
...

> I don't know whether this will give sufficient BW improvement for the
> Yagi as the Q is also determined by the reflector en directors. I am
> looking forward to your simulation results.

Yes, of course. If the antenna itself is not wide-band, there is
rather little you can do about it. It may be possible with a more-or-
less complicated network to make the SWR bandwidth somewhat greater
(assuming still low loss--if you have a lossy network, you can make
the SWR bandwidth very large -- ;-) But making the SWR bandwidth
large does not make the antenna's gain bandwidth large. That is, for
a given set of directors and reflectors, the pattern will change with
frequency without much regard for what you do to get power into the
antenna.

Thanks for the encouragement about running some simulations. I'll
report results as I have a chance, probably this evening (US Pacific
coast time).

Cheers,
Tom

4049. Re: antenna ccr site?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 23:27:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <sqvnv3ld3qv4vrcgks43latlegb8ltjtck@4ax.com>
Source record: 26271

On Tue, 08 Apr 2008 19:05:22 -0400, ml <m@di.net> wrote:

>hi
>
>
>Is there any good site that i can check with prior to moving to
>investigate if a particular town/city is going to be tower
>friendly
>
>for example a job might open up for me in tampa, fl so i
>wanted to check the good/bad places around there to see what is
>good
>
>typically i wanted to check:
>
>a) tower friendly
>b) no power over ethernet
>c) strange but known rf stuff that might cause ham interference
>
>
>
>any tips /links appreciated

Hi Myles,

You need to get into the discussion group called "Tower Talk."

73's
Richard Clark, KB7QHC

4050. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 23:37:43 UTC
From: nm5k@wt.net
Message-ID: <348fe261-19ef-4539-b0b2-4ce6bcc7a773@q24g2000prf.googlegroups.com>
Source record: 26272

On Apr 8, 4:55 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Tue, 8 Apr 2008 07:50:35 -0700 (PDT), Art Unwin
>
> <ArthurUn...@gmail.com> wrote:
> >By the way the antenna took 200 watts key
> >down for 1 min
> >without any hint of failure.
>
> Nobody answered, hmmm?

Our cat has equal length mittens
and a symmetrical color scheme. :/
It's in equilibrium. Maybe I oughta fire
up the old rig, hook up some gator clips
to her legs, and see how she radiates from
2-100 mhz.. :+
I suspect if I place her on a steel patio table
as a ground plane/reflecting device, that would
increase the gain to the point that a government
grant surely would be inevitable. :)
They would probably make me cover boy
of QST for the next April edition.

4051. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-08 23:40:55 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <44f64dfe-4b04-482e-8850-b50b072d2743@n14g2000pri.googlegroups.com>
Source record: 26273

On 9 abr, 01:26, K7ITM <k7...@msn.com> wrote:
> Hi Wim (and lurkers),
>
> On Apr 8, 1:56 pm, Wimpie <wimabc...@tetech.nl> wrote:
>
> > On 8 abr, 18:52, K7ITM <k7...@msn.com> wrote:
>
> ...
>
>
>
> > > I just ran EZNEC on a frequency-scaled version of the 14MHz 5 element
> > > Yagi included in the sample files, with the D.E. slightly shortened to
> > > allow a decent hairpin match to 200 ohms at the design center
> > > frequency.
>
> > Did you also scale the thickness of the elements?
>
> Yes, EZNEC lets you scale everything in the same proportion in one
> quick operation.
>
>
>
> > I did a frequency sweep, 49 to 51 MHz, in 0.25MHz steps.
>
> ...
>
> > I don't know whether this will give sufficient BW improvement for the
> > Yagi as the Q is also determined by the reflector en directors. I am
> > looking forward to your simulation results.
>
> Yes, of course. If the antenna itself is not wide-band, there is
> rather little you can do about it. It may be possible with a more-or-
> less complicated network to make the SWR bandwidth somewhat greater
> (assuming still low loss--if you have a lossy network, you can make
> the SWR bandwidth very large -- ;-) But making the SWR bandwidth
> large does not make the antenna's gain bandwidth large. That is, for
> a given set of directors and reflectors, the pattern will change with
> frequency without much regard for what you do to get power into the
> antenna.
>
> Thanks for the encouragement about running some simulations. I'll
> report results as I have a chance, probably this evening (US Pacific
> coast time).

>
> Cheers,
> Tom

Hello Tom,

I do not have experience with EZNEC, so I didn't know that it also scales element diameter.

Fully agree with regards to VSWR BW, gain BW and wide band dummy loads....

Here it is UTC+2, so it is time for me te visit my bed for some hours. Tommorow VAT administration is waiting.

Best regards,

Wim

4052. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 00:37:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <4g3ov3dhkau74alt79t2jln4gvr2uc0jsp@4ax.com>
Source record: 26274

On Tue, 8 Apr 2008 16:37:43 -0700 (PDT), nm5k@wt.net wrote:

>a government grant surely would be inevitable. :)

But just think of this constant Z response to infinity!

No more Gamma Matching to (don't stare into the) Gamma raze.

No more changing jX in X-raze either.

Can we afford the connector adapter (and does Wireman carry it)?

73's
Richard Clark, KB7QHC

4053. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 06:40:22 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <776ae5a8-41c8-47f4-b321-51bc9c3a635f@u36g2000prf.googlegroups.com>
Source record: 26275

On Apr 8, 4:40 pm, Wimpie <wimabc...@tetech.nl> wrote:
> On 9 abr, 01:26, K7ITM <k7...@msn.com> wrote:
>
>
>
> > Hi Wim (and lurkers),
>
> > On Apr 8, 1:56 pm, Wimpie <wimabc...@tetech.nl> wrote:
>
> > > On 8 abr, 18:52, K7ITM <k7...@msn.com> wrote:
>
> > ...
>
> > > > I just ran EZNEC on a frequency-scaled version of the 14MHz 5 element
> > > > Yagi included in the sample files, with the D.E. slightly shortened to
> > > > allow a decent hairpin match to 200 ohms at the design center
> > > > frequency.
>
> > > Did you also scale the thickness of the elements?
>
> > Yes, EZNEC lets you scale everything in the same proportion in one
> > quick operation.
>
> > > I did a frequency sweep, 49 to 51 MHz, in 0.25MHz steps.
>
> > ...
>
> > > I don't know whether this will give sufficient BW improvement for the
> > > Yagi as the Q is also determined by the reflector en directors. I am
> > > looking forward to your simulation results.
>
> > Yes, of course. If the antenna itself is not wide-band, there is
> > rather little you can do about it. It may be possible with a more-or-
> > less complicated network to make the SWR bandwidth somewhat greater
> > (assuming still low loss--if you have a lossy network, you can make
> > the SWR bandwidth very large -- ;-) But making the SWR bandwidth
> > large does not make the antenna's gain bandwidth large. That is, for
> > a given set of directors and reflectors, the pattern will change with
> > frequency without much regard for what you do to get power into the
> > antenna.
>
> > Thanks for the encouragement about running some simulations. I'll
> > report results as I have a chance, probably this evening (US Pacific
> > coast time).

>
> > Cheers,
> > Tom
>
> Hello Tom,
>
> I do not have experience with EZNEC, so I didn't know that it also
> scales element diameter.
>
> Fully agree with regards to VSWR BW, gain BW and wide band dummy
> loads....
>
> Here it is UTC+2, so it is time for me te visit my bed for some hours.
> Tommorow VAT administration is waiting.
>
> Best regards,
>
> Wim

Hi Wim and lurkers,

Yes, EZNEC has some nice features. I exercised a couple of them tonight, doing frequency sweeps with inductive and capacitive matching. I did cheat: since I do not know the dimensions of the hairpin match, I elected to just use a pure lumped inductance. I suppose the error compared with a transmission line stub (hairpin) won't be great. I also used for the first time ASCII file import for the wire description, making use of Excel to generate the wires. (Why did it take me so long?? ;-)

Somewhat to my surprise, I found that the SWR bandwidth of the shortened D.E. (driven element) loaded with a shunt inductance and that of the lengthened D.E. loaded with a shunt capacitance was not so different.

The antenna I picked to model was one in the Orr and Cowan book, "The Beam Antenna Book." It's a 6-element 1.20 wave long design, with 0.2 waves D.E. to reflector, and 0.25 waves D.E. to first director and also between each adjacent pair of directors. For 6 meters it is a little shorter than Tony's antenna, but not very much shorter. But the elements (per Orr and Cowan's numbers) are 2 inches (about 50mm) diameter. The large diameter almost certainly contributes to the fairly broad bandwidth. All models below are done in freespace.

For the shortened D.E.: D.E. length = 95.4 inches. Feedpoint impedance at 50.1MHz is 16.32-j54.63 ohms. Gain varies from 11.78dBi at 49.5MHz to 11.98dBi at 50.1 to 11.68 at 50.5. f/b varies uniformly from 19.43dB at 49.5 to 8.21dB at 50.5. Matched at 50.1MHz to 200 ohms with 189.4nH shunt at the feedpoint yields a 1.4:1 SWR bandwidth of about 49.89MHz to 50.28MHz.

For the lengthened D.E.: length = 115.8 inches; impedance at 50.1 = 29.28+j70.7 ohms. Gain: 11.81@49.5, 12.05max, 11.82@50.5. f/b shows same uniform degradation with increased freq; 20.92@49.5 to 8.52@50.5. 38.35pF shunt across feedpoint yields 1.4:1 SWR BW of about 49.89 to 50.34MHz, just slightly greater than the shortened one.

(Neither of these includes frequency effects of the 4:1 balun to get back to 50 ohms...)

I also tried a much-lengthened D.E., to get it up to 50+j204.1 ohms. Then a series 15.57pF gives a 50 ohm match. Gain is similar to above, 11.83dBi --> 12.11dBi --> 11.93dBi, and f/b is also similar, 22.82 --> 8.83. I notice both the gain and the f/b improve slightly as the D.E. is lengthened, though it's small enough that you'd never notice it--it would be swamped out by other effects. The 1.4:1 SWR BW for this configuration is about 49.85MHz to 50.32MHz; this of course against a 50 ohm reference which is different from the first two examples above which are against a 200 ohm reference.

OK--I think I got all the critical stuff in there...

Cheers,
Tom

4054. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 09:08:16 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A7BC2ACF8A37nonenowhere@61.9.191.5>
Source record: 26276

K7ITM <k7itm@msn.com> wrote in
news:776ae5a8-41c8-47f4-b321-51bc9c3a635f@u36g2000prf.googlegroups.com:

...
> Yes, EZNEC has some nice features. I exercised a couple of them
> tonight, doing frequency sweeps with inductive and capacitive
> matching. I did cheat: since I do not know the dimensions of the
> hairpin match, I elected to just use a pure lumped inductance. I
> suppose the error compared with a transmission line stub (hairpin)
> won't be great. I also used for the first time ASCII file import for

It probably isn't.

However, you could get an idea from my Two Wire Line Loss Calculator
(http://www.vk1od.net/tl/twllc.htm). It looks like a hairpin made of 4mm
dia aluminium 50mm spacing and 150mm in length give an impedance of 0.02
+j61... so the Q is probably mainly determined by the end connections.

a o/c stub made of 4mm dia aluminium 50mm spacing and 1300mm in length
give an impedance of 0.07-j80... so, it is not quite as good
electrically, it is unweildly and end connection resistance will probably
still be significant. This is no doubt why people use a hairpin in
preference to an o/c stub!

Owen

4055. Re: antenna ccr site?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 09:39:19 UTC
From: ml <m@di.net>
Message-ID: <m-9A4CE5.05391909042008@news.optonline.net>
Source record: 26277

In article <sqvnv3ld3qv4vrcgks43latlegb8ltjtck@4ax.com>,
Richard Clark <kb7qhc@comcast.net> wrote:

> On Tue, 08 Apr 2008 19:05:22 -0400, ml <m@di.net> wrote:
>
> >hi
> >
> >
> >Is there any good site that i can check with prior to moving to
> >investigate if a particular town/city is going to be tower
> >friendly
> >
> >for example a job might open up for me in tampa, fl so i
> >wanted to check the good/bad places around there to see what is
> >good
> >
> >typically i wanted to check:
> >
> >a) tower friendly
> >b) no power over ethernet
> >c) strange but known rf stuff that might cause ham interference
> >
> >
> >
> >any tips /links appreciated
>
> Hi Myles,
>
> You need to get into the discussion group called "Tower Talk."
>
> 73's
> Richard Clark, KB7QHC

was that a news group i didn't find it ?

thanks

4056. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 10:45:04 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <bd5394f2-ca4d-4ad9-9853-1dc7c3de0f4b@p39g2000prm.googlegroups.com>
Source record: 26278

```
On 9 abr, 08:40, K7ITM <k7...@msn.com> wrote:
> On Apr 8, 4:40 pm, Wimpie <wimabc...@tetech.nl> wrote:
>
>
>
> > On 9 abr, 01:26, K7ITM <k7...@msn.com> wrote:
>
> > > Hi Wim (and lurkers),
>
> > > On Apr 8, 1:56 pm, Wimpie <wimabc...@tetech.nl> wrote:
>
> > > > On 8 abr, 18:52, K7ITM <k7...@msn.com> wrote:
>
> > > ...
>
> > > > > I just ran EZNEC on a frequency-scaled version of the 14MHz 5 element
> > > > > Yagi included in the sample files, with the D.E. slightly shortened to
> > > > > allow a decent hairpin match to 200 ohms at the design center
> > > > > frequency.
>
> > > > Did you also scale the thickness of the elements?
>
> > > Yes, EZNEC lets you scale everything in the same proportion in one
> > > quick operation.
>
> > > > I did a frequency sweep, 49 to 51 MHz, in 0.25MHz steps.
>
> > > ...
>
> > > > I don't know whether this will give sufficient BW improvement for the
> > > > Yagi as the Q is also determined by the reflector en directors. I am
> > > > looking forward to your simulation results.
>
> > > Yes, of course. If the antenna itself is not wide-band, there is
> > > rather little you can do about it. It may be possible with a more-or-
> > > less complicated network to make the SWR bandwidth somewhat greater
> > > (assuming still low loss--if you have a lossy network, you can make
> > > the SWR bandwidth very large -- ;-) But making the SWR bandwidth
> > > large does not make the antenna's gain bandwidth large. That is, for
> > > a given set of directors and reflectors, the pattern will change with
> > > frequency without much regard for what you do to get power into the
> > > antenna.
>
> > > Thanks for the encouragement about running some simulations. I'll
```

> > > report results as I have a chance, probably this evening (US Pacific
> > > coast time).
>
> > > Cheers,
> > > Tom
>
> > Hello Tom,
>
> > I do not have experience with EZNEC, so I didn't know that it also
> > scales element diameter.
>
> > Fully agree with regards to VSWR BW, gain BW and wide band dummy
> > loads....
>
> > Here it is UTC+2, so it is time for me te visit my bed for some hours.
> > Tommorow VAT administration is waiting.
>
> > Best regards,
>
> > Wim
>
> Hi Wim and lurkers,
>
> Yes, EZNEC has some nice features. I exercised a couple of them
> tonight, doing frequency sweeps with inductive and capacitive
> matching. I did cheat: since I do not know the dimensions of the
> hairpin match, I elected to just use a pure lumped inductance. I
> suppose the error compared with a transmission line stub (hairpin)
> won't be great. I also used for the first time ASCII file import for
> the wire description, making use of Excel to generate the wires. (Why
> did it take me so long?? ;-)
>
> Somewhat to my surprise, I found that the SWR bandwidth of the
> shortened D.E. (driven element) loaded with a shunt inductance and
> that of the lengthened D.E. loaded with a shunt capacitance was not so
> different.
>
> The antenna I picked to model was one in the Orr and Cowan book, "The
> Beam Antenna Book." It's a 6-element 1.20 wave long design, with 0.2
> waves D.E. to reflector, and 0.25 waves D.E. to first director and
> also between each adjacent pair of directors. For 6 meters it is a
> little shorter than Tony's antenna, but not very much shorter. But
> the elements (per Orr and Cowan's numbers) are 2 inches (about 50mm)
> diameter. The large diameter almost certainly contributes to the
> fairly broad bandwidth. All models below are done in freespace.
>
> For the shortened D.E.: D.E. length = 95.4 inches. Feedpoint
> impedance at 50.1MHz is 16.32-j54.63 ohms. Gain varies from 11.78dBi
> at 49.5MHz to 11.98dBi at 50.1 to 11.68 at 50.5. f/b varies uniformly
> from 19.43dB at 49.5 to 8.21dB at 50.5. Matched at 50.1MHz to 200

> ohms with 189.4nH shunt at the feedpoint yields a 1.4:1 SWR bandwidth
> of about 49.89MHz to 50.28MHz.
>
> For the lengthened D.E.: length = 115.8 inches; impedance at 50.1 =
> 29.28+j70.7 ohms. Gain: 11...@49.5, 12.05max, 11...@50.5. f/b shows
> same uniform degradation with increased freq; 20...@49.5 to
> 8...@50.5. 38.35pF shunt across feedpoint yields 1.4:1 SWR BW of
> about 49.89 to 50.34MHz, just slightly greater than the shortened one.
>
> (Neither of these includes frequency effects of the 4:1 balun to get
> back to 50 ohms...)
>
> I also tried a much-lengthened D.E., to get it up to 50+j204.1 ohms.
> Then a series 15.57pF gives a 50 ohm match. Gain is similar to above,
> 11.83dBi --> 12.11dBi --> 11.93dBi, and f/b is also similar, 22.82 -->
> 8.83. I notice both the gain and the f/b improve slightly as the D.E.
> is lengthened, though it's small enough that you'd never notice it--it
> would be swamped out by other effects. The 1.4:1 SWR BW for this
> configuration is about 49.85MHz to 50.32MHz; this of course against a
> 50 ohm reference which is different from the first two examples above
> which are against a 200 ohm reference.
>
> OK--I think I got all the critical stuff in there...
>
> Cheers,
> Tom

Hello Tom,

Regarding the "cheating", no problem with that. When length of hairpin is far below 1/8 lambda, difference with lumped component is negligible (for this situation).

Owen mentioned that a 150mm hairpin has the required reactance. The 0.02 Ohms loss resistance in the hairpin does not dissipate significant power (not measurable in practice within the antenna setup). This also shows that Tony does not have to worry about hairpin loss, even in his 200 Ohm intermediate impedance.

Your simulation made fully clear that Tony's problem is in the antenna and not in the matching.

Thanks for sharing your results,

Wim
PA3DJS
www.tetech.nl
please remove abc from the address.

4057. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 10:45:19 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <851cee65-d5d0-43fd-ae23-c39910eb514c@m1g2000pre.googlegroups.com>
Source record: 26279

On Apr 7, 12:14 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Sun, 6 Apr 2008 19:21:00 -0700 (PDT)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Apr 5, 10:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > Pg(t) is the result of a standing wave, containing power from Pf(x) and Pr(x+90).
>
> > This is one way of thinking of it, but it is less misleading to
> > consider
> > that Pg(t) describes the actual energy flow, just as Vg(t) describes
> > the
> > actual voltage and Ig(t) describes the actual current. Using
> > superposition
> > Vf, If, Vr and Ir can be derived and from these Pf and Pr.
>
> Your argument is correct to the extent that the power you describe is passing point Pg(t) at the instant (t). It is the equivalent statement that an observer watching cars pass on the freeway would make, saying "one blue car moving left and one red car moving right, so two cars are passing". Not wrong, just "how is the information useful"?

Pg(t) is the actual power at that point in the circuit. It can be
derived by simply multiplying the direct measurement of the actual
voltages and currents at that point in the circuit. One measures
the same voltages and currents regardless of whether it is a
transmission line to the right of point g, or the equivalent
lumped circuit element.

While Vf, Vr, etc. can be used to derive the same information and,
therefore is arguably just a different point of view, Vf and Vr,
If and Ir, etc., must always be used in pairs to arrive at the
actual circuit conditions. It is when one starts to look at them
separately, as if they individually represent some part of reality,
that confusion awaits.

Thus I strongly suggest that Vg, Ig, Pg, represent reality. The
others are a convenient alternative view for the purposes of
solving problems.

Typically we see Vg split into Vf and Vr, but why stop at two.
Why not 3, or 4? Analyzing a two wire telephone line will use
four or more, forward to the east, forward to the west, reflected
to east, reflected to the west, and sometimes many different
reflections. How do we choose how many? Depends on what is
convenient for solving the problem. The power of superposition.
But assigning too much reality to the individual contributors

can be misleading.

> > > If we can't account for the power, it is because we are doing the accounting incorrectly.
>
> > And the error in the accounting may be the expectation that the
> > particular set of powers chosen should balance. Attempting to
> > account for Pr fails when Pr is the imputed power from a partial
> > voltage and current because such computations do not yield powers
> > which exist.
>
> If we remove the transmission line from the circuit, we have an open circuit with no current. Without current, there can be no power. How can power arrive at Rs if there is no power coming through the transmission line?

There is power coming from the transmission line. Looking at Pg(t),
some of the time energy flows into the line, later in the cycle
it flows out. The energy transfer would be exactly the same if the
transmission line was replaced by a lumped circuit element. And
we don't need Pf and Pr for an inductor.

But this flow is quite different than the flow suggested by Pf and
Pr. These suggest a continuous flow in each direction. It is only
when they are summed that it becomes clear that flow is first in
one direction and then other.

> Would it help to consider that before the "reflection from the short" arrives, power arrives via the transmission line path but the impedance is 100 ohms for our example, composed of Rs = 50 ohms and transmission line = 50 ohms? After the "reflection from the short" arrives, the impedance drops to 70.7 ohms so the power to the circuit goes up (assuming a constant voltage source). How can this happen if power is not carried via the "reflection from the short"?

It goes up because the impedance presented by the transmission
changes when the reflection returns. This change in impedance
alters the circuit conditions and the power in the various
elements change. Depending on the details of the circuit,
these powers may go up, or they may go down when the reflection
arrives.

...Keith

4058. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 10:45:25 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <0d74f360-2060-4dc7-8b8b-9911ea981388@k1g2000prb.googlegroups.com>
Source record: 26280

On Apr 7, 5:31 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > As long as you stick with simple assertions, followed
> > by sentences such as, "That is simple physics.",
> > spoken in a tone which says no further understanding
> > is necessary, you will be locked in the fruitless
> > search for the imputed reflected energy flow.
>
> My vision is returning and could turn out to be
> the best vision that I've ever had in my life. :-)
>
> You have been asking for the mechanism for storage
> and return of the interference energy in the system.
> That mechanism is standing waves. Are you aware that
> standing waves store energy and return it to the
> system every 90 degrees?

More correctly, the energy is stored in the distributed
capacitance and inductance of the transmission line.

> In the examples being discussed,
> there are standing waves inside the source.

There is no capacitance or inductance in the source to
store energy.

> For the 1/8WL
> shorted line, there appears to be 125 watts of forward
> power and 25 watts of reflected power at points on each
> side of the source.

Not if there is no transmission line.

> With powers given in average values, the circuit that
> you should be using for your instantaneous power
> equations is:
>
>   50 ohm
> ----50-ohm----/\/\/\/\----50-ohm----
>   125w-->   100w   50w-->
>   <--25w   <--50w
>
> I will be very surprised if the instantaneous
> powers don't balance.

Perhaps. But I don't need more examples where the powers balance. I already have the one example where they don't. And it only takes one to disprove an hypothesis.

> Your previous problem is that you were using net
> power values on one side of Rs and component power
> values on the other side of Rs.

But there are no component powers in the source. It is a simple circuit element.

...Keith

4059. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 10:45:30 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b99e0b35-fee4-454e-9989-4dc9d6eeb602@r9g2000prd.googlegroups.com>
Source record: 26281

On Apr 8, 8:51 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Roy Lewallen wrote:
> > Now, I don't know of any way to assign "ownership" to bundles of energy.
>
> One way is to add a unique bit of modulation to each
> bundle of wave energy. I am fond of using a TV signal
> and observing ghosting on the screen. This, of course,
> assumes that the modulation stays with the same component
> wave to which it was originally associated.

But as soon as you modulate, you no longer have sinusoidal
steady state.

You can split the signal up into its spectral components
and, using superposition, analyze the circuit for each
spectral component individually, then sum them to obtain
the total system response. But chasing the energy with
one frequency is hard enough. The conundrums that arise
when doing it for several are much worse than the ones
here.

For your enjoyment consider the composite signal
cos(9.95*2*pi*t)+cos(10.05*2*pi*t)
working into 1 ohm.
The imputed average power for each of the components is
0.5 W. The total average power is 1 W as expected.

Consider the 1 second interval from 4.5 to 5.5 seconds.
In this second 0.016393 joules flow for an average
power of 0.016393 W. But the sum of the imputed power
in the two spectral components is 1 W. Where did the
missing energy go?

Just another example of why assigning too much reality
to the imputed powers of the components of superposition
is misleading.

> > But let's suppose that the energy which flows into the node from the
> > left side during the "inhalation" part of the cycle is the energy which
> > flows out to the right during the "exhalation" part of the cycle, and
> > the energy flowing into the node from the right exits on the left. So
> > now we've managed to get energy past the node going in both directions
> > while maintaining zero power and current at the node and conserving
> > energy as we must.
>
> This agrees with the distributed network model. Since

> there is no impedance discontinuity and no impedor at
> the node, there can be no reflections at the node.

In other examples, you have suggested inserting a zero length transmission line to aid analysis. Why not insert a zero length transmission line with an impedance to produce the desired reflection? At steady state the reflection cancels but this would be due to the redistribution of energy according to your explanations.

> The
> forward wave flows unimpeded through the node as does
> the equal magnitude reflected wave. The net energy flow
> is zero. The average energy flow is zero.
>
> Anyone who believes there is zero energy at a standing-
> wave current node should touch that point on a transmission
> line (which just happens to be the same point as the
> maximum voltage anti-node).

No one has said there is zero energy. Only that there is zero energy flow. For energy flow, one needs simultaneous voltage and current.

> One must be careful not to confuse the net signal with the
> component signals.

Agreed. Assigning too much reality to component signals is seriously misleading. Now actual voltages, currents and powers, that's a different thing.

> One must be careful not to confuse the
> average values with the instantaneous values.
>
> This can best be visualized using light waves in free
> space. Unimpeded EM waves do not bounce off of each other.

Until one can grasp the simplicity of a transmission line, moving to the complexity of free space offers nothing but obfuscation.

...Keith

4060. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 10:45:36 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <35d4a656-a50e-48ba-9aa1-449e35f23e6d@q1g2000prf.googlegroups.com>
Source record: 26282

On Apr 8, 11:44 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > You seem to be saying that the answers would be
> > completely different if you chose a different
> > impedance for the non-existant transmission line.
>
> There you go again, trying to shove your words
> into my mouth. (Pattooieee!) Please don't do that.

Did you not say that 50 ohms for the non-existant
line was the correct impedance because other impedances
would yield the 'wrong' answer?

> You have apparently done the math and found it
> to be valid so, once again, you have to change
> the specified conditions in order to try to make
> your point.

I don't recall changing anything. I'm still with
Fig 1-1 from your paper, which did not include
non-existant transmission lines.

> A Z0 of 50 ohms is the *only* characteristic
> impedance that will meet the specified precondition
> of zero average interference. Choosing any other
> characteristic impedance will move the example
> outside of the scope of my Part 1 article.

Did you not say that adding 1 wave length of transmission
line does not alter the conditions? Are you now saying
it does?

> I
> understand why you want to do such a thing but
> obfuscation, diversions, and straw men are not
> part of the scientific method. My Part 1 article
> has a very narrow scope. Please abide by it.

Yes. That is why I prefer the simplicity of Fig 1-1
without the non-existant transmission lines.

...Keith

4061. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 15:16:50 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <6ba645d9-d4fd-40cd-bfd5-c14dbcb6e685@m36g2000hse.googlegroups.com>
Source record: 26283

On Apr 8, 7:37 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Tue, 8 Apr 2008 16:37:43 -0700 (PDT), n...@wt.net wrote:
> >a government grant surely would be inevitable. :)
>
> But just think of this constant Z response to infinity!
>
> No more Gamma Matching to (don't stare into the) Gamma raze.
>
> No more changing jX in X-raze either.
>
> Can we afford the connector adapter (and does Wireman carry it)?
>
> 73's
> Richard Clark, KB7QHC

Richard
Over the years you have insulted my work as I have shared most of it
with my fellow hams.
I shared with all the details of my antenna work and in this thread I
have shared with all
how I utelised the connection between mechanical laws and electrical
laws of Maxwell Gauss
Newton and the proof with respect to radiation. This last thread
proves the existence of the universal
law where I used the mechanical laws of the pendulum and applied them
to the electrical laws
which produced the antenna. It is this proof that I have provided
which is the most important step
in my work.Considering that Einstein spent his whole life searching
for this and eventually turned
away from the classics to those of relativity makes me very proud of
my work.
I shared it with hams because of their love with respect to antennas
but that is a love of the past.
I am extremely disapointed that hams did not go on this jorney with me
or even supply encouragement.
However I am now at the end of my quest and thus will retreat from
this newsgroup where it appears
emotion has overtaken the the employment of skill to pursue the holy
grail that most have given up.
Regards to all as I depart where I will not be privey to your replies
and can thus concentrate on other matters.
Art Unwin KB9MZ....XG an east ender from the UK)(

4062. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 16:02:53 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fce8a2$0$35961$4fafbaef@reader2.news.tin.it>
Source record: 26284

Tom and Wim,

I agree with your concluion that the bandwidth narrowness is due to the antenna design and not to the matching system.

I have simulated the antenna on EZNEC and the narrow band property of the antenna is very evident.

I would like to also put the hairpin in the EZNEC model, but I am not very good at EZNEC and I would not now know to do it.

If you are interested I can send you the EZNEC file via e-mail.

73

Tony I0JX

4063. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 16:29:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <X96Lj.1396$h75.874@newssvr27.news.prodigy.net>
Source record: 26285

Keith Dysart wrote:
> Thus I strongly suggest that Vg, Ig, Pg, represent reality. The
> others are a convenient alternative view for the purposes of
> solving problems.

Of course they represent *net* reality but we are trying
to determine what is happening at a component wave level.
Defining the component waves out of existence is an un-
acceptable substitute for ascertaining what is happening
in reality.

> Typically we see Vg split into Vf and Vr, but why stop at two.
> Why not 3, or 4?

Because two is what a directional wattmeter reads. The
two superposed waves, forward and reverse, can be
easily distinguished from one another. Two superposed
coherent forward waves cannot be distinguished from
each other. That's why we stop at two - because it is
foolish to go any farther.

> There is power coming from the transmission line. Looking at Pg(t),
> some of the time energy flows into the line, later in the cycle
> it flows out. The energy transfer would be exactly the same if the
> transmission line was replaced by a lumped circuit element. And
> we don't need Pf and Pr for an inductor.

OTOH, the distributed network model is a superset of
the lumped circuit model so the inadequate lumped
circuit model might confuse people. Hint: changing
models to make waves disappear from existence doesn't
make the waves disappear.

The lumped circuit model is adequate for lumped circuits.
It is inadequate for a lot of distributed network problems.
If the lumped circuit model worked for everything, we
wouldn't ever need the distributed network model.

I suggest that you take your circuit and apply distributed
network modeling techniques to it including reflection
coefficients and forward and reflected voltages, currents,
and powers at all points in the circuit. Note that the
reflections are *same-cycle* reflections. If the lumped
circuit model analysis differs from the distributed network
model analysis, the lumped circuit analysis is wrong.

> It goes up because the impedance presented by the transmission
> changes when the reflection returns. This change in impedance
> alters the circuit conditions and the power in the various
> elements change. Depending on the details of the circuit,
> these powers may go up, or they may go down when the reflection
> arrives.

That is true, but the impedance is *VIRTUAL*, i.e. not an
impedor, and is therefore only an *EFFECT* of superposition.
We are once again left wondering about the *CAUSE* of the
virtual impedance, i.e. the details of the superposition
process. Ignoring those details will not solve the problem.
--
73, Cecil http://www.w5dxp.com

4064. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 16:51:06 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080409095106.5ce37dc6.rsparks@elltel.net>
Source record: 26286

On Wed, 9 Apr 2008 03:45:19 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 7, 12:14 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > On Sun, 6 Apr 2008 19:21:00 -0700 (PDT)
> >
> > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > On Apr 5, 10:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > Pg(t) is the result of a standing wave, containing power from Pf(x) and Pr(x+90).

> >
> > > This is one way of thinking of it, but it is less misleading to
> > > consider
> > > that Pg(t) describes the actual energy flow, just as Vg(t) describes
> > > the
> > > actual voltage and Ig(t) describes the actual current. Using
> > > superposition
> > > Vf, If, Vr and Ir can be derived and from these Pf and Pr.
> >
> > Your argument is correct to the extent that the power you describe is passing point Pg(t) at the instant (t). It is the equivalent statement that an observer watching cars pass on the freeway would make, saying "one blue car moving left and one red car moving right, so two cars are passing". Not wrong, just "how is the information useful"?
>
> Pg(t) is the actual power at that point in the circuit. It can be
> derived by simply multiplying the direct measurement of the actual
> voltages and currents at that point in the circuit. One measures
> the same voltages and currents regardless of whether it is a
> transmission line to the right of point g, or the equivalent
> lumped circuit element.
>
> While Vf, Vr, etc. can be used to derive the same information and,
> therefore is arguably just a different point of view, Vf and Vr,
> If and Ir, etc., must always be used in pairs to arrive at the
> actual circuit conditions. It is when one starts to look at them
> separately, as if they individually represent some part of reality,
> that confusion awaits.
>
> Thus I strongly suggest that Vg, Ig, Pg, represent reality. The
> others are a convenient alternative view for the purposes of
> solving problems.
>
> Typically we see Vg split into Vf and Vr, but why stop at two.
> Why not 3, or 4? Analyzing a two wire telephone line will use

> four or more, forward to the east, forward to the west, reflected
> to east, reflected to the west, and sometimes many different
> reflections. How do we choose how many? Depends on what is
> convenient for solving the problem. The power of superposition.
> But assigning too much reality to the individual contributors
> can be misleading.
>
Good thoughts.

By breaking Vg into Vf and Vr, we can explain why very long transmission lines, many wavelengths long, have repeating patterns of inductive and capacitive reactance as if they were lumped components. If Vf and Vr work for long lines, they should work for short lines.

So far as breaking Vg into many sequential/different Vf and Vr, we usually need to do that. Cecil chose our simple example to prevent re-reflection (reflection of the reflection) but even then it is apparent that the voltage source will have a reactive component.

> > > > If we can't account for the power, it is because we are doing the accounting incorrectly.
> >
> > > And the error in the accounting may be the expectation that the
> > > particular set of powers chosen should balance. Attempting to
> > > account for Pr fails when Pr is the imputed power from a partial
> > > voltage and current because such computations do not yield powers
> > > which exist.
> >
> > If we remove the transmission line from the circuit, we have an open circuit with no current. Without current, there can be no power. How can power arrive at Rs if there is no power coming through the transmission line?
>
> There is power coming from the transmission line. Looking at Pg(t),
> some of the time energy flows into the line, later in the cycle
> it flows out. The energy transfer would be exactly the same if the
> transmission line was replaced by a lumped circuit element. And
> we don't need Pf and Pr for an inductor.
>
> But this flow is quite different than the flow suggested by Pf and
> Pr. These suggest a continuous flow in each direction. It is only
> when they are summed that it becomes clear that flow is first in
> one direction and then other.
>
I understand the delemma here. It is like trying to both fill and empty the bottle at the same time. We can't do that with physical objects and we like to think of energy as if it were a physical object. So how can energy seemingly flow into a line at the same time it flows out?

Of course one way would be if Vf actually did reflect from Vr. A reflection beginning at the point Vg, then propagating down the line as an artifact of the original wave. So far as I have been able to figure, the result is the same as when we think of both Vf and Vr as actual waves, which are much easier to follow and calculate.

> > Would it help to consider that before the "reflection from the short" arrives, power arrives via the transmission line path but the impedance is 100 ohms for our example, composed of Rs = 50 ohms and transmission line = 50 ohms? After the "reflection from the short" arrives, the impedance drops to 70.7 ohms so the power to the circuit goes up (assuming a constant voltage source). How can this happen if power is not carried via the "reflection from the short"?
>
> It goes up because the impedance presented by the transmission
> changes when the reflection returns. This change in impedance
> alters the circuit conditions and the power in the various
> elements change. Depending on the details of the circuit,
> these powers may go up, or they may go down when the reflection
> arrives.
>
Your comment almost makes the altered impedance sound like a resistance, probably not quite the picture you want to convey. I think of power to Rs coming via two paths, one longer than the other. In my mind, the changed impedance is the result of two power streams merging back together.

The impedance found when the reflection returns is dependent upon the line impedance, length of line, and conditons at the point of reflection. The length of line is measured in terms of time and wave velocity. While this is strong evidence supporting Vf and Vr, it does not rule out reflection between wave components.

I don't know how many people have seen an railroad engine starting a train from stop, when there is a small gap between each of the cars. You can hear each of the cars bumping the adjacent car in a chain reaction going from engine to the end of the train. Clearly, the reaction has a velocity of travel. Our EM waves could do the same thing but we would never measure anything except the the resultant wave.

--
73, Roger, W7WKB

4065. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 16:52:02 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <500b4b90-34a6-4dba-b0f7-739426d0b585@s8g2000prg.googlegroups.com>
Source record: 26287

On Apr 9, 2:08 am, Owen Duffy <n...@no.where> wrote:
> K7ITM <k7...@msn.com> wrote
innews:776ae5a8-41c8-47f4-b321-51bc9c3a635f@u36g2000prf.googlegroups.com:
>
> ...
>
> > Yes, EZNEC has some nice features. I exercised a couple of them
> > tonight, doing frequency sweeps with inductive and capacitive
> > matching. I did cheat: since I do not know the dimensions of the
> > hairpin match, I elected to just use a pure lumped inductance. I
> > suppose the error compared with a transmission line stub (hairpin)
> > won't be great. I also used for the first time ASCII file import for
>
> It probably isn't.
>
> However, you could get an idea from my Two Wire Line Loss Calculator
> (http://www.vk1od.net/tl/twllc.htm). It looks like a hairpin made of 4mm
> dia aluminium 50mm spacing and 150mm in length give an impedance of 0.02
> +j61... so the Q is probably mainly determined by the end connections.
>
> a o/c stub made of 4mm dia aluminium 50mm spacing and 1300mm in length
> give an impedance of 0.07-j80... so, it is not quite as good
> electrically, it is unweildly and end connection resistance will probably
> still be significant. This is no doubt why people use a hairpin in
> preference to an o/c stub!
>
> Owen

Thanks, Owen. Actually, the error I was thinking of was not the Q,
since both a good hairpin and a good helical coil will have Qu's very
much higher than the loaded Q of the matching network -- but rather of
the slope of reactance versus frequency, since the hairpin is a
transmission line and will presumably show a sharp resonance at a
different frequency from the coil's self resonance. But that error
should also be small--negligible as Wim notes.

Cheers,
Tom

4066. Re: antenna ccr site?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 16:53:01 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <h2tpv35kmerf3i7f4bm1arudsns8koh33f@4ax.com>
Source record: 26288

On Wed, 09 Apr 2008 05:39:19 -0400, ml <m@di.net> wrote:

>
>was that a news group i didn't find it ?

Hi Myles,

Try:
http://lists.contesting.com/_towertalk/

73's
Richard Clark, KB7QHC

4067. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 16:59:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uB6Lj.2352$GE1.112@nlpi061.nbdc.sbc.com>
Source record: 26289

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
> There is no capacitance or inductance in the source to
> store energy.

"In" is an oxymoron for the lumped circuit model.
The lumped reactance exists *at* the same point as
the source because everything is conceptually lumped
into a single point.

In the real world, circuits are never single points
and there exists a frequency at which distributed
network effects cannot be ignored. In reality,
distributed network effects occur for all real
circuits but they can often be ignored as negligible.

The two inches of wire connecting the source to the
source resistor has a characteristic impedance and
is a certain fraction of a wavelength long. If it is
not perfectly matched, reflections will occur, i.e.
there will exist forward power and reflected power on
that two inches of wire.

>> For the 1/8WL
>> shorted line, there appears to be 125 watts of forward
>> power and 25 watts of reflected power at points on each
>> side of the source.
>
> Not if there is no transmission line.

Aha, there's your error. What would a Bird directional
wattmeter read for forward power and reflected power?
Consider that short pieces of 50 ohm coax are used
to connect the real-world components together.

Or chose any characteristic impedance and do the math.
You will discover something about the real world, i.e.
that you have been seduced by the lumped circuit model.

> Perhaps. But I don't need more examples where the
> powers balance. I already have the one example where
> they don't.

And that one example is outside the scope of the
preconditions of my Part 1 article. Let me help you
out on that one. There are an infinite number of
examples where the reflected power is NOT dissipated

in the source resistor but none of those examples,
including yours, satisfies the preconditions specified
in my Part 1 article. Therefore, they are irrelevant
to this discussion.

> But there are no component powers in the source. It
> is a simple circuit element.

No wonder your calculations are in error.
Perform your calculations based on the readings of
an ideal 50 ohm directional wattmeter and get back to us.
Hint: Mismatches cause reflections, even in real-world
circuits. The reflections happen to be *same-cycle*
reflections. The simplified lumped circuit model, that
exists in your head and not in reality, ignores those
reflections and thus causes confusion among the
uninitiated who do not understand its real-world
limitations.
--
73, Cecil http://www.w5dxp.com

4068. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 17:03:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <k4tpv35h9tk246a8le4t2g0nsscak8c1hk@4ax.com>
Source record: 26290

On Wed, 9 Apr 2008 08:16:50 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>Over the years you have insulted my work as I have shared most of it
>with my fellow hams.

No Arthur, you are simply confused about the distinction between
criticism of stupidity and your effort to prove it.

Your effort is all well and good, but it does not elevate stupidity to
the ranks of academic achievement; and neither does robbing textbooks,
and slurring your fellow hams remove the tarnish from your theories.

>I will not be privey to your replies
>and can thus concentrate on other matters.

Oh, something tells me you will be privy to this - enjoy! (privey
indeed. One would think when you use a Briticism, you would know how
to spell it - and for that matter, what it means!)

73's
Richard Clark, KB7QHC

4069. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 17:09:44 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <33cf0f97-b5a9-444c-9c49-b18d5a46154c@s39g2000prd.googlegroups.com>
Source record: 26291

On Apr 9, 9:02 am, "Antonio Vernucci" <vernu...@tin.it> wrote:
> Tom and Wim,
>
> I agree with your concluion that the bandwidth narrowness is due to the antenna
> design and not to the matching system.
>
> I have simulated the antenna on EZNEC and the narrow band property of the
> antenna is very evident.
>
> I would like to also put the hairpin in the EZNEC model, but I am not very good
> at EZNEC and I would not now know to do it.
>
> If you are interested I can send you the EZNEC file via e-mail.
>
> 73
>
> Tony I0JX

Hi Tony,

I would be happy to have a look at the file and add the hairpin if you wish. But I can also guide you through doing it yourself. It should be quite easy. Simply click on the "> Trans Lines" button, the second one below > Sources in the main window. Specify the first end the same as the source--perhaps 50% along wire 2, assuming the D.E. is wire 2. That end will then be in parallel with the source. You can type "S" in for the other end's wire #, or if you click in the End 2 Wire # box, you should see a list of "open" and "short" and you can select "short" there. Then enter the length, Z0, velocity factor (1) and loss. Reverse or normal doesn't matter since only one end is connected.

In as much as the hairpin actually IS in the field of the antenna, and couples to it to some degree, there may be a small error in using the EZNEC transmission line, instead of entering it as wires, but for a short stub I would not expect that to be a significant issue. I do know that the 1/4 wave stub used to separate elements of a collinear does couple to the antenna fields and that coupling is a significant factor in the performance of the antenna--or at least that is what R.W.P. King tells us.

And...thanks much for the interesting discussion topic. I learned a few things from it.

Cheers,
Tom

4070. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 17:22:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KX6Lj.1406$h75.1121@newssvr27.news.prodigy.net>
Source record: 26292

Keith Dysart wrote:
> On Apr 8, 8:51 am, Cecil Moore <nos...@w5dxp.com> wrote:
>> Roy Lewallen wrote:
>>> Now, I don't know of any way to assign "ownership" to bundles of energy.
>> One way is to add a unique bit of modulation to each
>> bundle of wave energy. I am fond of using a TV signal
>> and observing ghosting on the screen. This, of course,
>> assumes that the modulation stays with the same component
>> wave to which it was originally associated.
>
> But as soon as you modulate, you no longer have sinusoidal
> steady state.

You know and I know that is a copout diversion to avoid
your having to face the technical facts.

> Consider the 1 second interval from 4.5 to 5.5 seconds.
> In this second 0.016393 joules flow for an average
> power of 0.016393 W. But the sum of the imputed power
> in the two spectral components is 1 W. Where did the
> missing energy go?

Hint: Missing energy is impossible except in your mind.
Just because you are ignorant of where the energy goes
doesn't mean it is missing. It just means that you fail
to understand interference. Have you not read Hecht's
Chapter 9 on "Interference"?

Obviously, interference is present and there is *NO*
missing energy. I have previously listed the possibilities
at least four times so will not bother listing them again.

> Just another example of why assigning too much reality
> to the imputed powers of the components of superposition
> is misleading.

Just another example of ignorance in action. Waves
possess energy that cannot be destroyed. Just because
you cannot track it doesn't mean it cannot be tracked.

> In other examples, you have suggested inserting a zero length
> transmission line to aid analysis. Why not insert a zero length
> transmission line with an impedance to produce the desired
> reflection?

What would be the characteristic impedance of a length of
transmission that caused a reflection coefficient of 1.0?

> No one has said there is zero energy. Only that there is
> zero energy flow. For energy flow, one needs simultaneous
> voltage and current.

Vfor/Ifor = Z0, Vfor*Ifor = Pfor = EforxHfor
If an EM wave exists, it is moving at the speed of
light and transferring energy. For Z0 purely resistive,
Vfor cannot exist without Vfor/Z0 = Ifor. Vfor is
always in phase with Ifor.

> Assigning too much reality to component signals is
> seriously misleading.

Assigning reality to the components of superposition
is seriously misleading???? Can we therefore throw
out the entire principle of superposition?

> Until one can grasp the simplicity of a transmission line,
> moving to the complexity of free space offers nothing but
> obfuscation.

It is obvious that you have many things you desire to
hide inside that black transmission line to which we
are not even allowed to attach a directional wattmeter.

Since you are incapable of explaining what happens in
free space for all to see, why should we believe that
you have figured out what is happening inside a
transmission line where everything is hidden from view?

Until one can grasp the transparency of free space,
moving to the opaque transmission line where all kinds
of important things are hidden from view offers nothing
but obfuscation.
--
73, Cecil http://www.w5dxp.com

4071. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 17:31:23 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fcfd60$0$18151$4fafbaef@reader3.news.tin.it>
Source record: 26293

> You are suggesting that it is easier to make a low loss capacitor that is
> located at the feedpoint in a hostile environment, than it is to make a
> low loss inductor (the hairpin).

What I was maning to say that is easier to determine the correct capacitance (just using a variable capacitor) rather than the correct inductance (using a sliding short on the hairpin). Once one determined the correct value, the variable element should anyway be replaced with an equiavalent fixed element

> Only hundreds?
>
> Hy-Gain have used this feed system on 2m antennas for a very long time.
> Yes, their gain figures seem a bit generous, but the hairpin is a viable
> commercial option.

Well, this is an antenna just for 6-meter enthusiasts fabricated in Italy, and there are not too many of them around here.

> It is a long time since I read your first post, but narrow bandwidth can
> be an advantage. It reduces out of band signal reach your first amplifier
> where it will mix and produce IMD products that may be in-band. Narrow
> band antennas help to provide the selectivity that is lacking in many /
> most modern radios.

yes, but the bandwidth is so tight that it barely fits my needs. Also the SWR response shift when it rains is a problem to which I have no solution

73

Tony I0JX

4072. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 17:36:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <g87Lj.5758$2g1.912@nlpi068.nbdc.sbc.com>
Source record: 26294

Keith Dysart wrote:
> Did you not say that 50 ohms for the non-existant
> line was the correct impedance because other impedances
> would yield the 'wrong' answer?

ABSOLUTELY NOT! I said that other impedances do
not meet the specified preconditions for my
Part 1 article so the answers are irrelevant,
not wrong.

If a 50 ohm Z0 and 50 ohm load is specified, do
other Z0s yield wrong answers? Of course not.
Those answers are merely irrelevant to the
specified preconditions.

> I don't recall changing anything. I'm still with
> Fig 1-1 from your paper, which did not include
> non-existant transmission lines.

You have not proved any errors exist in my Part 1
article. You keep trying to change the specified
preconditions from average power to instantaneous
power but that is simply unethical.

> Did you not say that adding 1 wave length of transmission
> line does not alter the conditions? Are you now saying
> it does?

The set(A) conditions are not altered. The set(B)
conditions are altered. Exactly what conditions
are you referring to?

> Yes. That is why I prefer the simplicity of Fig 1-1
> without the non-existant transmission lines.

Of course, you absolutely avoid using any tool that
would prove you wrong. So what's new?
--
73, Cecil http://www.w5dxp.com

4073. techical note from the kosher HaM

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 18:33:02 UTC
From: ccr rpsident mrak mrogan <mrak@kornstain.com>
Message-ID: <ftj22k$s5c$1@stable.tornevall.net>
Source record: 26295
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.swap,alt.ham-radio.vhf-uhf

http://techkb9rqz.blogspot.com/

4074. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 18:36:51 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fd0cb9$0$29597$4fafbaef@reader1.news.tin.it>
Source record: 26296

> Hi Tony,
>
> I would be happy to have a look at the file and add the hairpin if you
> wish. But I can also guide you through doing it yourself. It should
> be quite easy. Simply click on the "> Trans Lines" button, the second
> one below > Sources in the main window. Specify the first end the
> same as the source--perhaps 50% along wire 2, assuming the D.E. is
> wire 2. That end will then be in parallel with the source. You can
> type "S" in for the other end's wire #, or if you click in the End 2
> Wire # box, you should see a list of "open" and "short" and you can
> select "short" there. Then enter the length, Z0, velocity factor (1)
> and loss. Reverse or normal doesn't matter since only one end is
> connected.

Thanks on you guidance. My hairpin is a U of aluminum tube connected directly to the antenna feedpoints. The U center is connected to the boom.

The hairpin tube diameter is about 0.8 cm. The three sides of the U are approximately 35 cm, 10 cm and 35 cm. I presume that I shall enter 35 cm as the transmission line length, but how to calculate Z0? Moreover what about the velocity factor, perhaps 0.98 for a tube in open air?

Would you have a formula at hand?

Thanks and 73

Tony I0JX

4075. stop the lies dloyd

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 18:41:12 UTC
From: an old friend <kb9rqz@yahoo.com>
Message-ID: <380faa1a-d9c7-44cc-8459-2917217735d5@b1g2000hsg.googlegroups.com>
Source record: 26297
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.swap,alt.ham-radio.vhf-uhf

On Apr 9, 2:33 pm, "ccr rpsident mrak mrogan" <m...@kornstain.com>
wrote:
>
fake

4076. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 19:03:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <kN6dnQs-a_ydjmDanZ2dnUVZ_ruqnZ2d@easystreetonline>
Source record: 26298

Keith Dysart wrote:
> On Apr 8, 8:51 am, Cecil Moore <nos...@w5dxp.com> wrote:
> . . .
>> The
>> forward wave flows unimpeded through the node as does
>> the equal magnitude reflected wave. The net energy flow
>> is zero. The average energy flow is zero.
>>
>> Anyone who believes there is zero energy at a standing-
>> wave current node should touch that point on a transmission
>> line (which just happens to be the same point as the
>> maximum voltage anti-node).
>
> No one has said there is zero energy. Only that there is
> zero energy flow. For energy flow, one needs simultaneous
> voltage and current.
> . . .

In the interesting case of a current node on an infinite-SWR line, it appears we do have energy flow without any current, and therefore without power. Energy flows into the node from both directions in equal amounts at the same time, and out to both directions in equal amounts at the same time. What we don't have is *net* energy flow at the node. Likewise, there's charge flowing into the node from both directions, and out in both directions, which results in the zero net current. I don't believe that's the same as saying there's no energy or charge flow at all, even though the power and current are zero. And it's not necessary to separately consider forward and reverse waves of current, energy, or power in order to observe this -- it can be seen from looking only at the total charge or energy.

Roy Lewallen, W7EL

4077. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 19:35:59 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <bed1486e-3e17-4ab8-a594-1c7b7933b9a5@1g2000prg.googlegroups.com>
Source record: 26300

On Apr 9, 11:36 am, "Antonio Vernucci" <vernu...@tin.it> wrote:
> > Hi Tony,
>
> > I would be happy to have a look at the file and add the hairpin if you
> > wish. But I can also guide you through doing it yourself. It should
> > be quite easy. Simply click on the "> Trans Lines" button, the second
> > one below > Sources in the main window. Specify the first end the
> > same as the source--perhaps 50% along wire 2, assuming the D.E. is
> > wire 2. That end will then be in parallel with the source. You can
> > type "S" in for the other end's wire #, or if you click in the End 2
> > Wire # box, you should see a list of "open" and "short" and you can
> > select "short" there. Then enter the length, Z0, velocity factor (1)
> > and loss. Reverse or normal doesn't matter since only one end is
> > connected.
>
> Thanks on you guidance. My hairpin is a U of aluminum tube connected directly to
> the antenna feedpoints. The U center is connected to the boom.
>
> The hairpin tube diameter is about 0.8 cm. The three sides of the U are
> approximately 35 cm, 10 cm and 35 cm. I presume that I shall enter 35 cm as the
> transmission line length, but how to calculate Z0? Moreover what about the
> velocity factor, perhaps 0.98 for a tube in open air?
>
> Would you have a formula at hand?
>
> Thanks and 73
>
> Tony I0JX

Hi Tony,

Since the spacing is so large (10cm), it may be better to enter the
hairpin as wires in the model. It might be interesting to compare the
results between wires and a transmission line. First the wires:

I assume that the D.E. is one wire in the model you have now. I
suppose it has an odd number of segments, so that the source can go
just in the middle. I'm assuming the hairpin parallel tube segments
are center-to-center 10cm apart. I will assume the D.E. is currently
250cm long, all at some x value, and y extending from -1.25m to
+1.25m, as one "wire" of some diameter. To be able to connect the
hairpin at the right places, we need wire ends at -.05m and +.05m, so
we can change the D.E. wire to be one segment between y=-.05m and +.
05m, and then add 2 wires the same diameter as the D.E., one from
y=-1.25m to -.05m, and one from y=+.05m to +1.25m, and each with about

half as many segments as the original D.E., all at the original x value. (Or exchange x and y if I have guessed wrong.) So if the original D.E. had 11 segments, put 5 segments on each of the two new wires. Now add three new wires to represent the hairpin U. Assuming the hairpin is oriented perpendicular to the plane of the antenna, it will be all at the same x value as the D.E. I'll assume the antenna is at z=0. So the wires will have ends at x,-.05,0;x,-.05,.35 and x,-.05,.35;x,+.05,.35 and x,+.05,.35;x,+.05,0 -- and all with diameter 8mm or .008m.

For the transmission line model: the diameter (8mm) and spacing (100mm center to center) tells me the line impedance is about 380 ohms. It should be OK to assume VF=1.00, if there is no insulation around the tube. One problem is that the short across the end is not really a short--it is more an inductance. We could go to the trouble of calculating the inductance and putting that as a load on the end of the transmission line instead of just a short, but it should be a good approximation to just lengthen the line by half the length of the "short"; I would enter the line length just as 40cm instead of 35. (I won't be surprised if Owen pops in here with either a confirmation or a better suggestion!)

Cheers,
Tom

4078. Re: Dayton Hamvention

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 19:36:20 UTC
From: Homer J <homerj@home.com>
Message-ID: <b3141$47fd1ab7$ce947019$19410@DIALUPUSA.NET>
Source record: 26201

They usually send those out around January or February back when I used to
do that Flea Mart thing in the old days.

Check their web site.

Homer J.

"SWLer" <French@comcast.net> wrote in message
news:47FAC26F.2060108@comcast.net...
> What's going on??
>
> I haven't received anything about reserving my tailgate
> space, tickets, etc.

4079. Optimum wavelength % for a stick antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 19:39:01 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <pX8Lj.19131$4O1.19019@trnddc03>
Source record: 26203

Hi All:

Is there an optimum % length for an antenna when the antenna is a simple straight stick? 1/4 wave... 1/2, 5/8, full wave? Does it differ depending on wavelength? If size is not a consideration, is a full wavelength preferable?

I've Googled around a bit but haven't found a good explanation yet.

4080. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 19:58:33 UTC
From: richardharrison@webtv.net
Message-ID: <27692-47FD1FE9-101@storefull-3257.bay.webtv.net>
Source record: 26204

Art Unwin, KB9MZ wrote:
"Regards to all as I depart----."

Would Art cut and run if his claim of an antenna for HF that deployed in the size of two shoe boxes and that performed as well as an antenna that deployed to a significant fraction of a wavelength were so? I think not. It has always been a fairy tale.

Truth is, a small antenna has a small radiation resistance. Ratio of the radiation resistance to the antenna`s total resistance predicts its efficiency. Available materials mean we must use large antennas to get efficiency.

Don`t go away mad, Art. Your stories are entertaining and make us think. Just don`t expect baloney to pass unchallenged.

Best regards, Richard Harrison, KB5WZI

4081. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 20:22:29 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fd257b$0$29597$4fafbaef@reader1.news.tin.it>
Source record: 26205

> I assume that the D.E. is one wire in the model you have now. I
> suppose it has an odd number of segments, so that the source can go
> just in the middle. I'm assuming the hairpin parallel tube segments
> are center-to-center 10cm apart. I will assume the D.E. is currently
> 250cm long, all at some x value, and y extending from -1.25m to
> +1.25m, as one "wire" of some diameter. To be able to connect the
> hairpin at the right places, we need wire ends at -.05m and +.05m, so
> we can change the D.E. wire to be one segment between y=-.05m and +.
> 05m, and then add 2 wires the same diameter as the D.E., one from
> y=-1.25m to -.05m, and one from y=+.05m to +1.25m, and each with about
> half as many segments as the original D.E., all at the original x
> value. (Or exchange x and y if I have guessed wrong.) So if the
> original D.E. had 11 segments, put 5 segments on each of the two new
> wires. Now add three new wires to represent the hairpin U. Assuming
> the hairpin is oriented perpendicular to the plane of the antenna, it
> will be all at the same x value as the D.E. I'll assume the antenna
> is at z=0. So the wires will have ends at x,-.05,0;x,-.05,.35 and x,-.
> 05,.35;x,+.05,.35 and x,+.05,.35;x,+.05,0 -- and all with diameter 8mm
> or .008m.

Thanks Tom,

I did the EZNEC model exactly as you suggested, but I now have another doubt (I must re-read the EZNEC help one of these days...)

I would say that I shall still feed the driven element at its center, and not separately feed the two junctions between the hairpin and the driven element

Is that right?

73

Tony I0JX

4082. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 20:30:59 UTC
From: Bob <"bob asko"@hotmail.com>
Message-ID: <36f7c$47fd198b$cef8bf45$12859@TEKSAVVY.COM-Free>
Source record: 26299

Really? http://home.comcast.net/~xtxinc/prioritymyth.htm

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:6ba645d9-d4fd-40cd-bfd5-c14dbcb6e685@m36g2000hse.googlegroups.com...
> On Apr 8, 7:37 pm, Richard Clark <kb7...@comcast.net> wrote:
>> On Tue, 8 Apr 2008 16:37:43 -0700 (PDT), n...@wt.net wrote:
>> >a government grant surely would be inevitable. :)
>>
>> But just think of this constant Z response to infinity!
>>
>> No more Gamma Matching to (don't stare into the) Gamma raze.
>>
>> No more changing jX in X-raze either.
>>
>> Can we afford the connector adapter (and does Wireman carry it)?
>>
>> 73's
>> Richard Clark, KB7QHC
>
> Richard
> Over the years you have insulted my work as I have shared most of it
> with my fellow hams.
> I shared with all the details of my antenna work and in this thread I
> have shared with all
> how I utelised the connection between mechanical laws and electrical
> laws of Maxwell Gauss
> Newton and the proof with respect to radiation. This last thread
> proves the existence of the universal
> law where I used the mechanical laws of the pendulum and applied them
> to the electrical laws
> which produced the antenna. It is this proof that I have provided
> which is the most important step
> in my work.Considering that Einstein spent his whole life searching
> for this and eventually turned
> away from the classics to those of relativity makes me very proud of
> my work.
> I shared it with hams because of their love with respect to antennas
> but that is a love of the past.
> I am extremely disapointed that hams did not go on this jorney with me
> or even supply encouragement.
> However I am now at the end of my quest and thus will retreat from
> this newsgroup where it appears
> emotion has overtaken the the employment of skill to pursue the holy
> grail that most have given up.

> Regards to all as I depart where I will not be privey to your replies
> and can thus concentrate on other matters.
> Art Unwin KB9MZ....XG an east ender from the UK)(

4083. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 20:36:07 UTC
From: Bob <"bob asko"@hotmail.com>
Message-ID: <338db$47fd1abf$cef8bf45$13070@TEKSAVVY.COM-Free>
Source record: 26202

Art - It's spring time! Lets Go Fishin' .

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:6ba645d9-d4fd-40cd-bfd5-c14dbcb6e685@m36g2000hse.googlegroups.com...
> On Apr 8, 7:37 pm, Richard Clark <kb7...@comcast.net> wrote:
>> On Tue, 8 Apr 2008 16:37:43 -0700 (PDT), n...@wt.net wrote:
>> >a government grant surely would be inevitable. :)
>>
>> But just think of this constant Z response to infinity!
>>
>> No more Gamma Matching to (don't stare into the) Gamma raze.
>>
>> No more changing jX in X-raze either.
>>
>> Can we afford the connector adapter (and does Wireman carry it)?
>>
>> 73's
>> Richard Clark, KB7QHC
>
> Richard
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> I shared with all the details of my antenna work and in this thread I
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> how I utelised the connection between mechanical laws and electrical
> laws of Maxwell Gauss
> Newton and the proof with respect to radiation. This last thread
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> law where I used the mechanical laws of the pendulum and applied them
> to the electrical laws
> which produced the antenna. It is this proof that I have provided
> which is the most important step
> in my work.Considering that Einstein spent his whole life searching
> for this and eventually turned
> away from the classics to those of relativity makes me very proud of
> my work.
> I shared it with hams because of their love with respect to antennas
> but that is a love of the past.
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> or even supply encouragement.
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> this newsgroup where it appears
> emotion has overtaken the the employment of skill to pursue the holy
> grail that most have given up.

> Regards to all as I depart where I will not be privey to your replies
> and can thus concentrate on other matters.
> Art Unwin KB9MZ....XG an east ender from the UK)(

4084. Re: Optimum wavelength % for a stick antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 21:14:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <h8idndJbL68hrGDanZ2dnUVZ_qygnZ2d@easystreetonline>
Source record: 26206

There's no single "optimum" length; every length has its own
characteristics, and each length is better for some purposes than
others. I suggest that you visit your local library and check out a copy
of the _ARRL Antenna Book_. It'll provide a good basis for learning
about this interesting topic.

Roy Lewallen, W7EL

usmcbrat wrote:
> Hi All:
>
> Is there an optimum % length for an antenna when the antenna is a simple
> straight stick? 1/4 wave... 1/2, 5/8, full wave? Does it differ depending
> on wavelength? If size is not a consideration, is a full wavelength
> preferable?
>
> I've Googled around a bit but haven't found a good explanation yet.
>
>

4085. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-09 21:59:02 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A7C51365DFE7nonenowhere@61.9.191.5>
Source record: 26207

K7ITM <k7itm@msn.com> wrote in
news:500b4b90-34a6-4dba-b0f7-739426d0b585@s8g2000prg.googlegroups.com:

> On Apr 9, 2:08 am, Owen Duffy <n...@no.where> wrote:
>> K7ITM <k7...@msn.com> wrote
>> innews:776ae5a8-41c8-47f4-b321-51bc9c3a635f@u36g2000prf.googlegroups.c
>> om:
>>
>> ...
>>
>> > Yes, EZNEC has some nice features. I exercised a couple of them
>> > tonight, doing frequency sweeps with inductive and capacitive
>> > matching. I did cheat: since I do not know the dimensions of the
>> > hairpin match, I elected to just use a pure lumped inductance. I
>> > suppose the error compared with a transmission line stub (hairpin)
>> > won't be great. I also used for the first time ASCII file import
>> > for
>>
>> It probably isn't.
>>
>> However, you could get an idea from my Two Wire Line Loss Calculator
>> (http://www.vk1od.net/tl/twllc.htm). It looks like a hairpin made of
>> 4mm dia aluminium 50mm spacing and 150mm in length give an impedance
>> of 0.02 +j61... so the Q is probably mainly determined by the end
>> connections.
>>
>> a o/c stub made of 4mm dia aluminium 50mm spacing and 1300mm in
>> length give an impedance of 0.07-j80... so, it is not quite as good
>> electrically, it is unweildly and end connection resistance will
>> probably still be significant. This is no doubt why people use a
>> hairpin in preference to an o/c stub!
>>
>> Owen
>
> Thanks, Owen. Actually, the error I was thinking of was not the Q,
> since both a good hairpin and a good helical coil will have Qu's very
> much higher than the loaded Q of the matching network -- but rather of
> the slope of reactance versus frequency, since the hairpin is a
> transmission line and will presumably show a sharp resonance at a
> different frequency from the coil's self resonance. But that error
> should also be small--negligible as Wim notes.

Hi Tom,

Warning bells sound to me when applications call for reactors fabricated from TL sections. Not to say that are always bad, but they aren't always good, and they bear examination.

I think that may have been in Tony's mind over the matching network.

In the case of the hairpin, fabricated from substantial material, it looks good in this application. Because the line section is so short, inductive reactance is almost linearly proportional to length, and self resonance of the line section itself is nearly a decade higher.

My experience with one of the HyGain (now MFJ) 2m Yagis was that VSWR was stable with weather and over time. I had taken some care to exclude air + water from key connections, in fact I replaced all the fastners used for electrical connection with SS when the beam was less than a year old because of corrosion. Tweny years later the remaining fastners used only for mechanical retention required replacement due to corrosion. But, after the first rework, the matching system seemed robust (bird proof) and reliable.

I have used them since on home made antennas with good success.

Owen

4086. Re: Optimum wavelength % for a stick antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 00:05:24 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <JQcLj.30310$dT.28878@bignews1.bellsouth.net>
Source record: 26208

"usmcbrat" <president@whitehouse.gov> wrote in message
news:pX8Lj.19131$4O1.19019@trnddc03...
> Hi All:
>
> Is there an optimum % length for an antenna when the antenna is a simple
> straight stick? 1/4 wave... 1/2, 5/8, full wave? Does it differ
> depending on wavelength? If size is not a consideration, is a full
> wavelength preferable?
>
> I've Googled around a bit but haven't found a good explanation yet.
>
If you're talking about a vertical whip antenna, you may want to look at a
5/8 wave - but you would need to add a little coil at the bottom to match
impedence to 50-ohms.
I read somewhere that that the pattern of a vertical antenna improves as the
length approaches 5/8-wave.
Picture the pattern like a small balloon full of water sitting on a map -
and as you increase the length of the whip, you press down on the
water-balloon - making its coverage more horizontal - thus covering more
area. Some of the radiation that would have gone up now goes out.
And a dipole with 5/8 wave on each pole would make it more directional as
well.
I don't have references to point you to, just going by memory - which may -
or may not - be intact.

4087. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 00:23:48 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <88dba64d-9ce5-4f35-96a8-88388d43afec@1g2000prg.googlegroups.com>
Source record: 26209

On Apr 9, 12:51 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Wed, 9 Apr 2008 03:45:19 -0700 (PDT)
>
> Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > On Apr 7, 12:14 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > > On Sun, 6 Apr 2008 19:21:00 -0700 (PDT)
>
> > > Keith Dysart <Keith.Dys...@gmail.com> wrote:
> > > > On Apr 5, 10:06 am, Roger Sparks <rspa...@elltel.net> wrote:
> > > > > Pg(t) is the result of a standing wave, containing power from Pf(x) and
Pr(x+90).
>
> > > > This is one way of thinking of it, but it is less misleading to
> > > > consider
> > > > that Pg(t) describes the actual energy flow, just as Vg(t) describes
> > > > the
> > > > actual voltage and Ig(t) describes the actual current. Using
> > > > superposition
> > > > Vf, If, Vr and Ir can be derived and from these Pf and Pr.
>
> > > Your argument is correct to the extent that the power you describe is passing point
Pg(t) at the instant (t). It is the equivalent statement that an observer watching cars
pass on the freeway would make, saying "one blue car moving left and one red car moving
right, so two cars are passing". Not wrong, just "how is the information useful"?
>
> > Pg(t) is the actual power at that point in the circuit. It can be
> > derived by simply multiplying the direct measurement of the actual
> > voltages and currents at that point in the circuit. One measures
> > the same voltages and currents regardless of whether it is a
> > transmission line to the right of point g, or the equivalent
> > lumped circuit element.
>
> > While Vf, Vr, etc. can be used to derive the same information and,
> > therefore is arguably just a different point of view, Vf and Vr,
> > If and Ir, etc., must always be used in pairs to arrive at the
> > actual circuit conditions. It is when one starts to look at them
> > separately, as if they individually represent some part of reality,
> > that confusion awaits.
>
> > Thus I strongly suggest that Vg, Ig, Pg, represent reality. The
> > others are a convenient alternative view for the purposes of
> > solving problems.
>
> > Typically we see Vg split into Vf and Vr, but why stop at two.

> > Why not 3, or 4? Analyzing a two wire telephone line will use
> > four or more, forward to the east, forward to the west, reflected
> > to east, reflected to the west, and sometimes many different
> > reflections. How do we choose how many? Depends on what is
> > convenient for solving the problem. The power of superposition.
> > But assigning too much reality to the individual contributors
> > can be misleading.
>
> Good thoughts.
>
> By breaking Vg into Vf and Vr, we can explain

I am not sure that 'explain' is the correct word. It certainly
provides
a convenient technique for computing the voltate and current along the
line, but there are other ways to compute the result; differential
equations being one other way, though less convenient. But I am not
convinced that a convenient technique for solving the problem is
necessarily an 'explanation of why'.

> why very long transmission lines, many wavelengths long, have repeating patterns of inductive and capacitive reactance as if they were lumped components. If Vf and Vr work for long lines, they should work for short lines.

This is true. But when we descend to zero length lines, as some have
done, the rationale becomes quite a bit weaker.

> So far as breaking Vg into many sequential/different Vf and Vr, we usually need to do that. Cecil chose our simple example to prevent re-reflection (reflection of the reflection) but even then it is apparent that the voltage source will have a reactive component.

I still think of a voltage source as just being a voltage source, not
something
with resitance, reactance or impedance.

> > > > > If we can't account for the power, it is because we are doing the accounting incorrectly.
>
> > > > > And the error in the accounting may be the expectation that the
> > > > > particular set of powers chosen should balance. Attempting to
> > > > > account for Pr fails when Pr is the imputed power from a partial
> > > > > voltage and current because such computations do not yield powers
> > > > > which exist.
>
> > > If we remove the transmission line from the circuit, we have an open circuit with no current. Without current, there can be no power. How can power arrive at Rs if there is no power coming through the transmission line?
>
> > There is power coming from the transmission line. Looking at Pg(t),
> > some of the time energy flows into the line, later in the cycle
> > it flows out. The energy transfer would be exactly the same if the

> > transmission line was replaced by a lumped circuit element. And
> > we don't need Pf and Pr for an inductor.
>
> > But this flow is quite different than the flow suggested by Pf and
> > Pr. These suggest a continuous flow in each direction. It is only
> > when they are summed that it becomes clear that flow is first in
> > one direction and then other.
>
> I understand the delemma here. It is like trying to both fill and empty the bottle at the same time. We can't do that with physical objects and we like to think of energy as if it were a physical object. So how can energy seemingly flow into a line at the same time it flows out?
>
> Of course one way would be if Vf actually did reflect from Vr. A reflection beginning at the point Vg, then propagating down the line as an artifact of the original wave. So far as I have been able to figure, the result is the same as when we think of both Vf and Vr as actual waves, which are much easier to follow and calculate.

I agree that the final results are the same. The intermediate results
can
mislead in different ways.

> > > Would it help to consider that before the "reflection from the short" arrives, power arrives via the transmission line path but the impedance is 100 ohms for our example, composed of Rs = 50 ohms and transmission line = 50 ohms? After the "reflection from the short" arrives, the impedance drops to 70.7 ohms so the power to the circuit goes up (assuming a constant voltage source). How can this happen if power is not carried via the "reflection from the short"?
>
> > It goes up because the impedance presented by the transmission
> > changes when the reflection returns. This change in impedance
> > alters the circuit conditions and the power in the various
> > elements change. Depending on the details of the circuit,
> > these powers may go up, or they may go down when the reflection
> > arrives.
>
> Your comment almost makes the altered impedance sound like a resistance,

Impedance does have some similarity to resistance, but only for
single
frequency sinusoidal excitation, though I was not trying to say that.

> probably not quite the picture you want to convey. I think of power to Rs coming via two paths, one longer than the other. In my mind, the changed impedance is the result of two power streams merging back together.
>
> The impedance found when the reflection returns is dependent upon the line impedance, length of line, and conditons at the point of reflection. The length of line is measured in terms of time and wave velocity. While this is strong evidence supporting Vf and Vr,

The technique of breaking actual voltage into Vf and Vr certainly
works. But

I would not say this is evidence for the existance of Vf and Vr,
merely agreement
with superposition.

One of my text books drags the reader through the solution using
differential
equations, and then introduces Vf and Vr as a simpler way to solve the
problem.
The student is truly happy from learning that diffyQs will not be
required.

> it does not rule out reflection between wave components.
>
> I don't know how many people have seen an railroad engine starting a train from stop, when there is a small gap between each of the cars. You can hear each of the cars bumping the adjacent car in a chain reaction going from engine to the end of the train. Clearly, the reaction has a velocity of travel.

Some what like hole flow in semiconductors. Electrons going forward
make the
holes flow backwards.

> Our EM waves could do the same thing but we would never measure anything except the the resultant wave.

...Keith

4088. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 00:36:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <443dcdad-1d06-424d-bcce-81541c612cd7@u36g2000prf.googlegroups.com>
Source record: 26210

On Apr 9, 3:03 pm, Roy Lewallen <w...@eznec.com> wrote:
> Keith Dysart wrote:
> > On Apr 8, 8:51 am, Cecil Moore <nos...@w5dxp.com> wrote:
> > . . .
> >> The
> >> forward wave flows unimpeded through the node as does
> >> the equal magnitude reflected wave. The net energy flow
> >> is zero. The average energy flow is zero.
>
> >> Anyone who believes there is zero energy at a standing-
> >> wave current node should touch that point on a transmission
> >> line (which just happens to be the same point as the
> >> maximum voltage anti-node).
>
> > No one has said there is zero energy. Only that there is
> > zero energy flow. For energy flow, one needs simultaneous
> > voltage and current.
> > . . .
>
> In the interesting case of a current node on an infinite-SWR line, it
> appears we do have energy flow without any current, and therefore
> without power. Energy flows into the node from both directions in equal
> amounts at the same time, and out to both directions in equal amounts at
> the same time.

I think I would be tempted to cut the node down the middle creating
two nodes with no current flow or energy flow between them.

> What we don't have is *net* energy flow at the node.
> Likewise, there's charge flowing into the node from both directions, and
> out in both directions, which results in the zero net current. I don't
> believe that's the same as saying there's no energy or charge flow at
> all, even though the power and current are zero. And it's not necessary
> to separately consider forward and reverse waves of current, energy, or
> power in order to observe this -- it can be seen from looking only at
> the total charge or energy.

One thought experiment I rather like is the infinite SWR ideal line.
Cut the line at all the current zeroes. The voltage, current, and,
I'd suggest, the energy distribution do not change. The line can
be re-assembled, again with no change.

Those who argue that energy is crossing the node, have to explain that
the cut has completely changed the mechanism that keeps the net energy
in its place, but the voltage and current distributions remain the

same. I prefer the basic circuit theory tenet that one can cut a line carrying no current without impacting the circuit. This leads to a model with no energy crossing the node.

...Keith

4089. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 00:54:00 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <94a7faab-136d-468c-b979-03793b9a8e34@a22g2000hsc.googlegroups.com>
Source record: 26211

On Apr 9, 2:59 pm, Owen Duffy <n...@no.where> wrote:
>...
> Hi Tom,
>
> Warning bells sound to me when applications call for reactors fabricated
> from TL sections. Not to say that are always bad, but they aren't always
> good, and they bear examination.
>
...

:-) Yes, indeed. I just this afternoon fabricated a 500MHz LPF that I wanted to give about 40dB attenuation up to several GHz. My design was a 5th order elliptical, so I had two parallel tanks for the series paths and three shunt capacitors. Because the coils (10nH and 15nH) are so small, I though about using a shorted stub instead, but then realized that my shorted stub would look like a short when it was 1/2 wave long, not a good thing to have as a series element at a frequency you want to block. Probably would have worked OK since the two stubs were different and wouldn't have the same resonance frequency; and by the time you reached that freq., the shunt caps would be pretty effective on their own. Anyway, it works fine with tiny coils. Thank goodness for good microscopes.

Cheers,
Tom

4090. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 00:59:18 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <a086bb70-4200-4f2f-9ae2-fb7a6b539c24@q1g2000prf.googlegroups.com>
Source record: 26212

On Apr 9, 12:29 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Thus I strongly suggest that Vg, Ig, Pg, represent reality. The
> > others are a convenient alternative view for the purposes of
> > solving problems.
>
> Of course they represent *net* reality but we are trying
> to determine what is happening at a component wave level.
> Defining the component waves out of existence is an un-
> acceptable substitute for ascertaining what is happening
> in reality.
>
> > Typically we see Vg split into Vf and Vr, but why stop at two.
> > Why not 3, or 4?
>
> Because two is what a directional wattmeter reads. The
> two superposed waves, forward and reverse, can be
> easily distinguished from one another. Two superposed
> coherent forward waves cannot be distinguished from
> each other. That's why we stop at two - because it is
> foolish to go any farther.

You sometimes use three. Discussions of ghosts have at
least three. Not so foolish, methinks.

> > There is power coming from the transmission line. Looking at Pg(t),
> > some of the time energy flows into the line, later in the cycle
> > it flows out. The energy transfer would be exactly the same if the
> > transmission line was replaced by a lumped circuit element. And
> > we don't need Pf and Pr for an inductor.
>
> OTOH, the distributed network model is a superset of
> the lumped circuit model so the inadequate lumped
> circuit model might confuse people. Hint: changing
> models to make waves disappear from existence doesn't
> make the waves disappear.

The model is not inaccurate when the question is framed
with the model, as you do for Fig 1-1.

> The lumped circuit model is adequate for lumped circuits.
> It is inadequate for a lot of distributed network problems.
> If the lumped circuit model worked for everything, we
> wouldn't ever need the distributed network model.

True, but the question at hand, based on Fig 1-1 is lumpy.

> I suggest that you take your circuit and apply distributed
> network modeling techniques to it including reflection
> coefficients and forward and reflected voltages, currents,
> and powers at all points in the circuit. Note that the
> reflections are *same-cycle* reflections. If the lumped
> circuit model analysis differs from the distributed network
> model analysis, the lumped circuit analysis is wrong.

Ummm. It was your circuit.

> > It goes up because the impedance presented by the transmission
> > changes when the reflection returns. This change in impedance
> > alters the circuit conditions and the power in the various
> > elements change. Depending on the details of the circuit,
> > these powers may go up, or they may go down when the reflection
> > arrives.
>
> That is true, but the impedance is *VIRTUAL*, i.e. not an
> impedor, and is therefore only an *EFFECT* of superposition.
> We are once again left wondering about the *CAUSE* of the
> virtual impedance, i.e. the details of the superposition
> process. Ignoring those details will not solve the problem.

Actually, the transmission line input impedance is quite real,
formed from distributed capacitance and inductance. Like most two
terminal circuits, it can be reduced to simpler form.

...Keith

4091. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:01:08 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <cb3bd6df-2285-4214-8d29-e6fe4f57f005@e39g2000hsf.googlegroups.com>
Source record: 26213

On Apr 9, 1:22 pm, "Antonio Vernucci" <vernu...@tin.it> wrote:
> > I assume that the D.E. is one wire in the model you have now. I
> > suppose it has an odd number of segments, so that the source can go
> > just in the middle. I'm assuming the hairpin parallel tube segments
> > are center-to-center 10cm apart. I will assume the D.E. is currently
> > 250cm long, all at some x value, and y extending from -1.25m to
> > +1.25m, as one "wire" of some diameter. To be able to connect the
> > hairpin at the right places, we need wire ends at -.05m and +.05m, so
> > we can change the D.E. wire to be one segment between y=-.05m and +.
> > 05m, and then add 2 wires the same diameter as the D.E., one from
> > y=-1.25m to -.05m, and one from y=+.05m to +1.25m, and each with about
> > half as many segments as the original D.E., all at the original x
> > value. (Or exchange x and y if I have guessed wrong.) So if the
> > original D.E. had 11 segments, put 5 segments on each of the two new
> > wires. Now add three new wires to represent the hairpin U. Assuming
> > the hairpin is oriented perpendicular to the plane of the antenna, it
> > will be all at the same x value as the D.E. I'll assume the antenna
> > is at z=0. So the wires will have ends at x,-.05,0;x,-.05,.35 and x,-.
> > 05,.35;x,+.05,.35 and x,+.05,.35;x,+.05,0 -- and all with diameter 8mm
> > or .008m.
>
> Thanks Tom,
>
> I did the EZNEC model exactly as you suggested, but I now have another doubt (I
> must re-read the EZNEC help one of these days...)
>
> I would say that I shall still feed the driven element at its center, and not
> separately feed the two junctions between the hairpin and the driven element
>
> Is that right?
>
> 73
>
> Tony I0JX

Hi Tony,

I can understand your confusion and doubt. I hope this says it in
clear terms:

In the revised model with the hairpin done as three wires, the
original D.E. single wire was replaced by three wires: a 10cm long
center section which should have the source in its center, and a
"left" and a "right" outer section. Those three sections are three
separate wires. The reason to break the original single wire into

three wires is so that there will be wire "ends" to connect the hairpin wires to. You can only connect wires at their ends, even though they have multiple segments. So yes, in the new model the source is just in the middle of the wire which is the middle section of the D.E.

Cheers,
Tom

4092. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:15:19 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <b9078f80-0486-44bb-9964-1e7a94ebb7d0@s33g2000pri.googlegroups.com>
Source record: 26214

On Apr 9, 12:59 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
> > There is no capacitance or inductance in the source to
> > store energy.
>
> "In" is an oxymoron for the lumped circuit model.
> The lumped reactance exists *at* the same point as
> the source because everything is conceptually lumped
> into a single point.
>
> In the real world, circuits are never single points
> and there exists a frequency at which distributed
> network effects cannot be ignored. In reality,
> distributed network effects occur for all real
> circuits but they can often be ignored as negligible.
>
> The two inches of wire connecting the source to the
> source resistor has a characteristic impedance and
> is a certain fraction of a wavelength long. If it is
> not perfectly matched, reflections will occur, i.e.
> there will exist forward power and reflected power on
> that two inches of wire.

It was your Fig 1-1, made of ideal elements with none
of these issues.

> >> For the 1/8WL
> >> shorted line, there appears to be 125 watts of forward
> >> power and 25 watts of reflected power at points on each
> >> side of the source.
>
> > Not if there is no transmission line.
>
> Aha, there's your error. What would a Bird directional
> wattmeter read for forward power and reflected power?
> Consider that short pieces of 50 ohm coax are used
> to connect the real-world components together.

It would read something completely different if it was
calibrated for 75 ohms, though the difference between
Pf and Pr would be the same.

But that is not the circuit of your Fig 1-1.

> Or chose any characteristic impedance and do the math.
> You will discover something about the real world, i.e.
> that you have been seduced by the lumped circuit model.

It was your circuit; Fig 1-1.

> > Perhaps. But I don't need more examples where the
> > powers balance. I already have the one example where
> > they don't.
>
> And that one example is outside the scope of the
> preconditions of my Part 1 article. Let me help you
> out on that one. There are an infinite number of
> examples where the reflected power is NOT dissipated
> in the source resistor but none of those examples,
> including yours, satisfies the preconditions specified
> in my Part 1 article. Therefore, they are irrelevant
> to this discussion.

As long as you agree that the imputed energy in the
reflected wave is not dissipated in the source
resistor; and only claim that the imputed average
power in the reflected wave is numerically equal
to the increase in the dissipation.

>
> > But there are no component powers in the source. It
> > is a simple circuit element.
>
> No wonder your calculations are in error.
> Perform your calculations based on the readings of
> an ideal 50 ohm directional wattmeter and get back to us.

Well there's a plan. Measure everything in a
circuit with a directional wattmeter. You first.
Start with Fig 1-1.

But you'll have to choose the calibration impedance.

I'd suggest 100 ohms for the section between the
source and the source resistor because the source
resistor and the line initially present a 100 ohm
impedance and you would not want any reflections
messing up the measurements.

> Hint: Mismatches cause reflections, even in real-world
> circuits. The reflections happen to be *same-cycle*
> reflections. The simplified lumped circuit model, that
> exists in your head and not in reality, ignores those
> reflections and thus causes confusion among the
> uninitiated who do not understand its real-world
> limitations.

We should explore this new world. Please discard your
voltmeter, ammeter, oscilloscope, ... All you need
is a Bird wattmeter.

...Keith

4093. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:23:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <yL2dnc5lus618WDanZ2dnUVZ_oqhnZ2d@easystreetonline>
Source record: 26215

Keith Dysart wrote:
> On Apr 9, 12:51 pm, Roger Sparks <rspa...@elltel.net> wrote:
> . . .
>> So far as breaking Vg into many sequential/different Vf and Vr, we usually need to do that. Cecil chose our simple example to prevent re-reflection (reflection of the reflection) but even then it is apparent that the voltage source will have a reactive component.
>
> I still think of a voltage source as just being a voltage source, not
> something
> with resitance, reactance or impedance.
> . . .

An ideal voltage source has, by definition, zero impedance, which means zero resistance and zero reactance. No amount of current you put into it or take out of it will alter its voltage. The ratio of voltage to current at its terminals is the impedance of the load which the source sees, not the impedance of the source. If a source used in an analysis has finite resistance, it's not an ideal voltage source.

Roy Lewallen, W7EL

4094. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:33:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <B7eLj.65$ix6.17@newssvr11.news.prodigy.net>
Source record: 26216

Keith Dysart wrote:
> One thought experiment I rather like is the infinite SWR ideal line.
> Cut the line at all the current zeroes. The voltage, current, and,
> I'd suggest, the energy distribution do not change. The line can
> be re-assembled, again with no change.

When you cut the line, you introduce an open circuit
where none existed before. Everything obeys the
distributed network model, at least conceptually.

Before you cut the line, there is no physical
impedance discontinuity and therefore no
reflections. You have to invent complete new
laws of physics for that one. I'm not against
you inventing new laws of physics but you need
to invent them before, not after, you use them. :-)
--
73, Cecil http://www.w5dxp.com

4095. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:37:11 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <5d63b0c5-85b2-4b34-8b34-7f7050e16b96@c19g2000prf.googlegroups.com>
Source record: 26217

On Apr 9, 1:22 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > On Apr 8, 8:51 am, Cecil Moore <nos...@w5dxp.com> wrote:
> >> Roy Lewallen wrote:
> >>> Now, I don't know of any way to assign "ownership" to bundles of energy.
> >> One way is to add a unique bit of modulation to each
> >> bundle of wave energy. I am fond of using a TV signal
> >> and observing ghosting on the screen. This, of course,
> >> assumes that the modulation stays with the same component
> >> wave to which it was originally associated.
>
> > But as soon as you modulate, you no longer have sinusoidal
> > steady state.
>
> You know and I know that is a copout diversion to avoid
> your having to face the technical facts.

You seem to be the one who knows this. I don't.

> > Consider the 1 second interval from 4.5 to 5.5 seconds.
> > In this second 0.016393 joules flow for an average
> > power of 0.016393 W. But the sum of the imputed power
> > in the two spectral components is 1 W. Where did the
> > missing energy go?
>
> Hint: Missing energy is impossible except in your mind.
> Just because you are ignorant of where the energy goes
> doesn't mean it is missing. It just means that you fail
> to understand interference. Have you not read Hecht's
> Chapter 9 on "Interference"?
>
> Obviously, interference is present and there is *NO*
> missing energy. I have previously listed the possibilities
> at least four times so will not bother listing them again.

Between 9.5 and 10.5 seconds, 1.983607 J (average 1.983607 W)
of energy flows. By 'interference', I think you are suggesting
the missing power from 4.5 to 5.5 appears as excess power
between 9.5 and 10.5, thus satisfying your conservation of
energy requirement. But where was the energy stored for
5 seconds until it could be delivered.

Or, more intriguing, between 0 and 1 second, 1.935466 J
(average 1.935466 W) of energy flowed, but the sum of
the powers of the two constituents was only 1 J (average

1 W) in this interval. Where did the extra energy come from?
Was it borrowed from the future? It did not come from
the past since the generator was not yet on.

> > Just another example of why assigning too much reality
> > to the imputed powers of the components of superposition
> > is misleading.
>
> Just another example of ignorance in action. Waves
> possess energy that cannot be destroyed. Just because
> you cannot track it doesn't mean it cannot be tracked.

That is why I pose the question, hoping for someone to
describe the mechanism that the energy for the flow that
is happening now can be borrowed from the future.

But what happens if the generator is turned off before
the future arrives? Where did the extra energy come from
then?

> > In other examples, you have suggested inserting a zero length
> > transmission line to aid analysis. Why not insert a zero length
> > transmission line with an impedance to produce the desired
> > reflection?
>
> What would be the characteristic impedance of a length of
> transmission that caused a reflection coefficient of 1.0?

Exactly. With the source impedance being zero, you can use
any impedance line you like.

> > No one has said there is zero energy. Only that there is
> > zero energy flow. For energy flow, one needs simultaneous
> > voltage and current.
>
> Vfor/Ifor = Z0, Vfor*Ifor = Pfor = EforxHfor
> If an EM wave exists, it is moving at the speed of
> light and transferring energy. For Z0 purely resistive,
> Vfor cannot exist without Vfor/Z0 = Ifor. Vfor is
> always in phase with Ifor.
>
> > Assigning too much reality to component signals is
> > seriously misleading.
>
> Assigning reality to the components of superposition
> is seriously misleading???? Can we therefore throw
> out the entire principle of superposition?

Well, you can solve these problems in other ways.
Superposition is not required, but it is certainly
convenient. I would not throw it out just because
the constituent powers do not necessarily have

any real meaning. I would just make sure I used
it in ways that did not mislead.

> > Until one can grasp the simplicity of a transmission line,
> > moving to the complexity of free space offers nothing but
> > obfuscation.
>
> It is obvious that you have many things you desire to
> hide inside that black transmission line to which we
> are not even allowed to attach a directional wattmeter.
>
> Since you are incapable of explaining what happens in
> free space for all to see, why should we believe that
> you have figured out what is happening inside a
> transmission line where everything is hidden from view?

Actually, I have a pretty good grasp of what is happening
in free space, and it is all available to you by extension
from the behaviours of the one dimensional transmission
line. But there is little point in going there until the
transmission line is understood. Three dimensional free
space has much too much wiggle room. And you are an
expert at wiggling.

...Keith

4096. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:40:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <7eeLj.2433$%41.1900@nlpi064.nbdc.sbc.com>
Source record: 26218

Keith Dysart wrote:
> Actually, the transmission line input impedance is quite real,
> formed from distributed capacitance and inductance. Like most two
> terminal circuits, it can be reduced to simpler form.

I didn't say virtual impedances are not real. I
said they are not causes of anything and are,
instead, effects of superposition incapable of
causing anything in the complete absence of a
physical impedance.

You have for a long while now, confused cause
and effect. Maybe you should review the three
separate definitions of "impedance" given in
the IEEE Dictionary.
--
73, Cecil http://www.w5dxp.com

4097. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:44:09 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <50969816-ad7e-4a71-a445-57991674972f@u36g2000prf.googlegroups.com>
Source record: 26219

On Apr 9, 9:33 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > > One thought experiment I rather like is the infinite SWR ideal line.
> > > Cut the line at all the current zeroes. The voltage, current, and,
> > > I'd suggest, the energy distribution do not change. The line can
> > > be re-assembled, again with no change.
>
> When you cut the line, you introduce an open circuit
> where none existed before. Everything obeys the
> distributed network model, at least conceptually.
>
> Before you cut the line, there is no physical
> impedance discontinuity and therefore no
> reflections. You have to invent complete new
> laws of physics for that one. I'm not against
> you inventing new laws of physics but you need
> to invent them before, not after, you use them. :-)

And yet....

The voltage distribution on the line, the current
distribution on the line and the energy distribution
on the line has not changed one iota.

This new physical impedance discontinuity has not
had any observable effect. All it seems to change
is the reflection of the unobservable forward and
reflected waves.

But the voltage distribution on the line, the current
distribution on the line and the energy distribution
on the line has not changed one iota.

These reflections can not be so important if they
can not be observed.

...Keith

4098. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:48:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <TleLj.67$ix6.1@newssvr11.news.prodigy.net>
Source record: 26220

Keith Dysart wrote:
> As long as you agree that the imputed energy in the
> reflected wave is not dissipated in the source
> resistor;

My ethical standards will not allow me to lie about
technical facts in evidence. You cannot bully me
into doing so.

When the average interference is zero, all of the
average reflected energy is dissipated in the source
resistor. It is true for all examples of Fig. 1-1.
You have not presented even one example where
that is not a true statement.

> We should explore this new world.

There's no new world. All I am presenting is the
distributed network model which is lots older than
I. What you should present are your new laws of
physics that contradict the distributed network model.
--
73, Cecil http://www.w5dxp.com

4099. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:51:02 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <aoeLj.68$ix6.45@newssvr11.news.prodigy.net>
Source record: 26221

Roger Sparks wrote:
> Of course one way would be if Vf actually did reflect from Vr.

That would require a brand new set of laws of physics.
--
73, Cecil http://www.w5dxp.com

4100. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 01:57:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <QteLj.70$ix6.25@newssvr11.news.prodigy.net>
Source record: 26222

Keith Dysart wrote:
> That is why I pose the question, hoping for someone to
> describe the mechanism that the energy for the flow that
> is happening now can be borrowed from the future.

Destructive interference would have to happen first.

> But what happens if the generator is turned off before
> the future arrives? Where did the extra energy come from
> then?

There is no extra energy. Constructive interference is
impossible without that supply of energy.

> Actually, I have a pretty good grasp of what is happening
> in free space, and it is all available to you by extension
> from the behaviours of the one dimensional transmission
> line. But there is little point in going there until the
> transmission line is understood.

It is the exact opposite. There is no point in inventing
new laws of physics for transmission lines if those new
laws don't work in free space.

So please present an example of EM waves reflecting off
of other EM waves in free space. Do you really think the
energy in the standing wave beam of a laser is reversing
direction and momentum every cycle?
--
73, Cecil http://www.w5dxp.com

4101. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 02:02:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <KyeLj.72$ix6.1@newssvr11.news.prodigy.net>
Source record: 26223

Keith Dysart wrote:
> The voltage distribution on the line, the current
> distribution on the line and the energy distribution
> on the line has not changed one iota.

In one case the wave energy changes direction and
momentum at the physical discontinuity. In the
other case, there exists nothing to change the
wave direction and momentum.

> This new physical impedance discontinuity has not
> had any observable effect. All it seems to change
> is the reflection of the unobservable forward and
> reflected waves.

Yes, exactly in agreement with the laws of physics.

> But the voltage distribution on the line, the current
> distribution on the line and the energy distribution
> on the line has not changed one iota.

Please present your new laws of physics that allow
EM waves to reflect off of EM waves in the complete
absence of a physical discontinuity. And please
demonstrate such in free space so we can see the
results.
--
73, Cecil http://www.w5dxp.com

4102. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 02:06:01 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4775d790-ec64-44d9-b699-14307333a1c0@m44g2000hsc.googlegroups.com>
Source record: 26224

On Apr 9, 9:40 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Actually, the transmission line input impedance is quite real,
> > formed from distributed capacitance and inductance. Like most two
> > terminal circuits, it can be reduced to simpler form.
>
> I didn't say virtual impedances are not real. I
> said they are not causes of anything and are,
> instead, effects of superposition incapable of
> causing anything in the complete absence of a
> physical impedance.

But the distributed capacitance and inductance
are physical impedances.

> You have for a long while now, confused cause
> and effect. Maybe you should review the three
> separate definitions of "impedance" given in
> the IEEE Dictionary.

Neither 'virtual impedance' nor 'impedance, virtual'
are in the dictionary (at least the 7th Edition).

...Keith

4103. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 09:47:55 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <e681a8df-49f5-4bfe-8542-e44af8f11c12@b9g2000prh.googlegroups.com>
Source record: 26225

On Apr 9, 9:48 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > As long as you agree that the imputed energy in the
> > reflected wave is not dissipated in the source
> > resistor;
>
> My ethical standards will not allow me to lie about
> technical facts in evidence. You cannot bully me
> into doing so.
>
> When the average interference is zero, all of the
> average reflected energy is dissipated in the source
> resistor. It is true for all examples of Fig. 1-1.
> You have not presented even one example where
> that is not a true statement.

But all you have demonstrated is that the imputed
average power in the reflected wave is *numerically
equal* to the average increase in the dissipation
of the source resistor. Which is good, as long as
that is all you claim. Which it some times seems
to be, especially when you qualify with "interference
is zero".

Finer grained analysis shows that the imputed
energy (not average) in the reflected wave is not
dissipated in the source resistor. The trouble
is, sometimes you agree with this (when you
invoke that interference is present), but other
times you don't (see your response to the opening
paragraph). It is this flip-flop that makes your
actual position difficult to discern.

...Keith

4104. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 09:49:32 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <3907bbe0-c407-4729-98e3-3a52b93ef14b@t12g2000prg.googlegroups.com>
Source record: 26226

On Apr 9, 9:57 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > That is why I pose the question, hoping for someone to
> > describe the mechanism that the energy for the flow that
> > is happening now can be borrowed from the future.
>
> Destructive interference would have to happen first.

For the example under discussion, the signals start with
'constructive interference'. There has not yet been an
opportunity for desctructive interference, which happens
later. So where does the extra energy at the start come
from?

> > But what happens if the generator is turned off before
> > the future arrives? Where did the extra energy come from
> > then?
>
> There is no extra energy. Constructive interference is
> impossible without that supply of energy.

Exactly. This is the problem with your model. The extra
energy (i.e. the energy greater than that in the sum of
the spectral components) is present, but your model does
not have somewhere for this energy to come from.

> > Actually, I have a pretty good grasp of what is happening
> > in free space, and it is all available to you by extension
> > from the behaviours of the one dimensional transmission
> > line. But there is little point in going there until the
> > transmission line is understood.
>
> It is the exact opposite. There is no point in inventing
> new laws of physics for transmission lines if those new
> laws don't work in free space.

There are no new laws of physics. There is just the
opportunity for a better understanding of what is
happening. This better understanding applies in free
space as well. It is just much easier to obtain this
better understanding on the transmission line and then
move to free space.

> So please present an example of EM waves reflecting off
> of other EM waves in free space.

That was someone elses suggestion, not mine.

> Do you really think the
> energy in the standing wave beam of a laser is reversing
> direction and momentum every cycle?

Why does this thought make you uncomfortable? Is it because
you are trying to commingle the wave explanation with the
partical explanation? These are a duality. You use one
or the other, but not bits from each at the same time.

...Keith

4105. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 09:51:42 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <ba09975c-da22-40f0-94e9-8ec4b642c5ea@y18g2000pre.googlegroups.com>
Source record: 26227

On Apr 9, 10:02 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > The voltage distribution on the line, the current
> > distribution on the line and the energy distribution
> > on the line has not changed one iota.
>
> In one case the wave energy changes direction and
> momentum at the physical discontinuity. In the
> other case, there exists nothing to change the
> wave direction and momentum.

As I expected, you claim that the situations are
completely different. And yet the voltage, current
and energy distributions are identical. There are
no observable differences. And yet you claim they
are *completely* different. And yet there are no
observable differences. And yet....

Tis a puzzle, isn't it.

And we know from circuit theory that we can cut
a conductor carrying no current without affecting
the circuit. Why should it be different here?

> > This new physical impedance discontinuity has not
> > had any observable effect. All it seems to change
> > is the reflection of the unobservable forward and
> > reflected waves.
>
> Yes, exactly in agreement with the laws of physics.

At least with your interpretation of the laws.

> > But the voltage distribution on the line, the current
> > distribution on the line and the energy distribution
> > on the line has not changed one iota.
>
> Please present your new laws of physics that allow
> EM waves to reflect off of EM waves in the complete
> absence of a physical discontinuity.

Again, not my claim. But using your previous approach
for analysis, perhaps we should insert a zero length
line of the appropriate impedance to provide the cause
for the reflection, if you insist on a reflection.

> And please
> demonstrate such in free space so we can see the
> results.

...Keith

4106. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 11:52:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ucnLj.715$FF6.101@newssvr29.news.prodigy.net>
Source record: 26228

Keith Dysart wrote:
> But the distributed capacitance and inductance
> are physical impedances.

But they are constant, i.e. there is no physical
impedance *discontinuity*. The reflection coefficient
inside a homogeneous piece of transmission line is
(Z0-Z0)/(Z0+Z0)=0, i.e. there can be no reflections.
The reflection coefficient in free space is
(1.0-1.0)/(1.0+1.0)=0, i.e. there can be no reflections
in free space.

> Neither 'virtual impedance' nor 'impedance, virtual'
> are in the dictionary (at least the 7th Edition).

"Virtual" essentially means that no physical impedor
exists. The virtual impedance definition is covered
by definition (B), the ratio of voltage to current
which *causes* the impedance. A virtual impedance
is an *effect*, not a cause.
--
73, Cecil http://www.w5dxp.com

4107. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 12:01:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fknLj.717$FF6.666@newssvr29.news.prodigy.net>
Source record: 26229

Keith Dysart wrote:
> Finer grained analysis shows that the imputed
> energy (not average) in the reflected wave is not
> dissipated in the source resistor.

It is the joules in instantaneous power that must
be conserved, not the instantaneous power. There
is no such thing as a conservation of power
principle yet all you have presented are power
calculations. "Where's the beef?"

How many joules are there in 100 watts of
instantaneous power?
--
73, Cecil http://www.w5dxp.com

4108. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 12:21:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <aDnLj.718$FF6.387@newssvr29.news.prodigy.net>
Source record: 26230

Keith Dysart wrote:
> For the example under discussion, the signals start with
> 'constructive interference'.

If the source is local and capable of supplying energy,
all is well and good as I have said many times before.
But constructive interference in the absence of any
source of energy is impossible.

That is exactly why you need to perform your calculations
with the source removed from the source resistor by one
wavelength of ideal 50 ohm transmission line. If you come
up with a violation of the conservation of energy principle,
something is wrong with your math.

If two coherent signals need constructive interference and
energy is not available, the two signals react as if they
were not coherent, i.e. Ptot = P1 + P2. Physics 201.

> Exactly. This is the problem with your model. The extra
> energy (i.e. the energy greater than that in the sum of
> the spectral components) is present, but your model does
> not have somewhere for this energy to come from.

Yes it does - as I have explained about 5 times now. If a
local source is present, constructive interference energy
can and often does come from the source. Why do you find
that fact so hard to comprehend? Sources supply energy -
that's what sources do. An ideal local source can react
instantaneously to any energy requirement.

> There are no new laws of physics.

On the contrary - there are no existing laws of physics
that allow EM waves to bounce off each other yet that's
what you are proposing. You are inventing new laws of
physics to support your (magical) thinking. So please
produce the theory and proof that EM waves can bounce
off of each other.

> That was someone elses suggestion, not mine.

Copout alert! How can *your* reflections at a passive
node occur without EM waves reflecting off of other EM
waves?

> These are a duality. You use one
> or the other, but not bits from each at the same time.

Keith, you have been willy-nilly mixing bits of the
distributed network model with bits of the lumped circuit
model ensuring that your energy equations will not balance.
You are the absolute worst offender of your own advice.
--
73, Cecil http://www.w5dxp.com

4109. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 13:01:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <OcoLj.724$FF6.721@newssvr29.news.prodigy.net>
Source record: 26231

Keith Dysart wrote:
> As I expected, you claim that the situations are
> *completely* different. And yet the voltage, current
> and energy distributions are identical. There are
> no observable differences. And yet you claim they
> are *completely* different. And yet there are no
> observable differences. And yet....

I did NOT claim that the situations are *completely*
different. I said that some conditions are different
and some conditions are the same. Voltages and currents
are the same yet there is certainly a difference between
an open circuit and a short circuit. Besides, in the
real world, cutting the line would certainly cause
observable differences.

> Tis a puzzle, isn't it.

Nope, if you were born without your five senses,
you would feel that way about everything in existence.
Why do you deliberately choose to remain handicapped
by ignorance?

A bit of modulation would cure up the mystery for
you. If any modulation crosses the node, it is a
good bet that wave energy is carrying the
modulation. If phase locked TV signal generators
equipped with circulator load resistors are
installed at each end of a transmission line,
the TV signals can be observed on normal TV
sets crossing the standing wave nodes as if
they didn't exist. Removing the modulation
is unlikely to reverse the laws of physics.

> And we know from circuit theory that we can cut
> a conductor carrying no current without affecting
> the circuit. Why should it be different here?

Please prove that a short circuit and an open circuit
are identical.

>> Please present your new laws of physics that allow
>> EM waves to reflect off of EM waves in the complete
>> absence of a physical discontinuity.
>
> Again, not my claim.

Seems your theory requires such. Please explain how
reflections can occur at a passive standing wave node
without EM waves bouncing off of each other.

Energy and momentum both must be conserved. A causeless
reversal of energy and momentum is impossible whether
it is a bullet or an EM wave.

> But using your previous approach
> for analysis, perhaps we should insert a zero length
> line of the appropriate impedance to provide the cause
> for the reflection, if you insist on a reflection.

Please produce an example of
a real world transmission line that would support your
100% reflection. Hint: what would be the Z02
characteristic impedance in the reflection
coefficient equation, (50-Z02)/(50+Z02) = 1.0 ???
--
73, Cecil http://www.w5dxp.com

4110. Re: Re:MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 13:58:41 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <l2pLj.3354$Q95.2555@newsfe23.ams2>
Source record: 26232

I have had the batteries on charge in the MFJ-259Z for over a day now. The jumper inside the unit is on for charging. The batteries were at 12.6V when put on charge and are still 12.6V. The PSU is working fine. Because I can run the unit off the PSU that came with it.

Any ideas on what can be wrong with it now?

Thanks

<kuzen001@duke.edu> wrote in message
news:ftgbou$8be$1@gargoyle.oit.duke.edu...
> Barrett <barrett@blueyounder.co.uk> wrote:
>> I don't think that my MFJ-259Z is charging properly. Its new and it has
>> been
>> on charge for over 6 hours and all the batteries are still reading 0
>> Volts.
>> I'm using the PSU that came with it. It works fine from the PSU but
>> doesn't
>> seem to be charging. The switch inside for charging is turned on.. Can
>> some
>
> I'm not familiar with that analyzer but the websites indicate it uses AA
> cells--presumably rechargable ones have been supplied with your 259Z. One
> thing to check is that the cells are correctly inserted (sorry but it
> happens often!) and that they're not protected by little plastic covers on
> the positive terminals. Rechargable batteries that come with new
> equipment often have tiny bits of plastic that have to be removed by the
> end user. This isn't always mentioned in manuals.
>
> If it's brand new and has never worked with the batteries alone, you might
> have a manufacturing defect--they're not unknown in MFJ gear, not that I'm
> knocking MFJ. You'd want to take a quick look at the charge/no-charge
> switch, the bypass (if there is one) on the connector for the PSU on the
> radio, etc.--simple things easily visible. You might also try charging
> the AA cells in a standard charger, and seeing if the 259Z then works
> properly with the batteries--if that doesn't work, it might be the cells
> you have and not the analyzer itself.
>
> HTH! 73 de AC4RD
>
> ____
> Ken Kuzenski AC4RD atsign mindspring dotsign com
> ____
> All disclaimers apply, see? www.duke.edu/~kuzen001
>

>
>
>

4111. Re: Re:MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 15:10:15 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <LqadnZUC-Y2AsGPanZ2dnUVZ_jadnZ2d@comcast.com>
Source record: 26233

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:l2pLj.3354$Q95.2555@newsfe23.ams2...
>I have had the batteries on charge in the MFJ-259Z for over a day now. The
>jumper inside the unit is on for charging. The batteries were at 12.6V when
>put on charge and are still 12.6V. The PSU is working fine. Because I can
>run the unit off the PSU that came with it.
>
> Any ideas on what can be wrong with it now?
>
> Thanks
>
>
> <kuzen001@duke.edu> wrote in message
> news:ftgbou$8be$1@gargoyle.oit.duke.edu...
>> Barrett <barrett@blueyounder.co.uk> wrote:
>>> I don't think that my MFJ-259Z is charging properly. Its new and it has
>>> been
>>> on charge for over 6 hours and all the batteries are still reading 0
>>> Volts.
>>> I'm using the PSU that came with it. It works fine from the PSU but
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>>> seem to be charging. The switch inside for charging is turned on.. Can
>>> some
>>
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>> happens often!) and that they're not protected by little plastic covers
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>> the positive terminals. Rechargable batteries that come with new
>> equipment often have tiny bits of plastic that have to be removed by the
>> end user. This isn't always mentioned in manuals.
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>> If it's brand new and has never worked with the batteries alone, you
>> might
>> have a manufacturing defect--they're not unknown in MFJ gear, not that
>> I'm
>> knocking MFJ. You'd want to take a quick look at the charge/no-charge
>> switch, the bypass (if there is one) on the connector for the PSU on the
>> radio, etc.--simple things easily visible. You might also try charging
>> the AA cells in a standard charger, and seeing if the 259Z then works
>> properly with the batteries--if that doesn't work, it might be the cells
>> you have and not the analyzer itself.

>>
>> HTH! 73 de AC4RD
>>
>> ____
>> Ken Kuzenski AC4RD atsign mindspring dotsign com
>> ____
>> All disclaimers apply, see? www.duke.edu/~kuzen001
>>
1] You might want to contact MFJ and see if they can supply you with a schematic of the unit. Usually with minimum knowledge and a Volt/Ohm/Meter, you should be able to check some internal voltages, and or check the operations of transistors/voltage regulators, and or internal fuses.
2] If you don't want to open up the box, contact MFJ and see how much they want to repair the unit.. They seem to be reasonable folks..

4112. Re: Re:MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 16:15:50 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <V2rLj.61569$qj3.7419@newsfe20.ams2>
Source record: 26234

I might send it back, its only 9 days old and I did inform them by email
within the 7 days from purchase about the trouble with the batteries. If it
was an easy fix I might do it myself. But I'm unsure to what is causing it.

"Howard W3CQH" <hsgorden@comcast.net> wrote in message
news:LqadnZUC-Y2AsGPanZ2dnUVZ_jadnZ2d@comcast.com...
>
> "Barrett" <barrett@blueyounder.co.uk> wrote in message
> news:l2pLj.3354$Q95.2555@newsfe23.ams2...
>>I have had the batteries on charge in the MFJ-259Z for over a day now. The
>>jumper inside the unit is on for charging. The batteries were at 12.6V
>>when put on charge and are still 12.6V. The PSU is working fine. Because I
>>can run the unit off the PSU that came with it.
>>
>> Any ideas on what can be wrong with it now?
>>
>> Thanks
>>
>>
>> <kuzen001@duke.edu> wrote in message
>> news:ftgbou$8be$1@gargoyle.oit.duke.edu...
>>> Barrett <barrett@blueyounder.co.uk> wrote:
>>>> I don't think that my MFJ-259Z is charging properly. Its new and it has
>>>> been
>>>> on charge for over 6 hours and all the batteries are still reading 0
>>>> Volts.
>>>> I'm using the PSU that came with it. It works fine from the PSU but
>>>> doesn't
>>>> seem to be charging. The switch inside for charging is turned on.. Can
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>>> I'm not familiar with that analyzer but the websites indicate it uses AA
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>>> thing to check is that the cells are correctly inserted (sorry but it
>>> happens often!) and that they're not protected by little plastic covers
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>>> the positive terminals. Rechargable batteries that come with new
>>> equipment often have tiny bits of plastic that have to be removed by the
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>>> the AA cells in a standard charger, and seeing if the 259Z then works
>>> properly with the batteries--if that doesn't work, it might be the cells
>>> you have and not the analyzer itself.
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>>> _____
>>> Ken Kuzenski AC4RD atsign mindspring dotsign com
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>>> All disclaimers apply, see? www.duke.edu/~kuzen001
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> 1] You might want to contact MFJ and see if they can supply you with a
> schematic of the unit. Usually with minimum knowledge and a
> Volt/Ohm/Meter, you should be able to check some internal voltages, and or
> check the operations of transistors/voltage regulators, and or internal
> fuses.
> 2] If you don't want to open up the box, contact MFJ and see how much
> they want to repair the unit.. They seem to be reasonable folks..
>
>

4113. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 18:33:17 UTC
From: dplatt@radagast.org
Message-ID: <d432d5-o7n.ln1@radagast.org>
Source record: 26235

>I have had the batteries on charge in the MFJ-259Z for over a day now. The
>jumper inside the unit is on for charging. The batteries were at 12.6V when
>put on charge and are still 12.6V. The PSU is working fine. Because I can
>run the unit off the PSU that came with it.
>
>Any ideas on what can be wrong with it now?

It certainly sounds to me as if the charging circuit is not working,
or is not working effectively.

12.6 volts is 1.26 volts per cell, which is what I'd expect to see in
the no-load or light-load case of a NiMH with a fractional charge
(maybe half-charged?). The cell voltage will rise, as charging
continues, to as high as 1.4 volts or more (depending on charging
current).

It could be that the charging circuit simply isn't working at all.

It's also possible that the charging circuit is only delivering (by
error or design) just enough of a trickle charge to prevent an
exernally-charged NiMH battery from self-discharging. If the
battery is only receiving 10-20 mA, this would be the case - the
battery will essentially *never* recharge itself completely under
these conditions.

There's a real tradeoff with NiMH cells. Any simple charger which is
capable of recharging them in a reasonable amount of time (say, a day
or less) should *not* be left hooked up to them indefinitely - it'll
overcharge them and significantly shorten their life. Conversely, a
simple charger which *can* be left hooked up for days at a time, will
not recharge a dead battery rapidly enough to be useful.

Charger circuits *can* switch between two charging modes (fast and
maintenance) but it requires quite a bit more complexity.

So... what to do now. My suggestions:

[1] First, measure the voltage across each individual cell in the
battery. If they're all around 1.25 or so, then the cells are
probably OK, and the problem is in the charging.

If you find that most of the cells have a higher voltage, and one
is very low, then that one cell is junk and should be recycled and
replaced.

[2] Get a digital multimeter with small alligator-clip leads. Set it
on its "DC current" scale, remove the charging jumper in the MFJ,

and connect the two leads of the multimeter to the two pins that had been jumpered together (stick a bit of paper between them to prevent the multimeter leads from shorting). Plug the MFJ into its wallwart (with the power switch turned off) and read the current on your DMM. This will tell you how much current is flowing into the battery through the charging circuit (assuming that it's a simple linear charger and not a pulse-charger).

If the current consistently reads zero, then the charger is not working at all.

If it's charging at a rate of below 50 mA, then it's just a maintenance trickle-charger... sufficient to keep charged batteries alive in standby mode, but insufficient to recharge them in any reasonable amount of time. You'll need to do the major charging using an external charger.

If it's charging at 100-200 mA, then it'll take a day or more to fully recharge.

If it's charging at over 200 mA, then it'll recharge effectively in under a day, but should *not* be left hooked up indefinitely... it'll overcharge the batteries and shorten their service life.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

4114. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 20:22:04 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fe76e1$0$41654$4fafbaef@reader4.news.tin.it>
Source record: 26236

> I can understand your confusion and doubt. I hope this says it in
> clear terms:
>
> In the revised model with the hairpin done as three wires, the
> original D.E. single wire was replaced by three wires: a 10cm long
> center section which should have the source in its center, and a
> "left" and a "right" outer section. Those three sections are three
> separate wires. The reason to break the original single wire into
> three wires is so that there will be wire "ends" to connect the
> hairpin wires to. You can only connect wires at their ends, even
> though they have multiple segments. So yes, in the new model the
> source is just in the middle of the wire which is the middle section
> of the D.E.
>
Thanks for your clarification that confirms my expectation that I shall put the generator in the middle of the 10 cm-long center section of the D.E..

Everything works fine and, for a reference 200-ohm resistance, I get an SWR of almost 1 not too far away from the frequency at which it actually occurs.

If I may take a bit more of your time, I have noted two inconsistencies:

- with the hairpin EZNEC gives an antenna gain of 12.76 dB but, if I just delete the three hairpin segments leaving everything else unchanged, the gain grows up to 13.59 dB. I am surprised about that result, as I had understood that, in EZNEC, the antenna gain has nothing to do with the way the antenna is fed.

- with the hairpin, at the antenna resonant frequency EZNEC shows an impedance of 200.5 +j2.1 ohm which obviously corresponds to an SWR of almost 1. If I remove the hairpin, at the same frequency EZNEC shows an impedance of 42.4 - 39 ohm which could seem reasonable, but it is actually not. As a matter of fact, by applying the appropriate series-to-parallel conversion formula, that impedance corresponds to the parallel of a 78.2 ohm resistance and a 85.1 ohm capacitive reactance. Resonating the reactive capacitance with an equal (though opposite) reactance hairpin, the remaining resistance would be just 78.2 ohm, that is far away from the 200 ohm EZNEC shows with the hairpin installed.

May I have your opinion?

73

Tony I0JX

4115. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 20:56:16 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <7e23d6aa-fceb-4db2-bdb5-8b1863495488@z38g2000hsc.googlegroups.com>
Source record: 26237

On Apr 10, 1:22 pm, "Antonio Vernucci" <vernu...@tin.it> wrote:
> > I can understand your confusion and doubt. I hope this says it in
> > clear terms:
>
> > In the revised model with the hairpin done as three wires, the
> > original D.E. single wire was replaced by three wires: a 10cm long
> > center section which should have the source in its center, and a
> > "left" and a "right" outer section. Those three sections are three
> > separate wires. The reason to break the original single wire into
> > three wires is so that there will be wire "ends" to connect the
> > hairpin wires to. You can only connect wires at their ends, even
> > though they have multiple segments. So yes, in the new model the
> > source is just in the middle of the wire which is the middle section
> > of the D.E.
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> Thanks for your clarification that confirms my expectation that I shall put the
> generator in the middle of the 10 cm-long center section of the D.E..
>
> Everything works fine and, for a reference 200-ohm resistance, I get an SWR of
> almost 1 not too far away from the frequency at which it actually occurs.
>
> If I may take a bit more of your time, I have noted two inconsistencies:
>
> - with the hairpin EZNEC gives an antenna gain of 12.76 dB but, if I just delete
> the three hairpin segments leaving everything else unchanged, the gain grows up
> to 13.59 dB. I am surprised about that result, as I had understood that, in
> EZNEC, the antenna gain has nothing to do with the way the antenna is fed.
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> - with the hairpin, at the antenna resonant frequency EZNEC shows an impedance
> of 200.5 +j2.1 ohm which obviously corresponds to an SWR of almost 1. If I
> remove the hairpin, at the same frequency EZNEC shows an impedance of 42.4 - 39
> ohm which could seem reasonable, but it is actually not. As a matter of fact, by
> applying the appropriate series-to-parallel conversion formula, that impedance
> corresponds to the parallel of a 78.2 ohm resistance and a 85.1 ohm capacitive
> reactance. Resonating the reactive capacitance with an equal (though opposite)
> reactance hairpin, the remaining resistance would be just 78.2 ohm, that is far
> away from the 200 ohm EZNEC shows with the hairpin installed.
>
> May I have your opinion?
>
> 73
>
> Tony I0JX

Hi Tony,

Hmm...very interesting. I hope some others will check in on this with ideas too.

My first thought is that the hairpin conductors are really more a part of the antenna than you may have thought. The current in that 10cm section of the hairpin, especially, is in a direction parallel to the D.E. and to all the directors and to the reflector(s). It will couple to them, and could be changing the gain and impedance some.

I am also surprised by the high resistance you are seeing with the hairpin wires removed. From what you posted before, and from the 3-element NBS and the 6-element designs I ran in EZNEC, I would expect a lower feedpoint resistance than that. If I put a pure inductance in parallel with your 42.4-j39 ohms, I get the same answer as you did, that it moves to 78 ohms resistive.

My offer to look at your EZNEC file is still open, of course. Maybe I could see something in it--I know that I can look and look at something and not see an obvious problem, even when I know perfectly well what to look for.

Also--in the model before you split the D.E. into three wires, did you get a more reasonable feedpoint impedance (with no hairpin, just looking at the D.E. feedpoint)? I think we were expecting something like 19-j58 ohms. If you get that, then I would look for the reason things change (so very much!) when you split the D.E. into three separate (but connected, end-to-end) wires. I can understand a small change but not so large a change. Is the total number of segments for the three wires making up the D.E. still about the same as it was in the original version of the model, with just one wire for the D.E.?

Cheers,
Tom

4116. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 21:24:50 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47fe8598$0$41664$4fafbaef@reader4.news.tin.it>
Source record: 26238

> I am also surprised by the high resistance you are seeing with the
> hairpin wires removed. From what you posted before, and from the 3-
> element NBS and the 6-element designs I ran in EZNEC, I would expect a
> lower feedpoint resistance than that. If I put a pure inductance in
> parallel with your 42.4-j39 ohms, I get the same answer as you did,
> that it moves to 78 ohms resistive.
>
> My offer to look at your EZNEC file is still open, of course. Maybe I
> could see something in it--I know that I can look and look at
> something and not see an obvious problem, even when I know perfectly
> well what to look for.

If your personal mail on the newsgroup is correct, I could send you the EZNEC file of my antenna.

> Also--in the model before you split the D.E. into three wires, did you
> get a more reasonable feedpoint impedance (with no hairpin, just
> looking at the D.E. feedpoint)? I think we were expecting something
> like 19-j58 ohms. If you get that, then I would look for the reason
> things change (so very much!) when you split the D.E. into three
> separate (but connected, end-to-end) wires. I can understand a small
> change but not so large a change. Is the total number of segments for
> the three wires making up the D.E. still about the same as it was in
> the original version of the model, with just one wire for the D.E.?

I am also surprised as I would have expected a much lower resistance (as you suggested)

I did the test you have suggested and I noted some change, but not much. With a "solid" D.E., i.e. not broken in three pieces (and without the hairpin of course), impedance is 43.27 - j 40.97 ohm, not terribly away from 42.4 - j39 ohm. In that test I configured EZNEC for 17 segments, whilst when the D.E. was broken in three parts I had used 17 segments for the two outer arms and only 5 segments for the 10-cm center section, due to its much shorter length (I see that result depend somewhat on the number of segments).

73

Tony I0JX

4117. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 21:27:04 UTC
From: nm5k@wt.net
Message-ID: <3bdd302e-a160-4203-a605-f1f8ce64b222@l28g2000prd.googlegroups.com>
Source record: 26239

On Apr 9, 10:16 am, Art Unwin <ArthurUn...@gmail.com> wrote:

>
> Richard
> Over the years you have insulted my work as I have shared most of it
> with my fellow hams.
> I shared with all the details of my antenna work and in this thread I
> have shared with all
> how I utelised the connection between mechanical laws and electrical
> laws of Maxwell Gauss
> Newton and the proof with respect to radiation. This last thread
> proves the existence of the universal
> law where I used the mechanical laws of the pendulum and applied them
> to the electrical laws
> which produced the antenna. It is this proof that I have provided
> which is the most important step
> in my work.

The only problem is writing out personal theories is not "proof".
You have not proved anything here. You have only offered
your theory.

>Considering that Einstein spent his whole life searching
> for this and eventually turned
> away from the classics to those of relativity makes me very proud of
> my work.

What does Einstein have to do with small 160m antennas?

> I shared it with hams because of their love with respect to antennas
> but that is a love of the past.

I don't love antennas. Period. They are mechanical devices.
I also do not get sentimental about antennas, or antenna theory.

> I am extremely disapointed that hams did not go on this jorney with me
> or even supply encouragement.

Not my job.. If you want to design and use such a device, that's
up to you. You already know what type of antennas I prefer.
Full sized ones.
I have zero use for small sub par antennas.
Besides, I thought you had a ham already testing one.
I imagine most are still quivering with excitement waiting for
the report of that version..

> However I am now at the end of my quest and thus will retreat from
> this newsgroup where it appears
> emotion has overtaken the the employment of skill to pursue the holy
> grail that most have given up.

Another day, another $2.31....

> Regards to all as I depart where I will not be privey to your replies
> and can thus concentrate on other matters.

Oh well.. add another day, and another $2.31...

4118. Re: Optimum wavelength % for a stick antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 21:40:46 UTC
From: nm5k@wt.net
Message-ID: <2fd2d857-c0b9-444f-9ab6-b536260d7862@a9g2000prl.googlegroups.com>
Source record: 26240

On Apr 9, 7:05 pm, "Hal Rosser" <hmros...@bellsouth.net> wrote:
> "usmcbrat" <presid...@whitehouse.gov> wrote in message
>
> news:pX8Lj.19131$4O1.19019@trnddc03...> Hi All:
>
> > Is there an optimum % length for an antenna when the antenna is a simple
> > straight stick? 1/4 wave... 1/2, 5/8, full wave? Does it differ
> > depending on wavelength? If size is not a consideration, is a full
> > wavelength preferable?
>
> > I've Googled around a bit but haven't found a good explanation yet.
>
> If you're talking about a vertical whip antenna, you may want to look at a
> 5/8 wave - but you would need to add a little coil at the bottom to match
> impedence to 50-ohms.
> I read somewhere that that the pattern of a vertical antenna improves as the
> length approaches 5/8-wave.
> Picture the pattern like a small balloon full of water sitting on a map -
> and as you increase the length of the whip, you press down on the
> water-balloon - making its coverage more horizontal - thus covering more
> area. Some of the radiation that would have gone up now goes out.
> And a dipole with 5/8 wave on each pole would make it more directional as
> well.
> I don't have references to point you to, just going by memory - which may -
> or may not - be intact.

.64 wave is the length that gives the maximum gain for a single
element. But.. Single 5/8 elements really need a lower 5/8 element
to live up to expectations. Also, some may prefer slightly shorter
to minimize radiation at the higher angles.
If you had an EDZ, the best length for maximum broadside gain
is .64 wave per leg/pole.
But like Roy says, there is really no best element length unless
you have a specific purpose for the pattern a particular length
provides. Any gain is one direction is a loss in some other direction.
IE: the EDZ will have more gain broadside than a 1/2 wave dipole,
but less gain in the appx end fire directions. No free lunches.. :/

4119. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 22:26:06 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <0uwLj.22067$fx2.22066@newsfe08.ams2>
Source record: 26241

Hi Dave

I checked the voltages in all the cells and they were all even voltages.
The batteries should be ok.

I checked the current on the two pins like you said and there was no
reading.

I checked the voltage on the two pins. No voltage on the outside pin and 5
volts on the middle pin.

I checked the voltage coming from the charger and its 18 volts.

I checked the voltage from the + side to the - side of the battery pack with
the charger on and got the 12.6 volts.

I checked the voltage from the + side to the - side of the battery pack with
the charger off and unplugged and got 12.6 volts.

I checked the voltage from the battery pack with the charger on and using
the case as the ground. It was 17.9 volts.

The charger says output voltage 12VDC 300mA 3.6VA.

Hope you can point me in the right direction. Do you know what sort of
voltages I should expect when it's charging properly?

Many thanks

Barrett

"Dave Platt" <dplatt@radagast.org> wrote in message
news:d432d5-o7n.ln1@radagast.org...
> >I have had the batteries on charge in the MFJ-259Z for over a day now.
> >The
>>jumper inside the unit is on for charging. The batteries were at 12.6V
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>>run the unit off the PSU that came with it.
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>>Any ideas on what can be wrong with it now?
>
> It certainly sounds to me as if the charging circuit is not working,
> or is not working effectively.
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> 12.6 volts is 1.26 volts per cell, which is what I'd expect to see in
> the no-load or light-load case of a NiMH with a fractional charge
> (maybe half-charged?). The cell voltage will rise, as charging

> continues, to as high as 1.4 volts or more (depending on charging
> current).
>
> It could be that the charging circuit simply isn't working at all.
>
> It's also possible that the charging circuit is only delivering (by
> error or design) just enough of a trickle charge to prevent an
> exernally-charged NiMH battery from self-discharging. If the
> battery is only receiving 10-20 mA, this would be the case - the
> battery will essentially *never* recharge itself completely under
> these conditions.
>
> There's a real tradeoff with NiMH cells. Any simple charger which is
> capable of recharging them in a reasonable amount of time (say, a day
> or less) should *not* be left hooked up to them indefinitely - it'll
> overcharge them and significantly shorten their life. Conversely, a
> simple charger which *can* be left hooked up for days at a time, will
> not recharge a dead battery rapidly enough to be useful.
>
> Charger circuits *can* switch between two charging modes (fast and
> maintenance) but it requires quite a bit more complexity.
>
> So... what to do now. My suggestions:
>
> [1] First, measure the voltage across each individual cell in the
> battery. If they're all around 1.25 or so, then the cells are
> probably OK, and the problem is in the charging.
>
> If you find that most of the cells have a higher voltage, and one
> is very low, then that one cell is junk and should be recycled and
> replaced.
>
> [2] Get a digital multimeter with small alligator-clip leads. Set it
> on its "DC current" scale, remove the charging jumper in the MFJ,
> and connect the two leads of the multimeter to the two pins that
> had been jumpered together (stick a bit of paper between them to
> prevent the multimeter leads from shorting). Plug the MFJ into
> its wallwart (with the power switch turned off) and read the
> current on your DMM. This will tell you how much current is
> flowing into the battery through the charging circuit (assuming
> that it's a simple linear charger and not a pulse-charger).
>
> If the current consistently reads zero, then the charger is not
> working at all.
>
> If it's charging at a rate of below 50 mA, then it's just a
> maintenance trickle-charger... sufficient to keep charged
> batteries alive in standby mode, but insufficient to recharge them
> in any reasonable amount of time. You'll need to do the major
> charging using an external charger.

>
> If it's charging at 100-200 mA, then it'll take a day or more to
> fully recharge.
>
> If it's charging at over 200 mA, then it'll recharge effectively
> in under a day, but should *not* be left hooked up indefinitely...
> it'll overcharge the batteries and shorten their service life.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!
>

4120. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 23:04:48 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <EqCdndn6cuWoBmPanZ2dnUVZ_iydnZ2d@comcast.com>
Source record: 26242

If you are really having this much trouble troubleshooting the unit and it
is still under warranty - for a couple of bucks in postage you should send
it back to MFJ for the warranty repairs... If you continue to try and get
into the unit you may end up VOIDing the warranty and then it will cost you
a BUNCH of bucks to get it repaired!

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:0uwLj.22067$fx2.22066@newsfe08.ams2...
> Hi Dave
>
>
>
> I checked the voltages in all the cells and they were all even voltages.
> The batteries should be ok.
>
>
>
> I checked the current on the two pins like you said and there was no
> reading.
>
> I checked the voltage on the two pins. No voltage on the outside pin and 5
> volts on the middle pin.
>
> I checked the voltage coming from the charger and its 18 volts.
>
> I checked the voltage from the + side to the - side of the battery pack
> with the charger on and got the 12.6 volts.
>
> I checked the voltage from the + side to the - side of the battery pack
> with the charger off and unplugged and got 12.6 volts.
>
> I checked the voltage from the battery pack with the charger on and using
> the case as the ground. It was 17.9 volts.
>
>
>
> The charger says output voltage 12VDC 300mA 3.6VA.
>
>
>
> Hope you can point me in the right direction. Do you know what sort of
> voltages I should expect when it's charging properly?
>
>

>
> Many thanks
>
>
>
> Barrett
>
>
>
>
>
>
> "Dave Platt" <dplatt@radagast.org> wrote in message
> news:d432d5-o7n.ln1@radagast.org...
>> >I have had the batteries on charge in the MFJ-259Z for over a day now.
>> >The
>>>jumper inside the unit is on for charging. The batteries were at 12.6V
>>>when
>>>put on charge and are still 12.6V. The PSU is working fine. Because I can
>>>run the unit off the PSU that came with it.
>>>
>>>Any ideas on what can be wrong with it now?
>>
>> It certainly sounds to me as if the charging circuit is not working,
>> or is not working effectively.
>>
>> 12.6 volts is 1.26 volts per cell, which is what I'd expect to see in
>> the no-load or light-load case of a NiMH with a fractional charge
>> (maybe half-charged?). The cell voltage will rise, as charging
>> continues, to as high as 1.4 volts or more (depending on charging
>> current).
>>
>> It could be that the charging circuit simply isn't working at all.
>>
>> It's also possible that the charging circuit is only delivering (by
>> error or design) just enough of a trickle charge to prevent an
>> exernally-charged NiMH battery from self-discharging. If the
>> battery is only receiving 10-20 mA, this would be the case - the
>> battery will essentially *never* recharge itself completely under
>> these conditions.
>>
>> There's a real tradeoff with NiMH cells. Any simple charger which is
>> capable of recharging them in a reasonable amount of time (say, a day
>> or less) should *not* be left hooked up to them indefinitely - it'll
>> overcharge them and significantly shorten their life. Conversely, a
>> simple charger which *can* be left hooked up for days at a time, will
>> not recharge a dead battery rapidly enough to be useful.
>>
>> Charger circuits *can* switch between two charging modes (fast and
>> maintenance) but it requires quite a bit more complexity.

>>
>> So... what to do now. My suggestions:
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>> [1] First, measure the voltage across each individual cell in the
>> battery. If they're all around 1.25 or so, then the cells are
>> probably OK, and the problem is in the charging.
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>> If you find that most of the cells have a higher voltage, and one
>> is very low, then that one cell is junk and should be recycled and
>> replaced.
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>> [2] Get a digital multimeter with small alligator-clip leads. Set it
>> on its "DC current" scale, remove the charging jumper in the MFJ,
>> and connect the two leads of the multimeter to the two pins that
>> had been jumpered together (stick a bit of paper between them to
>> prevent the multimeter leads from shorting). Plug the MFJ into
>> its wallwart (with the power switch turned off) and read the
>> current on your DMM. This will tell you how much current is
>> flowing into the battery through the charging circuit (assuming
>> that it's a simple linear charger and not a pulse-charger).
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>> If the current consistently reads zero, then the charger is not
>> working at all.
>>
>> If it's charging at a rate of below 50 mA, then it's just a
>> maintenance trickle-charger... sufficient to keep charged
>> batteries alive in standby mode, but insufficient to recharge them
>> in any reasonable amount of time. You'll need to do the major
>> charging using an external charger.
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>> If it's charging at 100-200 mA, then it'll take a day or more to
>> fully recharge.
>>
>> If it's charging at over 200 mA, then it'll recharge effectively
>> in under a day, but should *not* be left hooked up indefinitely...
>> it'll overcharge the batteries and shorten their service life.
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>> --
>> Dave Platt <dplatt@radagast.org> AE6EO
>> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>> I do _not_ wish to receive unsolicited commercial email, and I will
>> boycott any company which has the gall to send me such ads!
>>
>
>

4121. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 23:08:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <ouqdnW6iTZCXA2PanZ2dnUVZ_sCtnZ2d@easystreetonline>
Source record: 26243

Antonio Vernucci wrote:
> . . .
> - with the hairpin EZNEC gives an antenna gain of 12.76 dB but, if I
> just delete the three hairpin segments leaving everything else
> unchanged, the gain grows up to 13.59 dB. I am surprised about that
> result, as I had understood that, in EZNEC, the antenna gain has nothing
> to do with the way the antenna is fed.

What you're probably seeing is a numerical problem in the NEC calculating engine. It's very fussy about the region near a source, and doesn't like small loops which include a source. You should run an Average Gain check (see "Average Gain" in the EZNEC manual index), which will reveal whether this is the problem.

The double precision calculating engine in EZNEC+ is considerably more tolerant of small loops, but can still have problems with average gain for other reasons.

Roy Lewallen, W7EL

4122. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 23:39:00 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <9845c3f1-6ae9-4bac-af5a-14575f292e3d@x19g2000prg.googlegroups.com>
Source record: 26244

On Apr 10, 7:52 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > But the distributed capacitance and inductance
> > are physical impedances.
>
> But they are constant, i.e. there is no physical
> impedance *discontinuity*. The reflection coefficient
> inside a homogeneous piece of transmission line is
> (Z0-Z0)/(Z0+Z0)=0, i.e. there can be no reflections.
> The reflection coefficient in free space is
> (1.0-1.0)/(1.0+1.0)=0, i.e. there can be no reflections
> in free space.
>
> > Neither 'virtual impedance' nor 'impedance, virtual'
> > are in the dictionary (at least the 7th Edition).
>
> "Virtual" essentially means that no physical impedor
> exists. The virtual impedance definition is covered
> by definition (B), the ratio of voltage to current
> which *causes* the impedance. A virtual impedance
> is an *effect*, not a cause.

The transmission line definitely falls into
definition (C), "A physical device or combination of
devices whose impedance as defined in definition (A) or
(B) can be determined." The TL is a combination of
devices, a lot of very small ones, and its impedance
can be determined.

Using 26 pf/ft as a representative value for
RG-58, dividing the 45 degree section into 45
pieces, applying the normal rules for parallel and
series circuit elements, the impedance at the
entry to the line is trivially (using Excel) calculated
to be 50.443 /_ 90. Subdividing into smaller
elements would increase accuracy. If I could remember
my calculus, the exact answer could be derived.

There is no need for forward or reflected waves
at all; just basic AC circuit theory.

...Keith

4123. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 23:40:00 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c392954d-ea99-481c-a24a-469734423ef7@v26g2000prm.googlegroups.com>
Source record: 26245

On Apr 10, 8:01 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Finer grained analysis shows that the imputed
> > energy (not average) in the reflected wave is not
> > dissipated in the source resistor.
>
> It is the joules in instantaneous power that must
> be conserved, not the instantaneous power. There
> is no such thing as a conservation of power
> principle yet all you have presented are power
> calculations. "Where's the beef?"

The computation using energy instead of power has
also been done (and published here) and found also
to demonstrate that the reflected is not dissipated
in the source resistor.

> How many joules are there in 100 watts of
> instantaneous power?

Obviously. It depends on how long you let the
100 W of instantaneous power flow. Integrate and
the answer shall be yours.

...Keith

4124. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-10 23:44:39 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <677e4eef-08ac-4e84-b334-7504e33c313f@1g2000prf.googlegroups.com>
Source record: 26246

On Apr 10, 9:01 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > As I expected, you claim that the situations are
> > *completely* different. And yet the voltage, current
> > and energy distributions are identical. There are
> > no observable differences. And yet you claim they
> > are *completely* different. And yet there are no
> > observable differences. And yet....
>
> I did NOT claim that the situations are *completely*
> different. I said that some conditions are different
> and some conditions are the same. Voltages and currents
> are the same yet there is certainly a difference between
> an open circuit and a short circuit. Besides, in the
> real world, cutting the line would certainly cause
> observable differences.
>
> > Tis a puzzle, isn't it.
>
> Nope, if you were born without your five senses,
> you would feel that way about everything in existence.
> Why do you deliberately choose to remain handicapped
> by ignorance?
>
> A bit of modulation would cure up the mystery for
> you. If any modulation crosses the node, it is a
> good bet that wave energy is carrying the
> modulation.

When you modulate the carrier, the resulting signal
has many frequencies. Unless great care is taken
with the choice of modulation frequencies and
carrier frequencies, they will each have nodes
at different places on the transmission line. Without
a common node, there is no place that energy
does not cross, hence modulation makes the
question moot. In effect, the standing waves
of the various frequency components do not line
up. (Remember superposition works, for voltages).

If care is taken with the selection of modulation
frequencies with regards to the carrier, then nodes
can be created on the transmission line and neither
the carrier nor the modulation will cross such a
node.

> If phase locked TV signal generators
> equipped with circulator load resistors are
> installed at each end of a transmission line,
> the TV signals can be observed on normal TV
> sets crossing the standing wave nodes as if
> they didn't exist.

Which they don't, as explained above.

> Removing the modulation
> is unlikely to reverse the laws of physics.

True, but it can change whether there are nodes.

> > And we know from circuit theory that we can cut
> > a conductor carrying no current without affecting
> > the circuit. Why should it be different here?
>
> Please prove that a short circuit and an open circuit
> are identical.

An open circuit is just as useful as a short circuit
when no current is flowing.

> >> Please present your new laws of physics that allow
> >> EM waves to reflect off of EM waves in the complete
> >> absence of a physical discontinuity.
>
> > Again, not my claim.
>
> Seems your theory requires such. Please explain how
> reflections can occur at a passive standing wave node
> without EM waves bouncing off of each other.
>
> Energy and momentum both must be conserved. A causeless
> reversal of energy and momentum is impossible whether
> it is a bullet or an EM wave.

What causes energy to flow into and then out of a capacitor?
Look for your answer there.

> > But using your previous approach
> > for analysis, perhaps we should insert a zero length
> > line of the appropriate impedance to provide the cause
> > for the reflection, if you insist on a reflection.
>
> Please produce an example of
> a real world transmission line that would support your
> 100% reflection. Hint: what would be the Z02
> characteristic impedance in the reflection
> coefficient equation, (50-Z02)/(50+Z02) = 1.0 ???

That is just too easy...
(50-Z02)/(50+Z02) = 1.0

```
50 - Z02 = 50 + Z02
-2 * Z02 = 0
Z02 = 0
That wasn't so hard, was it?
```

...Keith

4125. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 10:29:54 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <A4HLj.22713$fx2.12591@newsfe08.ams2>
Source record: 26247

I have only taken the back off at this point and was hoping it would be some
thing simple to fix, rather than send it back.

Is there an MFJ in the UK?

"Howard W3CQH" <hsgorden@comcast.net> wrote in message
news:EqCdndn6cuWoBmPanZ2dnUVZ_iydnZ2d@comcast.com...
> If you are really having this much trouble troubleshooting the unit and it
> is still under warranty - for a couple of bucks in postage you should send
> it back to MFJ for the warranty repairs... If you continue to try and get
> into the unit you may end up VOIDing the warranty and then it will cost
> you a BUNCH of bucks to get it repaired!
>
> "Barrett" <barrett@blueyounder.co.uk> wrote in message
> news:0uwLj.22067$fx2.22066@newsfe08.ams2...
>> Hi Dave
>>
>>
>>
>> I checked the voltages in all the cells and they were all even voltages.
>> The batteries should be ok.
>>
>>
>>
>> I checked the current on the two pins like you said and there was no
>> reading.
>>
>> I checked the voltage on the two pins. No voltage on the outside pin and
>> 5 volts on the middle pin.
>>
>> I checked the voltage coming from the charger and its 18 volts.
>>
>> I checked the voltage from the + side to the - side of the battery pack
>> with the charger on and got the 12.6 volts.
>>
>> I checked the voltage from the + side to the - side of the battery pack
>> with the charger off and unplugged and got 12.6 volts.
>>
>> I checked the voltage from the battery pack with the charger on and using
>> the case as the ground. It was 17.9 volts.
>>
>>
>>
>> The charger says output voltage 12VDC 300mA 3.6VA.
>>

>>
>>
>> Hope you can point me in the right direction. Do you know what sort of
>> voltages I should expect when it's charging properly?
>>
>>
>>
>> Many thanks
>>
>>
>>
>> Barrett
>>
>>
>>
>>
>>
>>
>> "Dave Platt" <dplatt@radagast.org> wrote in message
>> news:d432d5-o7n.ln1@radagast.org...
>>> >I have had the batteries on charge in the MFJ-259Z for over a day now.
>>> >The
>>>>>jumper inside the unit is on for charging. The batteries were at 12.6V
>>>>>when
>>>>>put on charge and are still 12.6V. The PSU is working fine. Because I
>>>>>can
>>>>>run the unit off the PSU that came with it.
>>>>>
>>>>>Any ideas on what can be wrong with it now?
>>>
>>> It certainly sounds to me as if the charging circuit is not working,
>>> or is not working effectively.
>>>
>>> 12.6 volts is 1.26 volts per cell, which is what I'd expect to see in
>>> the no-load or light-load case of a NiMH with a fractional charge
>>> (maybe half-charged?). The cell voltage will rise, as charging
>>> continues, to as high as 1.4 volts or more (depending on charging
>>> current).
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>>> It could be that the charging circuit simply isn't working at all.
>>>
>>> It's also possible that the charging circuit is only delivering (by
>>> error or design) just enough of a trickle charge to prevent an
>>> exernally-charged NiMH battery from self-discharging. If the
>>> battery is only receiving 10-20 mA, this would be the case - the
>>> battery will essentially *never* recharge itself completely under
>>> these conditions.
>>>
>>> There's a real tradeoff with NiMH cells. Any simple charger which is
>>> capable of recharging them in a reasonable amount of time (say, a day

>>> or less) should *not* be left hooked up to them indefinitely - it'll
>>> overcharge them and significantly shorten their life. Conversely, a
>>> simple charger which *can* be left hooked up for days at a time, will
>>> not recharge a dead battery rapidly enough to be useful.
>>>
>>> Charger circuits *can* switch between two charging modes (fast and
>>> maintenance) but it requires quite a bit more complexity.
>>>
>>> So... what to do now. My suggestions:
>>>
>>> [1] First, measure the voltage across each individual cell in the
>>> battery. If they're all around 1.25 or so, then the cells are
>>> probably OK, and the problem is in the charging.
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>>> If you find that most of the cells have a higher voltage, and one
>>> is very low, then that one cell is junk and should be recycled and
>>> replaced.
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>>> [2] Get a digital multimeter with small alligator-clip leads. Set it
>>> on its "DC current" scale, remove the charging jumper in the MFJ,
>>> and connect the two leads of the multimeter to the two pins that
>>> had been jumpered together (stick a bit of paper between them to
>>> prevent the multimeter leads from shorting). Plug the MFJ into
>>> its wallwart (with the power switch turned off) and read the
>>> current on your DMM. This will tell you how much current is
>>> flowing into the battery through the charging circuit (assuming
>>> that it's a simple linear charger and not a pulse-charger).
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>>> If the current consistently reads zero, then the charger is not
>>> working at all.
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>>> If it's charging at a rate of below 50 mA, then it's just a
>>> maintenance trickle-charger... sufficient to keep charged
>>> batteries alive in standby mode, but insufficient to recharge them
>>> in any reasonable amount of time. You'll need to do the major
>>> charging using an external charger.
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>>> If it's charging at 100-200 mA, then it'll take a day or more to
>>> fully recharge.
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>>> If it's charging at over 200 mA, then it'll recharge effectively
>>> in under a day, but should *not* be left hooked up indefinitely...
>>> it'll overcharge the batteries and shorten their service life.
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>>> Dave Platt <dplatt@radagast.org> AE6EO
>>> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>>> I do _not_ wish to receive unsolicited commercial email, and I will
>>> boycott any company which has the gall to send me such ads!
>>>

>>
>>
>
>

4126. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 11:19:45 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <wNGdnSyv2Lew1GLanZ2dnUVZ8tyqnZ2d@pipex.net>
Source record: 26248

Barrett wrote:
> I have only taken the back off at this point and was hoping it would be some
> thing simple to fix, rather than send it back.
>
> Is there an MFJ in the UK?
==========
No ,you probably have to return it to the UK importer Waters & Stanton.

I have used the MFJ259 (bought in the USA) for many years with an
external small Sealed Lead Acid battery .
I find it a very useful piece of equipment to test antenna matching
units and resistors/capacitors used for RF purposes . Also stubs and
coax cable.

It is also used whenever a UK Foundation Licence trainee in my area
needs to do an antenna assessment eg plotting the SWR curve of a wire
dipole with the exercise to be repeated with a slightly shorter dipole
,showing a shift of the SWR graph towards a higher frequency.
All this is done with a dipole for 28 MHz.

Frank GM0CSZ / KN6WH

4127. Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 12:02:04 UTC
From: Robert11 <rgsros@notme.com>
Message-ID: <SK-dnZ_m3LahzmLanZ2dnUVZ_uWInZ2d@comcast.com>
Source record: 26249

Hello,

For the scanner frequencies around 118 MHz, e.g., I realize FM is
essentially line of sight.

Are AM transmissions also line of sight ?

Same question, but for the higher freq's around 800 MHz ?

Thanks,
Bob

4128. Sloping doublet

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 12:20:45 UTC
From: networkrail@mailinator.com
Message-ID: <4dc893d0-2c11-46a5-9489-2b7e9861804f@u12g2000prd.googlegroups.com>
Source record: 26250

Once I get my licence, I would like to get a doublet antenna up to work as many HF bands as possible. The problem is that down one side of my garden there are power lines and at the bottom of the other side of the garden is a two story flat/apartment. If I have the dipole running down the power line side of the garden it will have to slope from about 40feet to about 20 feet. Will this be a problem with regards to the balance of the antenna and cause any problems such as RF in the shack etc?

The alternative is to get some kind of thin pole and have one end of the antenna right outside one of the flats kitchen window which I'm not to keen on.

Any advice appreciated

Peter

4129. Multiband no-radial vertical?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 13:13:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ZtJLj.8067$V14.7955@nlpi070.nbdc.sbc.com>
Source record: 26119

I received an email question from a ham in Spain
and I don't know the answer.

> Could you recommend me a HF vertical multiband antenna
> (80,40,20,10 or more bands) which doesn't require
> radials?

Is there a commercial HF vertical available in
Spain that doesn't require radials?
--
73, Cecil http://www.w5dxp.com

4130. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 13:17:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AxJLj.8068$V14.7388@nlpi070.nbdc.sbc.com>
Source record: 26120

Keith Dysart wrote:
> There is no need for forward or reflected waves
> at all; just basic AC circuit theory.

Now do it in free space. EM waves are EM waves
no matter what the medium.
--
73, Cecil http://www.w5dxp.com

4131. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 13:25:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <oFJLj.2450$h75.459@newssvr27.news.prodigy.net>
Source record: 26121

Keith Dysart wrote:
> The computation using energy instead of power has
> also been done (and published here) and found also
> to demonstrate that the reflected is not dissipated
> in the source resistor.

Well, that certainly violates the conservation of
energy principle. We know the reflected energy is
not dissipated in the load resistor, by definition.

The only other device in the entire system capable
of dissipation is the source resistor. Since the reflected
energy is not dissipated in the load resistor and you say
it is not dissipated in the source resistor, it would
necessarily have to magically escape the system or build
up to infinity (but it doesn't). You keep digging your
hole deeper and deeper.

>> How many joules are there in 100 watts of
>> instantaneous power?
>
> Obviously. It depends on how long you let the
> 100 W of instantaneous power flow. Integrate and
> the answer shall be yours.

I'm not the one making the assertions. How many joules
of energy exist in *YOUR* instantaneous power calculations?
--
73, Cecil http://www.w5dxp.com

4132. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 13:32:07 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pLJLj.8073$V14.3937@nlpi070.nbdc.sbc.com>
Source record: 26122

Keith Dysart wrote:
> If care is taken with the selection of modulation
> frequencies with regards to the carrier, then nodes
> can be created on the transmission line and neither
> the carrier nor the modulation will cross such a
> node.

Please prove your assertion on the bench. Until you
do, there is little left to discuss.

>> Please produce an example of
>> a real world transmission line that would support your
>> 100% reflection. Hint: what would be the Z02
>> characteristic impedance in the reflection
>> coefficient equation, (50-Z02)/(50+Z02) = 1.0 ???
>
> That is just too easy...
> (50-Z02)/(50+Z02) = 1.0
> 50 - Z02 = 50 + Z02
> -2 * Z02 = 0
> Z02 = 0
> That wasn't so hard, was it?

Now build one. Be sure to verify that you can transfer
energy from end to end. Until you do, there is little
left to discuss.
--
73, Cecil http://www.w5dxp.com

4133. Re: Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 13:38:20 UTC
From: JOHN PASSANEAU <w3jxp@arrl.net>
Message-ID: <Xns9A7D620DAE791JXP16PSUEDU@216.196.97.136>
Source record: 26123

"Robert11" <rgsros@notme.com> wrote in news:SK-dnZ_m3LahzmLanZ2dnUVZ_uWlnZ2d@comcast.com:

> Hello,
>
> For the scanner frequencies around 118 MHz, e.g., I realize FM is
> essentially line of sight.
>
> Are AM transmissions also line of sight ?
>
> Same question, but for the higher freq's around 800 MHz ?
>
> Thanks,
> Bob
>
>
>
Hi Bob

The propagation of radio signals is frequency dependent, not modulation mode dependent. That is not to say that some modulation modes are not better over long distances than others, SSB is better than AM and AM is better than FM. To say that VHF frequencies are always line of sight is also not completely correct. They are propagation modes that can extend the range of VHF signals quite a bit. I have worked stations on 144MHz that were more than 500 miles away. But these are not an everyday thing so it safe to say that most of the time VHF is line of sight. 800MHz is in the UHF band and is even more just line of sight than VHF but they are still propagation modes that can extend the range out to 100s of miles. Line of sight propagation is the reason that VHF and UHF antennas are put up high as it extends the line of sight.

John Passaneau W3JXP

4134. Re: Multiband no-radial vertical?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 14:09:11 UTC
From: kuzen001@duke.edu
Message-ID: <ftnre7$c3f$1@gargoyle.oit.duke.edu>
Source record: 26124

Cecil Moore <nospam@w5dxp.com> wrote:
> I received an email question from a ham in Spain
> and I don't know the answer.

> > Could you recommend me a HF vertical multiband antenna
> > (80,40,20,10 or more bands) which doesn't require
> > radials?

> Is there a commercial HF vertical available in
> Spain that doesn't require radials?

I don't know about availability in Spain, but I used to have a Gap "Eagle" vertical that needed no radials. It's actually a vertical dipole, with a center feed. It worked moderately well and had a fairly small footprint.

I bought it when we moved to a new house because my wife didn't want "all those wires in the yard." :-) After using it for a couple of months I wound up putting up another big horizontal loop--but left the Eagle up. Probably 85% of signals were better on the loop but the Gap Eagle worked reasonably well for a small antenna. HTH!

Ken Kuzenski AC4RD atsign mindspring dotsign com

All disclaimers apply, see? www.duke.edu/~kuzen001

4135. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 14:11:10 UTC
From: derekbluey@gmail.com
Message-ID: <7ec20b83-7db7-4ead-8978-309d9581070f@n14g2000pri.googlegroups.com>
Source record: 26125

On Apr 10, 3:58 am, richardharri...@webtv.net (Richard Harrison)
wrote:

> Would Art cut and run if his claim of an antenna for HF that deployed in
> the size of two shoe boxes and that performed as well as an antenna that
> deployed to a significant fraction of a wavelength were so? I think not.
> It has always been a fairy tale.
>

Aaah but then sometimes fairy tales come true.

If you think art has cut and run because his claims are false I
suggest you think again, more likely he has "finally"come to the
realization he is wasting his time with people whose eyes are
blinkered by the ghosts of the past and reject anything that is not
written in a book.
The time for disclosure is coming closer and I forecast that when
it
comes the so called guru's on this group will choke on their word's.

Derek

4136. Re: Multiband no-radial vertical?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 14:13:37 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9A7D5DDEE52F4VeebleFetzer@127.0.0.1>
Source record: 26126

nospam@w5dxp.com (Cecil Moore) wrote in
news:ZtJLj.8067$V14.7955@nlpi070.nbdc.sbc.com:

> I received an email question from a ham in Spain
> and I don't know the answer.
>
>> Could you recommend me a HF vertical multiband antenna
>> (80,40,20,10 or more bands) which doesn't require
>> radials?
>
> Is there a commercial HF vertical available in
> Spain that doesn't require radials?

There are lots of "no-radial" verticals on the market.

Your friend will just have to either find a Spanish retailer or find a
foreign source that will export to Spain.

Without knowing the state of import/export regulations and the general
availability of ham radio gear in Spain, your question is impossible
to answer.

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

4137. Re: Sloping doublet

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 14:14:36 UTC
From: kuzen001@duke.edu
Message-ID: <ftnroc$c3f$2@gargoyle.oit.duke.edu>
Source record: 26127

networkrail@mailinator.com wrote:
> of my garden there are power lines and at the bottom of the other side
> of the garden is a two story flat/apartment. If I have the dipole
> running down the power line side of the garden it will have to slope
> from about 40feet to about 20 feet. Will this be a problem with
> regards to the balance of the antenna and cause any problems such as

Peter, keep any antennas well away from the power lines--very very important! As far as problems, if you're talking about a classic two-sided wire antenna fed by balanced line (ladder-line, etc.), any problems are likely to be tiny and more theoretical than practical. I've used antennas like that, and big horizontal loops, since 1991, and because they all hang from available supports (trees, mostly), they wander all over, they vary widely in height from one place to another. The great thing about antennas like this is that they don't have to be pretty to work well. :-) Higher will be better, for performance--but don't let that worry you. Put some wire up and see how it works!

(And DO keep it away from the power lines!) GL!

4138. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 15:14:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GfLLj.4402$GO4.1927@newssvr19.news.prodigy.net>
Source record: 26128

Cecil Moore wrote:
> Keith Dysart wrote:
>> If care is taken with the selection of modulation
>> frequencies with regards to the carrier, then nodes
>> can be created on the transmission line and neither
>> the carrier nor the modulation will cross such a
>> node.
>
> Please prove your assertion on the bench. Until you
> do, there is little left to discuss.

And if you do, the distributed network model will
have to be overhauled.
--
73, Cecil http://www.w5dxp.com

4139. Re: Multiband no-radial vertical?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 15:17:18 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <8jtuv3pl4hqv6pvugedm51ntspclqha606@4ax.com>
Source record: 26129

I once had a Hustler 4BTV and a Taylor Radio 4 Band Trap Vertical (at different times.) Both antennas recommended ground radials, but I managed to use them effectively with only a ground rod and worked all states and many DX countries.

Obviously, this is not the optimum way to use either antenna, but given the restrictions I had at those times, they were better than the alternative, none!

My thoughts are, that if the antenna is to be ground mounted, as opposed to roof mounted, a good ground rod (Mine was 4') will make most ground mounted verticals usable.

I can't offer much help for a roof mount unless there is ample metal to connect a ground to.

I hope this is useful info.

On Fri, 11 Apr 2008 08:13:30 -0500, Cecil Moore <nospam@w5dxp.com> wrote:

>I received an email question from a ham in Spain
>and I don't know the answer.
>
>> Could you recommend me a HF vertical multiband antenna
>> (80,40,20,10 or more bands) which doesn't require
>> radials?
>
>Is there a commercial HF vertical available in
>Spain that doesn't require radials?

N4PGW
Buck
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4140. Re: Multiband no-radial vertical?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 15:49:13 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <47ff8391$0$23827$9b536df3@news.fv.fi>
Source record: 26130

GAP Titan DX (vertical dipole)
Cushcraft R8 (half wave vertical) no 80m

may be what you are seeking

73 Jouko OH5RM

4141. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 15:59:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <462vv3tshobsrqvnekj3sfq45u0pa3khsv@4ax.com>
Source record: 26131

On Fri, 11 Apr 2008 07:11:10 -0700 (PDT), derekbluey@gmail.com wrote:

> I forecast that when it
>comes the so called guru's on this group will choke on their word's.

Hi Derek,

Your forecasting ability would be better served if you actually did something. One project that comes to mind is your Guru's own design, that he has explicitly revealed here. It is notable for being easy to construct and to erect; and offering boon to every user.

Those "supporters" that have faith in Art's design should be able to give us reports of their own efforts of testing his antenna in his behalf.

But that doesn't happen.

This fair weather enthusiasm can only be attributable to his "supporters" patronizing attitude towards Art where they think of him as a doddering eccentric that needs a chuck under the chin to keep his spirits up. Such is the mawkish sentimentality of your post that survives quoted above.

73's
Richard Clark, KB7QHC

4142. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 16:22:44 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080411092244.7da965f9.rsparks@elltel.net>
Source record: 26132

On Fri, 11 Apr 2008 13:25:40 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Keith Dysart wrote:
> > The computation using energy instead of power has
> > also been done (and published here) and found also
> > to demonstrate that the reflected is not dissipated
> > in the source resistor.
>
> Well, that certainly violates the conservation of
> energy principle. We know the reflected energy is
> not dissipated in the load resistor, by definition.
>
> The only other device in the entire system capable
> of dissipation is the source resistor. Since the reflected
> energy is not dissipated in the load resistor and you say
> it is not dissipated in the source resistor, it would
> necessarily have to magically escape the system or build
> up to infinity (but it doesn't). You keep digging your
> hole deeper and deeper.
>

You write "The only other device in the entire system capable
of dissipation is the source resistor." which is a correct statement. Unfortunately, the circuit is intended to illustrate the absence of interference under special circumstances but an instant analysis shows that all the power can not be accounted for. We can only conclude that interference is present. Not good because the circuit was intended to illustrate a case of NO interference.

Our choice of a voltage source is incomplete because we did not assign it a mechanism to provide a reactive voltage, allowing the source to only apply a sinsoidal voltage without specifying the current or current timing. As a result, reflected power will return to the source resulting in an apparent loss of power to the system and resistor Rs. It is not a magical loss of power, only the result of interference acting within the cycle.

The circuit is very useful to investigate interference more carefully because on the AVERAGE, the interference IS zero. Using spreadsheets, we can see how the interference both adds and subtracts from the instantaneous applied voltage, resulting in cycling variations in the power applied to the resistor and other circuit elements. A very instructive exercise.

--
73, Roger, W7WKB

4143. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 16:27:03 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <7a94ff6c-9d58-401c-93d4-d28059f44771@u3g2000hsc.googlegroups.com>
Source record: 26133

On Apr 10, 2:24 pm, "Antonio Vernucci" <vernu...@tin.it> wrote:
> > I am also surprised by the high resistance you are seeing with the
> > hairpin wires removed. From what you posted before, and from the 3-
> > element NBS and the 6-element designs I ran in EZNEC, I would expect a
> > lower feedpoint resistance than that. If I put a pure inductance in
> > parallel with your 42.4-j39 ohms, I get the same answer as you did,
> > that it moves to 78 ohms resistive.
>
> > My offer to look at your EZNEC file is still open, of course. Maybe I
> > could see something in it--I know that I can look and look at
> > something and not see an obvious problem, even when I know perfectly
> > well what to look for.
>
> If your personal mail on the newsgroup is correct, I could send you the EZNEC
> file of my antenna.
>
> > Also--in the model before you split the D.E. into three wires, did you
> > get a more reasonable feedpoint impedance (with no hairpin, just
> > looking at the D.E. feedpoint)? I think we were expecting something
> > like 19-j58 ohms. If you get that, then I would look for the reason
> > things change (so very much!) when you split the D.E. into three
> > separate (but connected, end-to-end) wires. I can understand a small
> > change but not so large a change. Is the total number of segments for
> > the three wires making up the D.E. still about the same as it was in
> > the original version of the model, with just one wire for the D.E.?
>
> I am also surprised as I would have expected a much lower resistance (as you
> suggested)
>
> I did the test you have suggested and I noted some change, but not much. With a
> "solid" D.E., i.e. not broken in three pieces (and without the hairpin of
> course), impedance is 43.27 - j 40.97 ohm, not terribly away from 42.4 - j39
> ohm. In that test I configured EZNEC for 17 segments, whilst when the D.E. was
> broken in three parts I had used 17 segments for the two outer arms and only 5
> segments for the 10-cm center section, due to its much shorter length (I see
> that result depend somewhat on the number of segments).
>
> 73
>
> Tony I0JX

Yes, the email should be right. I do have Eznec5+, so I can check
against Roy's suggestion. I'm sure he'll be happy to help with things
that may be related to how NEC/EZNEC behaves, if we can identify them.

Cheers,
Tom

4144. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 18:32:22 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47ffaeab$0$35966$4fafbaef@reader2.news.tin.it>
Source record: 26134

> What you're probably seeing is a numerical problem in the NEC calculating
> engine. It's very fussy about the region near a source, and doesn't like small
> loops which include a source. You should run an Average Gain check (see
> "Average Gain" in the EZNEC manual index), which will reveal whether this is
> the problem.
>
> The double precision calculating engine in EZNEC+ is considerably more
> tolerant of small loops, but can still have problems with average gain for
> other reasons.
>
> Roy Lewallen, W7EL

Hi Roy,

thanks for the tip.

As a matter of fact without the hairpin the average gain is almost zero, whilst with the hairpin is about -0.8 dB, that correponds to the gain drop I notice. So the problem you had anticipated actually occurs.

I then tried to simulate the hairpin with a proper-length shorted trasmission line and, doing so, the average gain is almost 0. Evidently the program does not like the short hairpin loop.

73

Tony I0JX

4145. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 18:54:50 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47ffb3ef$0$35964$4fafbaef@reader2.news.tin.it>
Source record: 26135

> Yes, the email should be right. I do have Eznec5+, so I can check
> against Roy's suggestion. I'm sure he'll be happy to help with things
> that may be related to how NEC/EZNEC behaves, if we can identify them.
>
> Cheers,
> Tom

Tom,

the mistery seems to be solved:

- with the "real" hairpin the program does not yield correct answers, neither in terms of gain nor in terms of impedance. Roy W7EL anticipated that the problem is due to the feedpoint being in a short loop. I did the test he suggested (i.e. calculating the Average Gain) and the result I got clearly showed that there was a problem.

- instead, with the hairpin simulated by means of a shorted piece of transmission, the results are fully consistent. Firstly the gain does not vary with and without the hairpin. Secondly the impedance I read removing the hairpin is 24.5 +j65.37 ohm, a value fully consintent with the pure 200 ohm I get with the simulated hairpin.

At least I learned one should not try to model "real" hairpins.

At this point I would not further bother you, by sending you files that would not tell you much. It was a real pleasure for me to have such an interesting discussion with you and, if I may, I will write you should some other strange situation occur in the future.

73

Tony I0JX

4146. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 19:30:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <K%OLj.4417$GO4.4387@newssvr19.news.prodigy.net>
Source record: 26136

Roger Sparks wrote:
> You write "The only other device in the entire system capable
> of dissipation is the source resistor." which is a correct statement.

Therefore, all power dissipated in the circuit must be dissipated
in the load resistor and the source resistor because there is
nowhere else for it to go. Since the reflected power is not
dissipated in the load, by definition, it has to be dissipated
in the source resistor but not at the exact time of its arrival.
There is nothing wrong with delaying power dissipation for 90
degrees of the cycle. In Parts 2 and 3 of my articles, I will show
how the source decreases it power output to compensate for destructive
interference and increases it power output to compensate for
constructive interference.

> Unfortunately, the circuit is intended to illustrate the absence of

> [AVERAGE] interference under special circumstances but an instant analysis shows

> that all the power can not be accounted for.

Not surprising since there is no conservation of power principle.

> We can only conclude that

> [instantaneous] interference is present. Not good because the circuit was intended to

> illustrate a case of NO [AVERAGE] interference.

I took the liberty of adding adjectives in brackets [*] to your
above statements. It doesn't matter about the instantaneous values
of power since not only do they not have to be conserved, but they
are also "of limited usefulness", according to Eugene Hecht, since
the actual energy content of instantaneous power is undefined even
when the instantaneous power is defined.

> The circuit is very useful to investigate interference more carefully because on the
AVERAGE,

the interference IS zero. Using spreadsheets, we can see how the
interference both adds and

subtracts from the instantaneous applied voltage, resulting in cycling
variations in the power

applied to the resistor and other circuit elements. A very instructive
exercise.

Instructive as long as we remember that a conservation of power
principle doesn't exist and therefore, equations based on instantaneous
powers do not have to balance. The joules, not the watts, are what must
balance.
--
73, Cecil http://www.w5dxp.com

4147. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 19:32:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <k1PLj.4418$GO4.111@newssvr19.news.prodigy.net>
Source record: 26137

Antonio Vernucci wrote:
> I then tried to simulate the hairpin with a proper-length shorted
> trasmission line and, doing so, the average gain is almost 0.

Is that shorted transmission line lossless?
--
73, Cecil http://www.w5dxp.com

4148. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 19:49:09 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <47ffc0aa$0$41653$4fafbaef@reader4.news.tin.it>
Source record: 26138

>> I then tried to simulate the hairpin with a proper-length shorted trasmission
>> line and, doing so, the average gain is almost 0.
>
> Is that shorted transmission line lossless?
> --
> 73, Cecil http://www.w5dxp.com

I presume so. It would seem to me that in EZNEC there is no way of simulating a lossy transmission line.

73

Tony I0JX

4149. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 20:22:07 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <ede92ab0-b617-403b-9e4b-8aeb11d3e849@d45g2000hsc.googlegroups.com>
Source record: 26139

On Apr 11, 11:54 am, "Antonio Vernucci" <vernu...@tin.it> wrote:
> > Yes, the email should be right. I do have Eznec5+, so I can check
> > against Roy's suggestion. I'm sure he'll be happy to help with things
> > that may be related to how NEC/EZNEC behaves, if we can identify them.
>
> > Cheers,
> > Tom
>
> Tom,
>
> the mistery seems to be solved:
>
> - with the "real" hairpin the program does not yield correct answers, neither in
> terms of gain nor in terms of impedance. Roy W7EL anticipated that the problem
> is due to the feedpoint being in a short loop. I did the test he suggested (i.e.
> calculating the Average Gain) and the result I got clearly showed that there was
> a problem.
>
> - instead, with the hairpin simulated by means of a shorted piece of
> transmission, the results are fully consistent. Firstly the gain does not vary
> with and without the hairpin. Secondly the impedance I read removing the hairpin
> is 24.5 +j65.37 ohm, a value fully consintent with the pure 200 ohm I get with
> the simulated hairpin.
>
> At least I learned one should not try to model "real" hairpins.
>
> At this point I would not further bother you, by sending you files that would
> not tell you much. It was a real pleasure for me to have such an interesting
> discussion with you and, if I may, I will write you should some other strange
> situation occur in the future.
>
> 73
>
> Tony I0JX

Hi Tony,

I suppose you are not using EZNEC 5+. If that is the case, I would be
happy to run your model on the 5+ version with double-precision
calculations, and see if that makes a difference. It should be easy
enough to run it. It it no problem to me, just a fun diversion. And
of course I would be happy to have discussions with you in the future.

Cheers,
Tom

4150. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 22:24:44 UTC
From: nm5k@wt.net
Message-ID: <5a00ce51-6f15-44cb-bdb9-bb84e837dd7b@1g2000prf.googlegroups.com>
Source record: 26140

On Apr 11, 9:11 am, derekbl...@gmail.com wrote:

>
> Aaah but then sometimes fairy tales come true.

A Cinderella story this is not...
Cinderella (French: Cendrillon) is a popular fairy tale embodying
a classic folk tale myth-element of unjust oppression/triumphant
reward.
Thousands of variants are known throughout the world.
The word "cinderella" means one who unexpectedly achieves
recognition or success after a period of obscurity and neglect.

>
> If you think art has cut and run because his claims are false I
> suggest you think again, more likely he has "finally"come to the
> realization he is wasting his time with people whose eyes are
> blinkered by the ghosts of the past and reject anything that is not
> written in a book.
> The time for disclosure is coming closer and I forecast that when
> it
> comes the so called guru's on this group will choke on their word's.
>
> Derek

Where is the beef? He sent the antenna to be tested by a ham
on this group. Have the tests been completed? No mention yet..
Either he hasn't had time, the snow hasn't melted, or the tests
have been completed, but the results not divulged by Art.
Take your pick.
BTW, I don't blame the tester if he hasn't had time to mess
with it.. It's not really his job to do Art's work anyway..

Prior Art has only himself for this dilemma of credibility.
A normal person would build the thing and compare it to a
known reference. Repeatably, over a period of time over
various paths, etc. They would not expect other people to
do their work for them.
If he can mount his miracle device on a tower, it seems to me
he should be capable of also installing a 1/2 wave dipole at
the appx same mounting height to act as a reference antenna.
I assume his device is horizontally polarized.
If not, he can use a reference monopole.
He talks of receiving DX with this device. I would hope so..
It's fairly common knowledge that even a very small antenna
can be a good receive antenna on that low freq. You have

such a high overall level that atmospheric noise is going to
be the limiting factor, rather than efficiency of the antenna.
The S/N ratio will not be much less than a full size antenna
under normal semi noisy conditions. Maybe not any less,
unless the noise level is very low.
My 44x44 inch diamond MW loop is very good at receiving,
and it can provide fairly good signal levels. But I'd never be
foolish enough to suggest it would make for an efficient
transmitting antenna.
But judging by the description he provides of his shoe box
size antenna using 22 gauge wire, it's quite possible that
my MW loop would out transmit his antenna on 160m.
After all, it's bigger, and using a whole lot less turns to
tune the antenna.
When Art was listening to his DX, why did he not contact
the station and request a signal report?
Cat got his tongue? 0r maybe he did, and the failure to
communicate was just too great for him to bear, much less
divulge to the world. Only the shadow knows for sure.

Why did Art not have a full size antenna up to have on
the air comparisons with said DX station? Or any
station for that matter..
Does he fear rejection of his antenna by said DX station?
It shouldn't really be an issue, being transmitting is not
required to compare the two.
But you have to at least take the initiative to put up a
reference antenna. Whining to rraa is not going to
get it done.
Woe is Art.

How was the performance of the miracle antenna when
you tried it? How did it compare to a full size reference
antenna? Did you see the same inefficient type of
performance from your version as Art described?
How many people have actually been able to hear you
through the noise using such an antenna?
Do you cheat and let the feed line the bulk of the radiating?
Do you actually work 160m at all?

Oh, you say you haven't tried it at all, but just like to
further the propagation of fairy tales...
I get it now. In other words, you about as full of @#$%
as he is?
I've been choking on his bafflegab for quite a while, so
that would be addfing nothing new to add to the program.
:/
The only thing you have left is to prove us naysayers
wrong. Better get busy. The tooth fairy is not going to
do your work for you and stick it under your pillow while
you count the sheep.

I've already tried small antennas. Except for my mobile
where I have no choice, I have no use for small antennas.
I don't like having to repeat most everything I say two or
three times to get a message through the noise.
I tried a half size dipole on 160m, using heavy high Q
loading coils. It would have eaten Arts miracle whip for
lunch. But to me, it was an inferior radiating device,
and was dismantled after only a short time of testing.
But Art is going to beat that 120 ft long high Q loaded
antenna with a shoe box sized mass of 22 gauge wire,
wound in what I consider a perverted manner...
Chortle....You slay me, you really do.

4151. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 23:04:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <f8SLj.2050$%V7.723@newssvr14.news.prodigy.net>
Source record: 26141

Antonio Vernucci wrote:
>> Is that shorted transmission line lossless?
>
> I presume so. It would seem to me that in EZNEC there is no way of
> simulating a lossy transmission line.

So what would be the results if the real-world
transmission line losses were accounted for?
--
73, Cecil http://www.w5dxp.com

4152. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-11 23:07:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <taSLj.2051$%V7.192@newssvr14.news.prodigy.net>
Source record: 26142

nm5k@wt.net wrote:
> The word "cinderella" means one who unexpectedly achieves
> recognition or success after a period of obscurity and neglect.

A very appropriate name for my dog obtained from the
dog pound.
--
73, Cecil http://www.w5dxp.com

4153. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 00:28:28 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <RPqdnXT7S6i2n53VnZ2dnUVZ_hCdnZ2d@neonova.net>
Source record: 26143

Cecil Moore wrote:
> Roger Sparks wrote:
>> You write "The only other device in the entire system capable
>> of dissipation is the source resistor." which is a correct statement.
>
> Therefore, all power dissipated in the circuit must be dissipated
> in the load resistor and the source resistor because there is
> nowhere else for it to go. Since the reflected power is not
> dissipated in the load, by definition, it has to be dissipated
> in the source resistor but not at the exact time of its arrival.
> There is nothing wrong with delaying power dissipation for 90
> degrees of the cycle. In Parts 2 and 3 of my articles, I will show
> how the source decreases it power output to compensate for destructive
> interference and increases it power output to compensate for
> constructive interference.
>
>> Unfortunately, the circuit is intended to illustrate the absence of
>
>> [AVERAGE] interference under special circumstances but an instant
>> analysis shows
>
>> that all the power can not be accounted for.
>
> Not surprising since there is no conservation of power principle.
>
The concept of a wave is energy located at a predicted place after some
time period. That is a concept of conservation of power.

>> We can only conclude that
>
>> [instantaneous] interference is present. Not good because the circuit
>> was intended to
>
>> illustrate a case of NO [AVERAGE] interference.
>
> I took the liberty of adding adjectives in brackets [*] to your
> above statements. It doesn't matter about the instantaneous values
> of power since not only do they not have to be conserved, but they
> are also "of limited usefulness", according to Eugene Hecht, since
> the actual energy content of instantaneous power is undefined even
> when the instantaneous power is defined.
>
>> The circuit is very useful to investigate interference more carefully
>> because on the AVERAGE,

>
> the interference IS zero. Using spreadsheets, we can see how the
> interference both adds and
>
> subtracts from the instantaneous applied voltage, resulting in cycling
> variations in the power
>
> applied to the resistor and other circuit elements. A very instructive
> exercise.
>
> Instructive as long as we remember that a conservation of power
> principle doesn't exist and therefore, equations based on instantaneous
> powers do not have to balance. The joules, not the watts, are what must
> balance.

Forget the conservation of power at your own peril, because we need to depend upon the predictability of waves of energy acting over time to solve these problems. When the instantaneous powers do not balance, we know that we do not yet have the complete solution or complete circuit.

73, Roger, W7WKB

4154. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 00:35:03 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <07837c68-23e0-49c2-b4a6-6dc2f157bf3c@u36g2000prf.googlegroups.com>
Source record: 26144

On Apr 11, 9:25 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > The computation using energy instead of power has
> > also been done (and published here) and found also
> > to demonstrate that the reflected is not dissipated
> > in the source resistor.
>
> Well, that certainly violates the conservation of
> energy principle. We know the reflected energy is
> not dissipated in the load resistor, by definition.
>
> The only other device in the entire system capable
> of dissipation is the source resistor. Since the reflected
> energy is not dissipated in the load resistor and you say
> it is not dissipated in the source resistor, it would
> necessarily have to magically escape the system or build
> up to infinity (but it doesn't).

You seem to have forgotten that a voltage source can
absorb energy. This happens when the current flows
into it rather than out.

Recall the equation
Ps(t) = Prs(t) + Pg(t)

When the voltage source voltage is greatr than the
voltage at the terminals of the line (Vg(t)), energy
flows from the source into the resistor and the line.
When the voltage at the line terminals is greater
than the voltage source voltage, energy flows from
the line into the resistor and the voltage source.

At all times
Ps(t) = Prs(t) + Pg(t)
holds true.

Conservation of energy at work. No lost energy.

<gartuitous comment snipped>

> >> How many joules are there in 100 watts of
> >> instantaneous power?
>
> > Obviously. It depends on how long you let the
> > 100 W of instantaneous power flow. Integrate and
> > the answer shall be yours.

>
> I'm not the one making the assertions. How many joules
> of energy exist in *YOUR* instantaneous power calculations?

We have been down that path; the spreadsheet has been
published. The flows of energy described by
Ps(t) = Prs(t) + Pg(t)
always balance.

The integration of these energy flows over any interval
also balance.

Energy is conserved. The world is as it should be.

...Keith

4155. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 00:35:18 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <55a2c17c-3430-4c08-a56c-3edbbb5aef2d@n1g2000prb.googlegroups.com>
Source record: 26145

On Apr 11, 9:32 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > If care is taken with the selection of modulation
> > frequencies with regards to the carrier, then nodes
> > can be created on the transmission line and neither
> > the carrier nor the modulation will cross such a
> > node.
>
> Please prove your assertion on the bench. Until you
> do, there is little left to discuss.

Speculating that this is your way of asking for an
explantion...
With a shorted line, nodes occur every 90 degrees. These
90 degree nodal points are at different places on
the line for different frequencies because the
wavelengths are different. With the nodes at
different physical locations for the different
frequencies, when you sum the responses for all of
the frequencies there are no longer well defined
nodes.

If the frequencies are rational numbers, then
nodes for the total response will exist at the lowest
common multiples of the wavelengths, but it will
typically take a very long line to find one.

...Keith

4156. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 00:35:26 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <57930185-d617-480f-97e7-31f6fa2eff2e@a9g2000prl.googlegroups.com>
Source record: 26146

On Apr 11, 3:30 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > You write "The only other device in the entire system capable
> > of dissipation is the source resistor." which is a correct statement.
>
> Therefore, all power dissipated in the circuit must be dissipated
> in the load resistor and the source resistor because there is
> nowhere else for it to go.

Please do not forget the source. It can absorb energy.

> Since the reflected power is not
> dissipated in the load, by definition, it has to be dissipated
> in the source resistor but not at the exact time of its arrival.
> There is nothing wrong with delaying power dissipation for 90
> degrees of the cycle.

If you can't identify where the energy is stored for those 90
degrees you do not have a complete story. Or you are violating
conservation of energy and therefore have no story what-so-ever.

> In Parts 2 and 3 of my articles, I will show
> how the source decreases it power output to compensate for destructive
> interference and increases it power output to compensate for
> constructive interference.
>
> > Unfortunately, the circuit is intended to illustrate the absence of
> > [AVERAGE] interference under special circumstances but an instant analysis shows
> > that all the power can not be accounted for.
>
> Not surprising since there is no conservation of power principle.

Conservation of energy means that energy flows must be conserved.
Therefore, conservation of power.

> > We can only conclude that
> > [instantaneous] interference is present. Not good because the circuit was intended to
> > illustrate a case of NO [AVERAGE] interference.
>
> I took the liberty of adding adjectives in brackets [*] to your
> above statements. It doesn't matter about the instantaneous values
> of power since not only do they not have to be conserved, but they
> are also "of limited usefulness", according to Eugene Hecht, since
> the actual energy content of instantaneous power is undefined even
> when the instantaneous power is defined.

Are you sure that is why Hecht wrote what he did? He would, in all
likelihood, have an apoplexy if he knew how his words were being used.

> > The circuit is very useful to investigate interference more carefully because on the
AVERAGE,
>
> the interference IS zero. Using spreadsheets, we can see how the
> interference both adds and
>
> subtracts from the instantaneous applied voltage, resulting in cycling
> variations in the power
>
> applied to the resistor and other circuit elements. A very instructive
> exercise.
>
> Instructive as long as we remember that a conservation of power
> principle doesn't exist and therefore, equations based on instantaneous
> powers do not have to balance. The joules, not the watts, are what must
> balance.

Since the total energies in your equations do not balance either,
there is still a problem with your hypothesis.

It would be helpful, however, if you could actually demonstrate a
system where the energies balance, but the flows do not. This would
settle the matter once and for all. (You won't find one, since
balanced flows are a consequence of conservation of energy).

...Keith

4157. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 01:14:52 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <f93c6523-9100-4f37-807a-21fb4386689f@a1g2000hsb.googlegroups.com>
Source record: 26147

On Apr 11, 12:49 pm, "Antonio Vernucci" <vernu...@tin.it> wrote:
> >> I then tried to simulate the hairpin with a proper-length shorted trasmission
> >> line and, doing so, the average gain is almost 0.
>
> > Is that shorted transmission line lossless?
> > --
> > 73, Cecil http://www.w5dxp.com
>
> I presume so. It would seem to me that in EZNEC there is no way of simulating a
> lossy transmission line.
>
> 73
>
> Tony I0JX

At least in EZNEC 5+, the Transmission Lines window has an entry for
line loss, in dB/100 feet at a frequency you also enter. But the loss
for your 0.8cm diameter aluminum tubing spaced 10cm is only about
0.06dB/100 feet at 50MHz. It is certainly safe to ignore that,
considering that the loaded Q of the matching system is vastly lower
than the Q of the hairpin line as a resonator.

Cheers,
Tom

4158. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 01:18:58 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <48000e02$0$93280$8046368a@newsreader.iphouse.net>
Source record: 26148

Art Unwin wrote:
> Regards to all as I depart where I will not be privey to your replies
> and can thus concentrate on other matters.
> Art Unwin KB9MZ....XG an east ender from the UK)(

Make sure the door hits you in the ass.

tom
K0TAR

4159. An alarming reason to ground

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 02:52:30 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <go80045jh2pvn90sm3cva6u5gqkqdatshr@4ax.com>
Source record: 26149

I recently moved into this house, actually, on the first of this month we moved in. Last week out of boredom, I setup my FT 857D. It sat on the desk for three days before I finally decided that I wanted to listen to something other than the Mount Mitchell Repeater (145.190). I took a 500 foot spool of stranded wire, (invisible fence wire) and tossed it over a few branches and stung it out about 70-80 feet or so. The spool, still attached, is sitting on top of a stack of firewood about 4 feet off the ground but the wire is run from about 10-20 feet or so. The wire tunes up 30, 40, 20 and 80 meters, but with TVI generated with 80 meters, and the power supply hums on 20 meters. 40 meters tunes up clean and easily.

For the past three days, I have been operating CW on 40 mostly, but a little on 80 after TV hours. Today, I decided to try my hand at 30 meters. The wire tuned up well, I dropped the power to minimum for QRP (abt 5 watts) and I sent out a few CQ Strings on 10.110 until a QSO faded in from the background, so I moved up 1 and tried again. The third sequence brought on a surprise. The alarm, for which we have no access code, sounded off nice and loud.

By the time someone found the control box and dug it out from under all the boxes we have yet to unpack, I clipped off the speaker from the alarm at the ceiling. I managed to acquire a real nice 12v 5 AH SLA battery that registers 13.9v and a speaker that must have been made industrial tough. I haven't tested it four audio quality, but I will.

In the meantime, I took the 8-foot ground rod I had placed by my window two days ago, and pounded it 3.5 feet into the ground before being called to supper. I ran about 4 foot of #8 solid copper wire to the rod from the back of the tuner. I checked the tuning of 30 meters, and where I did have a minimal match, I now had a bad match. I tuned it to the 10.111 where I was, and noticed the noise level had dropped. I tested tuning on 20 and 40 meters. On 40, it is about the same, very easy to tune. On 30 meters, where my power supply had been humming when I tuned it, the supply no longer hummed during the tuning phase. I got no RFI on the TV with 30 or 40, but no one was watching it when I tested 20 meters.

I just tested tuning the wire on various bands. It is difficult to tune on 6, 10 and 12 meters, ok on 15, and tunes easily down through 80 less 60 mtrs which I didn't try. 160 meters tunes, but it is really sharp making it difficult. When I get time, I'll make a ground rod driver and finish driving the rod into the ground.

73 for now,
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4160. Re: Multiband no-radial vertical?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 03:48:40 UTC
From: AI4QJ <nospam@ns.ns.com>
Message-ID: <48003119$0$22300$4c368faf@roadrunner.com>
Source record: 26150

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:ZtJLj.8067$V14.7955@nlpi070.nbdc.sbc.com...
>I received an email question from a ham in Spain
> and I don't know the answer.
>
>> Could you recommend me a HF vertical multiband antenna
>> (80,40,20,10 or more bands) which doesn't require
>> radials?
>

http://www.gapantenna.com/titan.html
> Is there a commercial HF vertical available in
> Spain that doesn't require radials?
> --
> 73, Cecil http://www.w5dxp.com

4161. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 03:59:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <X_GdncqOXbYVrp3VnZ2dnUVZ_hGdnZ2d@easystreetonline>
Source record: 26151

Antonio Vernucci wrote:
>
> I presume so. It would seem to me that in EZNEC there is no way of
> simulating a lossy transmission line.

EZNEC v. 5.0 has that ability. Earlier versions do not.

Roy Lewallen, W7EL

4162. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 08:09:14 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <48006e20$0$18150$4fafbaef@reader3.news.tin.it>
Source record: 26152

>> I presume so. It would seem to me that in EZNEC there is no way of
>> simulating a lossy transmission line.
>
> EZNEC v. 5.0 has that ability. Earlier versions do not.

Sorry Roy,

I still have the old 3.0 version and I shall certainly get the newer version.

On this occasion, may I ask a question privately?

73

Tony I0JX

4163. Yagi Beam Antennas for sale

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 10:09:30 UTC
From: Peter <peterandcarmen@hotmail.com>
Message-ID: <f5dacf1f-2e12-4c18-ae2a-f31dc639bb4e@k10g2000prm.googlegroups.com>
Source record: 26153

Three Yagi beam antennas for sale. Built for 433.92MHz (amateur band).
$50 for the three. Great for remote data transmission etc. Available
at Brighton-le-Sands in Sydney, Australia. For details ring me on +61
2 9599-1811 after hours.

4164. Re: Yagi Beam Antennas for sale

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 10:59:57 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <xLmdnVC5u9ycC53VnZ2dnUVZ8uadnZ2d@pipex.net>
Source record: 26154

Peter wrote:
> Three Yagi beam antennas for sale. Built for 433.92MHz (amateur band).
> $50 for the three. Great for remote data transmission etc. Available
> at Brighton-le-Sands in Sydney, Australia. For details ring me on +61
> 2 9599-1811 after hours.
==========
433.92 MHz is a frequency used for unlicenced low power devices like car key fobs ,domestic oil tank level reporting , remote weather station sensors ,etc , even while this is in the 70cms amateur band.

Frank GM0CSZ / KN6WH

4165. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 11:53:12 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <QJGdnSCI7dY0P53VnZ2dnUVZ_i2dnZ2d@easystreetonline>
Source record: 26155

Antonio Vernucci wrote:
>>> I presume so. It would seem to me that in EZNEC there is no way of
>>> simulating a lossy transmission line.
>>
>> EZNEC v. 5.0 has that ability. Earlier versions do not.
>
> Sorry Roy,
>
> I still have the old 3.0 version and I shall certainly get the newer
> version.
>
> On this occasion, may I ask a question privately?

Sure.

Roy Lewallen, W7EL

4166. www.voguesonline.net china wholesale cheap LRG ed hardy 10deep d&g hoody etc

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 12:22:48 UTC
From: cnsneakers95@yahoo.com.cn
Message-ID: <7e47a636-4ff1-4e64-acf8-39fad7207a64@1g2000prf.googlegroups.com>
Source record: 26156

china wholesale ed hardy Women's T- shirts,men's T- shirts at cheap
discounted discount price
cheap Bape hoody,LRG hoody,BBC hoody discount Evisu hoody,Coogi
hoody,Kidrobot hoodies,A&F hot clothes,artful dodger hoody china
online shop ed hardy hoody for men and women,Artful
Dodger hoodies,A&Fsportwear,A&F men hoodies,ED Hardy,GGG
Hoodies,BAPE ...

GGG Hoodies,Artful Dodger hoodies,A&F Women
Hoodie,CA Hoodies, Ed hardy t-shirts Ed hardy t-shirts,Evisu
jeans Ed hardy t-shirts,hoodie,maxmara jacket,number line men hoodies
polo women hoodies at cheap discount www.voguesonline.net

wholesale ed-hardy t-shirts and red monkey
jeans Evisu jeans 10deep hoodies and cheap gino green global
hoodies cheap wholesale red monkey,evisu,Ed hardy
jeans,shorts,hoodies ed hardy caps,ed hardy caps cheap
www.voguesonline.net ed hardy for cheap,ed hardy christian audigier
china wholesale cheap girbauds discount Evisu hoody,Coogi
hoody,Kidrobot
hoodies,A&F hot clothes,artful dodger hoody china online shop
ed hardy hoody for men and women,Artful www.voguesonline.net
Dodger hoodies,A&F sportwear,A&F men hoodies,ED Hardy,GGG
Hoodies,BAPE ... GGG Hoodies,Artful Dodger hoodies,A&F Women
Hoodie,CA
Hoodies

4167. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 13:04:17 UTC
From: derekbluey@gmail.com
Message-ID: <0dbe7991-008e-4389-aeab-4dd825a7a3a7@w5g2000prd.googlegroups.com>
Source record: 26157

On Apr 11, 11:59 pm, Richard Clark <kb7...@comcast.net> wrote:

> Your forecasting ability would be better served if you actually did
> something.

Hi Richard

I put your suggestion back to you, give me a convincing argument as
to why Art's antenna would not be viable, apart from the knee jerk
reaction it was designed by Art therefore it cannot be viable.

Derek

4168. Re: An alarming reason to ground

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 14:08:30 UTC
From: ltdoc@yahoo.com
Message-ID: <365d5bfa-05eb-4b6f-b82e-2968b7bad346@y21g2000hsf.googlegroups.com>
Source record: 26158

Buck,
Use some of that 500 foot spool of wire and run a few radials instead of the rod. Works just as well, if not better, Same amount of 'work' involved though, just different.
All 'lop-sided' antennas need a ground to be 'happy'. Putting a ground in dirt usually works better than using the house wiring for a ground (RF wise), as you found out.
- 'Doc

A ground should be above 'clothes-line' height, or below where the lawn mower will catch it. After that, almost anything will work, sort of...

4169. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 15:12:18 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <hj4Mj.4497$AG5.2667@newsfe29.ams2>
Source record: 26159

I have two questions. On the power socket on the MFJ-259, there are 3
terminals on this socket.
1. Is the centre pin that is + volts.
2.. Is the negative side pin that connects to the GND track on the board.
3,. Is another negative pin that connects to the chassis.

Are the two negative pins in the power socket connected in anyway inside the
socket itself?

They are not connected on the board.

If I bridge a wire from one negative pin to the other on the socket the
batteries start to charge. I don't want to do this if its bypassing the
problem.

I'm beginning to suspect a bad power socket. What do you think?

MFJ just e-mailed back and said.
got to be a short somewhere in the battery compartment then. or there is a
faulty smt diode or resistor. if you have a way of testing the components,
check around the charging jumper circuit.

Many thanks

Barrett

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:wNGdnSyv2Lew1GLanZ2dnUVZ8tyqnZ2d@pipex.net...
> Barrett wrote:
>> I have only taken the back off at this point and was hoping it would be
>> some thing simple to fix, rather than send it back.
>>
>> Is there an MFJ in the UK?
> ==========
> No ,you probably have to return it to the UK importer Waters & Stanton.
>
> I have used the MFJ259 (bought in the USA) for many years with an external
> small Sealed Lead Acid battery .
> I find it a very useful piece of equipment to test antenna matching units
> and resistors/capacitors used for RF purposes . Also stubs and coax cable.
>
> It is also used whenever a UK Foundation Licence trainee in my area needs
> to do an antenna assessment eg plotting the SWR curve of a wire dipole
> with the exercise to be repeated with a slightly shorter dipole ,showing a
> shift of the SWR graph towards a higher frequency.
> All this is done with a dipole for 28 MHz.
>

>
> Frank GM0CSZ / KN6WH

4170. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 17:22:01 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <Tc6Mj.2484$_h7.1271@newsfe05.ams2>
Source record: 26160

Of course the board is multi layered that's why the pins look as if there
not connected. I've checked for dry solder joints and they all look ok to me
so I think its some thing a bit more serious than that, so back it goes.

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:hj4Mj.4497$AG5.2667@newsfe29.ams2...
>I have two questions. On the power socket on the MFJ-259, there are 3
>terminals on this socket.
> 1. Is the centre pin that is + volts.
> 2.. Is the negative side pin that connects to the GND track on the board.
> 3,. Is another negative pin that connects to the chassis.
>
> Are the two negative pins in the power socket connected in anyway inside
> the socket itself?
>
> They are not connected on the board.
>
> If I bridge a wire from one negative pin to the other on the socket the
> batteries start to charge. I don't want to do this if its bypassing the
> problem.
>
> I'm beginning to suspect a bad power socket. What do you think?
>
> MFJ just e-mailed back and said.
> got to be a short somewhere in the battery compartment then. or there is
> a faulty smt diode or resistor. if you have a way of testing the
> components, check around the charging jumper circuit.
>
> Many thanks
>
> Barrett
>
>
> "Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
> news:wNGdnSyv2Lew1GLanZ2dnUVZ8tyqnZ2d@pipex.net...
>> Barrett wrote:
>>> I have only taken the back off at this point and was hoping it would be
>>> some thing simple to fix, rather than send it back.
>>>
>>> Is there an MFJ in the UK?
>> ==========
>> No ,you probably have to return it to the UK importer Waters & Stanton.
>>
>> I have used the MFJ259 (bought in the USA) for many years with an

>> external small Sealed Lead Acid battery .
>> I find it a very useful piece of equipment to test antenna matching units
>> and resistors/capacitors used for RF purposes . Also stubs and coax
>> cable.
>>
>> It is also used whenever a UK Foundation Licence trainee in my area needs
>> to do an antenna assessment eg plotting the SWR curve of a wire dipole
>> with the exercise to be repeated with a slightly shorter dipole ,showing
>> a shift of the SWR graph towards a higher frequency.
>> All this is done with a dipole for 28 MHz.
>>
>>
>> Frank GM0CSZ / KN6WH
>
>
>

4171. Re: An alarming reason to ground

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 17:39:56 UTC
From: Bruce in alaska <fast@btpost.net>
Message-ID: <fast-263A21.09395812042008@netnews.worldnet.att.net>
Source record: 26161

In article <go80045jh2pvn90sm3cva6u5gqkqdatshr@4ax.com>,
Buck <usenet01@lumpuckeroo.com> wrote:

> I recently moved into this house, actually, on the first of this month
> we moved in.

snipped for brevity....

> 73 for now,

Well you now know that the saying, "Ground is not Ground, the World
Around" has real meaning for your new QTH. RF Grounds are different than
Lightning Grounds or Electrical Grounds, and NEVER should the three be
confused, or understood to be non-Mutually Exclusive.

--
Bruce in alaska
add <path> after <fast> to reply

4172. Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 17:54:38 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <4800f763$0$8161$9b536df3@news.fv.fi>
Source record: 26162

I am planning a two band antenna for 30 and 80m using linear traps.
The idea is to build the antenna of zip-cord type line 140ohm vf 0.73.
Trap is made using 1/4 wave shorted stub, decoupling occurs at the open end.
My question:
Is there any difference if the shorted end is pointing to the center or to
the tip of dipole.
Only the stub portion has two wires in parallell, the rest is only one wire.

```
----------------------------------------xxcenterxxx----
I_________
```

OR

```
----------------------------------------xxxxcenterxxx------
________I
```

73 Jouko OH5RM

4173. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 17:56:16 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ius1049alvio1e5kuj1puj7dqn1hs2pqhi@4ax.com>
Source record: 26163

On Sat, 12 Apr 2008 06:04:17 -0700 (PDT), derekbluey@gmail.com wrote:

>On Apr 11, 11:59 pm, Richard Clark <kb7...@comcast.net> wrote:
>
>
>> Your forecasting ability would be better served if you actually did
>> something.
>
>
>Hi Richard
>
> I put your suggestion back to you, give me a convincing argument as
>to why Art's antenna would not be viable, apart from the knee jerk
>reaction it was designed by Art therefore it cannot be viable.

Hi Derek,

Put it back to me? Talk about passivity. As I said, I see nothing in your reply that actually GOES to any active supporting participation by you, simply maudlin cheerleading. This is fey effort at appearing to be gracious.

I have modeled ALL of Art's contraptions. Art has modeled them all too. I have offered the results of that work. Art rarely offers the results of his work. I have built enough models into wire and aluminum (and foils and coils) to find that they all conform to models within suitable accuracy. Art has built enough models into.... and has to date never expressed how they directly compare. The archives are complete to this record - available to anyone with an actual interest in the topic. The results? Pitifully dull where the imagination is reserved for the rhetoric of claims cloaked in a fog of ersatz academia.

You aren't really interested are you? You can't even answer the simple questions about his designs, nor name one advantage pressed against actual performance shown. What are you here for? Slumming for amusement and Art fills the bill? Just another Troll.

73's
Richard Clark, KB7QHC

4174. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 18:39:03 UTC
From: richardharrison@webtv.net
Message-ID: <29870-480101C7-65@storefull-3253.bay.webtv.net>
Source record: 26164

Derek wrote:
"---give me a convincing argument as to why Art`s antenna should not be viable,---."

It may be viable. Light bulb thansmissions have been detected over considerable distances.

From clues, Art`s antenna is a full wavelength of small wire coiled to make a dipole. If equilibrium means two equal coils are used to make the dipole, each contains one half wavelength of wire. Each coil fits (almost) in a shoebox.

Such a dipole doesn`t radiate as a fullwave antenna, although Art`s clue is that his antenna doesn`t radiate perpendicular to the axis. That would be true for a straight fullwave antenna remote from ground. Terman says on page 868 of his 1955 opus:
"The result is a directional pattern in which the maximum of radiation occurs at an angle with respect to the wire axis which is the case shown in Fig. 23-6 is approximately 64 degrees (see Fig. 23-4a)."

I`d wager Art`s antenna radiates more as a halfwave dipole radiates.

I posted an excerpt earlier that said that experimenters had found a short insulating whip could be wound with almost twice the resonant length of wire to make the short whip resonant at about half the frequency for a conducting pole of the whip`s length. British hams were quoted as saying the results were good when heavy wire was used for the coil. One can imagine making a dipole with two such quarterwave pole lengths which is my guess as to what Art did, except for the heavy wire.

A continuous small diameter coil is a radial mode helix, not an axial mode helix. It will radiate radially or perpendicularly like a length of wire replacing the axis of the coil. Its radiating length is only about half the length of wire wound into the coil using the experimental results. A full wavelength of wire continuously loading a half wavelength dipole would have about twice the loss resistance of a straight wire dipole. This explains the wide bandwidth Art clains for his antenna.

Efficiency is radiation resistance over total resistance, (loss + radiation resistance). Radiation resistances for the straight and coiled dipoles are about the same but the higher loss of the coiled antenna makes it something of a dummy load. Low efficiency does not make such antennas not "viable".

B&W has many satisfied customers for its resistance loaded folded dipole. Bandwidth can trump efficiency. Art`s antenna may find similar

favor.

Best regards, Richard Harrison, KB5WZI

4175. MFJ969D Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 18:42:42 UTC
From: "R. Scott" <lintardspamtrap@scotts-home.net>
Message-ID: <3qWdndetidICn5zVnZ2dnUVZ_sninZ2d@comcast.com>
Source record: 26165

Anyone have this and have had trouble tuning.

I lost the pilot light to the meter (still cant figure out how to get it out. And ever since then it wont tune anything well. Keeps going off tune. My 25 year old DIAWA is back in service and working fine.

I bought the 969 cause it had 6meters.

only lasted about a year.

Ideas ???

Cant find any pits on the roller inductor either.

Scotty W7PSK.

4176. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 19:25:44 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <faqdnbHMMfAokZzVnZ2dnUVZ_uOmnZ2d@comcast.com>
Source record: 26166

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:0uwLj.22067$fx2.22066@newsfe08.ams2...
> Hi Dave
>
>
>
> I checked the voltages in all the cells and they were all even voltages.
> The batteries should be ok.
>
>
>
> I checked the current on the two pins like you said and there was no
> reading.
>
> I checked the voltage on the two pins. No voltage on the outside pin and 5
> volts on the middle pin.
>
> I checked the voltage coming from the charger and its 18 volts.
>
> I checked the voltage from the + side to the - side of the battery pack
> with the charger on and got the 12.6 volts.
>
> I checked the voltage from the + side to the - side of the battery pack
> with the charger off and unplugged and got 12.6 volts.
>
> I checked the voltage from the battery pack with the charger on and using
> the case as the ground. It was 17.9 volts.
>
>
>
> The charger says output voltage 12VDC 300mA 3.6VA.
>
>
>
> Hope you can point me in the right direction. Do you know what sort of
> voltages I should expect when it's charging properly?
>
>
>
> Many thanks
>
>
>
> Barrett

>
>
>
>
>
>
> "Dave Platt" <dplatt@radagast.org> wrote in message
> news:d432d5-o7n.ln1@radagast.org...
>> >I have had the batteries on charge in the MFJ-259Z for over a day now.
>> >The
>>>jumper inside the unit is on for charging. The batteries were at 12.6V
>>>when
>>>put on charge and are still 12.6V. The PSU is working fine. Because I can
>>>run the unit off the PSU that came with it.
>>>
>>>Any ideas on what can be wrong with it now?
>>
>> It certainly sounds to me as if the charging circuit is not working,
>> or is not working effectively.
>>
>> 12.6 volts is 1.26 volts per cell, which is what I'd expect to see in
>> the no-load or light-load case of a NiMH with a fractional charge
>> (maybe half-charged?). The cell voltage will rise, as charging
>> continues, to as high as 1.4 volts or more (depending on charging
>> current).
>>
>> It could be that the charging circuit simply isn't working at all.
>>
>> It's also possible that the charging circuit is only delivering (by
>> error or design) just enough of a trickle charge to prevent an
>> exernally-charged NiMH battery from self-discharging. If the
>> battery is only receiving 10-20 mA, this would be the case - the
>> battery will essentially *never* recharge itself completely under
>> these conditions.
>>
>> There's a real tradeoff with NiMH cells. Any simple charger which is
>> capable of recharging them in a reasonable amount of time (say, a day
>> or less) should *not* be left hooked up to them indefinitely - it'll
>> overcharge them and significantly shorten their life. Conversely, a
>> simple charger which *can* be left hooked up for days at a time, will
>> not recharge a dead battery rapidly enough to be useful.
>>
>> Charger circuits *can* switch between two charging modes (fast and
>> maintenance) but it requires quite a bit more complexity.
>>
>> So... what to do now. My suggestions:
>>
>> [1] First, measure the voltage across each individual cell in the
>> battery. If they're all around 1.25 or so, then the cells are
>> probably OK, and the problem is in the charging.

>>
>> If you find that most of the cells have a higher voltage, and one
>> is very low, then that one cell is junk and should be recycled and
>> replaced.
>>
>> [2] Get a digital multimeter with small alligator-clip leads. Set it
>> on its "DC current" scale, remove the charging jumper in the MFJ,
>> and connect the two leads of the multimeter to the two pins that
>> had been jumpered together (stick a bit of paper between them to
>> prevent the multimeter leads from shorting). Plug the MFJ into
>> its wallwart (with the power switch turned off) and read the
>> current on your DMM. This will tell you how much current is
>> flowing into the battery through the charging circuit (assuming
>> that it's a simple linear charger and not a pulse-charger).
>>
>> If the current consistently reads zero, then the charger is not
>> working at all.
>>
>> If it's charging at a rate of below 50 mA, then it's just a
>> maintenance trickle-charger... sufficient to keep charged
>> batteries alive in standby mode, but insufficient to recharge them
>> in any reasonable amount of time. You'll need to do the major
>> charging using an external charger.
>>
>> If it's charging at 100-200 mA, then it'll take a day or more to
>> fully recharge.
>>
>> If it's charging at over 200 mA, then it'll recharge effectively
>> in under a day, but should *not* be left hooked up indefinitely...
>> it'll overcharge the batteries and shorten their service life.
>>
>> --
>> Dave Platt <dplatt@radagast.org> AE6EO
>> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>> I do _not_ wish to receive unsolicited commercial email, and I will
>> boycott any company which has the gall to send me such ads!
>>
>
you should check out these sites:

http://www.w8ji.com/mfj-259b_calibration.htm

http://www.mfjenterprises.com/man/pdf/MFJ-259B.pdf?PHPSESSID=344dae9ca8f4ab6932849d4b5163ded5

http://www.mfjenterprises.com/MFJ-259Bcalibration.php?PHPSESSID=344dae9ca8f4ab6932849d4b5163ded5

http://qrp.kd4ab.org/2002/020129/0029.html

4177. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 19:39:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <7e8Mj.1450$pS4.1433@newssvr13.news.prodigy.net>
Source record: 26167

Keith Dysart wrote:
> It would be helpful, however, if you could actually demonstrate a
> system where the energies balance, but the flows do not.

That's obviously easy to demonstrate in a distributed
network system. We can have energy flowing into both
ends of a loading coil at the same time and 180 degrees
later, energy flowing out of both ends at the same time.
The energies balance but the flows are completely
unbalanced and indeed defy the lumped circuit model.
--
73, Cecil http://www.w5dxp.com

4178. Re: Optimum wavelength % for a stick antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 20:42:24 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <039e23b4-c246-4535-826d-3a991a641f5e@x19g2000prg.googlegroups.com>
Source record: 26168

On 9 abr, 21:39, "usmcbrat" <presid...@whitehouse.gov> wrote:
> Hi All:
>
> Is there an optimum % length for an antenna when the antenna is a simple
> straight stick? 1/4 wave... 1/2, 5/8, full wave? Does it differ depending
> on wavelength? If size is not a consideration, is a full wavelength
> preferable?
>
> I've Googled around a bit but haven't found a good explanation yet.

Hello,

For a single straight stick (assuming a monopole antenna) and maximum radiation perpendicular to the stick, a half wave has my preference. Reason for that: good compromise between gain and requirements for an RF ground. An electrically end-fed half wave stick has lowest requirements with respect to ground. Disadvantage is you need a matching network to match to about 500...3 kOhms (depending in length/ thickness ratio).

A full wave monopole does virtually not radiate perpendicularly to the stick.

The highest gain over perfect ground gives a 5/8 monopole. In most situations, ground is not perfect and then it is questionable whether the 5/8 monopole will outperform the half wave monopole.

When you may feed the stick in the middle, 2*5/8 lambda gives the highest gain. Note that matching requires inductances. 2*1/4 waves matches easiest to 50 Ohms cable.

A full wave dipole has high input impedance, but also larger bandwidth than a half wave dipole. All dipoles require some form of balun when fed from coaxial cable.

It is difficult/impossible to say what length is optimum for your particular situation.

Best regards,

Wim
PA3DJS
www.tetech.nl (Dutch)
please remove abc from the address.

4179. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 20:43:13 UTC
From: nm5k@wt.net
Message-ID: <694102c2-f587-454c-b5ab-3709491c4c18@h1g2000prh.googlegroups.com>
Source record: 26101

On Apr 12, 12:56 pm, Richard Clark <kb7...@comcast.net> wrote:
> Art has modeled them all
> too.

I think modeling is how he gets started with these things.
That freaking optimizer program that shows him how to
build a skewed 6 element antenna with the performance
of the usual 3 element. What a breakthrough... :/
I called that particular antenna the "cluster%$#@"....
Then then he abandoned that one and decided to go with the
coil antenna he's pushing now.
Viable? Sure it's viable if you don't mind a puny signal.
Note the Isotron.. To me, not a whole heck of a lot
different than what Art proposes. Arts version may
be slightly inferior though..
And some people do buy and use them.. Mostly
ones with yards the size of clothes closets and have
no other choice but to try small antennas of that ilk.
I doubt any of those users really feel like they are
setting the woods on fire.
I knew a guy here locally that ran one for a while
on 75m. He was able to radiate, but a vast majority
of the people on frequency could not hear him.
I think he retired that antenna after a while.
I suspect he ran out of hair to pull out...
And as mentioned, quite a few QSO's have been
made using dummy load light bulbs.
Usually by accident when they forgot to flip the
switch to the real antenna...
Is a light bulb viable as an antenna?
I suppose.. But don't try to claim it is an efficient
radiator.
To sum.. Art suffers delusions of grandeur induced
by various modeling program optimizers.
This can happen to anyone. But... most people
will verify if the data is true by comparing to known
reference antennas. Art does not do this.
He places unflinching blind trust into these programs.
And they have led him astray from reality.
Woe is Art.

4180. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 21:25:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pN9Mj.3378$iK6.2838@nlpi069.nbdc.sbc.com>
Source record: 26103

nm5k@wt.net wrote:
> Note the Isotron..

I suspect that the Isotron performs best when the
feedline is radiating like crazy. So the question
is: Has anyone ever tried to maximize feedline
radiation? Seems that is what the Carolina Windom
has done by accident. Can it be done on purpose?
--
73, Cecil http://www.w5dxp.com

4181. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 21:25:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <dm9204dqm8sdqq4724bbctajojqn2m17is@4ax.com>
Source record: 26102

On Sat, 12 Apr 2008 13:43:13 -0700 (PDT), nm5k@wt.net wrote:

>And as mentioned, quite a few QSO's have been
>made using dummy load light bulbs.
>Usually by accident when they forgot to flip the
>switch to the real antenna...

Hi Mark,

My girlfriend some time back could work Alaska from here through her dummy load (for the same reasons you described, not that she chose to do it this way).

I can only imagine that Arthur will re-discover that poor isolation problem and describe it as a "Faraday Paradox Enhancement" with inverse shielding efficiency. It may lead to anti-gravity research that finally disproves Einstein's theory of Brownian motion (Art's final nail in the casket of that historical fraud).

Hi Arthur,

Still peaking at these postings, aren't you?

73's
Richard Clark, KB7QHC

4182. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-12 23:36:28 UTC
From: dplatt@radagast.org
Message-ID: <skt7d5-mlt.ln1@radagast.org>
Source record: 26104

In article <pN9Mj.3378$iK6.2838@nlpi069.nbdc.sbc.com>,
Cecil Moore <nospam@w5dxp.com> wrote:

>I suspect that the Isotron performs best when the
>feedline is radiating like crazy.

That's consistent with the installation instructions that state that
it must be mounted on a metal mast.

> So the question
>is: Has anyone ever tried to maximize feedline
>radiation? Seems that is what the Carolina Windom
>has done by accident. Can it be done on purpose?

Use a simple wire or rod radiator tied to the center conductor of the
coax, no radiator tied to the shield, and a length of feedline which
is an even multiple of a halfwave (at the exterior shield's
velocity-of-propagation) back to ground or the transmitter, serving as
a counterpoise?

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4183. Re: An alarming reason to ground

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 01:30:42 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <98l204tc4a6be551bae5sj1919c9bqit98@4ax.com>
Source record: 26105

Thanks, For a permanent antenna, i would do that, but this is just for
a temporary solution until i raise a real antenna.

On Sat, 12 Apr 2008 07:08:30 -0700 (PDT), ltdoc@yahoo.com wrote:

>Buck,
>Use some of that 500 foot spool of wire and run a few radials instead
>of the rod. Works just as well, if not better, Same amount of 'work'
>involved though, just different.
>All 'lop-sided' antennas need a ground to be 'happy'. Putting a
>ground in dirt usually works better than using the house wiring for a
>ground (RF wise), as you found out.
> - 'Doc
>
>
>A ground should be above 'clothes-line' height, or below where the
>lawn mower will catch it. After that, almost anything will work, sort
>of...

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4184. Re: Sloping doublet

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 01:52:50 UTC
From: David Thompson <thompson@mindspring.com>
Message-ID: <KMadndDrndXq-pzVnZ2dnUVZ_tWtnZ2d@earthlink.com>
Source record: 26106

Peter,

I agree that you should keep the doublet or dipole away from the power line.

Sloping such an antenna will work fine. I have two 75 meter dipoles that slope and they do great. I fed them in the center and keep the feedline going away from the antenna at as close to a right angle as possible.

Dave K4JRB

4185. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 02:01:45 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <f89a2f9a-941c-4203-9ef5-1d2bca76b7d3@m3g2000hsc.googlegroups.com>
Source record: 26107

On Apr 12, 3:39 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > It would be helpful, however, if you could actually demonstrate a
> > system where the energies balance, but the flows do not.
>
> That's obviously easy to demonstrate in a distributed
> network system. We can have energy flowing into both
> ends of a loading coil at the same time and 180 degrees
> later, energy flowing out of both ends at the same time.
> The energies balance but the flows are completely
> unbalanced and indeed defy the lumped circuit model.

You are not quite looking at the system correctly.

It is a system with two ports (bottom and top) where
energy can enter or leave, and one element (coil)
which can store energy.

The energy that flows in the bottom either flows out
the top or increases the energy stored in the coil.
The energy flowing into the bottom is equal to
the sum of the energy flowing out the top plus the
increase in the energy stored in the coil.
Expressed arithmetically
Pbottom(t) = Pcoil(t) + Ptop(t)

For the specific situation you describe above:
"energy flowing out of both ends at the same time"
means that the energy stored in the ooil is being
reduced to supply the energy leaving the top and
the bottom. The sum of the energy flows out of
the top and the bottom is exactly equal to the rate
at which the stored energy is being reduced.

Lumped or not lumped is moot.
The same analysis can be applied to a transmission
line. The energy flow into the left is exactly
equal to the energy flow out on the right plus
the rate of increase in the energy stored in the
line.

Energy flows (aka power) do indeed balance, though
you certainly have to correctly pick the flows that
should balance.

...Keith

4186. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 02:21:12 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A7EE3E435559mcoslocomcastnet@216.196.97.136>
Source record: 26108

derekbluey@gmail.com wrote in news:0dbe7991-008e-4389-aeab-4dd825a7a3a7
@w5g2000prd.googlegroups.com:

> On Apr 11, 11:59 pm, Richard Clark <kb7...@comcast.net> wrote:
>
>
>> Your forecasting ability would be better served if you actually did
>> something.
>
>
> Hi Richard
>
> I put your suggestion back to you, give me a convincing argument as
> to why Art's antenna would not be viable, apart from the knee jerk
> reaction it was designed by Art therefore it cannot be viable.

It appears to be a counterwound coil on the end of a stick. It isn't all that different than an Isotron antenna. Not quite the same mind you, but in the ballpark.

I haven't built one, but it stands to reason that in the world of electronics, that somoene would have discovered the presumed effect by now via serendipity, if not calculation. Doesn't matter who designed it.

Anxiously awaiting that test report.....

- 73 de Mike N3LI -

4187. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 02:28:56 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A7EE533661BBmcoslocomcastnet@216.196.97.136>
Source record: 26109

Cecil Moore <nospam@w5dxp.com> wrote in news:taSLj.2051$%V7.192
@newssvr14.news.prodigy.net:

> nm5k@wt.net wrote:
>> The word "cinderella" means one who unexpectedly achieves
>> recognition or success after a period of obscurity and neglect.
>
> A very appropriate name for my dog obtained from the
> dog pound.

Kudos Cecil!

- 73 d eMike N3LI -

4188. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 12:43:40 UTC
From: derekbluey@gmail.com
Message-ID: <894bd2aa-74ac-4c72-b868-7cc216649823@w5g2000prd.googlegroups.com>
Source record: 26111

On Apr 13, 1:56 am, Richard Clark <kb7...@comcast.net> wrote:
.
>
> I have modeled ALL of Art's contraptions.

I doubt that, if you had modeled the antenna described in Art's
posts of the 17 march onward you "may" have changed your opinion but
then that would go against the grain would it not.
Your problem is you have allowed your antagonism towards Art cloud
your judgment, one has only to look at your post's to see that no
matter what Art claim's are you will rubbish them as you have
consistently for the last year or so that I have followed this group.

Derek

4189. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 12:54:12 UTC
From: derekbluey@gmail.com
Message-ID: <f92f5dff-65ab-4425-8818-c53e9447cda2@b9g2000prh.googlegroups.com>
Source record: 26112

On Apr 13, 10:21 am, Mike Coslo <mco...@youknow.comcast.net> wrote:

> Anxiously awaiting that test report.....

You should have built one, you would not have been disappointed.

I predict that Denny is feeling like the cat who got the cream right
at this moment.

Derek

4190. Re: Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 13:28:26 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <rIadnRpJg8jDYZzVnZ2dnUVZ_rCtnZ2d@earthlink.com>
Source record: 26110

"Robert11" <rgsros@notme.com> wrote in message
news:SK-dnZ_m3LahzmLanZ2dnUVZ_uWlnZ2d@comcast.com...
> Hello,
>
> For the scanner frequencies around 118 MHz, e.g., I realize FM is
> essentially line of sight.
>
> Are AM transmissions also line of sight ?
>
> Same question, but for the higher freq's around 800 MHz ?
>
> Thanks,
> Bob
It is not the type of transmission (AM, FM, SSB) but the frequencies that determin the line of sight. For the most part any frequency much above 30 mhz will be line of sight most of the time.

In a few years when the sun spots come back, frequencies up to 50 mhz or slightly more will become more useful for distances greater than line of sight.

There will be times when you can receive transmissions at much greater distances on almost all frequencies. I have worked stations over 500 miles away many times on 144 and 432 mhz. This is not normal, but it can hapen. This is with simple antennas and 25 watts of power. More power and better antennas will give beter results.

4191. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 13:35:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <e_nMj.2333$%V7.817@newssvr14.news.prodigy.net>
Source record: 26113

Dave Platt wrote:
> Use a simple wire or rod radiator tied to the center conductor of the
> coax, no radiator tied to the shield, and a length of feedline which
> is an even multiple of a halfwave (at the exterior shield's
> velocity-of-propagation) back to ground or the transmitter, serving as
> a counterpoise?

Seems to me, the "ground" would cause reflections, turn
that "even multiple of a halfwave" into a standing-wave
antenna, and maybe be more efficient than an Isotron?
--
73, Cecil http://www.w5dxp.com

4192. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 13:45:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <i8oMj.2337$%V7.1076@newssvr14.news.prodigy.net>
Source record: 26114

Keith Dysart wrote:
> For the specific situation you describe above:
> "energy flowing out of both ends at the same time"
> means that the energy stored in the ooil is being
> reduced to supply the energy leaving the top and
> the bottom. The sum of the energy flows out of
> the top and the bottom is exactly equal to the rate
> at which the stored energy is being reduced.

Yes, the energy obviously balances but the instantaneous
powers are in opposite directions and therefore cannot
balance.

> Lumped or not lumped is moot.

Energy cannot flow out of both ends of a lumped circuit
inductor. The current is, by definition, exactly the
same at both ends as it is for the lumped inductors in
EZNEC. You might find these class notes informative.

http://www.ttr.com/corum/
--
73, Cecil http://www.w5dxp.com

4193. cheap wholesale timberland boots ugg boots bbc jeans gucci handbag lv shoes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 13:54:42 UTC
From: ebayshoe@yahoo.cn
Message-ID: <ea4c526e-2873-4fbf-a070-713ca295f05e@r9g2000prd.googlegroups.com>
Source record: 26115

Welcome to visit www.china-sneakers.com
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Bape Sta from nike outlets and factory stores, also Nike wholesale - Jordan Shoes. Nike Shoes, sport Shoes, Reebok Shoes,Basketball Shoes,prada,bapestar,Nike Shox,Dunks,Nike Flightposite ,Nike jordan Basketball ,K1X Chiefglider wholesale suppliers factory.We sale new Nike Sneakers,Air Jordan Sneakers,AIR FORCE 1S,Nike Dunks SB, Bape Sta
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wholesale Nike Air Max 2004 Shoes Wholesale
wholesale Nike Air Max 2005 Shop
wholesale Nike Air Max 2006 Shoes Shop
wholesale Nike Air Max 360 Catalogs
wholesale Nike Air Max Ltd Shoes Catalogs
wholesale Nike Air Max Tn Men's Shoes
wholesale Nike Air Max Tn 2 Women's Shoes
wholesale Nike Air Max Tn 3 Customize
wholesale Nike Air Max Tn 4 Shoes Customize
wholesale Nike Air Max Tn 6 Supply
wholesale Nike Shox NZ Shoes Supply
wholesale Nike Shox OZ Sale
wholesale Nike Shox TL Store
wholesale Nike Shox TL 2 Shoes Store
wholesale Nike Shox TL 3 Distributor
wholesale Nike Shox Bmw Shoes Distributor
wholesale Nike Shox Elite Shoes Manufacturer

wholesale Nike Shox Monster Manufacturer
wholesale Nike Shox R4 Running Shoes
wholesale Nike Shox R5 Mens Shoes
wholesale Nike Shox Ride Womens Shoes
wholesale Nike Shox Rival Shoes Wholesaler
wholesale Nike Shox Energia Wholesaler
wholesale Nike Shox LV Sneaker
wholesale Nike Shox Turbo Suppliers
wholesale Nike Shox Classic Shoes Suppliers
wholesale Nike Shox Dendara Trainer
wholesale Nike Air Jordan 1 Seller
wholesale Nike Air Jordan 2 Shoes Seller
wholesale Nike Air Jordan 3 Collection
wholesale Nike Air Jordan 4 Shoes Collection
wholesale Nike Air Jordan 5 Chaussure Shoes
wholesale Nike Air Jordan 6 Catalog
wholesale Nike Air Jordan 7 Shoes Catalog
wholesale Nike Air Jordan 8 Customized
wholesale Nike Air Jordan 9 Shoes Customized
wholesale Nike Air Jordan 10 Wholesalers
wholesale Nike Jordan 11 Shoes Wholesalers
wholesale Nike Air Jordan 12 Factory
wholesale Nike Air Jordan 13 Shoes Factory
wholesale Nike Air Jordan 14 Shoes Sell
wholesale Nike Air Jordan 16 Exporter
wholesale Nike Air Jordan 17 Shoes Exporter
wholesale Nike Air Jordan 18 Offer
wholesale Nike Air Jordan 19 Shoes Offer
wholesale Nike Air Jordan 20 Manufacture
wholesale Nike Jordan 21 Shoes Manufacture
wholesale Nike Air Force 1 Low Directory
wholesale Air Force 1 High Shoes Directory
wholesale Nike Air Force 1 Custom Importer
wholesale Air Force 1 Dollar Shoes Importer
wholesale Nike Air Force 1 Clear Sales
wholesale Air Force 1 Carving Shoes Sales
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wholesale Timberland Boots Low Sell
wholesale Timberland Boots Mid Shoes Buyer
wholesale Timberland Boots Womens Buyer
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Wholesale Custom Jordans
Air China Jordans Wholesale
Jordans Retro Wholesale
Nike Air Jordan Wholesale
Nike Golf Wholesale
Wholesale Jordans
Wholesale Nike Shox
Wholesale Basketball Shoes Nike
Air Jordans Price Wholesale
Jordans Kid Wholesale
Wholesale Air Force One And Jordans
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4194. cheap wholesale prada shoes gucci shoes lacoste shoes dunk shoes puma shoes air force one shoes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 14:46:23 UTC
From: ebayshoe1@yahoo.cn
Message-ID: <a495aa29-bc2f-4ea9-90a2-b64d6ba2a77c@u12g2000prd.googlegroups.com>
Source record: 26116

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Bape Sta from nike outlets and factory stores, also Nike wholesale - Jordan Shoes. Nike Shoes, sport Shoes, Reebok Shoes,Basketball Shoes,prada,bapestar,Nike Shox,Dunks,Nike Flightposite ,Nike jordan Basketball ,K1X Chiefglider wholesale suppliers factory.We sale new Nike Sneakers,Air Jordan Sneakers,AIR FORCE 1S,Nike Dunks SB, Bape Sta
from nike Wholesale china nike jordans gucci prada sneakers at cheap price !!!

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wholesale Nike Air Max 360 Catalogs
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wholesale Air Force 1 Dollar Shoes Importer
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wholesale Timberland Boots Mid Shoes Buyer
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Air China Jordans Wholesale
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4195. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 15:02:26 UTC
From: Dave <noone@nowhere.com>
Message-ID: <6gpMj.3318$eg2.2659@trndny06>
Source record: 26117

<derekbluey@gmail.com> wrote in message
news:f92f5dff-65ab-4425-8818-c53e9447cda2@b9g2000prh.googlegroups.com...
> On Apr 13, 10:21 am, Mike Coslo <mco...@youknow.comcast.net> wrote:
>
>
>> Anxiously awaiting that test report.....
>
> You should have built one, you would not have been disappointed.
>

have YOU built one? and if so, have you compared it with a full size
antenna?? and what were your results???

4196. Re: Sloping doublet

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 16:41:07 UTC
From: networkrail@mailinator.com
Message-ID: <656704bf-b9eb-4f07-aa3e-30321505ae34@b9g2000prh.googlegroups.com>
Source record: 26118

Thanks both of you for the advice :)

peter

4197. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 17:11:15 UTC
From: dplatt@radagast.org
Message-ID: <jer9d5-nbt.ln1@radagast.org>
Source record: 26170

In article <e_nMj.2333$%V7.817@newssvr14.news.prodigy.net>,
Cecil Moore <nospam@w5dxp.com> wrote:

>> Use a simple wire or rod radiator tied to the center conductor of the
>> coax, no radiator tied to the shield, and a length of feedline which
>> is an even multiple of a halfwave (at the exterior shield's
>> velocity-of-propagation) back to ground or the transmitter, serving as
>> a counterpoise?
>
>Seems to me, the "ground" would cause reflections, turn
>that "even multiple of a halfwave" into a standing-wave
>antenna, and maybe be more efficient than an Isotron?

Better be careful about that dreaded word "efficient", especially in
the context of small antennas - Art might take umbrage.

On the basis of the usual "power radiated, divided by power input",
the type I suggested *might* be more efficient than an Isotron... but
only because its losses might be lower. Most of the Isotron designs
I've seen pictured, have a tuned circuit of some sort at the feedpoint
(e.g. a big air-wound coil and a metal-plate capacitor), and there
will no doubt be some losses in this tuned circuit.

I don't know which antenna would have more directional gain at its
primary lobe, or which one would have a stronger signal in whatever
specific angle its operator found most useful at any particular moment.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4198. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 17:22:13 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <8d317272-3578-45f9-a963-1342224cd5c4@b5g2000pri.googlegroups.com>
Source record: 26169

On Apr 13, 9:45 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > For the specific situation you describe above:
> > "energy flowing out of both ends at the same time"
> > means that the energy stored in the ooil is being
> > reduced to supply the energy leaving the top and
> > the bottom. The sum of the energy flows out of
> > the top and the bottom is exactly equal to the rate
> > at which the stored energy is being reduced.
>
> Yes, the energy obviously balances but the instantaneous
> powers are in opposite directions and therefore cannot
> balance.
>
> > Lumped or not lumped is moot.
>
> Energy cannot flow out of both ends of a lumped circuit
> inductor. The current is, by definition, exactly the
> same at both ends as it is for the lumped inductors in
> EZNEC. You might find these class notes informative.

It is well known that if one builds the wrong model one
will get the wrong answer. You build the wrong model,
then claim that flows do not balance. Unbalanced flows
are the expected result from incomplete models.

Your imcompleteness is that you forgot to include the
energy flow into the electric and magnetic fields around
the coil. When one does not forget this flow, all of
the flows will balance at every instant.

...Keith

4199. Re: Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 18:18:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bfj40458tt6b2989vejmfos5hgsl1d3ci6@4ax.com>
Source record: 26171

On Fri, 11 Apr 2008 08:02:04 -0400, "Robert11" <rgsros@notme.com>
wrote:

>For the scanner frequencies around 118 MHz, e.g., I realize FM is
>essentially line of sight.
>
>Are AM transmissions also line of sight ?
>
>Same question, but for the higher freq's around 800 MHz ?

Hi Bob,

John and Ralph pretty much cover some of the familiar turf. I would
add (or perhaps extend what has been said) that atmosphering ducting
can extend that range thousands of miles.

One example that I personally observed (quite literally) was watching
TV programining out of Edmonton and Calgary Canada while I was living
in Colorado Springs, Colorado. There were times I could watch an
entire movie before the duct faded away.

73's
Richard Clark, KB7QHC

4200. Re: Constant impedance response to infinity with point radiation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 18:27:08 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <vkj404db37rvn94h2f6o0efdtj5t164bm4@4ax.com>
Source record: 26172

On Sun, 13 Apr 2008 05:43:40 -0700 (PDT), derekbluey@gmail.com wrote:

>On Apr 13, 1:56 am, Richard Clark <kb7...@comcast.net> wrote:
>.
>>
>> I have modeled ALL of Art's contraptions.
>
> I doubt that, if you had modeled the antenna described in Art's
>posts of the 17 march onward you "may" have changed your opinion but
>then that would go against the grain would it not.

It would be more honest of you to call me a liar, wouldn't it?

> Your problem is you have allowed your antagonism towards Art cloud
>your judgment, one has only to look at your post's to see that no
>matter what Art claim's are you will rubbish them as you have
>consistently for the last year or so that I have followed this group.

Hi Derek,

Then by your own admission of a very short tenure here, you are quite ignorant of both the scope and depth of this discussion. You feel fully capable of challenging my work that you haven't observed and then saying what you have no experience in is a "clouding of my judgement?" Derek, were you born in the fog?

You really should fade back into the wallpaper and observe for a few years more so that at the end of that term you can make contributions instead of simply continuing your trolling.

You are serving no useful purpose for Arthur, because, again, you would rather dispute what has been accomplished than actually put your hand to any task of work. Your "support" of Arthur is a cheap price of entertainment for gleefully seeing him twist in the wind.

73's
Richard Clark, KB7QHC

4201. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-13 22:18:17 UTC
From: Yuri Blanarovich <K3BU@optonline.net>
Message-ID: <48028709$0$15182$607ed4bc@cv.net>
Source record: 26173

Howdy gents,

I thought that the problem of the hairpin or Beta Match was kicked around
way back, please see http://www.k3bu.us/beta_match.htm

Hairpin is shortening the (most important) radiating part of the driven
element where the current is the highest.
The best way to match the long antennas with low feedpoint at the driven
element is to use the folded dipole or Quad element, as I used in my Razor
Beams http://www.k3bu.us/razor_beams.htm

First you shorten the driven element, reduce the effective length, then you
apply lossy matching and then you see less gain and narrower bandwidth.
Folded dipole or quad elements fix that.

Yuri, K3BU.us

"Antonio Vernucci" <vernucci@tin.it> wrote in message
news:47ffaeab$0$35966$4fafbaef@reader2.news.tin.it...
>> What you're probably seeing is a numerical problem in the NEC calculating
>> engine. It's very fussy about the region near a source, and doesn't like
>> small loops which include a source. You should run an Average Gain check
>> (see "Average Gain" in the EZNEC manual index), which will reveal whether
>> this is the problem.
>>
>> The double precision calculating engine in EZNEC+ is considerably more
>> tolerant of small loops, but can still have problems with average gain
>> for other reasons.
>>
>> Roy Lewallen, W7EL
>
> Hi Roy,
>
> thanks for the tip.
>
> As a matter of fact without the hairpin the average gain is almost zero,
> whilst with the hairpin is about -0.8 dB, that correponds to the gain drop
> I notice. So the problem you had anticipated actually occurs.
>
> I then tried to simulate the hairpin with a proper-length shorted
> trasmission line and, doing so, the average gain is almost 0. Evidently
> the program does not like the short hairpin loop.
>
> 73
>
> Tony I0JX

>

4202. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 00:41:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <gLxMj.5741$GE1.3074@nlpi061.nbdc.sbc.com>
Source record: 26174

Keith Dysart wrote:
> Your imcompleteness is that you forgot to include the
> energy flow into the electric and magnetic fields around
> the coil. When one does not forget this flow, all of
> the flows will balance at every instant.

Sorry, it may or may not be a coil. It is in a black box
whose contents are unknown. Including the energy flows
inside the black box is impossible. The instantaneous
power into the black box does not balance the instantaneous
power out of the black box.
--
73, Cecil http://www.w5dxp.com

4203. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 02:24:26 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <4802c058$0$9514$4c368faf@roadrunner.com>
Source record: 26175

"Jimmie D" <GFENDER@carolina.rr.com> wrote in message
news:47f79d66$0$1107$4c368faf@roadrunner.com...
>
> <derekbluey@gmail.com> wrote in message
> news:927ebca3-724e-4394-b7cd-0b8ef317731f@i36g2000prf.googlegroups.com...
>>
>>> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
>>
>>> > > You are thinking wrong.
>>>
>>> > you might as well plonk him, he is either a persistent troll or
>>> > totally
>>> > convinced that only he has the proper view of the world. in either
>>> > case you
>>> > are fighting a losing battle.
>>
>>
>> Two perfect examples of a closed mind, but not to worry
>> enlightenment will be along shortly.
>>
>> Derek
>
> Enlightenment will surely come if Art connects that antenna to the KW amp
> he claims to have.
>
> Go back to Art discription of his antenna.IT sounds to me as if it evolved
> from a double bazooka.
>
> Make a bazooka antenna with these mods:
> .
> Forget about the ladder line part of the dipole and make it all like the
> center coax section.
>
> Replace the coax section with lamp cord
>
> Now make it fit in a couple of shoe boxes by coiling it all up.
>
> Isnt this a good discription of Art's antenna?
>
> Jimmie
>

I had a couple of 100 ft rolls of speaker wire on cardboard reels so I
decided to connect them together as Art had described and they give VSWR

indication much as he described even if I stick them in a metal locker. This may be just what a lot of hams are looking for as it is a very quiet antenna.

Jimmie

4204. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 03:50:04 UTC
From: derekbluey@gmail.com
Message-ID: <bcf3a13a-7eac-40d6-9d80-2e6564bd46e5@p25g2000pri.googlegroups.com>
Source record: 26176

On Apr 14, 10:24 am, "Jimmie D" <GFEN...@carolina.rr.com> wrote:
> "Jimmie D" <GFEN...@carolina.rr.com> wrote in message
>
> news:47f79d66$0$1107$4c368faf@roadrunner.com...
>
>
>
>
>
> > <derekbl...@gmail.com> wrote in message
> >news:927ebca3-724e-4394-b7cd-0b8ef317731f@i36g2000prf.googlegroups.com...
>
> >>> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
>
> >>> > > You are thinking wrong.
>
> >>> > you might as well plonk him, he is either a persistent troll or
> >>> > totally
> >>> > convinced that only he has the proper view of the world. in either
> >>> > case you
> >>> > are fighting a losing battle.
>
> >> Two perfect examples of a closed mind, but not to worry
> >> enlightenment will be along shortly.
>
> >> Derek
>
> > Enlightenment will surely come if Art connects that antenna to the KW amp
> > he claims to have.
>
> > Go back to Art discription of his antenna.IT sounds to me as if it evolved
> > from a double bazooka.
>
> > Make a bazooka antenna with these mods:
> > .
> > Forget about the ladder line part of the dipole and make it all like the
> > center coax section.
>
> > Replace the coax section with lamp cord
>
> > Now make it fit in a couple of shoe boxes by coiling it all up.
>
> > Isnt this a good discription of Art's antenna?
>

> > Jimmie
>
> I had a couple of 100 ft rolls of speaker wire on cardboard reels so I
> decided to connect them together as Art had described and they give VSWR
> indication much as he described even if I stick them in a metal locker. This
> may be just what a lot of hams are looking for as it is a very quiet
> antenna.
>
> Jimmie

g'day Jimmy

welcome to the minority and stand by for Richard to call you a
fool and stupid for listening to Art, I am sure you are the first
among many who will now build the antenna and find out for themselves
instead of listening to those who say if it is not in a book it cant
be done
well done.

Derek

4205. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 05:46:23 UTC
From: derekbluey@gmail.com
Message-ID: <894a6c3e-281f-4b94-a99c-8d5279ce4292@w4g2000prd.googlegroups.com>
Source record: 26177

On Apr 14, 11:50 am, derekbl...@gmail.com wrote:
> On Apr 14, 10:24 am, "Jimmie D" <GFEN...@carolina.rr.com> wrote:
>
>
>
> > "Jimmie D" <GFEN...@carolina.rr.com> wrote in message
>
> >news:47f79d66$0$1107$4c368faf@roadrunner.com...
>
> > > <derekbl...@gmail.com> wrote in message
> > >news:927ebca3-724e-4394-b7cd-0b8ef317731f@i36g2000prf.googlegroups.com...
>
> > > >>> On Apr 4, 7:02 pm, "Dave" <no...@nowhere.com> wrote:
>
> > > >>> > > You are thinking wrong.
>
> > > >>> > you might as well plonk him, he is either a persistent troll or
> > > >>> > totally
> > > >>> > convinced that only he has the proper view of the world. in either
> > > >>> > case you
> > > >>> > are fighting a losing battle.
>
> > > >> Two perfect examples of a closed mind, but not to worry
> > > >> enlightenment will be along shortly.
>
> > > >> Derek
>
> > > > Enlightenment will surely come if Art connects that antenna to the KW amp
> > > > he claims to have.
>
> > > > Go back to Art discription of his antenna.IT sounds to me as if it evolved
> > > > from a double bazooka.
>
> > > > Make a bazooka antenna with these mods:
> > > > .
> > > > Forget about the ladder line part of the dipole and make it all like the
> > > > center coax section.
>
> > > > Replace the coax section with lamp cord
>
> > > > Now make it fit in a couple of shoe boxes by coiling it all up.
>
> > > > Isnt this a good discription of Art's antenna?
>

> > > Jimmie
>
> > I had a couple of 100 ft rolls of speaker wire on cardboard reels so I
> > decided to connect them together as Art had described and they give VSWR
> > indication much as he described even if I stick them in a metal locker. This
> > may be just what a lot of hams are looking for as it is a very quiet
> > antenna.
>
> > Jimmie
>
> g'day Jimmy
>
> welcome to the minority and stand by for Richard to call you a
> fool and stupid for listening to Art, I am sure you are the first
> among many who will now build the antenna and find out for themselves
> instead of listening to those who say if it is not in a book it cant
> be done
> well done.
>
> Derek

g'day Jimmie

Miss spelt your name my apologies.

Derek

4206. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 05:47:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0or5045umufqclm24spv65cp209711uanr@4ax.com>
Source record: 26178

On Sun, 13 Apr 2008 20:50:04 -0700 (PDT), derekbluey@gmail.com wrote:

>> I had a couple of 100 ft rolls of speaker wire on cardboard reels so I
>> decided to connect them together as Art had described and they give VSWR
>> indication much as he described even if I stick them in a metal locker. This
>> may be just what a lot of hams are looking for as it is a very quiet
>> antenna.

> welcome to the minority and stand by for Richard to call you a
>fool and stupid for listening to Art, I am sure you are the first
>among many who will now build the antenna and find out for themselves
>instead of listening to those who say if it is not in a book it cant
>be done
> well done.

How droll!

Perhaps one day you will be able to tell those who are laughing up
their sleeve at this.

Seeing as you are clueless to the implications of this report, I
return to my original question, Derek:
Why are you here?

73's
Richard Clark, KB7QHC

4207. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 09:20:56 UTC
From: nm5k@wt.net
Message-ID: <63d1703f-7db2-4f40-8149-a7c88438c318@a5g2000prg.googlegroups.com>
Source record: 26179

On Apr 14, 12:47 am, Richard Clark <kb7...@comcast.net> wrote:
> On Sun, 13 Apr 2008 20:50:04 -0700 (PDT), derekbl...@gmail.com wrote:
> >> I had a couple of 100 ft rolls of speaker wire on cardboard reels so I
> >> decided to connect them together as Art had described and they give VSWR
> >> indication much as he described even if I stick them in a metal locker. This
> >> may be just what a lot of hams are looking for as it is a very quiet
> >> antenna.
> > welcome to the minority and stand by for Richard to call you a
> >fool and stupid for listening to Art, I am sure you are the first
> >among many who will now build the antenna and find out for themselves
> >instead of listening to those who say if it is not in a book it cant
> >be done
> > well done.
>
> How droll!
>
> Perhaps one day you will be able to tell those who are laughing up
> their sleeve at this.
>
> Seeing as you are clueless to the implications of this report, I
> return to my original question, Derek:
> Why are you here?
>
> 73's
> Richard Clark, KB7QHC

Probably one of Arts relatives...
It does boggle the mind.. Jimmie gives a report which seems
to indicate it's performance does indeed mimic an air cooled
dummy load, and ole Derek thinks the report claims a success
of the design as an antenna intended to radiate RF.
Cinderella has a mustache, green teeth, and hairy legs
it seems. :(

I'd bet this lack of noise pertains to most any direction and
angle too..
IE: you could spin it round and round, and the noise received
will be puny in any direction compared to any real antenna.
It's possible the pattern may have a couple of nulls where
the noise gets even lower if received from a single source. :/
Art has reinvented the dummy load. And a fairly poorly
designed one at that.. :{
Woe is Art.

4208. china jordan viii jordan ix sneakers jordan x sneakers

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 10:18:28 UTC
From: mynicesneakers9@yahoo.com.cn
Message-ID: <4b4964df-fe4b-466d-bf33-be977d84782b@n14g2000pri.googlegroups.com>
Source record: 26180

custom nba jersey ,nba hardwood classic jersey ,2007 allstar jersey authentic Ugg boots such as the Clasic Cardy, Fluffy Mama, Classic Tall, Sunburst, Rainier, etc.(www.nice-sneakers.com) cheap wholesale 575 Denim jeans wholesale,Antik women jeans Denim Atman china wholesale By Russell Simmons C'N'C Costume National cheap jeans Chip & Pepper cheap mens jeans suppliers Christian Audigier jeans manufacture Creative Recreation Custo Barcelona Deeper Couture jeans factory Diesel Earnest Sewn Energie Evisu jeans at www.nice-sneakers.com jeans outlets,jeans wholesaler,jeans suppliers,jeans offer,jeans trade lead,jeans products .Fabulous 300 Gardener jeans at discount GF Ferre Goldspun Hudson J & Company wholesaler J. Lindeberg Jean's outlets,Paul Gaultier jeans Joe's Jeans Just Cavalli Leroy Jenkins Moschino Jeans People's Liberation Prohibit jeans wholesaler Red Monkey sale in china Collection- Denim Hoodies Outerwear,Shirts cheap wholesale Religion jeans at www.nice-sneakers.com china suppliers discount Taverniti So jeans hoodies, The Year Of jeans jacket wholesale True Religion WESC Premium Denim William Rast at discount price.Miss Sixty Jeans china wholesaler,cheap Creative Recreation hoodies suppliers,china supply Zoo York jeans,Yoropiko Jeans for womens,William Rast wholesaler.buy The North Face jacket,coat online,Spyder jacket boss suit in china,Scarface wholesale.Rocawear womens suit wholesaler,Prohibit Primp Pelle Pelle Notorious BIG jeans wholesale ,cheap Kidrobot Hoodie wholesaler,china Juicy Couture,Joe's Jeans,Inkslingers,Hudson Jeans,cheap Greedy Genius,discount Girbaud,Gino Green Global hoodies china wholesaler,outlets G Star jeans tshirts wholesale,Citizen of Humanity,cheap Christian Dior,sale Christian Audigier,suppliers Chip & Pepper Avirex Akademiks Abercrombie & Fitch hoodies for mens and womens

4209. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 10:39:35 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4ec92819-9c3c-46f2-bc43-1a1ad5bd9ba1@b9g2000prh.googlegroups.com>
Source record: 26181

On Apr 13, 8:41 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Your imcompleteness is that you forgot to include the
> > energy flow into the electric and magnetic fields around
> > the coil. When one does not forget this flow, all of
> > the flows will balance at every instant.
>
> Sorry, it may or may not be a coil. It is in a black box
> whose contents are unknown. Including the energy flows
> inside the black box is impossible. The instantaneous
> power into the black box does not balance the instantaneous
> power out of the black box.

Black boxes are an excellent way to set problems which help us
learn about the meaning of theories.

Conservation of energy and its corollary, conservation of power,
is used in a different way for analyzing black boxes than it
is when we analyzed the fully specified circuit in your Fig 1-1.

With the black box, knowing the power function on the two ports,
we can compute the energy flow into the storage elements within
the box. If the flow out of one port is not always exactly
balanced by the flow into the other, then we know that the black
box is storing some energy and therefore that it has some elements
which store energy. In a more typical situation, we do not have
a completely black box, but we know some of its elements. We can
use the balance of energy flows to help us decide if we have all
the elements. If some of the energy flow is unaccounted for, then
we have not yet found all the elements.

If the box is truly opague, then all we can say is that it has
some energy storage elements and that collectively, the flow
into these elements is described by
Pport1(t) - Pport2(t)

The situation is somewhat different in Fig 1-1. All the elements
of the system are completely specified in Fig 1-1 and we used
circuit theory to compute the energy flows. Not surprisingly, they
completely balanced:
Ps(t) = Prs(t) + Pg(t)
Associated with Fig 1-1, there is a secondary hypothesis that it
should be possible to account for another energy flow, the imputed
flow in the reflected wave on the line. The inability to account
for this flow, given the conservation of power corollary to the
conservation of energy law, is a very strong indicator that the

energy flow imputed to the reflected wave is not an actual energy
flow.

...Keith

4210. Re: Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 10:54:22 UTC
From: AndyS <andysharpe@juno.com>
Message-ID: <f526c032-b8fc-47e1-a7b9-453fc2cce501@t12g2000prg.googlegroups.com>
Source record: 26182

Robert11 wrote:
> Hello,
>
> For the scanner frequencies around 118 MHz, e.g., I realize FM is
> essentially line of sight.
>
> Are AM transmissions also line of sight ?
>
> Same question, but for the higher freq's around 800 MHz ?
>
> Thanks,
> Bob

Andy replies:

While I agree with the other posters, let me add that "line of
sight"
represents the best possible circumstances, and then only in free
space.

To test this, take your 2 meter handi talki and start up a
conversation
and then walk behind a car, or big truck. Nearly every time you will
be able
to maintain your conversation, even tho you are no longer in "line of
sight".

The environment is so full of reflections that it's like standing
in a hall
of mirrors with a flashlight. Many times you can drive thru a tunnel
without
losing the link. Other times you will lose a signal when you drive
by
light poles. (This is especially noticeable with your FM radio and a
weak signal).

While the radio waves travel propagate thru a non-homogenous
medium with
lots of things present that don't represent 377 ohms, each one of them
causes a reflection that will combine with the original vector, and
can
create sharp nulls or slight enhancement. Also, the combined signals
can effectively make the path of the signal "bend"....

So, while "line of sight" is the simplest answer, I have rarely
found

it to be correct. The close you get to "free space", the more
realistic
it is..... but that hardly ever happens when standing on earth...

Andy W4OAH

4211. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 13:45:39 UTC
From: "carkenord@juno.com" <carkenord@juno.com>
Message-ID: <28a7021a-078e-49f5-bfae-7d515ac622ef@a5g2000prg.googlegroups.com>
Source record: 26183

On Apr 12, 11:54 am, "JN" <j...@vfemail.net> wrote:
> I am planning a two band antenna for 30 and 80m using linear traps.
> 73 Jouko OH5RM

Jouko.......you might try to GOOGLE:

"lattin antenna"

That may lead you to useful information.

Lee KA0FPJ

4212. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 14:10:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <gBJMj.5781$GE1.3499@nlpi061.nbdc.sbc.com>
Source record: 26184

Keith Dysart wrote:
> All the elements
> of the system are completely specified in Fig 1-1 and we used
> circuit theory to compute the energy flows. Not surprisingly, they
> completely balanced:
> Ps(t) = Prs(t) + Pg(t)

Yes, but that is only *NET* energy flow and says nothing
about component energy flow. Everything is already known
about net energy flow and there are no arguments about it
so you are wasting your time. Your equation above completely
ignores reflections which is the subject of the thread.

You object to me being satisfied with average energy flow
while you satisfy yourself with net energy flow. I don't see
one iota of conceptual difference between our two positions.

After hundreds of postings, all you have proved is that
Eugene Hecht was right when he said instantaneous powers
are "of limited utility", such that you cannot even tell
me how many joules there are in 100 watts of instantaneous
power when it is the quantity of those very joules that
are required to be conserved and not the 100 watts.

The limit in your quest for tracking instantaneous energy
is knowing the position and momentum of each individual
electron. Good luck on that one.

I am going to summarize the results of my Part 1 article
and be done with it.

In the special case presented in Part 1, there are only
two sources of power dissipation in the entire system,
the load resistor and the source resistor. None of the
reflected energy is dissipated in the load resistor
because the chosen special conditions prohibit reflections
from the source resistor. Therefore, all of the energy not
dissipated in the load resistor is dissipated in the source
resistor because there is no other source of dissipation
in the entire system. Only RL and Rs exist. Pr is not
dissipated in RL. Where is Pr dissipated? Even my ten year
old grandson can solve that problem and he's no future
rocket scientist.
--
73, Cecil http://www.w5dxp.com

4213. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 14:47:54 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <48036e98$0$9531$4c368faf@roadrunner.com>
Source record: 26185

<nm5k@wt.net> wrote in message
news:63d1703f-7db2-4f40-8149-a7c88438c318@a5g2000prg.googlegroups.com...
> On Apr 14, 12:47 am, Richard Clark <kb7...@comcast.net> wrote:
>> On Sun, 13 Apr 2008 20:50:04 -0700 (PDT), derekbl...@gmail.com wrote:
>> >> I had a couple of 100 ft rolls of speaker wire on cardboard reels so
>> >> I
>> >> decided to connect them together as Art had described and they give
>> >> VSWR
>> >> indication much as he described even if I stick them in a metal
>> >> locker. This
>> >> may be just what a lot of hams are looking for as it is a very quiet
>> >> antenna.
>> > welcome to the minority and stand by for Richard to call you a
>> >fool and stupid for listening to Art, I am sure you are the first
>> >among many who will now build the antenna and find out for themselves
>> >instead of listening to those who say if it is not in a book it cant
>> >be done
>> > well done.
>>
>> How droll!
>>
>> Perhaps one day you will be able to tell those who are laughing up
>> their sleeve at this.
>>
>> Seeing as you are clueless to the implications of this report, I
>> return to my original question, Derek:
>> Why are you here?
>>
>> 73's
>> Richard Clark, KB7QHC
>
> Probably one of Arts relatives...

Probably a sock puppet

4214. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 16:06:44 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080414090644.b143a95a.rsparks@elltel.net>
Source record: 26186

On Mon, 14 Apr 2008 09:10:20 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Keith Dysart wrote:
> > All the elements
> > of the system are completely specified in Fig 1-1 and we used
> > circuit theory to compute the energy flows. Not surprisingly, they
> > completely balanced:
> > Ps(t) = Prs(t) + Pg(t)
>
> Yes, but that is only *NET* energy flow and says nothing
> about component energy flow. Everything is already known
> about net energy flow and there are no arguments about it
> so you are wasting your time. Your equation above completely
> ignores reflections which is the subject of the thread.
>
> You object to me being satisfied with average energy flow
> while you satisfy yourself with net energy flow. I don't see
> one iota of conceptual difference between our two positions.
>
> After hundreds of postings, all you have proved is that
> Eugene Hecht was right when he said instantaneous powers
> are "of limited utility", such that you cannot even tell
> me how many joules there are in 100 watts of instantaneous
> power when it is the quantity of those very joules that
> are required to be conserved and not the 100 watts.
>
> The limit in your quest for tracking instantaneous energy
> is knowing the position and momentum of each individual
> electron. Good luck on that one.
>
> I am going to summarize the results of my Part 1 article
> and be done with it.
>
> In the special case presented in Part 1, there are only
> two sources of power dissipation in the entire system,
> the load resistor and the source resistor. None of the
> reflected energy is dissipated in the load resistor
> because the chosen special conditions prohibit reflections
> from the source resistor. Therefore, all of the energy not
> dissipated in the load resistor is dissipated in the source
> resistor because there is no other source of dissipation
> in the entire system. Only RL and Rs exist. Pr is not
> dissipated in RL. Where is Pr dissipated? Even my ten year

> old grandson can solve that problem and he's no future
> rocket scientist.
> --
> 73, Cecil http://www.w5dxp.com

This thread has one assumption that I find very frustrating, a voltage source that is a steady source of power but can not absorb power. My view is that any source must both absorb and deliver power at some none zero impedance. As justification for this view, I offer that current always flows from high voltage to lower voltage, so a real voltage source would have to absorb energy if the external voltage exceeded the voltage of the voltage source.

While it can be agrued that the ideal voltage source would have zero internal resistance, that argument does not address the fact that power flowing in the reverse direction (into the source, against the source supplied voltage) delivers power into the source. Charging a battery with zero internal resistance is a good example. Another example is the observation that a generator becomes a motor when the externally suppied voltage exceeds the voltage supplied by the generator.

Yes, we can make the assumption that the voltage source can not absorb power at any time, but the assumption takes us into an unreal world and gives answers that are impossible to duplicate with measurements. Some would call that a world of science fiction.
--
73, Roger, W7WKB

4215. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 16:32:32 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <81330e56-2b33-4c05-960f-1d09c3975b08@a9g2000prl.googlegroups.com>
Source record: 26187

On Apr 14, 10:10 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > All the elements
> > of the system are completely specified in Fig 1-1 and we used
> > circuit theory to compute the energy flows. Not surprisingly, they
> > completely balanced:
> >   Ps(t) = Prs(t) + Pg(t)
>
> Yes, but that is only *NET* energy flow and says nothing
> about component energy flow. Everything is already known
> about net energy flow and there are no arguments about it
> so you are wasting your time.

Ahhh, but there is then agreement that energy flows (power) must
be in balance to satisfy conservation of energy.

> Your equation above completely
> ignores reflections which is the subject of the thread.

That it does. We get to that later.

> You object to me being satisfied with average energy flow
> while you satisfy yourself with net energy flow. I don't see
> one iota of conceptual difference between our two positions.

They are quite different. I am quite will to explore (and am
doing so) the concept of imputed energy flow in the reflected
wave. It is just that it comes up short since there is no
explanation of where the energy goes. Were an adequate
explanation to be offered, I would quite accept it.

> After hundreds of postings, all you have proved is that
> Eugene Hecht was right when he said instantaneous powers
> are "of limited utility", such that you cannot even tell
> me how many joules there are in 100 watts of instantaneous
> power when it is the quantity of those very joules that
> are required to be conserved and not the 100 watts.

You should tread back through the posts, the question was
answered.

> The limit in your quest for tracking instantaneous energy
> is knowing the position and momentum of each individual
> electron. Good luck on that one.
>
> I am going to summarize the results of my Part 1 article
> and be done with it.

>
> In the special case presented in Part 1, there are only
> two sources of power dissipation in the entire system,
> the load resistor and the source resistor.

Three! The source can also take energy from the system.
Since you have overlooked the source, the rest of your
post is quite flawed in its conclusions.

> None of the
> reflected energy is dissipated in the load resistor
> because the chosen special conditions prohibit reflections
> from the source resistor. Therefore, all of the energy not
> dissipated in the load resistor is dissipated in the source
> resistor because there is no other source of dissipation
> in the entire system. Only RL and Rs exist. Pr is not
> dissipated in RL. Where is Pr dissipated?

Well that is the question, isn't it? It could be in the source.
Or, if it can not be determined where the energy in Pr goes,
then the only other answer is that Pr does not represent an
energy flow. Think Sherlock: "when the impossible has been
eliminated the residuum, however improbable, must contain the
truth."

> Even my ten year
> old grandson can solve that problem and he's no future
> rocket scientist.

Ah yes, but was he presented with ALL the options?

...Keith

4216. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 16:54:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <r%LMj.2455$%V7.1348@newssvr14.news.prodigy.net>
Source record: 26188

Roger Sparks wrote:
> While it can be argued that the ideal voltage source would
> have zero internal resistance, that argument does not address
> the fact that power flowing in the reverse direction (into the
> source, against the source supplied voltage) delivers power
> into the source.

I thought I had already addressed that topic when I added the
one-wavelength of transmission line to the example in between
the source and source resistance.

But here's an example that may allow better tracking
of the energy flow. Let's modify my Part 1, Fig. 1-1
to add a 50 ohm circulator and load to the ground
leg of the source. Everything else remains the same.

```
Gnd--1---2---Vs---Rs-----45 deg 50 ohm----------RL
\ /
3
|
50 ohms
|
GND
```

How much power is dissipated in the circulator
resistor?

How much power does the source have to supply to
maintain 50 watts of forward power on the transmission
line?

Does this example answer your questions?
--
73, Cecil http://www.w5dxp.com

4217. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 17:36:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <QCMMj.9196$2g1.7488@nlpi068.nbdc.sbc.com>
Source record: 26189

Keith Dysart wrote:
> Ahhh, but there is then agreement that energy flows (power) must
> be in balance to satisfy conservation of energy.

You can probably answer your own question by figuring
out how the light energy in an interference pattern
gets from the dark ring to the bright ring some
distance away. Do you think it happens faster than
the speed of light?

> It is just that it comes up short since there is no
> explanation of where the energy goes. Were an adequate
> explanation to be offered, I would quite accept it.

I am satisfied with the destructive/constructive
interference explanation. That you have come up
short in tracking those component energies is not
unexpected given your prejudices.

If you told me your car disappeared from existence
because you cannot find it, I wouldn't believe you
either.

> You should tread back through the posts, the question was
> answered.

"It depends" was no answer - that was just mealy-mouthing.

>> In the special case presented in Part 1, there are only
>> two sources of power dissipation in the entire system,
>> the load resistor and the source resistor.
>
> Three! The source can also take energy from the system.

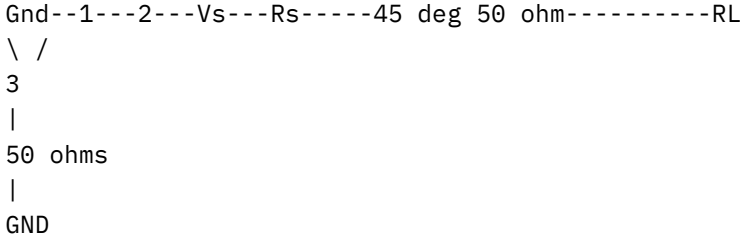
The Vs source has zero resistance rendering dissipation
impossible. I repeat: There are only two sources of
power *DISSIPATION* in the entire system, the load
resistor and the source resistor.

The source can certainly throttle back its output when
there is destructive interference in the source resistor
and increase its output when there is constructive
interference in the source resistor, but it CANNOT
dissipate any power.

> Since you have overlooked the source, the rest of your
> post is quite flawed in its conclusions.

Nope, you are confused. The source can adjust its output
but the source cannot *DISSIPATE* power. As I said, the
only sources of power *DISSIPATION* are the two resistors.
No amount of obfuscation is going to change that.

Perhaps adding a circulator to my Part 1, Fig. 1-1 will
allow you to see things in a clearer light. Of course,
using light would be even better.



How much power is dissipated in the circulator
resistor?

How much power does the source have to supply to
maintain 50 watts of forward power on the transmission
line?
--
73, Cecil http://www.w5dxp.com

4218. Effect of twisting on twisted pair impedance.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 19:10:43 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <c2009089-17a4-4183-acd0-a8de2b2420b8@q1g2000prf.googlegroups.com>
Source record: 26190

Hello,

Following link http://qucs.sourceforge.net/tech/node93.html gives an expression for the characteristic impedance of a twisted pair. It also includes a correction on effective permittivity for the twist angle (or twists/length).

I have a document from Universidad de Buenos Aires, www.fi.uba.ar, "Líneas de transmisión" (transmission lines) this document explicitly mentions that the twist angle must be in radians.

However, when assuming twist angle of 45 degrees (0.785 radians, that is tight twisting) and a relative epsilon of 3, the formula gives a decrease of Z0 of less then 0.1% (w.r.t. almost no twisting). This result doesn't match my experience and experimental data from other recourses.

When entering 45 degrees, the result is a reduction of Z0 to 70% of non-twist value, which sounds better to me.

Does somebody have access to the original document (or know from experience) to figure out whether radians or degrees must be used for the formulas in the link mentioned above?

Thanks,

Wim
PA3DJS
www.tetech.nl
Please remove abc from the address in case of direct reply.

4219. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 20:35:05 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <srf7041r20nl7gp54l0ljr6pm8165e9klv@4ax.com>
Source record: 26191

>
> In the past, I normally have always used a balanced tuner on my
>balanced antenna systems..... this one under discussion, being one of
>those SGC antenna couplers, is NOT balanced..... It did not occur to me
>that the currents through the twin coax feedlines to the balanced
>antenna would not be equal. So, to make sure I am understanding you
>correctly, this un-symmetrical current could also occur in open ladder-
>line?
>
> Obviously the weakness of my antenna knowledge has been exposed. My
>thanks to Roy, AND to Owen.
>
>
> Ed
Just curious, how did this project turn out?
John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

4220. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 20:40:20 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <800bdc77-ccae-4b48-bd03-c441f46c32d9@c19g2000prf.googlegroups.com>
Source record: 26192

On Apr 14, 12:06 pm, Roger Sparks <rspa...@elltel.net> wrote:
> On Mon, 14 Apr 2008 09:10:20 -0500
>
> Cecil Moore <nos...@w5dxp.com> wrote:
> > Keith Dysart wrote:
> > > All the elements
> > > of the system are completely specified in Fig 1-1 and we used
> > > circuit theory to compute the energy flows. Not surprisingly, they
> > > completely balanced:
> > >   Ps(t) = Prs(t) + Pg(t)
>
> > Yes, but that is only *NET* energy flow and says nothing
> > about component energy flow. Everything is already known
> > about net energy flow and there are no arguments about it
> > so you are wasting your time. Your equation above completely
> > ignores reflections which is the subject of the thread.
>
> > You object to me being satisfied with average energy flow
> > while you satisfy yourself with net energy flow. I don't see
> > one iota of conceptual difference between our two positions.
>
> > After hundreds of postings, all you have proved is that
> > Eugene Hecht was right when he said instantaneous powers
> > are "of limited utility", such that you cannot even tell
> > me how many joules there are in 100 watts of instantaneous
> > power when it is the quantity of those very joules that
> > are required to be conserved and not the 100 watts.
>
> > The limit in your quest for tracking instantaneous energy
> > is knowing the position and momentum of each individual
> > electron. Good luck on that one.
>
> > I am going to summarize the results of my Part 1 article
> > and be done with it.
>
> > In the special case presented in Part 1, there are only
> > two sources of power dissipation in the entire system,
> > the load resistor and the source resistor. None of the
> > reflected energy is dissipated in the load resistor
> > because the chosen special conditions prohibit reflections
> > from the source resistor. Therefore, all of the energy not
> > dissipated in the load resistor is dissipated in the source
> > resistor because there is no other source of dissipation
> > in the entire system. Only RL and Rs exist. Pr is not

> > dissipated in RL. Where is Pr dissipated? Even my ten year
> > old grandson can solve that problem and he's no future
> > rocket scientist.
> > --
> > 73, Cecil http://www.w5dxp.com
>
> This thread has one assumption that I find very frustrating, a voltage source that is a steady source of power but can not absorb power. My view is that any source must both absorb and deliver power at some none zero impedance.

I am not sure why you desire a non-zero impedance. The usual
definition of an
ideal voltage source is that it provides or sinks what ever current is
needed to
hold the desired output voltage. When it is sourcing current then it
is providing
energy. No statement is made about where this energy comes from. When
it is
sinking current, it is absorbing energy. No statement is made about
where
this energy is going.

A non-zero impedance is not required to make any of the above
behaviour work.

If you include a non-zero impedance, then you have a more real world
source
which can often be modeled using the Thevenin equivalent circuit; an
ideal
voltage source (zero impedance) in series with a resistor representing
the impedance of the real world source.

> As justification for this view, I offer that current always flows from high voltage to lower voltage, so a real voltage source would have to absorb energy if the external voltage exceeded the voltage of the voltage source.

This is true.

> While it can be agrued that the ideal voltage source would have zero internal resistance, that argument does not address the fact that power flowing in the reverse direction (into the source, against the source supplied voltage) delivers power into the source. Charging a battery with zero internal resistance is a good example. Another example is the observation that a generator becomes a motor when the externally suppied voltage exceeds the voltage supplied by the generator.
>
> Yes, we can make the assumption that the voltage source can not absorb power at any time, but the assumption takes us into an unreal world and gives answers that are impossible to duplicate with measurements. Some would call that a world of science fiction.

...Keith

4221. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 20:57:35 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c5b56116-e7ae-4bca-bd5e-8e466f1468d1@a9g2000prl.googlegroups.com>
Source record: 26193

On Apr 14, 1:36 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Ahhh, but there is then agreement that energy flows (power) must
> > be in balance to satisfy conservation of energy.
>
> You can probably answer your own question by figuring
> out how the light energy in an interference pattern
> gets from the dark ring to the bright ring some
> distance away. Do you think it happens faster than
> the speed of light?

What is your explanation for this phenomenon?

> > It is just that it comes up short since there is no
> > explanation of where the energy goes. Were an adequate
> > explanation to be offered, I would quite accept it.
>
> I am satisfied with the destructive/constructive
> interference explanation. That you have come up
> short in tracking those component energies is not
> unexpected given your prejudices.

I suppose. If you are happy with energy equations that
don't balance.

> If you told me your car disappeared from existence
> because you cannot find it, I wouldn't believe you
> either.
>
> > You should tread back through the posts, the question was
> > answered.
>
> "It depends" was no answer - that was just mealy-mouthing.

Except, that it does depend.

> >> In the special case presented in Part 1, there are only
> >> two sources of power dissipation in the entire system,
> >> the load resistor and the source resistor.
>
> > Three! The source can also take energy from the system.
>
> The Vs source has zero resistance rendering dissipation
> impossible. I repeat: There are only two sources of
> power *DISSIPATION* in the entire system, the load
> resistor and the source resistor.

You have to read more carefully. I did not use the word
dissipation. This is because there are ways other than
dissipation to remove energy from the system. Just as
the source provides energy and we do not care where it
comes from, it can remove energy and we do not care where
it goes.

Examine Ps(t). You will find that for some of the time
energy is being absorbed by the source. This occurs
when the sign of Ps(t) is negative.

> The source can certainly throttle back its output when
> there is destructive interference in the source resistor
> and increase its output when there is constructive
> interference in the source resistor, but it CANNOT
> dissipate any power.

Since we don't know the internals of the source, we do not
know if it is dissipating or not. But we do know that when
the sign of Ps(t) is negative, the source is absorbing
energy from the system, exactly analagous to it providing
energy when the sign of Ps(t) is positive.

> > Since you have overlooked the source, the rest of your
> > post is quite flawed in its conclusions.
>
> Nope, you are confused. The source can adjust its output
> but the source cannot *DISSIPATE* power. As I said, the
> only sources of power *DISSIPATION* are the two resistors.
> No amount of obfuscation is going to change that.

You really should rethink this a bit. When current flows into
a voltage source, the voltage source is absorbing energy.

> Perhaps adding a circulator to my Part 1, Fig. 1-1 will
> allow you to see things in a clearer light. Of course,
> using light would be even better.
>
> Gnd--1---2---Vs---Rs-----45 deg 50 ohm----------RL
>   \ /
>   3
> |
>   50 ohms
> |
>   GND
>
> How much power is dissipated in the circulator
> resistor?

This circulator, while often used, does not in any way add
clarity.

Changing the circuit changes the results, especially when
you add a circulator which alters rather dramatically the

energy flows.

> How much power does the source have to supply to
> maintain 50 watts of forward power on the transmission
> line?

This depends on the design of the generator and the length
of the line. With a shorted line that is 90 degrees long,
and a generator constructed using the circuit of Fig 1-1, the
source supplies no energy to maintain an imputed forward
power of 50 watts on the line.

...Keith

4222. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 20:57:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6zPMj.644$26.400@newssvr23.news.prodigy.net>
Source record: 26194

Keith Dysart wrote:
> When it is sourcing current then it is providing
> energy. No statement is made about where this energy
> comes from.

The question is: Is that energy being created or
dissipated as needed according to your omnipotent
whims?
--
73, Cecil http://www.w5dxp.com

4223. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 21:28:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <H%PMj.645$26.110@newssvr23.news.prodigy.net>
Source record: 26195

Keith Dysart wrote:
> What is your explanation for this phenomenon?

You first! :-)

> I suppose. If you are happy with energy equations that
> don't balance.

My energy equations balance perfectly. Yours are the
energy equations that don't balance in violation of
the conservation of energy principle.

>> "It depends" was no answer - that was just mealy-mouthing.
>
> Except, that it does depend.

Sounds more like religion than anything else.

> You have to read more carefully. I did not use the word
> dissipation.

You have to read more carefully. I used the word
"dissipation" and you disagreed with me. Please
read it again to verify that fact.

> Since we don't know the internals of the source, we do not
> know if it is dissipating or not.

Sorry, the source is, by definition, lossless. All of
the source dissipation is lumped in the source resistance
drawn separately on the diagram as Rs.

> You really should rethink this a bit. When current flows into
> a voltage source, the voltage source is absorbing energy.

But the source is NOT *DISSIPATING* energy because
Rs is not inside the source. Rs is clearly drawn outside
the lossless source so the source generates *ZERO* heat.
I am amazed at the lengths to which you will go to try
to obfuscate the discussion.

> Changing the circuit changes the results, ...

When you get more serious about the technical facts
of physics than you are about saving face, please get
back to us, but please, not before. Everyone is
tired of your delusions of grandeur where the laws
of physics obey your every whim.

--
73, Cecil http://www.w5dxp.com

4224. Re: Effect of twisting on twisted pair impedance.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-14 22:39:34 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fu0mf6$280$1@news.jpl.nasa.gov>
Source record: 26196

Wimpie wrote:
> Hello,
>
> Following link http://qucs.sourceforge.net/tech/node93.html gives an
> expression for the characteristic impedance of a twisted pair. It also
> includes a correction on effective permittivity for the twist angle
> (or twists/length).

They cite the 1971 paper by Lefferson...

Lefferson gives T = tan(theta)/(pi *D)
where T = twist per unit length
theta is "pitch angle" (between wire and line down center of TL)
D is center to center spacing.

he observes that the maximum angle is on the order of 50.5 degrees,
where the wire will tend to break, and that optimum performance is
angles from 20-45 degrees.

Figure 6 in that paper gives the picture... (an angle of zero would be
something like twinlead)

he gives a formula for the actual wire length.. one twist is
pi*D*sqrt(1+1/(tan(theta)^2))

There are some typos in the original paper (Figure 6 and Eq 12).. in the
IEEE Xpress online version, they've been fixed.

>
> I have a document from Universidad de Buenos Aires, www.fi.uba.ar,
> "Lï¿½neas de transmisiï¿½n" (transmission lines) this document explicitly
> mentions that the twist angle must be in radians.

Since figure 2 in the Lefferson paper gives angles in degrees, I assume
that the empirical expression (cited on the QUCS page) is the same as
Lefferson's equation [7] beta=0.25 +4E-4*theta^2

>
> However, when assuming twist angle of 45 degrees (0.785 radians, that
> is tight twisting) and a relative epsilon of 3, the formula gives a
> decrease of Z0 of less then 0.1% (w.r.t. almost no twisting). This
> result doesn't match my experience and experimental data from other
> recourses.
>
> When entering 45 degrees, the result is a reduction of Z0 to 70% of
> non-twist value, which sounds better to me.

>
> Does somebody have access to the original document (or know from
> experience) to figure out whether radians or degrees must be used for
> the formulas in the link mentioned above?
>
> Thanks,
>
> Wim
> PA3DJS
> www.tetech.nl
> Please remove abc from the address in case of direct reply.

4225. Open form coils for sale - reprise

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 00:51:08 UTC
From: Henry <wa0goz@arrl.net>
Message-ID: <3J6dnZdiXrVkZp7VnZ2dnUVZ_gEAAAAA@comcast.com>
Source record: 26197

Open form coils for sale.

I have the following new open form coils left for sale.

Air Dux coils

(4) 416T 1/2" dia X 2" long 15t/in $4 each
(3) 432T 1/2" dia X 2" long 30t/in $4 each
(3) 804T 1" dia X 3" long 4t/in $5 each
(2) 816T 1" dia X 3" long 16t/in $5 each

B & W coils

(1) 3008 5/8" dia X 1 7/8" long 32t/in $4

Unknown manufacturer coils (but look like Air Dux)

(3) 1 1/4" dia X 10" long 6t/in $18 each
(1) 1 1/4" dia X 10" long 10t/in $18 each
(1) 2" dia X 10" long 4t/in $18
(1) 2" dia X 2 1/4 long 10t/in $4
(1) 2" dia X 7/8" long 10t/in $2

Lot price totals $153. I will discount if you buy the whole lot.

Prices are plus shipping in CONUS. I need your zip code to figure
shipping.

Henry WA0GOZ
wa0goz@arrl.net

4226. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 00:51:14 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080414175114.a38f5502.rsparks@elltel.net>
Source record: 26198

On Mon, 14 Apr 2008 16:54:47 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > While it can be argued that the ideal voltage source would
> > have zero internal resistance, that argument does not address
> > the fact that power flowing in the reverse direction (into the
> > source, against the source supplied voltage) delivers power
> > into the source.
>
> I thought I had already addressed that topic when I added the
> one-wavelength of transmission line to the example in between
> the source and source resistance.
>

I thought the addition of a one wavelength transmission line did not address the issue, and only added more reflections. We still need a reason to assume that a voltage source should *not* absorb power.

> But here's an example that may allow better tracking
> of the energy flow. Let's modify my Part 1, Fig. 1-1
> to add a 50 ohm circulator and load to the ground
> leg of the source. Everything else remains the same.
>
> Gnd--1---2---Vs---Rs-----45 deg 50 ohm----------RL
> \ /
> 3
> |
> 50 ohms
> |
> GND
>
> How much power is dissipated in the circulator
> resistor?
>
> How much power does the source have to supply to
> maintain 50 watts of forward power on the transmission
> line?
>
> Does this example answer your questions?
> --
> 73, Cecil http://www.w5dxp.com

No, I'm sorry but no. I offered the examples of two real sources that will absorb power when the returning voltage exceeds the output voltage (a battery and a generator turned

into a motor). I think that we must allow our voltage source to have that same real property.

I do understand that when we allow the source to receive power, then we need to address source impedance. If we assign a single impedance, then we expect reflections from the source. The simple solution that I propose is to add a source property of absorbing all reflections. This can be accomplished in the real world by making the transmission so long that reflections never return from the source over any reasonable time, or by making the tranmission line sufficiently lossy to absorb reflections. Your example uses the first method.

Does the idea of source receiving power run counter to what you were planning to write in Parts 2 and 3? I am trying to understand why you have such great reluctance to accept that the source could receive power for part of a cycle, especially when it could easily bring the instantaneous power and energy calculations into balance.
--
73, Roger, W7WKB

4227. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 00:59:03 UTC
From: Fred McKenzie <fmmck@aol.com>
Message-ID: <fmmck-512B10.20590314042008@nntp.aioe.org>
Source record: 26199

In article <XoJKj.1009$2g1.803@nlpi068.nbdc.sbc.com>,
Cecil Moore <nospam@w5dxp.com> wrote:

> Fred McKenzie wrote:
> > I've collected the parts but haven't assembled it yet. It will be
> > interesting to see how the monstrosity works!
>
> Hope you enjoy 75m QRP.

Cecil-

I can appreciate that a mobile whip used on an auto, does not have the efficiency of a full quarter wave vertical over an array of counterpoise wires. But it does work.

I want to use a pair of mobile whips as a horizontal dipole. (Or more in the case of the Octopus.) Are you suggesting that such a dipole on 75 or 40 Meters, will not perform as well as just one of the whips mounted on an automobile?

Fred
K4DII

4228. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 01:14:05 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080414181405.53ef4526.rsparks@elltel.net>
Source record: 26200

On Mon, 14 Apr 2008 13:40:20 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 14, 12:06 pm, Roger Sparks <rspa...@elltel.net> wrote:
> > On Mon, 14 Apr 2008 09:10:20 -0500
> >
> > Cecil Moore <nos...@w5dxp.com> wrote:
> > > Keith Dysart wrote:
> > > > All the elements
> > > > of the system are completely specified in Fig 1-1 and we used
> > > > circuit theory to compute the energy flows. Not surprisingly, they
> > > > completely balanced:
> > > >   Ps(t) = Prs(t) + Pg(t)
> >
> > > Yes, but that is only *NET* energy flow and says nothing
> > > about component energy flow. Everything is already known
> > > about net energy flow and there are no arguments about it
> > > so you are wasting your time. Your equation above completely
> > > ignores reflections which is the subject of the thread.
> >
> > > You object to me being satisfied with average energy flow
> > > while you satisfy yourself with net energy flow. I don't see
> > > one iota of conceptual difference between our two positions.
> >
> > > After hundreds of postings, all you have proved is that
> > > Eugene Hecht was right when he said instantaneous powers
> > > are "of limited utility", such that you cannot even tell
> > > me how many joules there are in 100 watts of instantaneous
> > > power when it is the quantity of those very joules that
> > > are required to be conserved and not the 100 watts.
> >
> > > The limit in your quest for tracking instantaneous energy
> > > is knowing the position and momentum of each individual
> > > electron. Good luck on that one.
> >
> > > I am going to summarize the results of my Part 1 article
> > > and be done with it.
> >
> > > In the special case presented in Part 1, there are only
> > > two sources of power dissipation in the entire system,
> > > the load resistor and the source resistor. None of the
> > > reflected energy is dissipated in the load resistor
> > > because the chosen special conditions prohibit reflections
> > > from the source resistor. Therefore, all of the energy not

> > > dissipated in the load resistor is dissipated in the source
> > > resistor because there is no other source of dissipation
> > > in the entire system. Only RL and Rs exist. Pr is not
> > > dissipated in RL. Where is Pr dissipated? Even my ten year
> > > old grandson can solve that problem and he's no future
> > > rocket scientist.
> > > --
> > > 73, Cecil http://www.w5dxp.com
> >
> > This thread has one assumption that I find very frustrating, a voltage source that is a steady source of power but can not absorb power. My view is that any source must both absorb and deliver power at some none zero impedance.
>
> I am not sure why you desire a non-zero impedance. The usual
> definition of an
> ideal voltage source is that it provides or sinks what ever current is
> needed to
> hold the desired output voltage. When it is sourcing current then it
> is providing
> energy. No statement is made about where this energy comes from. When
> it is
> sinking current, it is absorbing energy. No statement is made about
> where
> this energy is going.
>
> A non-zero impedance is not required to make any of the above
> behaviour work.
>
My thought needed more developement. When the source delivers power, we readily accept that the impedance of delivery will be the impedance of the attached circuit. We make the same assumption when a reflection is returned to the source. If we make the assumption that the source has the same impedance as the refection, then no reflection from the source is expected. So yes, I agree with your observation.

> If you include a non-zero impedance, then you have a more real world
> source
> which can often be modeled using the Thevenin equivalent circuit; an
> ideal
> voltage source (zero impedance) in series with a resistor representing
> the impedance of the real world source.
>

--
73, Roger, W7WKB

4229. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 01:22:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <7rTMj.2539$%V7.1326@newssvr14.news.prodigy.net>
Source record: 26051

Roger Sparks wrote:
> I offered the examples of two real sources that will absorb
> power when the returning voltage exceeds the output voltage
> (a battery and a generator turned into a motor). I think that
> we must allow our voltage source to have that same real property.

A battery converts electrical energy to chemical energy, i.e.
it transforms the electrical energy. A motor converts electrical
energy into physical work, i.e. it transforms the electrical
energy. An ideal source does not dissipate power and there is
no mechanism for storing energy. It seems what you are objecting
to is the artificial separation of Vs and Rs.

> I do understand that when we allow the source to receive
> power, then we need to address source impedance.

The series source impedance is zero. It acts like a short
circuit to reflections, i.e. there are no reflections.
However, there seem to be 100% reflection from the GND on
the other side of the source.

> Does the idea of source receiving power run counter to what
> you were planning to write in Parts 2 and 3?

The source will be shown to adjust its output until an
energy balance is achieved. It will throttle back when
destructive interference occurs at the source resistor
and will gear up when constructive interference requires
more energy.

> I am trying to
> understand why you have such great reluctance to accept that
> the source could receive power for part of a cycle, especially
> when it could easily bring the instantaneous power and energy
> calculations into balance.

There is no known mechanism that would allow an ideal
source to dissipate or store energy. Consider that the
energy you see flowing back into the source is reflected
back through the source by the ground on the other side
and becomes part of the forward wave out of the source.
That would satisfy the distributed network model and
explain why interference exists in the source.
--
73, Cecil http://www.w5dxp.com

4230. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 01:42:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2KTMj.8379$V14.7229@nlpi070.nbdc.sbc.com>
Source record: 26052

Fred McKenzie wrote:
> I want to use a pair of mobile whips as a horizontal dipole. (Or more
> in the case of the Octopus.) Are you suggesting that such a dipole on
> 75 or 40 Meters, will not perform as well as just one of the whips
> mounted on an automobile?

The radiation resistance of a 75m hamstick is roughly
about 0.5 ohms. The feedpoint impedance is roughly
about 20 ohms if one subtracts out the ground losses.
Very roughly, that would make a 75m hamstick dipole
have a radiation resistance of about 1 ohm and a
feedpoint impedance around 40 ohms. That's about 2.5
watts out for 100 watts in. I would say that qualifies
for QRP and is actually an improvement over a 75m mobile
hamstick with a measured signal strength that is 12 dB
down from a good screwdriver which itself is about 10 dB
down from a 1/2WL dipole.

Almost any other antenna in the world will beat a
75m hamstick dipole. One can radiate ten times as
much power simply by lengthening it by 50% and using
high-Q loading coils.
--
73, Cecil http://www.w5dxp.com

4231. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 02:29:09 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <4eeaee6e-6083-4c93-a88c-d01783ea6372@l42g2000hsc.googlegroups.com>
Source record: 26053

On Apr 14, 5:28 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > What is your explanation for this phenomenon?
>
> You first! :-)
>
> > I suppose. If you are happy with energy equations that
> > don't balance.
>
> My energy equations balance perfectly. Yours are the
> energy equations that don't balance in violation of
> the conservation of energy principle.
>
> >> "It depends" was no answer - that was just mealy-mouthing.
>
> > Except, that it does depend.
>
> Sounds more like religion than anything else.
>
> > You have to read more carefully. I did not use the word
> > dissipation.
>
> You have to read more carefully. I used the word
> "dissipation" and you disagreed with me. Please
> read it again to verify that fact.
>
> > Since we don't know the internals of the source, we do not
> > know if it is dissipating or not.
>
> Sorry, the source is, by definition, lossless. All of
> the source dissipation is lumped in the source resistance
> drawn separately on the diagram as Rs.
>
> > You really should rethink this a bit. When current flows into
> > a voltage source, the voltage source is absorbing energy.
>
> But the source is NOT *DISSIPATING* energy because
> Rs is not inside the source. Rs is clearly drawn outside
> the lossless source so the source generates *ZERO* heat.
> I am amazed at the lengths to which you will go to try
> to obfuscate the discussion.

You do need to back up a bit and review voltage sources.

When conventional current is flowing out of the positive
terminal of a voltage source, it is usually agreed that
the voltage source is providing energy to the circuit.
This comes from
P(t) = V(t) * I(t)
when V and I are the same sign, P is positive representing
a flow of energy from the source to the other elements
of the circuit.

What do you explain is happening when conventional current
is flowing into the positive terminal of the source?
Is the source still providing energy to the circuit now
that P is negative?
Or is it accepting energy from the circuit, the negative
P representing an energy flow into the source?

...Keith

4232. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 02:45:46 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <480416db$0$1114$8046368a@newsreader.iphouse.net>
Source record: 26054

Cecil Moore wrote:

> A battery converts electrical energy to chemical energy, i.e.
> it transforms the electrical energy.

Gee, I'm just a silly old engineer, but I thought batteries converted
chemical energy to electrical energy. Unless you are perhaps speaking
of charging it.

tom
K0TAR

4233. Re: SGC coupler to Dipole feedling question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 02:46:24 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A80C92719A2BHuckleberrybigvalley@198.186.192.196>
Source record: 26055

>
>> In the past, I normally have always used a balanced tuner on my
>>balanced antenna systems..... this one under discussion, being one of
>>those SGC antenna couplers, is NOT balanced..... It did not occur to
me
>>that the currents through the twin coax feedlines to the balanced
>>antenna would not be equal. So, to make sure I am understanding you
>>correctly, this un-symmetrical current could also occur in open
ladder-
>>line?
>>
>> Obviously the weakness of my antenna knowledge has been exposed. My
>>thanks to Roy, AND to Owen.
>>
>>
>> Ed
> Just curious, how did this project turn out?
> John Ferrell W8CCW
> Beware of the dopeler effect (pronounced dope-ler).
> That's where bad ideas seem good if they come at you
> fast enough.
>

Appreciate the inquiry, but due to my pending move in early May (
local) We have not yet completed this project. Rest assured, I
remember the information presented in the discussion on this thread and
intend to proceed..... probably later in May when my move is completed
and I am available to assist the other members of the team that will be
installing the aformentioned antenna. TNX

73 de Ed K7AAT

4234. Re: Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 03:26:09 UTC
From: greenhornet@cato.com
Message-ID: <6q7804110jouvh25te048icrd0uue7h7p0@4ax.com>
Source record: 26056

On Sun, 13 Apr 2008 11:18:06 -0700, Richard Clark <kb7qhc@comcast.net>
wrote:

>On Fri, 11 Apr 2008 08:02:04 -0400, "Robert11" <rgsros@notme.com>
>wrote:
>
>>For the scanner frequencies around 118 MHz, e.g., I realize FM is
>>essentially line of sight.
>>
>>Are AM transmissions also line of sight ?
>>
>>Same question, but for the higher freq's around 800 MHz ?
>
>Hi Bob,
>
>John and Ralph pretty much cover some of the familiar turf. I would
>add (or perhaps extend what has been said) that atmosphering ducting
>can extend that range thousands of miles.
>
>One example that I personally observed (quite literally) was watching
>TV programining out of Edmonton and Calgary Canada while I was living
>in Colorado Springs, Colorado. There were times I could watch an
>entire movie before the duct faded away.
>
>73's
>Richard Clark, KB7QHC

Yup, ducting, meteor scatter etc can all provide extended VHF range.
I've only done about 250 miles on 2 meters, though on 6 meters my
farthest contact was about 3000 miles.....did as straight a line
as I could on MS Streets & Trips to 'calculate' that so there may well
be some error.

That was pretty good range for a video signal to carry, Richard; was
that on an older tv that actually allowed you to [fine] tune?

4235. Re: Optimum wavelength % for a stick antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 03:32:22 UTC
From: usmcbrat <president@whitehouse.gov>
Message-ID: <alVMj.12347$tw3.2162@trnddc03>
Source record: 26057

"Wimpie" <wimabctel@tetech.nl> wrote in message
news:039e23b4-c246-4535-826d-
> It is difficult/impossible to say what length is optimum for your
> particular situation.

Thanks for all of your info. I don't have a particular situation in mind,
this was just a question for my own education. I didn't know if there was
any advantage to having a "larger" antenna beyond any particular point...
such as a two wavelength or a ten wavelength or a thousand wavelength.

4236. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 03:53:17 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080414205317.98b1c801.rsparks@elltel.net>
Source record: 26058

On Tue, 15 Apr 2008 01:22:11 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > I offered the examples of two real sources that will absorb
> > power when the returning voltage exceeds the output voltage
> > (a battery and a generator turned into a motor). I think that
> > we must allow our voltage source to have that same real property.
>
> A battery converts electrical energy to chemical energy, i.e.
> it transforms the electrical energy. A motor converts electrical
> energy into physical work, i.e. it transforms the electrical
> energy. An ideal source does not dissipate power and there is
> no mechanism for storing energy. It seems what you are objecting
> to is the artificial separation of Vs and Rs.
>
No, the separation of Vs and Rs was made to better understand why no interference would occur in Figure 1-1. found at http://www.w5dxp.com/nointfr.htm.

Here is a quote from Part 1.
"4. Since the transmission line is 1/8 wavelength (45 degrees) long and the load is purely resistive, the reflected wave incident upon the source resistor will be 2(45) = 90 degrees out of phase with the forward wave at the source resistor. This is the necessary and sufficient condition to produce zero interference at the source resistor."

The problem is that the source and reflected waves behave as two power sources out of time by 90 degrees. As a result, the current flows as the result of two sine waves, and can be described by only one sine wave. The one sine wave description necessarily shows that power *does* flow into the source during part of the cycle. Interference techniques are used to combine the two sine waves into one wave so it would appear that statement 4 is incorrect.

> > I do understand that when we allow the source to receive
> > power, then we need to address source impedance.
>
> The series source impedance is zero. It acts like a short
> circuit to reflections, i.e. there are no reflections.
> However, there seem to be 100% reflection from the GND on
> the other side of the source.
>
It is not the reflections from the source that is the root of the problem. The root is the way two sine waves combine into one wave that runs at a third phase compared to either of the source waves.

> > Does the idea of source receiving power run counter to what
> > you were planning to write in Parts 2 and 3?
>

> The source will be shown to adjust its output until an
> energy balance is achieved. It will throttle back when
> destructive interference occurs at the source resistor
> and will gear up when constructive interference requires
> more energy.
>
> > I am trying to
> > understand why you have such great reluctance to accept that
> > the source could receive power for part of a cycle, especially
> > when it could easily bring the instantaneous power and energy
> > calculations into balance.
>
> There is no known mechanism that would allow an ideal
> source to dissipate or store energy. Consider that the
> energy you see flowing back into the source is reflected
> back through the source by the ground on the other side
> and becomes part of the forward wave out of the source.
> That would satisfy the distributed network model and
> explain why interference exists in the source.

I can understand a voltage source that throttles up and down but I can't understand why the throttle all has to be on the plus side. What logic prevents the power from returning to the ideal source from whence it just left?

Our real limit is that only one current can flow for only one voltage for each instant at any place in the circuit. This is how we justify a "one sine wave" description. It is why whenever we have a reflection, we also have interference. It is also the reason that we must have power flowing back into the source for part of the cycle.
--
73, Roger, W7WKB

4237. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 08:39:04 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <480464b4$0$23817$9b536df3@news.fv.fi>
Source record: 26059

Jouko.......you might try to GOOGLE:

"lattin antenna"

That may lead you to useful information.

Lee KA0FPJ

Yes Lee, Google found quite a lot of hits, but they all refer to one 5band
antenna design with no much
real information. So my question still remains open. Could some modelling
program give the answer?
I think those two alternatives differ at least in how much inductive loadind
they are causing to the lower frequency
and so shortening the total length of antenna.

Jouko OH5RM

4238. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 09:16:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <wn_Mj.628$ix6.491@newssvr11.news.prodigy.net>
Source record: 26060

Tom Ring wrote:
> Cecil Moore wrote:
>> A battery converts electrical energy to chemical energy, i.e.
>> it transforms the electrical energy.
>
> Gee, I'm just a silly old engineer, but I thought batteries converted
> chemical energy to electrical energy. Unless you are perhaps speaking
> of charging it.

Here was the preceding comment in context which you trimmed:
"I offered the examples of two real sources that will absorb power when
the returning voltage exceeds the output voltage (a battery and a
generator turned into a motor)."

The context was a battery absorbing power when the
charging voltage exceeds the battery's output voltage.
A battery converts electrical energy to chemical energy
during that charging process.
--
73, Cecil http://www.w5dxp.com

4239. Re: Effect of twisting on twisted pair impedance.

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 09:37:03 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <b028e997-fd32-4d38-a8a2-d535b0bf4397@d45g2000hsc.googlegroups.com>
Source record: 26061

On 15 abr, 00:39, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Wimpie wrote:
> > Hello,
>
> > Following linkhttp://qucs.sourceforge.net/tech/node93.htmlgives an
> > expression for the characteristic impedance of a twisted pair. It also
> > includes a correction on effective permittivity for the twist angle
> > (or twists/length).
>
> They cite the 1971 paper by Lefferson...
>
> Lefferson gives T = tan(theta)/(pi *D)
> where T = twist per unit length
> theta is "pitch angle" (between wire and line down center of TL)
> D is center to center spacing.
>
> he observes that the maximum angle is on the order of 50.5 degrees,
> where the wire will tend to break, and that optimum performance is
> angles from 20-45 degrees.
>
> Figure 6 in that paper gives the picture... (an angle of zero would be
> something like twinlead)
>
> he gives a formula for the actual wire length.. one twist is
> pi*D*sqrt(1+1/(tan(theta)^2))
>
> There are some typos in the original paper (Figure 6 and Eq 12).. in the
> IEEE Xpress online version, they've been fixed.
>
>
>
> > I have a document from Universidad de Buenos Aires,www.fi.uba.ar,
> > "Líneas de transmisión" (transmission lines) this document explicitly
> > mentions that the twist angle must be in radians.
>
> Since figure 2 in the Lefferson paper gives angles in degrees, I assume
> that the empirical expression (cited on the QUCS page) is the same as
> Lefferson's equation [7] beta=0.25 +4E-4*theta^2
>
>
>
> > However, when assuming twist angle of 45 degrees (0.785 radians, that
> > is tight twisting) and a relative epsilon of 3, the formula gives a
> > decrease of Z0 of less then 0.1% (w.r.t. almost no twisting). This

> > result doesn't match my experience and experimental data from other
> > recourses.
>
> > When entering 45 degrees, the result is a reduction of Z0 to 70% of
> > non-twist value, which sounds better to me.
>
> > Does somebody have access to the original document (or know from
> > experience) to figure out whether radians or degrees must be used for
> > the formulas in the link mentioned above?
>
> > Thanks,
>
> > Wim
> > PA3DJS
> >www.tetech.nl
> > Please remove abc from the address in case of direct reply.

Hello Jim,

Thank you for your helpful reply.

I think I can be sure now that the twist angle must be entered in
degrees rather then radians.

Best regards,

Wim
PA3DJS
www.tetech.nl
please remove abc from the mail address

4240. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 09:43:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0N_Mj.9313$2g1.8296@nlpi068.nbdc.sbc.com>
Source record: 26062

Roger Sparks wrote:
> On Tue, 15 Apr 2008 01:22:11 GMT
> Cecil Moore <nospam@w5dxp.com> wrote:
>> An ideal source does not dissipate power and there is
>> no mechanism for storing energy. It seems what you are objecting
>> to is the artificial separation of Vs and Rs.
>>
> No, the separation of Vs and Rs was made to better understand
> why no interference would occur in Figure 1-1.

I wasn't talking about my article. I was talking about Vs & Rs
models in general. In the real world, Vs is not separated from
Rs. That only occurs in the ideal model. In the ideal model,
all dissipation is confined to Rs and there is none in Vs.

> The problem is that the source and reflected waves behave as
> two power sources out of time by 90 degrees.

Not quite correct. The problem is that the forward waves
and reflected waves flowing through the source behave as
two power sources out of time by 90 degrees. The source
wave is the net superposition of the forward wave and
reflected wave. An ideal 50 ohm directional wattmeter
in the circuit will not read the source power. It will
read a forward power which is a different magnitude
than the source power. In any case, only Rs and RL
dissipate power in the system.

> I can understand a voltage source that throttles up and
> down but I can't understand why the throttle all has to be
> on the plus side.

It is not all on the plus side. Whatever energy flows, flows.
Sometimes the flow is forward and sometimes it is backwards.
That's the way AC works. If destructive interference is
present, the source reduces its output power. If constructive
interference is present, the source increases its output
power. But the ideal source does not dissipate power, i.e.
doesn't heat up. All of the heat generated in the entire
system comes from Rs and RL.

> Our real limit is that only one current can flow for only one
> voltage for each instant at any place in the circuit.

You are, of course, talking about the *net* voltage and the
net current after superposition of all the components. But

this discussion is not about net voltage and net current.

> This is
> how we justify a "one sine wave" description. It is why whenever
> we have a reflection, we also have interference. It is also the
> reason that we must have power flowing back into the source for
> part of the cycle.

I don't know where you got the idea that energy doesn't
flow back into the source for part of the cycle. Since
it is AC, it does flow forward and backward but none is
dissipated, i.e. none is turned into heat in an ideal
source. An equal amount of destructive and constructive
interference occurs during each complete cycle.
--
73, Cecil http://www.w5dxp.com

4241. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 10:16:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%f%Mj.5157$GO4.1772@newssvr19.news.prodigy.net>
Source record: 26063

Keith Dysart wrote:
> Or is it accepting energy from the circuit, the negative
> P representing an energy flow into the source?

Of course there can be an energy flow into the source
and through the source. The point is that the ideal
source doesn't dissipate that energy, i.e. it doesn't
heat up. All of the heating (power dissipation) in the
entire example occurs in Rs and RL because they are
the only resistive components in the entire system.
Any additional heating in the ideal source would
violate the conservation of energy principle.
--
73, Cecil http://www.w5dxp.com

4242. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 11:26:47 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <9a2785b0-76e8-4ad1-84f6-e2d734e09aa2@l28g2000prd.googlegroups.com>
Source record: 26064

On Apr 15, 6:16 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Or is it accepting energy from the circuit, the negative
> > P representing an energy flow into the source?
>
> Of course there can be an energy flow into the source

Good.

> and through the source.

It is not clear what you mean by "through the source".
The source provides or absorbs energy. It does not have
a "through", since it only has a single port.

> The point is that the ideal
> source doesn't dissipate that energy, i.e. it doesn't
> heat up.

It is not obvious why you want to draw a distinction
between elements that remove energy from a circuit by
heating and those that do so in some other manner.

Could you expand?

Is there some reason why you think that it is only
necessary to account for the energy removed from the
circuit by heating?
And that you can ignore energy being removed in other ways?

And how do you know the ideal source does not dispose
of the energy it receives by getting warm? Nowhere
do I find in the specification of an ideal source any
hint of how it disposes of its excess energy. It could
be by heat, could it not?

And the resistor, could it not also radiate some of
the energy it receives? Perhaps even as visible light?
Would that make it less of a resistor because it was
not 'dissipating' the energy?

> All of the heating (power dissipation) in the
> entire example occurs in Rs and RL because they are
> the only resistive components in the entire system.
> Any additional heating in the ideal source would
> violate the conservation of energy principle.

This is quite a leap. The energy flows into the source. We have accounted for that energy. We don't know where it goes from there.

How would it violate conservation of energy if it was dissipated rather than going somewhere else?

In your model, what things could be done with the energy that would not violate conservation of energy? What other things (besides heating) would violate conservation of energy?

...Keith

4243. Www.3Asneakers.cn sell china cheap nike jordan af1 dunk shox r4 max bally sneakers gucci prada timberland chanel mauri armani evisu hogan sneaker shoes wholesale lrg jeans bape jeans bbc jeand armani jeans redmonkey jeans seven jeans coogi jeans ect china cheapest wholesale

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 12:21:28 UTC
From: "www.3asneakers.cn wholesale nike gucci prada sneakers" <sneakers11@126.com>
Message-ID: <f3f70ae2-2942-4e7d-a8b6-82eff2a235ec@n14g2000pri.googlegroups.com>
Source record: 26065

(www.3asneakers.cn) Discount Prada Sneakers china wholesale good.
(www.3asneakers.cn) wholesale china lacoste mens turbo low mix gucci
sneaker shoes for cheap.
(www.3asneakers.cn) Order Sneakers from China nike wholesale trainers
(www.3asneakers.cn) wholesale china cheap nike air jordan sneaker
shoes.
(www.3asneakers.cn) ordan key chain for air force 1 customized nike
jordan tennis shoes
(www.3asneakers.cn) wholesale bape t-shirt ED Hardy t-shirt wholesale
gucci shoes china
(www.3asneakers.cn) branded perfume wholesale china nike dunk sneakers
(www.3asneakers.cn) suppliers for sneakers wholesale shoes from
china
(www.3asneakers.cn) china wholesale nike jordan gucci prada sneakers
cheapest nike,nike dunk sneaker necklaces.
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4244. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 13:32:01 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A816189E9B75jxp16psuedu@128.118.141.40>
Source record: 26066

Cecil Moore <nospam@w5dxp.com> wrote in news:2KTMj.8379$V14.7229
@nlpi070.nbdc.sbc.com:

> Fred McKenzie wrote:
>> I want to use a pair of mobile whips as a horizontal dipole. (Or more
>> in the case of the Octopus.) Are you suggesting that such a dipole on
>> 75 or 40 Meters, will not perform as well as just one of the whips
>> mounted on an automobile?
>
> The radiation resistance of a 75m hamstick is roughly
> about 0.5 ohms. The feedpoint impedance is roughly
> about 20 ohms if one subtracts out the ground losses.
> Very roughly, that would make a 75m hamstick dipole
> have a radiation resistance of about 1 ohm and a
> feedpoint impedance around 40 ohms. That's about 2.5
> watts out for 100 watts in. I would say that qualifies
> for QRP and is actually an improvement over a 75m mobile
> hamstick with a measured signal strength that is 12 dB
> down from a good screwdriver which itself is about 10 dB
> down from a 1/2WL dipole.
>
> Almost any other antenna in the world will beat a
> 75m hamstick dipole. One can radiate ten times as
> much power simply by lengthening it by 50% and using
> high-Q loading coils.

Hi:

As I reported some time ago, I compared Hamstick dipoles to a full size dipole at about the same height. The Hamstick dipole was about 20d down from the full size antenna. The 2:1 SWR bandwidth was about 65KHz. They work as an antenna but are in the better than nothing class.

John Passaneau W3JXP

4245. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 16:30:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <usl90495ouego1e1uj0ipk2c8h34o92evu@4ax.com>
Source record: 26067

On Tue, 15 Apr 2008 11:39:04 +0300, "JN" <jnxx@vfemail.net> wrote:

>
>
>Jouko.......you might try to GOOGLE:
>
>"lattin antenna"
>
>That may lead you to useful information.
>
>Yes Lee, Google found quite a lot of hits, but they all refer to one 5band
>antenna design with no much
>real information. So my question still remains open. Could some modelling
>program give the answer?
>I think those two alternatives differ at least in how much inductive loadind
>they are causing to the lower frequency
>and so shortening the total length of antenna.

Hi Jouko OH5RM

Yes modeling can give an answer:
NO

It does not work.

73's
Richard Clark, KB7QHC

4246. Re: Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 16:39:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <42m904pi6pvoihq6bpc4th1ioqku0c9vnk@4ax.com>
Source record: 26068

On Mon, 14 Apr 2008 20:26:09 -0700, greenhornet@cato.com wrote:

>>One example that I personally observed (quite literally) was watching
>>TV programining out of Edmonton and Calgary Canada while I was living
>>in Colorado Springs, Colorado. There were times I could watch an
>>entire movie before the duct faded away.
>>
>>73's
>>Richard Clark, KB7QHC
>
>Yup, ducting, meteor scatter etc can all provide extended VHF range.
>I've only done about 250 miles on 2 meters, though on 6 meters my
>farthest contact was about 3000 miles.....did as straight a line
>as I could on MS Streets & Trips to 'calculate' that so there may well
>be some error.
>
>That was pretty good range for a video signal to carry, Richard; was
>that on an older tv that actually allowed you to [fine] tune?

Yes, it was. And I was very much younger (a reverse convergence in this somewhere). This was in the mid-1960s, summer time, antenna pointed generally north, low band TV. The view north was a clear shot to the horizon at a high point of roughly 6400 feet (average terrain at least 6000 feet).

I also worked in a TV shop at the time (summers and weekends) and had experience with 100s of "tuners" for TV. Some were works of art, some trash, and few really helped because Colorado Springs was not a metropolitan area and far from Denver. We did have one advantage however. The local TV transmitters were atop Cheyenne Mountain. That had about a 1 mile height advantage over the average terrain to the east. It was also ground Zero for probably a good percentage of the Soviet nuclear arsenal. I lived, perhaps, two miles from the front doors (direct hit-proof blast doors, those) of NORAD.

73's
Richard Clark, KB7QHC

4247. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 16:47:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <H_4Nj.1262$FF6.1068@newssvr29.news.prodigy.net>
Source record: 26069

Keith Dysart wrote:
> It is not clear what you mean by "through the source".
> The source provides or absorbs energy. It does not have
> a "through", since it only has a single port.

Good grief! The source is a two terminal device
with one terminal tied to ground. Since it has
a zero resistance, an EM reverse wave can flow
right through it, encounter the ground, and be
100% re-reflected by that ground. I have already
explained that. Did you bother to read it?

If you put an ideal 50 ohm directional wattmeter
between the source and its ground, what will it read?

dir
GND---watt----Vs--Rs----------RL
meter

Did you bother to analyze this configuration?

Rs=50
----50-ohm----/\/\/\/\----50-ohm----
125w--> 100w 50w-->
<--25w <--50w

This explains everything at the average power level.
I suspect it also works at the instantaneous level.

> It is not obvious why you want to draw a distinction
> between elements that remove energy from a circuit by
> heating and those that do so in some other manner.
>
> Could you expand?

We are dealing with an ideal closed system. The
ultimate destination for 100% of the ideal source
power is heat dissipation in the two ideal resistors,
Rs and RL. What happens between the power being sourced
and the power being dissipated as heat is "of limited
utility".

> Is there some reason why you think that it is only
> necessary to account for the energy removed from the
> circuit by heating?

Heating is the only way that the energy can be removed
from the ideal closed system.

> And that you can ignore energy being removed in other ways?

No energy is removed in other ways. There is no other
way for energy to leave the ideal closed system.

> And how do you know the ideal source does not dispose
> of the energy it receives by getting warm?

An ideal source has zero source impedance, by definition.
All of the source impedance is contained in Rs, the
ideal source resistor.

> And the resistor, could it not also radiate some of
> the energy it receives? Perhaps even as visible light?
> Would that make it less of a resistor because it was
> not 'dissipating' the energy?

God could also suck up the energy or the universe
could end. Why muddy the waters with irrelevant
obfuscations? Please deal with the ideal boundary
conditions as presented.

> This is quite a leap.

Nope, it is simple physics through which you must
have been asleep.

> How would it violate conservation of energy if it was
> dissipated rather than going somewhere else?

It can only be dissipated in the resistances, by definition.
Nothing other than the resistances in an ideal closed system
dissipates power. EE102.

> In your model, what things could be done with the energy
> that would not violate conservation of energy?

FIVE TMES, I listed three things in previous postings. Since
you avoided reading it FIVE TIMES already, I'm just going to
point you to the "Optics" chapters on "Interference" and
"Superposition".
--
73, Cecil http://www.w5dxp.com

4248. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 16:48:53 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <4804dc76$0$8172$9b536df3@news.fv.fi>
Source record: 26070

> Hi Jouko OH5RM
>
> Yes modeling can give an answer:
> NO
>
> It does not work.
>
> 73's
> Richard Clark, KB7QHC

Hi Richard,

Sorry I didnt quite understand your short answer.
What does not work? The whole principe of decoupling stubs?
Unfortenately I myself have no modelling program.

73 Jouko OH5RM

4249. Re: Hamstick dipole for 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 16:53:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <m45Nj.1263$FF6.634@newssvr29.news.prodigy.net>
Source record: 26071

John Passaneau wrote:
> As I reported some time ago, I compared Hamstick dipoles to a full size
> dipole at about the same height. The Hamstick dipole was about 20d down
> from the full size antenna.

So I was generous in estimating 2.5 watts radiated
out of 100w input. In your case, it was more like
1 watt radiated out of 100w input.
--
73, Cecil http://www.w5dxp.com

4250. wholesale sneaker air joedan nike gucci prada puma lv AF1 shoes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 17:21:54 UTC
From: ebayshoe@yahoo.cn
Message-ID: <539c50a2-64eb-406c-9e9c-202831490bd2@q27g2000prf.googlegroups.com>
Source record: 26072

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4251. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 17:30:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jgo9045m00tq3aujsmiv2ile0j7ofv0flg@4ax.com>
Source record: 26073

On Tue, 15 Apr 2008 19:48:53 +0300, "JN" <jnxx@vfemail.net> wrote:

>> Hi Jouko OH5RM
>>
>> Yes modeling can give an answer:
>> NO
>>
>> It does not work.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Hi Richard,
>
>Sorry I didnt quite understand your short answer.
>What does not work? The whole principe of decoupling stubs?
>Unfortenately I myself have no modelling program.

Hi Jouko,

Basically, what you describe was discussed here last week as the W9INN dipole, and recently as the Lattin dipole. Being the same thing as your twin line (parallel line, or folded stub, or whatever); the premise is these elements resonate and thus trap an antenna for multiband operation. Those stubs are not oriented correctly.

Let's take this by degrees. Any dipole is a multiband antenna. Those bands might be useful, and they might not. The point is that being multiband is nothing remarkable in itself. What is remarkable is if that antenna is useful in every band you want to use it in. This is the "Holy Grail." Nearly 60 years ago, a Ham invented the Lattin antenna. We cannot say it was designed because it never performed according to claims (and I do mean NEVER). It was even patented.

Designs do work, inventions rarely do. We get inventors here every week, some hang around for years. The bottom line is that if these inventions worked, we would be using them (and that is 2% of the goal of these inventors, the other 98% is seeking validation as being eminent thinkers). The Lattin antenna's balance sheet shows 1PPM usage, and no pursuit of validation (the inventor is dead, but some still keep the vigil and change the flowers at Internet memorial sites).

You can try your hand at modeling by visiting:
http://www.eznec.com/
The Lattin design is easily constructed by a model, I've done several

dozen variations. You can also model stubs that are oriented
correctly and that will work.

73's
Richard Clark, KB7QHC

4252. Re: W9INN Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 18:00:16 UTC
From: rdetweil@hotmail.com
Message-ID: <c1af1573-a433-4ec3-a715-ed7230652c66@d26g2000prg.googlegroups.com>
Source record: 26074

Best way to build one of those is to reverse engineer one,

I don't see where there is any posting of his disigns either.

I suspect the traps are simple HiQ traps made from PVC and 14 Guage
Magnet wire.

Richard. K5SF

4253. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 18:44:02 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <4804f774$0$8161$9b536df3@news.fv.fi>
Source record: 26075

Richard thanks for your answer and opinions.
I am not talking abt Lattin or W9INN.
These are things I hear in this thread for the first time.
I am talking abt using 1/4 wave stub as decoupling element
to make a (reduced size?) two band antenna.

This principle is used in commercial antennas like HY-GAIN AT-18
tower vertical and many others, stubs in line with element.
Orr in his antenna book is using orientation, open to center.but in line
with the element
So I am sure the principle works ok, and I was asking abt the different
orientation
alternatives. I understand that you would suggest 90 degree?
But does it really matter?

Designs do work, inventions rarely do. Yes I agree.
Therefore I am not going to build any complex mess where everything is
hanging of everything, just simple one time decoupling the element for
higher fequency.

73 Jouko OH5RM

4254. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 18:46:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NJ6Nj.6670$GE1.268@nlpi061.nbdc.sbc.com>
Source record: 26076

Richard Clark wrote:
> The Lattin design is easily constructed by a model, I've done several
> dozen variations. You can also model stubs that are oriented
> correctly and that will work.

Modeling real-world lossy stubs seems to violate
EZNEC's guidelines. How does one do it?
--
73, Cecil http://www.w5dxp.com

4255. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 18:51:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pO6Nj.6672$GE1.6169@nlpi061.nbdc.sbc.com>
Source record: 26077

JN wrote:
> So I am sure the principle works ok, and I was asking abt the different
> orientation
> alternatives. I understand that you would suggest 90 degree?
> But does it really matter?

The series stub can be coiled in a circle
as a lot of commercial antennas do.
--
73, Cecil http://www.w5dxp.com

4256. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 21:40:28 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <0406f163-8bdc-4864-b14e-83f2c091a85d@d45g2000hsc.googlegroups.com>
Source record: 26078

On Apr 15, 12:47 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Is there some reason why you think that it is only
> > necessary to account for the energy removed from the
> > circuit by heating?
>
> Heating is the only way that the energy can be removed
> from the ideal closed system.
>
> > And that you can ignore energy being removed in other ways?
>
> No energy is removed in other ways. There is no other
> way for energy to leave the ideal closed system.
>
> > And how do you know the ideal source does not dispose
> > of the energy it receives by getting warm?
>
> An ideal source has zero source impedance, by definition.
> All of the source impedance is contained in Rs, the
> ideal source resistor.

I see we need to back up a bit further.

Consider a 10 VDC ideal voltage source.

When 2 amps are flowing out of the positive terminal, the
ideal voltage source is delivering 20 joules per second
to the circuit.

Q1. Where does this energy come from?

When 1.5 amps is flowing into the positive terminal, the
ideal voltage source is absorbing 15 joules per second
from the circuit.

Q2. Where does this energy go?

Answer to both. We do not know and we do not care. An
ideal voltage source can deliver energy to a circuit
and it can remove energy from a circuit; that is part
of the definition of an ideal voltage source. It does
not matter how it does it.

But just as easily as it can supply energy, it can
remove it.

Without understanding these basics of the ideal voltage source, it will be impossible to correctly analyze circuits that include them.

Perhaps this has been the root cause of the misunderstandings.

...Keith

4257. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 21:50:22 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080415145022.f2af4bfa.rsparks@elltel.net>
Source record: 26079

On Tue, 15 Apr 2008 14:40:28 -0700 (PDT)
Keith Dysart <Keith.Dysart@gmail.com> wrote:

> On Apr 15, 12:47 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> > Keith Dysart wrote:
> > > Is there some reason why you think that it is only
> > > necessary to account for the energy removed from the
> > > circuit by heating?
> >
> > Heating is the only way that the energy can be removed
> > from the ideal closed system.
> >
> > > And that you can ignore energy being removed in other ways?
> >
> > No energy is removed in other ways. There is no other
> > way for energy to leave the ideal closed system.
> >
> > > And how do you know the ideal source does not dispose
> > > of the energy it receives by getting warm?
> >
> > An ideal source has zero source impedance, by definition.
> > All of the source impedance is contained in Rs, the
> > ideal source resistor.
>
> I see we need to back up a bit further.
>
> Consider a 10 VDC ideal voltage source.
>
> When 2 amps are flowing out of the positive terminal, the
> ideal voltage source is delivering 20 joules per second
> to the circuit.
>
> Q1. Where does this energy come from?
>
> When 1.5 amps is flowing into the positive terminal, the
> ideal voltage source is absorbing 15 joules per second
> from the circuit.
>
> Q2. Where does this energy go?
>
> Answer to both. We do not know and we do not care. An
> ideal voltage source can deliver energy to a circuit
> and it can remove energy from a circuit; that is part
> of the definition of an ideal voltage source. It does

> not matter how it does it.
>
> But just as easily as it can supply energy, it can
> remove it.
>
> Without understanding these basics of the ideal voltage
> source, it will be impossible to correctly analyze
> circuits that include them.
>
> Perhaps this has been the root cause of the misunderstandings.
>
> ...Keith

This WIKI article mentions the ability of an ideal voltage source to absorb power.

http://en.wikipedia.org/wiki/Voltage_source
--
73, Roger, W7WKB

4258. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 22:54:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ivba04l3f1lfgnqtf2t574rco8dfcmd8ne@4ax.com>
Source record: 26081

On Tue, 15 Apr 2008 21:44:02 +0300, "JN" <jnxx@vfemail.net> wrote:

>I understand that you would suggest 90 degree?
>But does it really matter?

Hi Jouko,

At right angles, yes. Does it matter? That depends on proximity to other conductors, including itself if you "coil" it around the radiator, or along the radiator.

When I looked at your first posting, I was confused by the single wire, and the text graphics should have been done in fixed font.

Keep the line conductors at least 3, preferably more, wire diameters from the radiator or themselves. Use the largest diameter for the multiplier of 3 (or more).

73's
Richard Clark, KB7QHC

4259. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 22:58:12 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <flca04tb5tkadbkkbfloa2uvf6q2mo4bgq@4ax.com>
Source record: 26082

On Tue, 15 Apr 2008 13:46:08 -0500, Cecil Moore <nospam@w5dxp.com>
wrote:
>Modeling real-world lossy stubs seems to violate
>EZNEC's guidelines. How does one do it?

One does not get hyperbolic about trivialities.

4260. Re: W9INN Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 23:05:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rtca045f7s52ecupn38ilhja4v3vmd3ac2@4ax.com>
Source record: 26083

On Tue, 15 Apr 2008 11:00:16 -0700 (PDT), rdetweil@hotmail.com wrote:

>
>Best way to build one of those is to reverse engineer one,
>
>I don't see where there is any posting of his disigns either.
>
>I suspect the traps are simple HiQ traps made from PVC and 14 Guage
>Magnet wire.

Hi Richard,

If you are talking about reverse engineering a lattin, that would be as satisfying as taking DNA samples from ghosts - it all hinges on finding one first.

There are enough examples on the Internet - too many, in fact, to say which is "authoritative." Doesn't matter as they are probably all equally incapable of meeting the general claim. Simply choose one, scale it from the bands it covers to those you want covered (yeah, easier said than done if it doesn't work in the first place).

73's
Richard Clark, KB7QHC

4261. Re: Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-15 23:18:26 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <ZtWdnRLtgug4tJjVnZ2dnUVZ_tOtnZ2d@earthlink.com>
Source record: 26080

<greenhornet@cato.com> wrote in message
news:6q7804110jouvh25te048icrd0uue7h7p0@4ax.com...
> Yup, ducting, meteor scatter etc can all provide extended VHF range.
> I've only done about 250 miles on 2 meters, though on 6 meters my
> farthest contact was about 3000 miles.....did as straight a line
> as I could on MS Streets & Trips to 'calculate' that so there may well
> be some error.
>

Evidently line of sight means different things. I take it as the common used formula of the square root of the height in feet is equal to the miles to ground modified by about 1.2 to 1.4 for the way the radio waves bend around the earth.

Good stations using ssb and a couple of hundred watts can work close to 250 miles almost any time on 2 meters and 432 MHz. I have worked over 800 miles (North Carolina to Texas and the end of Florida) several times on 2 meters. Also close to that on 432.

Not sure how you want to calculate it, but have also worked England via a satellite that was out to around 22,000 miles.

4262. Re: Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 03:22:35 UTC
From: greenhornet@cato.com
Message-ID: <55sa04h8356e7e5pb9likad6ig61eb3j9p@4ax.com>
Source record: 26084

On Tue, 15 Apr 2008 18:18:26 -0500, "Ralph Mowery"
<rmowery28146@earthlink.net> wrote:

>
><greenhornet@cato.com> wrote in message
>news:6q7804110jouvh25te048icrd0uue7h7p0@4ax.com...
>> Yup, ducting, meteor scatter etc can all provide extended VHF range.
>> I've only done about 250 miles on 2 meters, though on 6 meters my
>> farthest contact was about 3000 miles...........did as straight a line
>> as I could on MS Streets & Trips to 'calculate' that so there may well
>> be some error.
>>
>
>Evidently line of sight means different things. I take it as the common
>used formula of the square root of the height in feet is equal to the miles
>to ground modified by about 1.2 to 1.4 for the way the radio waves bend
>around the earth.
>
>Good stations using ssb and a couple of hundred watts can work close to 250
>miles almost any time on 2 meters and 432 MHz. I have worked over 800
>miles (North Carolina to Texas and the end of Florida) several times on 2
>meters. Also close to that on 432.
>
>Not sure how you want to calculate it, but have also worked England via a
>satellite that was out to around 22,000 miles.
>
I was not trying to imply my contacts were line of sight, guess I
didn't make that fully clear. Agree on the normal way to figure line
of sight - unless of course you are buying the "28 mile GMRS/FRS"
radios 8-}

4263. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 06:21:13 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <480595dd$0$23842$9b536df3@news.fv.fi>
Source record: 26085

```
.
>
> ----------------------------------------xxcenterxxx----
> I_________
>
> OR
>
> ----------------------------------------xxxxcenterxxx------
> ________I
>
>
> 73 Jouko OH5RM
>
```

Different text sizes seem to destroy the graphics, I used the medium size in
Outlook express.
Anyway the upper is OK , the lower should look like this

```
_____________________________________/center/_____
__________I
```

OH5RM

4264. Re: Re:Cobwebb feeder question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 10:50:46 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <YRkNj.158514$833.75346@newsfe17.ams2>
Source record: 26086

I think I have a problem on the 28MHz band with the homebrew Cobwebb that I have made.

The SWR is 1.1 and is tuned at 28.500MHz.

If I listen to this band it receives strongest at 28.500 and drops off sharply after about 300KHz each side along with a rise in SWR It can reduce a S9 signal down to S1 on both sides.

Is this how the Cobwebb performs or is there some thing wrong with it?

I like to listen to a few people on 27MHz that I know. They are only 5 miles away. I have no problem hearing them on a G5RV but I can only just here them on the Cobwebb.

Many thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message news:TauEj.45538$M9.39388@fe3.news.blueyonder.co.uk...

>I have some questions about the choke and feed line on the Cobwebb.
>
>
>
> Does the co-axial choke balun work better if the cable is wound on top of
> each other into a tube shape rather than just winding it round and zip
> tying it together in a round bundle?
>
>
>
> Can I attach a SO239 Chassis socket to the end of the box where the coax
> enters and then plug a PL259 into that for the feeder or will the socket
> allow current to bypass the choke balun and enter the feed line?
>
>
>
> Thanks
>
>
>
>

4265. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 11:59:38 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <83qb045pr80p3eu3jjmk432kafe0780q1c@4ax.com>
Source record: 26087

On Wed, 16 Apr 2008 09:21:13 +0300, "JN" <jnxx@vfemail.net> wrote:

>.
>>
>> ----------xxcenterxxx----
>> I_________
>>
>> OR
>>
>> ----------xxxxcenterxxx------
>> ________I
>>
>>
>> 73 Jouko OH5RM
>>
>
>Different text sizes seem to destroy the graphics, I used the medium size in
>Outlook express.
>Anyway the upper is OK , the lower should look like this
>
>_____/center/_____
> __________I
>
>OH5RM
>

from OP
>My question:
>Is there any difference if the shorted end is pointing to the center or to
>the tip of dipole.
>Only the stub portion has two wires in parallell, the rest is only one wire.

Jouko, I noticed this thread took a detour, but I never saw anyone
actually try to answer your question. I too, am looking to see the
answer on this.

It is amazing, all this talk about a Lattin antenna, that appears to
have lots of sites talking about how it works, but no one actually
having built one or used one, and a simple "yes" or "no" would answer
your question.

I don't have the answers or the means of testing one at this time. If
you get the answer direct, please post it here.

Thanks
Buck

N4PGW
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4266. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 13:32:36 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <GdnNj.159033$833.32140@newsfe17.ams2>
Source record: 26088

I think I have a problem on the 28MHz band with the homebrew Cobwebb that I have made.

The SWR is 1.1 and is tuned at 28.500MHz.

If I listen to this band it receives strongest at 28.500 and drops off sharply after about 300KHz each side along with a rise in SWR It can reduce a S9 signal down to S1 on both sides.

Is this how the Cobwebb performs or is there some thing wrong with it?

I like to listen to a few people on 27MHz that I know. They are only 5 miles away. I have no problem hearing them on a G5RV but I can only just here them on the Cobwebb.

Many thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message news:TauEj.45538$M9.39388@fe3.news.blueyonder.co.uk...

>I have some questions about the choke and feed line on the Cobwebb.
>
>
>
> Does the co-axial choke balun work better if the cable is wound on top of
> each other into a tube shape rather than just winding it round and zip
> tying it together in a round bundle?
>
>
>
> Can I attach a SO239 Chassis socket to the end of the box where the coax
> enters and then plug a PL259 into that for the feeder or will the socket
> allow current to bypass the choke balun and enter the feed line?
>
>
>
> Thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message news:YaCDj.297496$3m6.132261@fe2.news.blueyonder.co.uk...
> Thanks Dave for all the info. I will give it ago with the original
> spacing. I have also ordered the MFJ-259B to help tune it. Just have to
> work out how to use it properly. Hi.
>
> 73
>
>

> "Dave Platt" <dplatt@radagast.org> wrote in message
> news:guaua5-ijg.ln1@radagast.org...
>> In article <aiPCj.41541$nw4.38668@fe1.news.blueyonder.co.uk>,
>> Barrett <barrett@blueyounder.co.uk> wrote:
>>
>>>What I meant to say, is there any benefits in performance if I changed
>>>all
>>>the gaps to 3 inch's rather than keep them to the original Cobwebb spec?
>>
>> Changing the end spacing in this sort of antenna alters the
>> capacitance between the ends. This has a very significant effect on
>> the impedance at the feedpoint, and thus on the SWR. If the original
>> design had a different spacing and had a good SWR match, and you
>> change the spacing to 3" and don't make any compensating change to the
>> wire length, I suspect that you'll find that the antenna is no longer
>> as well matched and won't work as well with a 50-ohm feed source.
>>
>> If the changes in tip spacing / capacitance aren't too serious, you
>> could probably compensate with an antenna tuner/transmatch. There
>> would be some amount of excess loss in the feedline due to the higher
>> SWR, but it might not be enough to affect performance significantly.
>>
>> On the other hand, if the CobWebb with the 3" spacing has had its
>> radiator lengths adjusted to compensate for the change in tip-to-tip
>> capacitance, it might match up just fine. If that's the case, then
>> I'd expect that its performance would probably be indistinguishable
>> from an equally-well-matched Cobbweb with different tip spacings.
>>
>> When I built a 2-meter halo antenna, I found that a change of 1/16" in
>> the tip spacing made a big difference in the SWR. After several
>> attempts to construct a tip spacer that was neither too wide nor too
>> narrow (but was *just* right, like a good bowl of porridge) I gave up.
>> I just used one of the "too wide" spacers, and then added a bit of
>> aluminum tape at the end of one tip and trimmed it until the SWR was
>> as good-as-it-got.
>>
>> --
>> Dave Platt <dplatt@radagast.org> AE6EO
>> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>> I do _not_ wish to receive unsolicited commercial email, and I will
>> boycott any company which has the gall to send me such ads!
>>
>
>
>

4267. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 13:39:27 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <5knNj.159036$833.135848@newsfe17.ams2>
Source record: 26089

When I put the homebrew HF traps in my wire Ariel how do I calculate the
length of wire before and after each trap for each band?

Thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:2fzFj.261$w51.110@fe2.news.blueyonder.co.uk...
> Sorry about that, I should of said the length of my garden.
> From the bottom of the garden up to the wall of the house it is 60 feet
> and I do not have any chimney stacks to run wires from. My neighbours are
> happy with a 20 foot pole at the bottom of the garden. Any higher and
> there not happy about it so that's it for the height. At least there ok
> with a 20' pole. I am limited on length of wire and unfortunately the
> height as well. So any help is welcome.
>
>
> "Owen Duffy" <none@no.where> wrote in message
> news:Xns9A6B4A275FA64nonenowhere@61.9.191.5...
>> "Barrett" <barrett@blueyounder.co.uk> wrote in
>> news:InsFj.65676$M9.40999@fe3.news.blueyonder.co.uk:
>>
>>> I have up a half size G5RV and want to add 80 metres it. I don't have
>>> the space for a full size.
>>>
>>> What is best to go for a 80m inductor kit or a pair of 80m traps?
>>>
>>> Thanks
>>>
>>>
>>
>> Reading through the responses, it seems that your requirement is actually
>> for a shortened wire antenna for 80 and 40.
>>
>> The starting materials are a half sized G5RV (which is not a G5RV, but
>> one of the many variants).
>>
>> You could salvage materials from the G5RV to make a trapped 80/40 dipole.
>>
>> (The traps do not simply work as an on/off switch to disconnect the end
>> sections as implied by some. They might be seen to work that way if they
>> were resonant at the operating frequency, but they need not be, and there
>> is good reason for them to not be resonant at any operating frequency.)
>>
>> Google around for designs for an 80/40 trapped dipole, there are plenty.
>> Decent articles will include details of the physical construction of the

>> traps.
>>
>> There is a design on my web site, but it is probably too long for you (we
>> don't know your length requirements other than less than a G5RV, you
>> chose to not share that). Nevertheless, it might be an interesting read,
>> see http://www.vk1od.net/coaxtrap/8040.htm .
>>
>> These type of antennas are affected by their environment, so you should
>> expect to need to fine tune the configuration. Be wary of varying
>> specific trap designs, you might dig a hole for yourself.
>>
>> Owen
>
>

4268. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 14:01:24 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <480601b7$0$23850$9b536df3@news.fv.fi>
Source record: 26090

> Jouko, I noticed this thread took a detour, but I never saw anyone
> actually try to answer your question. I too, am looking to see the
> answer on this.
>
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com

Yes Buck it is often difficult to get an answer just to the question you are asking.
Anyway very soon all snow has melted away here and then its possible to testbuild it.

73 Jouko OH5RM

4269. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 14:04:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <CHnNj.5246$GO4.2915@newssvr19.news.prodigy.net>
Source record: 26091

Keith Dysart wrote:
> Q1. Where does this [source] energy come from?

An ideal source simply supplies a fixed voltage
devoid of any concern for efficiency or where
the energy comes from. This results in an
average steady-state number of joules being
supplied to the closed system per second.

> Q2. Where does this [reverse] energy go?

Once introduced into a closed system, it obeys
the laws of physics including the conservation
of energy/momentum principles and the principle
of superposition of forward and reverse
electromagnetic fields. You can use an ideal
directional wattmeter to track the forward and
reverse energy flows through the ideal source.

> Answer to both. We do not know and we do not care.

I have been telling you that your concepts violate
the conservation of energy principle and now you
have essentially admitted it.

> But just as easily as it can supply energy, it can
> remove it.

I'm afraid you will find that once the ideal source
has supplied the energy to a closed system, that energy
cannot be destroyed. If you are allowed to willy-nilly
suspend the conservation of energy principle, then any
magical event is possible and there is no valid reason
to even try to track the energy. It is one thing to
assume an introduction of steady-state power to a
closed system from an ideal source. It is another
thing entirely to allow destruction of that energy
once it has been introduced.
--
73, Cecil http://www.w5dxp.com

4270. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 14:30:29 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <94oNj.9242$XF3.1448@trnddc04>
Source record: 26092

"JN" <jnxx@vfemail.net> wrote in message
news:480601b7$0$23850$9b536df3@news.fv.fi...
>> Jouko, I noticed this thread took a detour, but I never saw anyone
>> actually try to answer your question. I too, am looking to see the
>> answer on this.
>>
>> 73 for now
>> Buck, N4PGW
>>
>> www.lumpuckeroo.com
>
> Yes Buck it is often difficult to get an answer just to the question you
> are asking.
> Anyway very soon all snow has melted away here and then its possible to
> testbuild it.
>
> 73 Jouko OH5RM

Hi Jouko

I thought Richard's statement that modeling would tell you about how the
design might perform, was good advice. If you use EZNEC, I'd be willing to
help you if you dont already know how to use it to model your antenna.

Jerry KD6JDJ

4271. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 14:31:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <65oNj.5248$GO4.2516@newssvr19.news.prodigy.net>
Source record: 26093

Roger Sparks wrote:
> This WIKI article mentions the ability of an ideal voltage source to absorb power.

It says: "A primary voltage source can supply (or absorb)
energy ..."

That's easy to comprehend for a battery source. Not so
easy for an ideal RF source with a zero series impedance.
If we define an RF source as a coherent RF battery, anything
is possible (at least in our minds). Which of the following
makes more sense?

1. Destructive interference energy is stored somewhere
in the system and delivered back to the system 90 degrees
later in the cycle just as it is by a physical inductor
or capacitor.

2. An RF battery inside the ideal source stores the extra energy
in coherent RF form and delivers it back to the system as needed.

> http://en.wikipedia.org/wiki/Voltage_source

It also says: "The internal resistance of an ideal voltage
source is zero;" So exactly how does something with an
internal resistance of zero absorb any power?
--
73, Cecil http://www.w5dxp.com

4272. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 14:34:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1e3c045o4ufrjap8bs47fhpbs8b5dieg26@4ax.com>
Source record: 26094

On Wed, 16 Apr 2008 17:01:24 +0300, "JN" <jnxx@vfemail.net> wrote:

>> Jouko, I noticed this thread took a detour, but I never saw anyone
>> actually try to answer your question. I too, am looking to see the
>> answer on this.
>>
>> 73 for now
>> Buck, N4PGW
>>
>> www.lumpuckeroo.com
>
>Yes Buck it is often difficult to get an answer just to the question you are
>asking.
> Anyway very soon all snow has melted away here and then its possible to
>testbuild it.
>
>73 Jouko OH5RM
>

Repeated message seeing that you both missed it:

On Tue, 15 Apr 2008 21:44:02 +0300, "JN" <jnxx@vfemail.net> wrote:

>I understand that you would suggest 90 degree?
>But does it really matter?

Hi Jouko,

At right angles, yes. Does it matter? That depends on proximity to
other conductors, including itself if you "coil" it around the
radiator, or along the radiator.

When I looked at your first posting, I was confused by the single
wire, and the text graphics should have been done in fixed font.

Keep the line conductors at least 3, preferably more, wire diameters
from the radiator or themselves. Use the largest diameter for the
multiplier of 3 (or more).

73's
Richard Clark, KB7QHC

73's
Richard Clark, KB7QHC

4273. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 14:36:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <J9oNj.5249$GO4.1601@newssvr19.news.prodigy.net>
Source record: 26095

Richard Clark wrote:
> Cecil Moore <nospam@w5dxp.com> wrote:
>> Modeling real-world lossy stubs seems to violate
>> EZNEC's guidelines. How does one do it?
>
> One does not get hyperbolic about trivialities.

Is 24 dBi omnidirectional gain from a vertical
antenna enough to "get hyperbolic about
trivialities"?

http://www.w5dxp.com/SUPRGAIN.EZ
--
73, Cecil http://www.w5dxp.com

4274. Re: 80m inductor kit or a pair of 80m traps?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 14:40:25 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3k3c04pn5dd9b6nq5qg53drk2prrl2p5fg@4ax.com>
Source record: 26096

On Wed, 16 Apr 2008 14:39:27 +0100, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>When I put the homebrew HF traps in my wire Ariel how do I calculate the
>length of wire before and after each trap for each band?

Hi Barrett,

1. You either copy an existing design and follow their specifications
for this explicitly;

2. You model the design and plan to trim length, and/or adjust turns;

3. You throw something together and (again) plan to trim length,
and/or adjust turns.

The placement of the coil along the radiator by actual distance and
proportion, seriously changes its requirements for any application.
That is to say, a 50 turn coil, with turns every 3mm, and a 4cm
diameter will work for one frequency at one position for one length of
wire ONLY. And even height above ground may upset this too; but
perhaps not as much as the first set of variables.

73's
Richard Clark, KB7QHC

4275. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 14:42:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <m04c0410cqpra259n68qms0qef84u51j83@4ax.com>
Source record: 26097

On Wed, 16 Apr 2008 14:32:36 +0100, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>If I listen to this band it receives strongest at 28.500 and drops off
>sharply after about 300KHz each side along with a rise in SWR It can reduce
>a S9 signal down to S1 on both sides.

Hi Barrett,

SWR change within that small a portion of frequency should not affect
receive to the degree you describe.

>Is this how the Cobwebb performs or is there some thing wrong with it?

Is it pointed in the right direction? Can you manually tune it?

73's
Richard Clark, KB7QHC

4276. Re: W9INN Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 14:44:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hhoNj.1339$FF6.910@newssvr29.news.prodigy.net>
Source record: 26098

Richard Clark wrote:
> If you are talking about reverse engineering a lattin, that would be
> as satisfying as taking DNA samples from ghosts - it all hinges on
> finding one first.

Has anyone tried to build just a dual-bander?
--
73, Cecil http://www.w5dxp.com

4277. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 15:17:12 UTC
From: zoe@eircom.net
Message-ID: <fba46514-1b58-4d9b-bb82-a9c0a2797ecb@k13g2000hse.googlegroups.com>
Source record: 26099

HI
Theory says that whatever condition exists at far end of 1/4 wave
stub will
appear at fed end. ie. if far end is left open a high impedance will
appear at fed end, at resonant freq. So it would appear that the
shorted end should be nearest
to feed point of antenna. The centre of dipole or bottom of a
vertical.
Hope that makes sense!.............................Rod EI3CZ

4278. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 15:26:17 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <4806159b$0$23850$9b536df3@news.fv.fi>
Source record: 26100

> I thought Richard's statement that modeling would tell you about how the
> design might perform, was good advice. If you use EZNEC, I'd be willing
> to help you if you dont already know how to use it to model your antenna.
>
> Jerry KD6JDJ
>

Jerry, thanks for the offert.
I dont know how good these modelling programs are in this situation.
But if it is easy, so could somebody do the following:

Take 20m of wire, that is half of a dipole.
Put a 1/4 electric wavelength shorted stub for 10,1MHz so that the open end is 7,25m from center and the shorted end pointing to the tip of antenna. One side of stub is the 20m wire itself, like in the upper picture. Ignore all velocity factors to make it sinple.
Now tell me what are the resonance frequencies of that kind of element and if possible feed point impedande (80m and 30m)

I know I could do it myself but as you know learning to use a new program reliably takes lot of time.

73 Jouko OH5RM

4279. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 15:43:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <H8pNj.4320$iK6.3645@nlpi069.nbdc.sbc.com>
Source record: 25951

zoe@eircom.net wrote:
> Theory says that whatever condition exists at far end of 1/4 wave
> stub will appear at fed end.

That's true for an ideal 1/2WL stub but for an
ideal 1/4WL stub, an open at the far end will
appear as a short at the feed end and a short
at the far end will appear as an open at the
feed end.
--
73, Cecil http://www.w5dxp.com

4280. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 15:54:04 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <wipNj.7849$El4.5871@trnddc05>
Source record: 25952

"JN" <jnxx@vfemail.net> wrote in message
news:4806159b$0$23850$9b536df3@news.fv.fi...
>> I thought Richard's statement that modeling would tell you about how the
>> design might perform, was good advice. If you use EZNEC, I'd be willing
>> to help you if you dont already know how to use it to model your antenna.
>>
>> Jerry KD6JDJ
>>
>
> Jerry, thanks for the offert.
> I dont know how good these modelling programs are in this situation.
> But if it is easy, so could somebody do the following:
>
> Take 20m of wire, that is half of a dipole.
> Put a 1/4 electric wavelength shorted stub for 10,1MHz so that the open
> end is 7,25m from center and the shorted end pointing to the tip of
> antenna. One side of stub is the 20m wire itself, like in the upper
> picture. Ignore all velocity factors to make it sinple.
> Now tell me what are the resonance frequencies of that kind of element and
> if possible feed point impedande (80m and 30m)
>
> I know I could do it myself but as you know learning to use a new program
> reliably takes lot of time.
>
> 73 Jouko OH5RM

Hi Jouko

I am not sure I am reading your text properly. But, I did model a 40
meter wire with a trap on each side. You are welcome to E-mail me if you
want to see what EZNEC says about *my* model. Maybe you can help me model
your concept.
I have a friend in vasa Finland who can get you any information about
contacting me. Google Patrik Tast.

Jerry KD6JDJ

4281. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 16:48:34 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <_5qNj.2454$nr1.586@newsfe13.phx>
Source record: 25953

Jouko, OH5RM wrote:

> Take 20m of wire, that is half of a dipole.
> Put a 1/4 electric wavelength shorted stub for 10,1MHz so that the open end
> is 7,25m from center and the shorted end pointing to the tip of antenna. One
> side of stub is the 20m wire itself, like in the upper picture.

I did just that with EZNEC, but with a free-space dipole. Without the
stubs, the antenna resonated at 3.6 MHz. With the stubs, that dropped
to 2.75 MHz and additional low-impedance points were noted at 6.5 and
11 MHz. The patterns at 2.75 and 6.5 had the desired dipole shape,
but the 11 MHz pattern had multiple lobes.

Jim Bromley, K7JEB
Glendale, AZ, USA

4282. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 16:50:18 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <4806294c$0$23833$9b536df3@news.fv.fi>
Source record: 25954

> Repeated message seeing that you both missed it:
>
> 73's
> Richard Clark, KB7QHC

Hi Richard,

No everything red carefully.
I fully understand what you are suggesting.
Cutting the element and insertin stub at right angles
Sure works OK but that is no answer to my original question, HI

73 Jouko OH5RM

4283. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 17:38:26 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <mQqNj.36900$tw3.17507@trnddc03>
Source record: 25955

<zoe@eircom.net> wrote in message
news:fba46514-1b58-4d9b-bb82-a9c0a2797ecb@k13g2000hse.googlegroups.com...
> HI
> Theory says that whatever condition exists at far end of 1/4 wave
> stub will
> appear at fed end. ie. if far end is left open a high impedance will
> appear at fed end, at resonant freq. So it would appear that the
> shorted end should be nearest
> to feed point of antenna. The centre of dipole or bottom of a
> vertical.
> Hope that makes sense!.....Rod EI3CZ

You have it just backwards. A 1/4 wave stub is an impedance converter. i.e.
a short at one end appears as an open at the other end.
Dale W4OP

4284. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 17:40:52 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <7ddc04hbg25ohfqr3352unhbhfpg7epqtr@4ax.com>
Source record: 25956

On Wed, 16 Apr 2008 09:36:27 -0500, Cecil Moore <nospam@w5dxp.com>
wrote:
>Is 24 dBi omnidirectional gain from a vertical
>antenna enough to "get hyperbolic about
>trivialities"?

Hysterical AND hyperbolic apparently.

4285. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 18:00:40 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <klec045q9dfujhur4s4n99355sjvmhio1e@4ax.com>
Source record: 25957

On Wed, 16 Apr 2008 19:50:18 +0300, "JN" <jnxx@vfemail.net> wrote:

>> Repeated message seeing that you both missed it:
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Hi Richard,
>
>No everything red carefully.
>I fully understand what you are suggesting.
>Cutting the element and insertin stub at right angles
>Sure works OK but that is no answer to my original question, HI

Your original question:
>>>My question:
>>>Is there any difference if the shorted end is pointing to the center or to
>>>the tip of dipole.
My specific response:
Keep the line conductors at least 3, preferably more, wire diameters
from the radiator or themselves.

Certainly more was said, but you have shied from terse responses in
the past.

You have a tuned line, that is illustrated several times by you. You
have a radiator, that is illustrated several times by you. You have
asked about the line in proximity to the radiator several times, that
is illustrated several times by you (you really need to use fixed font
to do this, it is the protocol of allowing everyone to see what you
mean). I have responded about the proximity of the line to the
radiator several times with a very simple rule.

The line going radially away from the radiator (at right angle)
absolutely satisfies that rule. Keeping the line away from the
radiator (at a 0 degree angle, either up or down towards a tip) can
also satisfy that rule - but only if you observe the rule. If you do
not observe the rule you will have problems. You may have problems
even if you do - but your question lacks your requirements.

So, ostensibly, yes there is a difference - this is just the nature of
life. The real question is would it matter to you? Some folks worry
over half a dB, others can live with -10dB. This has all been
discussed to some length by others, in related topics about hairpin
matches. A general reading of the postings helps put specific
problems into context and relationship. This means browse the topics

that are active - not just your own.

Now, do you have an original question that has gone without an answer?

73's
Richard Clark, KB7QHC

4286. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 18:16:00 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080416111600.45b2ed7e.rsparks@elltel.net>
Source record: 25958

On Wed, 16 Apr 2008 09:31:32 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > This WIKI article mentions the ability of an ideal voltage source to absorb power.
>
> It says: "A primary voltage source can supply (or absorb)
> energy ..."
>
> That's easy to comprehend for a battery source. Not so
> easy for an ideal RF source with a zero series impedance.

Unless we allow it absorb energy with the same ease that it emits energy.

> If we define an RF source as a coherent RF battery, anything
> is possible (at least in our minds). Which of the following
> makes more sense?
>
> 1. Destructive interference energy is stored somewhere
> in the system and delivered back to the system 90 degrees
> later in the cycle just as it is by a physical inductor
> or capacitor.
>
No, the problem here is that the individual switched batteries that would make up this system would not be equally discharged. Some would actually gain charge, and never deliver power to the system. So I don't like this choice.

> 2. An RF battery inside the ideal source stores the extra energy
> in coherent RF form and delivers it back to the system as needed.
>
This sounds identical to the 1st choice. You can make such a circuit with many individually switched batteries so it becomes a good test of the theory. Again, some of the batteries would actually gain energy.

> > http://en.wikipedia.org/wiki/Voltage_source
>
> It also says: "The internal resistance of an ideal voltage
> source is zero;" So exactly how does something with an
> internal resistance of zero absorb any power?

How do we deal with the I x E power when the reflected voltage is greater than the forward voltage from the source? One way is to ignore it and only deal with averages. Another is to allow the ideal voltage source to absorb power. A third way is to allow the energy to be stored in constructive and destructive interference some place in the system. A fourth way is to allow reflections from the ideal voltage source with the result that power will build internally and the phase shift of the resultant system wave will shift farther away from

the driving voltage, until some stable power input to disipation rate is reached.

I like your RF battery idea. It could actually be built to a close approximation of an actual sine wave.
--
73, Roger, W7WKB

4287. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 18:36:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pGrNj.9540$2g1.8499@nlpi068.nbdc.sbc.com>
Source record: 25959

Roger Sparks wrote:
> Cecil Moore <nospam@w5dxp.com> wrote:
>> That's easy to comprehend for a battery source. Not so
>> easy for an ideal RF source with a zero series impedance.
>
> Unless we allow it absorb energy with the same ease that it emits energy.

How can a device with a zero impedance, i.e. zero resistance,
zero capacitance, and zero inductance, absorb energy? We can
certainly allow it to magically absorb energy but of what
use is that?

> A third way is to allow the energy to be stored in constructive
> and destructive interference some place in the system.

As you know, this is the one I prefer. Another thing that
neither you nor Keith has done is to account for the
reverse-flowing energy through the source. I suspect if
that was done, every thimbleful of energy would be
accounted for. So far, net energy calculations have been
used on one side of Rs and component energy calculations
on the other. That would work only if Rs was not dissipating
power.
--
73, Cecil http://www.w5dxp.com

4288. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 18:51:25 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <vVrNj.33308$fx2.26563@newsfe08.ams2>
Source record: 25960

Hi Richard
I have turned it by hand, there is some difference in signal but not much.
The Ariel is 20ft off the ground,, the same as the G5RV.
It doesn't seem to be working right. But I'm not sure how the original
worked.

Thanks

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:m04c0410cqpra259n68qms0qef84u51j83@4ax.com...
> On Wed, 16 Apr 2008 14:32:36 +0100, "Barrett"
> <barrett@blueyounder.co.uk> wrote:
>
>>If I listen to this band it receives strongest at 28.500 and drops off
>>sharply after about 300KHz each side along with a rise in SWR It can
>>reduce
>>a S9 signal down to S1 on both sides.
>
> Hi Barrett,
>
> SWR change within that small a portion of frequency should not affect
> receive to the degree you describe.
>
>>Is this how the Cobwebb performs or is there some thing wrong with it?
>
> Is it pointed in the right direction? Can you manually tune it?
>
> 73's
> Richard Clark, KB7QHC
>

4289. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 18:53:39 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <48064635$0$23834$9b536df3@news.fv.fi>
Source record: 25961

Here is what I mean:

http://farm3.static.flickr.com/2208/2419428284_1c7fd3ba40_o.jpg

Measures taken from hat, but if one could say the resonance points and
impedances I would be grateful
Originally I asked the difference if you turn the stub 180 degrees.

73 Jouko OH5RM

4290. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 19:24:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <7ekc04ti7db8l4dati8oa4kk9mo4brfgek@4ax.com>
Source record: 25962

On Wed, 16 Apr 2008 19:51:25 +0100, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>I have turned it by hand, there is some difference in signal but not much.
>The Ariel is 20ft off the ground,, the same as the G5RV.
>It doesn't seem to be working right. But I'm not sure how the original
>worked.

Hi Barrett,

That is line of sight, easily. As you suspect, you should hear your
friends. Your turning it is OK. Your SWR readings would suggest your
line is OK, your antenna is OK. Aside from using a manual tuner (you
say nothing to my question there), that leaves the receiver as being
suspect.

73's
Richard Clark, KB7QHC

4291. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 19:39:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <TBsNj.1912$I55.1094@newssvr22.news.prodigy.net>
Source record: 25963

Jim, K7JEB wrote:
> Jouko, OH5RM wrote:
>
>> Take 20m of wire, that is half of a dipole.
>> Put a 1/4 electric wavelength shorted stub for 10,1MHz so that the open end
>> is 7,25m from center and the shorted end pointing to the tip of antenna. One
>> side of stub is the 20m wire itself, like in the upper picture.
>
> I did just that with EZNEC, but with a free-space dipole. Without the
> stubs, the antenna resonated at 3.6 MHz. With the stubs, that dropped
> to 2.75 MHz and additional low-impedance points were noted at 6.5 and
> 11 MHz. The patterns at 2.75 and 6.5 had the desired dipole shape,
> but the 11 MHz pattern had multiple lobes.

Great minds think alike. :-) I was doing the same thing
at different frequencies. I noticed that a 1/2WL dipole
with 1/4WL stubs on each end tends to resonate on frequencies
in a ratio of about 2.57:1. 18.14/2.57=7.06 so such an
antenna should be resonant on both 17m and 40m. EZNEC
agrees. Here are the approximate dimensions for the dualband
40m/17m antenna. Cutting and trying will be necessary for
fine tuning to resonance. Note that the antenna is about 13
feet shorter than a 1/2WL dipole on 40m. It has a dipole
pattern on both 40m and 17m and a 50 ohm SWR less than 2:1
on both bands. It appears to be linear-loaded on 40m and
stub-matched on 17m.

```
26.8' 26.8'
+-------------------------FP-------------------------+
| |
+------------ ------------+
13.3' 13.3'
```

Since 10.125/2.57=3.9 MHz, this antenna should be scalable
to become a dualbander on 75m and 30m.
--
73, Cecil http://www.w5dxp.com

4292. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 19:41:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <kkkc04hab8f2hknv8qah0n6dbpf8ue7ekl@4ax.com>
Source record: 25964

On Wed, 16 Apr 2008 21:53:39 +0300, "JN" <jnxx@vfemail.net> wrote:

>Here is what I mean:
>
>http://farm3.static.flickr.com/2208/2419428284_1c7fd3ba40_o.jpg
>
>Measures taken from hat, but if one could say the resonance points and
>impedances I would be grateful
>Originally I asked the difference if you turn the stub 180 degrees.

Hi Jouko,

If we are looking at four wire segments to the left of the center of the dipole, then this is a lattin design element. All my comments about that stand.

As for speculating where it resonates, there is not enough dimensioning to be exact (while there is little enough to make a poor guess).

I would only ask, do you want it to act as a trap such that the radiating portion of the antenna is confined to the right (as illustrated in your link) of this construction (like a conventional trap for a dual band operation)? Or do you want the element to act as linear loading to make the entire structure resonate at a shorter physical length?

If you turn the element, yes, it will make a difference. There is still a long road to travel to make it "work" and it probably won't look like your link's illustration and it won't resonate where you expect it to.

You still have to observe the separation of the two lines by at least 3 times the largest diameter wire/rod.

73's
Richard Clark, KB7QHC

4293. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 19:51:25 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <1NsNj.7477$Ho5.3023@trnddc01>
Source record: 25965

"JN" <jnxx@vfemail.net> wrote in message
news:4806159b$0$23850$9b536df3@news.fv.fi...
>> I thought Richard's statement that modeling would tell you about how the
>> design might perform, was good advice. If you use EZNEC, I'd be willing
>> to help you if you dont already know how to use it to model your antenna.
>>
>> Jerry KD6JDJ
>>
>
> Jerry, thanks for the offert.
> I dont know how good these modelling programs are in this situation.
> But if it is easy, so could somebody do the following:
>
> Take 20m of wire, that is half of a dipole.
> Put a 1/4 electric wavelength shorted stub for 10,1MHz so that the open
> end is 7,25m from center and the shorted end pointing to the tip of
> antenna. One side of stub is the 20m wire itself, like in the upper
> picture. Ignore all velocity factors to make it sinple.
> Now tell me what are the resonance frequencies of that kind of element and
> if possible feed point impedande (80m and 30m)
>
> I know I could do it myself but as you know learning to use a new program
> reliably takes lot of time.
>
> 73 Jouko OH5RM

Hi Jouko

I suspect that you either understimate your ability to learn or you arent aware of how EZNEC works. I submit to you that a modeling program is the best method of establishing the antenna design you are describing. You can probably learn everything you need to know about your antenna within a few hours of thinking on your own. You dont need to attend a class room course on use of the EZNEC program.
I considered computer modeling to be beyond my ability till Richard Clark encouraged me to 'just try it'. I tried it, and I consider the program to be the best tool a HAM could have for developing antennas. I am sure you will figure out how to model your "trap" antenna and learn how well it will work for you within a very short time. You even have access to some EZNEC experts from this rraa group. Try it, you'll like it.

Jerry KD6JDJ

4294. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 20:01:36 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <XWsNj.12276$CO2.6310@newsfe12.phx>
Source record: 25966

After a bit of e-mail correspondence and the
exchange of a single, crucial, 1000-word, picture,
I think we've bottomed-out on this. I'm seeing two,
distinct, dipole-like responses, one at 3.6 MHz
and one at 10.2 MHz. The EZNEC outputs and
source file are at:

http://www.arizona-am.net/test/Antenna_Stubs_SWR.pdf

http://www.arizona-am.net/test/Antenna_Stubs_picture.pdf

http://www.arizona-am.net/test/Antenna_Stubs_10MHz_SWR.pdf

http://www.arizona-am.net/test/Antenna_Stubs_3MHz_SWR.pdf

http://www.arizona-am.net/test/Antenna_Stubs_wires.pdf

http://www.arizona-am.net/test/Antenna_Stubs_Patt.pdf

http://www.arizona-am.net/test/Ant_End_Stubs.EZ

Jim, K7JEB

4295. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 20:37:56 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <pstNj.14343$Q95.2303@newsfe23.ams2>
Source record: 25967

Hi Richard

I have a manual tuner and two auto tuners that I have used and it makes no difference to improve the received signal. I have also used two different radios with the same outcome.
I'm wondering if the G5RV is to close and is causing this or if the square 10"x10" mounting plat that I have used in the centre of the Cobwebb might be causing the problem.

The G5RV is at the same height as the homebrew Cobwebb and they are about 15ft apart. All other bands do not sharply drop off like 28MHz does on receive signals.

Thanks

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:7ekc04ti7db8l4dati8oa4kk9mo4brfgek@4ax.com...
> On Wed, 16 Apr 2008 19:51:25 +0100, "Barrett"
> <barrett@blueyounder.co.uk> wrote:
>
>>I have turned it by hand, there is some difference in signal but not much.
>>The Ariel is 20ft off the ground,, the same as the G5RV.
>>It doesn't seem to be working right. But I'm not sure how the original
>>worked.
>
> Hi Barrett,
>
> That is line of sight, easily. As you suspect, you should hear your
> friends. Your turning it is OK. Your SWR readings would suggest your
> line is OK, your antenna is OK. Aside from using a manual tuner (you
> say nothing to my question there), that leaves the receiver as being
> suspect.
>
> 73's
> Richard Clark, KB7QHC

4296. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 21:20:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <r6rc04hvgfm2sftutpp29a15mbq0mmp775@4ax.com>
Source record: 25968

On Wed, 16 Apr 2008 21:37:56 +0100, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>Hi Richard
>
>I have a manual tuner and two auto tuners that I have used and it makes no
>difference to improve the received signal. I have also used two different
>radios with the same outcome.
>I'm wondering if the G5RV is to close and is causing this or if the square
>10"x10" mounting plat that I have used in the centre of the Cobwebb might be
>causing the problem.
>
>The G5RV is at the same height as the homebrew Cobwebb and they are about
>15ft apart. All other bands do not sharply drop off like 28MHz does on
>receive signals.
>
>Thanks

Hi Barrett,

One other thing that comes to mind is you may be cross-polarized,
which for line of sight transmission (and this close proximity so
qualifies) can exhibit substantially depressed signals.

This would mean that your Cobwebb homebrew is very much horizontally
polarized, and that your G5RV has enough slope to it to be
sufficiently vertical to your buddie's vertical signals.

I will let you sort out the particulars - like the buddies are also
vertical (if not, well, there goes that theory).....

73's
Richard Clark, KB7QHC

4297. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 22:04:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RJuNj.4379$iK6.334@nlpi069.nbdc.sbc.com>
Source record: 25969

Jim, K7JEB wrote:
> After a bit of e-mail correspondence and the
> exchange of a single, crucial, 1000-word, picture,
> I think we've bottomed-out on this. I'm seeing two,
> distinct, dipole-like responses, one at 3.6 MHz
> and one at 10.2 MHz.

10.2/3.6=2.8 It appears that frequency ratios
between about 2.4 and 2.8 can be easily achieved.
That's 75m+30m, 40m+17m, 30m+12m.

Unfortunately, a 2:1 ratio seems difficult to
achieve.
--
73, Cecil http://www.w5dxp.com

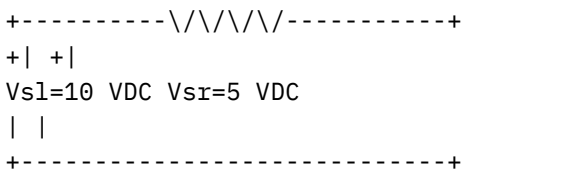
4298. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 22:52:20 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <888784c9-6ef0-4fda-8982-2c9dee0d11b2@x41g2000hsb.googlegroups.com>
Source record: 25971

On Apr 16, 10:04 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Q1. Where does this [source] energy come from?
>
> An ideal source simply supplies a fixed voltage
> devoid of any concern for efficiency or where
> the energy comes from. This results in an
> average steady-state number of joules being
> supplied to the closed system per second.
>
> > Q2. Where does this [reverse] energy go?

You have morphed the questions. Let us try again.

Try two ideal voltage sources arranged in the
circuit below.



Using the circuit analysis technique of your
choice you should find that 1 amp is flowing
through the resistor.

The ideal voltage source on the left is providing
10 joules/second to the circuit.

Q1. Where does this energy come from?

The ideal voltage source on the right is absorbing
5 joules/second from the circuit.

Q2. Where does this energy go?

Answer to both. We do not know and we do not care. An
ideal voltage source can deliver energy to a circuit
and it can remove energy from a circuit; that is part
of the definition of an ideal voltage source. It does
not matter how it does it.

But just as easily as it can supply energy, it can
remove it.

Without understanding these basics of the ideal voltage source, it will be impossible to correctly analyze circuits that include them.

This has been the root cause of the misunderstandings.

...Keith

4299. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 22:58:48 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <0482e384-c56b-4940-b156-a7733fd19501@8g2000hsu.googlegroups.com>
Source record: 25972

On Apr 16, 10:31 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > This WIKI article mentions the ability of an ideal voltage source to absorb power.
>
> It says: "A primary voltage source can supply (or absorb)
> energy ..."
>
> That's easy to comprehend for a battery source. Not so
> easy for an ideal RF source with a zero series impedance.
> If we define an RF source as a coherent RF battery, anything
> is possible (at least in our minds). Which of the following
> makes more sense?

Neither. See 3.

> 1. Destructive interference energy is stored somewhere
> in the system and delivered back to the system 90 degrees
> later in the cycle just as it is by a physical inductor
> or capacitor.
>
> 2. An RF battery inside the ideal source stores the extra energy
> in coherent RF form and delivers it back to the system as needed.

3. An ideal source provides or absorbs energy to satisfy its
basic function which is to hold the voltage across its terminals
at the desired value. When it is providing energy we do not know
where this energy comes from and when it is absorbing energy we
do not know where this energy goes.

> >http://en.wikipedia.org/wiki/Voltage_source
>
> It also says: "The internal resistance of an ideal voltage
> source is zero;" So exactly how does something with an
> internal resistance of zero absorb any power?

Unknown. Just as we do not know where the energy that an ideal
voltage source sometimes provides comes from.

But you are invited to speculate on the many ways that it might
be done. Just as you might speculate on where the ideal voltage
source gets its energy when it is providing energy to the
circuit.

Just as there are real devices which approximate ideal voltage
sources delivering energy to a circuit (commonly called power
supplies), there are devices which approximate ideal voltage

sources that remove energy from a circuit. Check the Agilent catalog for "DC Loads". Perhaps the schematic will provide what you seek. Of course power supplies and DC loads are typically one quadrant devices, but with a little ingenuity you can combine them to form a two quadrant device which would be an even better approximation to an ideal voltage source.

...Keith

4300. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 23:05:30 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <MCvNj.91193$qj3.32604@newsfe20.ams2>
Source record: 25973

Hi Richard

You might have the answer there. I will ask my friends tomorrow what Ariel's there using. The G5RV is a homebrew half size with 300ohm vertical feeder straight into 50ohm coax that has a coax Air Core Choke Ugly Balun in it.

Thanks

"Richard Clark" <kb7qhc@comcast.net> wrote in message news:r6rc04hvgfm2sftutpp29a15mbq0mmp775@4ax.com...
> On Wed, 16 Apr 2008 21:37:56 +0100, "Barrett"
> <barrett@blueyounder.co.uk> wrote:
>
>>Hi Richard
>>
>>I have a manual tuner and two auto tuners that I have used and it makes no
>>difference to improve the received signal. I have also used two different
>>radios with the same outcome.
>>I'm wondering if the G5RV is to close and is causing this or if the square
>>10"x10" mounting plat that I have used in the centre of the Cobwebb might
>>be
>>causing the problem.
>>
>>The G5RV is at the same height as the homebrew Cobwebb and they are about
>>15ft apart. All other bands do not sharply drop off like 28MHz does on
>>receive signals.
>>
>>Thanks
>
> Hi Barrett,
>
> One other thing that comes to mind is you may be cross-polarized,
> which for line of sight transmission (and this close proximity so
> qualifies) can exhibit substantially depressed signals.
>
> This would mean that your Cobwebb homebrew is very much horizontally
> polarized, and that your G5RV has enough slope to it to be
> sufficiently vertical to your buddie's vertical signals.
>
> I will let you sort out the particulars - like the buddies are also
> vertical (if not, well, there goes that theory).....
>
> 73's
> Richard Clark, KB7QHC
>

4301. Re: Line Of Sight Question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 23:08:46 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <OIadnZhTIrJ85ZvVnZ2dnUVZ_uyinZ2d@earthlink.com>
Source record: 25970

<greenhornet@cato.com> wrote in message
news:55sa04h8356e7e5pb9likad6ig61eb3j9p@4ax.com...
>> I was not trying to imply my contacts were line of sight, guess I
> didn't make that fully clear. Agree on the normal way to figure line
> of sight - unless of course you are buying the "28 mile GMRS/FRS"
> radios 8-}

I don't recall the type or service but those radios that run less than 1 watt and sell for about $ 29.95 a pair must be the ones you are talking about. I know a couple of hams that have exceeded that distance by a whole lot. One of the hams was on top of Mt. Mitchell (highest point on the east coast).

4302. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-16 23:29:08 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <a07c4220-837e-4264-971e-33a82eaa3633@24g2000hsh.googlegroups.com>
Source record: 25974

On Apr 14, 10:47 am, "Jimmie D" <GFEN...@carolina.rr.com> wrote:
> <n...@wt.net> wrote in message
>
> news:63d1703f-7db2-4f40-8149-a7c88438c318@a5g2000prg.googlegroups.com...
>
>
>
>
>
> > On Apr 14, 12:47 am, Richard Clark <kb7...@comcast.net> wrote:
> >> On Sun, 13 Apr 2008 20:50:04 -0700 (PDT), derekbl...@gmail.com wrote:
> >> >> I had a couple of 100 ft rolls of speaker wire on cardboard reels so
> >> >> I
> >> >> decided to connect them together as Art had described and they give
> >> >> VSWR
> >> >> indication much as he described even if I stick them in a metal
> >> >> locker. This
> >> >> may be just what a lot of hams are looking for as it is a very quiet
> >> >> antenna.
> >> >   welcome to the minority and stand by for Richard to call you a
> >> >fool and stupid for listening to Art, I am sure you are the first
> >> >among many who will now build the antenna and find out for themselves
> >> >instead of listening to those who say if it is not in a book it cant
> >> >be done
> >> >   well done.
>
> >> How droll!
>
> >> Perhaps one day you will be able to tell those who are laughing up
> >> their sleeve at this.
>
> >> Seeing as you are clueless to the implications of this report, I
> >> return to my original question, Derek:
> >>   Why are you here?
>
> >> 73's
> >> Richard Clark, KB7QHC
>
> > Probably one of Arts relatives...
>
> Probably a sock puppet- Hide quoted text -
>
> - Show quoted text -

I made a small mod to Arts design that greatly improved it as a
receiving antenna, I didnt care to risk my finals or melt down a
couple of rolls of lamp cord. I connected both leg of the feedline to
a single banana plug
and connected this to my aerial input

4303. I need to share the Secret to Power

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 00:40:06 UTC
From: scannvnop@googlemail.com
Message-ID: <fff264fa-e4a9-488a-917c-5e8b9133702a@f36g2000hsa.googlegroups.com>
Source record: 25975

I've discovered the Secret to Power. The secret to getting everything
I want! I just need to tell people about this!

I've found a way of getting people to do exactly as I say 99% of the
time, and improving. Once you learn this skill, Power is yours.

Anyway enough of this chit chat im getting back to discovering more
about the powers I never knew I had. man this is cool!

Discover the power for yourself. I found it on this page

http://www.meditationinformation.info/relaxation/hypnotism/conversational-hypnosis.html

4304. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 03:56:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <2UzNj.2948$h75.1267@newssvr27.news.prodigy.net>
Source record: 25976

Keith Dysart wrote:
> Q1. Where does this energy come from?
> Q2. Where does this energy go?
>
> Answer to both. We do not know and we do not care.

Well, that certainly puts an end to this
discussion.
--
73, Cecil http://www.w5dxp.com

4305. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 09:09:43 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <6eee82a3-02a9-4e2a-b0f7-4f4543d53be3@26g2000hsk.googlegroups.com>
Source record: 25977

On Apr 16, 11:56 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Q1. Where does this energy come from?
> > Q2. Where does this energy go?
>
> > Answer to both. We do not know and we do not care.
>
> Well, that certainly puts an end to this
> discussion.

An intriguing response.

It was such a good example that it just stopped you in
your tracks.

But was this because you have learned that you were in error
and now better understand the behaviour of sources when
they are absorbing energy?

Or was it because you have realized the contradictions
inherent in your previous explanations but can not
work out how to resolve them?

Or was it because you have detected just a hint of the
contradictions to come and want to give up before having
to realize their full impact?

...Keith

4306. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 09:14:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vfqdnbEBq5VjiZrVnZ2dnUVZ_gudnZ2d@easystreetonline>
Source record: 25978

This discussion about ideal sources and power absorption would be rather amazing if I hadn't seen so much of the long sad history of this whole thread. It's just another diversion to deflect the discussion away from some of the sticky problems with alternative theories.

It looks like Cecil could benefit from momentarily abandoning his power waves, virtual reflections, photons, s parameters, and constructive interference, and go back to basic first or second semester electric circuit theory. Connect an ideal voltage source to a series RL or RC -- all elements lumped, not distributed. Find the power P(t) at each of the three nodes. (It's easy. Just calculate v(t) and i(t) and multiply the two.) Remember that the sign of P(t) shows the direction of energy flow. If I had the patience and self-control to participate in this endless thread (and I admittedly have neither), I'd refuse to say another word about it until Cecil shows that he knows what the power waveforms are at those three nodes. Why argue with someone about distributed networks who hasn't mastered lumped circuit analysis?

Roy Lewallen, W7EL

4307. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 09:20:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vfqdnbABq5XZi5rVnZ2dnUVZ_gudnZ2d@easystreetonline>
Source record: 25979

Correction: Finding the voltage requires a reference node. So the power needs to be found at only two of the nodes, with the third being the reference (ground) node.

Roy Lewallen, W7EL

Roy Lewallen wrote:
> This discussion about ideal sources and power absorption would be rather
> amazing if I hadn't seen so much of the long sad history of this whole
> thread. It's just another diversion to deflect the discussion away from
> some of the sticky problems with alternative theories.
>
> It looks like Cecil could benefit from momentarily abandoning his power
> waves, virtual reflections, photons, s parameters, and constructive
> interference, and go back to basic first or second semester electric
> circuit theory. Connect an ideal voltage source to a series RL or RC --
> all elements lumped, not distributed. Find the power P(t) at each of the
> three nodes. (It's easy. Just calculate v(t) and i(t) and multiply the
> two.) Remember that the sign of P(t) shows the direction of energy flow.
> If I had the patience and self-control to participate in this endless
> thread (and I admittedly have neither), I'd refuse to say another word
> about it until Cecil shows that he knows what the power waveforms are at
> those three nodes. Why argue with someone about distributed networks who
> hasn't mastered lumped circuit analysis?
>
> Roy Lewallen, W7EL

4308. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 09:24:15 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <48071743$0$8178$9b536df3@news.fv.fi>
Source record: 25980

> Unfortunately, a 2:1 ratio seems difficult to
> achieve.
> --
> 73, Cecil http://www.w5dxp.com

In real life, at least in my case the stub will be made of twin-lead type material which shortens it abt 30%.
If the shortening effect at lower frequency due to the inductive loading of stub is less, then it would be possible.
Going one step further you could easily add another band to the design as parallell dipole for 17m using unused parts of
douple-line. That should have litle interaction to the original double band antenna.
http://farm4.static.flickr.com/3016/2420028687_e9fd3b1e6c_o.jpg

As Jim K7JEB verified, the total half length is not 20m but 15,5m due to the loading effect of the stub.
The real stub length is 1/4 WL at higher frequency respecting the velocity factor of material used.

73 Jouko OH5RM

4309. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 10:58:50 UTC
From: wood@itd.nrl.navy.mil
Message-ID: <wood-1704080658500001@jbw-mac.itd.nrl.navy.mil>
Source record: 25981

In article <vfqdnbEBq5VjiZrVnZ2dnUVZ_gudnZ2d@easystreetonline>, Roy Lewallen <w7el@eznec.com> wrote:

> It looks like Cecil could benefit from momentarily abandoning his power
> waves, virtual reflections, photons, s parameters, and constructive
> interference, and go back to basic first or second semester electric
> circuit theory.

Hello, all, and then there's that circuit topology problem found in some circuit theory textbooks:

There is an infinite planar square lattice of connected 1-ohm resistors that extends to infinity in all directions. A DC ohmmeter placed across any resistor would register what value? The answer is 0.5 ohm but how do you go about solving for it? (Hint: There is an easy way and a much more difficult (general) way to attack this problem. This problem is a discrete example that in the limit would indicate the distribution of a DC electric field (and currents) in a conducting, isotropic metal plate as one moves away from the source of excitation. Sincerely, and 73s from N4GGO,

John Wood (Code 5550) e-mail: wood@itd.nrl.navy.mil
Naval Research Laboratory
4555 Overlook Avenue, SW
Washington, DC 20375-5337

4310. Re: Antenna physical size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 11:16:12 UTC
From: ltdoc@yahoo.com
Message-ID: <7374719a-f582-412f-9e42-fca793ee0c5c@a22g2000hsc.googlegroups.com>
Source record: 25982

That almost makes sense, so, it has to be cheating.
- 'Doc

4311. Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 11:26:34 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <9bd48768-b888-4d34-9e47-5b1ce4439f83@y21g2000hsf.googlegroups.com>
Source record: 25983

Are there any companies that sell the big-ass glass/ceramic antenna strain and standoff insulators anymore?

Most of the ham antenna places that sell wire antennas have a single style of really tiny ceramic strain insulator, and one or two plastic strain insulators, but they all obviously are made by the same company and imported. Nothing wrong with them, but the ceramic one really will not hold any rope above 3/16", and the plastic one won't take any rope above 1/4" (and even that only with some effort.)

I have been buying good insulating plastics (e.g. G-10, Polycarbonate, etc.) and making my own insulators, but if there were a good source of the big classic ceramic and/or glass ribbed insulators - not just strain but also the standoffs - I'd buy them in a hearbeat.

Cool old insulators do show up on E-bay etc. but they're generally onesies-twosies and obviously being sold to collectors, not hams who string them up on antennas.

I can go to the industrial supplier indices and find companies, even local companies, that custom-make ceramic and glass insulators for the electrical industries, but they have no intention, or even mechanism if I call them, of selling a dozen insulators to an individual ham. If anyone knows of an exception, please let me know!

4312. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 11:35:21 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_BGNj.8573$V14.5906@nlpi070.nbdc.sbc.com>
Source record: 25984

Keith Dysart wrote:
> It was such a good example that it just stopped you in
> your tracks.

Not at all. Everything I have said applies to a
distributed network. Since you insist on using a
lumped circuit source in a distributed network
example, further discussion is futile because
you are mixing apples and oranges.

What you perceive as the source absorbing energy is
the reverse traveling wave energy flowing back through
the source unimpeded. After all, how much energy can
be absorbed by 0+j0 ohms? The illusion of energy
absorption is the direct result of you refusing to
deal with the component wave energies.
--
73, Cecil http://www.w5dxp.com

4313. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 11:48:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <IOGNj.4029$vF.3432@newssvr21.news.prodigy.net>
Source record: 25985

Roy Lewallen wrote:
> Why argue with someone about distributed networks who
> hasn't mastered lumped circuit analysis?

Roy, after your use of standing-wave current with
its unchanging reference phase (as reported by EZNEC)
to measure the delay through a 75m bugcatcher coil
as virtually zero delay, it is obvious that your
"lumped circuit analysis" cannot be trusted. Want
to read about "... the Failure of Lumped-Element
Circuit Theory" and diagnose your errors regarding
those loading coil measurements?

http://www.ttr.com/corum/
--
73, Cecil http://www.w5dxp.com

4314. Re: Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 11:53:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qTGNj.4030$vF.1865@newssvr21.news.prodigy.net>
Source record: 25986

Tim Shoppa wrote:
> Are there any companies that sell the big-ass glass/ceramic antenna
> strain and standoff insulators anymore?

Try a farm and ranch supply store and look for
ceramic insulators for electric fences. Lowe's
might also have them in their electric fence
section.
--
73, Cecil http://www.w5dxp.com

4315. Re: Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 13:32:50 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <6kINj.8268$il3.1862@trnddc06>
Source record: 25987

"Tim Shoppa" <shoppa@trailing-edge.com> wrote in message
news:9bd48768-b888-4d34-9e47-5b1ce4439f83@y21g2000hsf.googlegroups.com...
> Are there any companies that sell the big-ass glass/ceramic antenna
> strain and standoff insulators anymore?
>
> Most of the ham antenna places that sell wire antennas have a single
> style of really tiny ceramic strain insulator, and one or two plastic
> strain insulators, but they all obviously are made by the same company
> and imported. Nothing wrong with them, but the ceramic one really will
> not hold any rope above 3/16", and the plastic one won't take any rope
> above 1/4" (and even that only with some effort.)
>
> I have been buying good insulating plastics (e.g. G-10, Polycarbonate,
> etc.) and making my own insulators, but if there were a good source of
> the big classic ceramic and/or glass ribbed insulators - not just
> strain but also the standoffs - I'd buy them in a hearbeat.
>
> Cool old insulators do show up on E-bay etc. but they're generally
> onesies-twosies and obviously being sold to collectors, not hams who
> string them up on antennas.
>
> I can go to the industrial supplier indices and find companies, even
> local companies, that custom-make ceramic and glass insulators for the
> electrical industries, but they have no intention, or even mechanism
> if I call them, of selling a dozen insulators to an individual ham. If
> anyone knows of an exception, please let me know!

Take a look at http://www.texastowers.com/mischard.htm

Second paragraph from the bottom.

73,
John

4316. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 13:42:35 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080417064235.4face0ec.rsparks@elltel.net>
Source record: 25988

On Wed, 16 Apr 2008 13:36:05 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > Cecil Moore <nospam@w5dxp.com> wrote:
> >> That's easy to comprehend for a battery source. Not so
> >> easy for an ideal RF source with a zero series impedance.
> >
> > Unless we allow it absorb energy with the same ease that it emits energy.
>
> How can a device with a zero impedance, i.e. zero resistance,
> zero capacitance, and zero inductance, absorb energy? We can
> certainly allow it to magically absorb energy but of what
> use is that?
>
It gives a tool to check our work inside the system. We think we know what happens once the energy arrives into the known components, but we don't know what exactly happens in the voltage source itself. We solve that by equating "energy in equals energy out". Then we refine that equation to "energy in equals energy returned plus energy disipated plus energy stored during some time period". Ein = Er + Ed + Es

This is the "conservation of energy" principle at work.

> > A third way is to allow the energy to be stored in constructive
> > and destructive interference some place in the system.
>
"A third way is to allow the energy to be stored in constructive
and destructive interference SOME PLACE IN THE SYSTEM." In this quote, I capitalized "SOME PLACE IN THE SYSTEM" because we need to understand where interference is located. If interference is located within the voltage source, it is really located *OUTSIDE* the system because we do not completely understand the voltage source itself.

> As you know, this is the one I prefer. Another thing that
> neither you nor Keith has done is to account for the
> reverse-flowing energy through the source. I suspect if
> that was done, every thimbleful of energy would be
> accounted for. So far, net energy calculations have been
> used on one side of Rs and component energy calculations
> on the other. That would work only if Rs was not dissipating
> power.

Are you expecting additional reflections? Any additonal reflections from the source would only be mechanical copies of the reflection at the short, and would add or subtract to the forward wave following the rules of sine wave addition.

But how can we have a source with zero resistance, zero capacitance, and zero inductance because in the real world, any source has impedance? The short has "zero resistance, zero capacitance, and zero inductance but it does not emit energy nor have a reverese voltage, both properties of the voltage source. It is not reasonable to assign the properties of the short to the voltage source, ignoring the reverse voltage situation, and expect reflectons from the source to be identical to reflections from a short.

--
73, Roger, W7WKB

4317. Re: Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 13:47:44 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9A83597E09CVeebleFetzer@127.0.0.1>
Source record: 25989

shoppa@trailing-edge.com (Tim Shoppa) wrote in
news:9bd48768-b888-4d34-9e47-5b1ce4439f83@y21g2000hsf.googlegroups.com:

> Are there any companies that sell the big-ass glass/ceramic antenna
> strain and standoff insulators anymore?
>

There's a miscelaneous collection here:

http://www.surplussales.com/antennas/AntennaSubIndex.html

Since it's "surplus", I don't know how repeatable their selection is.

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

4318. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 14:46:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RpJNj.20474$%41.1467@nlpi064.nbdc.sbc.com>
Source record: 25990

Roger Sparks wrote:
> "A third way is to allow the energy to be stored in constructive
> and destructive interference SOME PLACE IN THE SYSTEM." In this
> quote, I capitalized "SOME PLACE IN THE SYSTEM" because we need
> to understand where interference is located.

Actually, all we need to realize is that, in a
distributed network, the current through the source
is NOT equal to the current being provided by the
source. It is the source current superposed with
reflected current and re-reflected current. The fact
that the *NET* power is negative is NOT because the
source is sinking power. It is caused by the other
"sources" of energy in the system, i.e. the energy
in the reflected waves.

> Are you expecting additional reflections?

Once steady-state is reached, the magnitude of the
reflections are also steady-state. The total energy
flowing toward the load is the forward energy. The
total energy flowing in the other direction is the
reflected energy. Both of those magnitudes are fixed
during steady-state.

I have asked multiple times that this simple mental
experiment be performed and my request has been ignored.

Please install an ideal 50 ohm directional wattmeter
at point 'x' and tell us what are those readings
for forward power and reflected power.

GND--Vs--x--Rs--------45deg 50 ohm----short
100v 50ohm

Once the forward and reverse energy flows at point
'x' are understood, it will become clear that all
of the net current through the source is NOT being
provided by the source. That the source is sinking
energy is an illusion caused by reflections.
--
73, Cecil http://www.w5dxp.com

4319. 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 15:09:10 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <sKJNj.16292$_h7.13395@newsfe05.ams2>
Source record: 25991

I have a stainless steal 1/4 wave length mobile whip.

Can I mount this on top of a 20ft aluminium scaffold pole and use the pole as the ground radial?
I also have a mobile AM-80 for 80 meters. Can I mount this in the same way and will it work ok?

Thanks

4320. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 15:18:32 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5bqe049tp5mdb08guvgj72ms5g23s8kck4@4ax.com>
Source record: 25992

On Thu, 17 Apr 2008 16:09:10 +0100, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>I have a stainless steal 1/4 wave length mobile whip.
>
>Can I mount this on top of a 20ft aluminium scaffold pole and use the pole
>as the ground radial?
>I also have a mobile AM-80 for 80 meters. Can I mount this in the same way
>and will it work ok?

Hi Barrett,

The combination will give you an offcenter, vertical dipole (for
either band you are investigating).

This is not a bad thing, just something that may not tune up the way
you think it "should."

The 10M application will have three sections:
1. The quarterwave whip;
2. a 5/8ths wave lower section (the pole);
3. an undefined length of transmission line (unless you choke it).

73's
Richard Clark, KB7QHC

4321. Database of 72 Windom radiation patterns for different antenna heights

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 15:38:20 UTC
From: ON4AA <ON4AA.24d70ff@radiobanter.com>
Message-ID: <ON4AA.24d70ff@radiobanter.com>
Source record: 26008

Hi folks,

I thought many of you might be interested in seeing this:
A recently updated database of 72(!) Windom (actually CL-OCFD)
radiation patterns for different antenna heights:

http://hamwaves.com/cl-ocfd/patterns.html

(Takes a moment to complete loading.)

It gives one a grip of how antenna height influences take-off angles
on different bands. Also, the basic shape of the radiation patterns is
very instructive about how Windom antenna behave in general.

I hope you enjoy!
All comments invited.

73 de Serge, ON4AA

--
ON4AA

4322. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 17:07:58 UTC
From: Ken Fowler <ko6no@yahoo.com>
Message-ID: <EpCdnffaSpJxHprVnZ2dnUVZ_umlnZ2d@comcast.com>
Source record: 25993

On 16-Apr-2008, "Jim, K7JEB" <k7jeb_2@yahoo.com> wrote:

> After a bit of e-mail correspondence and the
> exchange of a single, crucial, 1000-word, picture,
> I think we've bottomed-out on this. I'm seeing two,
> distinct, dipole-like responses, one at 3.6 MHz
> and one at 10.2 MHz.

I also played around with this yesterday on EZNEC. Started with a 75 M center fed half wave at 30 feet high, added 20 M quarter wave stubs one quarter wave (20 M) oout from the center. Got two low SWR points at ~3.5 MHz and ~14 MHz. By changing the distances to the stubs, the length of the stubs, and the length beyond the stubs, I got the low SWR points to 3.9MHz (2.8:1) and 14.2 MHz (1.2:1). Azimuth pattern on 14.2 MHz was sort of omni-directional with major lobes at 45, 135, 225, and 315 degrees. Pattern on 75 M was omnidirectional at high angles and max gain straight up.

Conclusions: Might be useful as a way to add 20 Meters to a shortened 75 M dipole. High SWR on 75 would still require a tuner. Losses were not determined. More height might help.

Ken Fowler, KO6NO

4323. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 17:36:20 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080417103620.dd3fd121.rsparks@elltel.net>
Source record: 25994

On Thu, 17 Apr 2008 09:46:55 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > "A third way is to allow the energy to be stored in constructive
> > and destructive interference SOME PLACE IN THE SYSTEM." In this
> > quote, I capitalized "SOME PLACE IN THE SYSTEM" because we need
> > to understand where interference is located.
>
> Actually, all we need to realize is that, in a
> distributed network, the current through the source
> is NOT equal to the current being provided by the
> source. It is the source current superposed with
> reflected current and re-reflected current. The fact
> that the *NET* power is negative is NOT because the
> source is sinking power. It is caused by the other
> "sources" of energy in the system, i.e. the energy
> in the reflected waves.
>
Yes, in nature the returning power will affect the frequency of the source. The ideal voltage source absorbs the reflected power rather than allowing a change in frequency.

> > Are you expecting additional reflections?
>
> Once steady-state is reached, the magnitude of the
> reflections are also steady-state. The total energy
> flowing toward the load is the forward energy. The
> total energy flowing in the other direction is the
> reflected energy. Both of those magnitudes are fixed
> during steady-state.
>
> I have asked multiple times that this simple mental
> experiment be performed and my request has been ignored.
>
> Please install an ideal 50 ohm directional wattmeter
> at point 'x' and tell us what are those readings
> for forward power and reflected power.
>
> GND--Vs--x--Rs--------45deg 50 ohm----short
> 100v 50ohm
>
> Once the forward and reverse energy flows at point
> 'x' are understood, it will become clear that all
> of the net current through the source is NOT being
> provided by the source. That the source is sinking

> energy is an illusion caused by reflections.

This circuit has an impedance of 73.5 + J44.1 ohms at the point x. Energy sinking into the source occurs during the cycle. It is not an illusion.

Think of things this way. Any signal must contain energy. A signal without energy is not a signal. Nature must have some method of signaling between source and load when the load does not match the impedance of power flow. This is simple logic based on the known fact that the apparent impedance of a transmission line depends upon the load at the end of the transmission line.

Power returning to the source is the signal nature requires to throttle the output of the source. Power returning to the source will change the frequency of the source in nature, but in our ideal voltage source, nature is suspended and the frequency is held constant. Our problem as engineers is to isolate each effect and to make valid predictions so that we can build more intelligently.
--
73, Roger, W7WKB

4324. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 17:55:13 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <taMNj.18861$yD6.2624@newsfe08.phx>
Source record: 25995

>>> Keith Dysart wrote:
>>> Q1. Where does this energy come from?
>>> Q2. Where does this energy go?
>>> Answer to both. We do not know and we do not care.

>> Cecil Moore wrote:
>> Well, that certainly puts an end to this discussion.

Then, Roy Lewallen wrote:
> ... It looks like Cecil could benefit from momentarily
> abandoning his power waves, virtual reflections, photons,
> s parameters, and constructive interference, and go back
> to basic first or second semester electric circuit theory.....

Just when you think you're out of it, they pull you back in.

K7JEB

4325. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 18:06:35 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <MkMNj.17104$2b2.5346@newsfe12.ams2>
Source record: 25996

Thanks Richard

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:5bqe049tp5mdb08guvgj72ms5g23s8kck4@4ax.com...
> On Thu, 17 Apr 2008 16:09:10 +0100, "Barrett"
> <barrett@blueyounder.co.uk> wrote:
>
>>I have a stainless steal 1/4 wave length mobile whip.
>>
>>Can I mount this on top of a 20ft aluminium scaffold pole and use the pole
>>as the ground radial?
>>I also have a mobile AM-80 for 80 meters. Can I mount this in the same way
>>and will it work ok?
>
> Hi Barrett,
>
> The combination will give you an offcenter, vertical dipole (for
> either band you are investigating).
>
> This is not a bad thing, just something that may not tune up the way
> you think it "should."
>
> The 10M application will have three sections:
> 1. The quarterwave whip;
> 2. a 5/8ths wave lower section (the pole);
> 3. an undefined length of transmission line (unless you choke it).
>
> 73's
> Richard Clark, KB7QHC

4326. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 18:07:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lIMNj.9658$2g1.3923@nlpi068.nbdc.sbc.com>
Source record: 25997

Ken Fowler wrote:
> I also played around with this yesterday on EZNEC. Started with a 75 M
> center fed half wave at 30 feet high, added 20 M quarter wave stubs one
> quarter wave (20 M) oout from the center.

That's a conventional trapped dipole with stub traps
instead of LC traps. Here's a graphic from my web page:

http://www.w5dxp.com/eznec.gif
--
73, Cecil http://www.w5dxp.com

4327. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 18:17:23 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <UuMNj.17107$2b2.8202@newsfe12.ams2>
Source record: 25998

Just went out to get things ready to try the Ariel's out tomorrow and it occurred to me that the 20ft pole is resting on the patio. To make this work, would I need to lift the pole off the floor and would 1ft be enough?

Thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:MkMNj.17104$2b2.5346@newsfe12.ams2...
> Thanks Richard
>
>
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:5bqe049tp5mdb08guvgj72ms5g23s8kck4@4ax.com...
>> On Thu, 17 Apr 2008 16:09:10 +0100, "Barrett"
>> <barrett@blueyounder.co.uk> wrote:
>>
>>>I have a stainless steal 1/4 wave length mobile whip.
>>>
>>>Can I mount this on top of a 20ft aluminium scaffold pole and use the
>>>pole
>>>as the ground radial?
>>>I also have a mobile AM-80 for 80 meters. Can I mount this in the same
>>>way
>>>and will it work ok?
>>
>> Hi Barrett,
>>
>> The combination will give you an offcenter, vertical dipole (for
>> either band you are investigating).
>>
>> This is not a bad thing, just something that may not tune up the way
>> you think it "should."
>>
>> The 10M application will have three sections:
>> 1. The quarterwave whip;
>> 2. a 5/8ths wave lower section (the pole);
>> 3. an undefined length of transmission line (unless you choke it).
>>
>> 73's
>> Richard Clark, KB7QHC
>
>
>

4328. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 18:43:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xTMNj.2727$%V7.543@newssvr14.news.prodigy.net>
Source record: 25999

Roger Sparks wrote:
> Yes, in nature the returning power will affect the
> frequency of the source.

If the reflected wave is a sine wave coherent with
the forward wave, why would the frequency change
when they are superposed?

>> GND--Vs--x--Rs--------45deg 50 ohm----short
>> 100v 50ohm
>>
> This circuit has an impedance of 73.5 + J44.1 ohms
> at the point x. Energy sinking into the source occurs
> during the cycle. It is not an illusion.

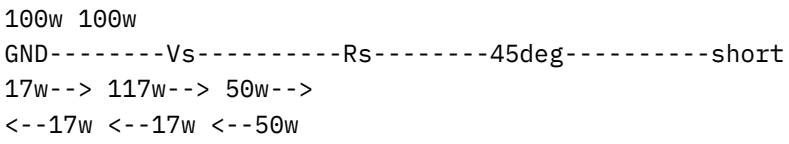
I got a different impedance value but for purposes
of discussion, all that matters is that the impedance
is NOT 50 ohms.

Let's assume your impedance is correct. That means
the ratio of reflected power to forward power at
point 'x' is 0.1452 in the 50 ohm environment.
Why would reflected energy flowing back through
the source be considered "energy sinking". Why
cannot the reflected energy flow back through the
source unimpeded by the 0+j0 impedance and be
reflected by the short to ground on the other side?
That same thing happens all the time to standing
wave current on the outside of the coax braid.
Why do the laws of physics change inside a source?

In this example, we are delivering 100 watts to Rs.
With a power reflection coefficient of 0.1452, the
forward power has to be 117 watts making the reflected
power equal to 17 watts at point 'x'. That reflected
power of 17 watts is not absorbed by the source. It
flows back through the source, unimpeded by the 0+j0
impedance, and is reflected by the short to ground.
It joins the 100 watts being generated by the source
to become the forward wave of 117 watts. No absorbing
of energy required - just good old distributed network
physics.

Once this 17 watt wave is tracked back through the
source, reflected, and superposed with the 100 watts
being generated by the source, all will become clear

without any power absorption by the source being
necessary. Here's a diagram of what's happening.



All energy flows balance perfectly and there is no
absorption by the source.
--
73, Cecil http://www.w5dxp.com

4329. cheap wholesale prada shoes gucci shoes lacoste shoes dunk shoes puma shoes air force one shoes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 18:48:53 UTC
From: ebayshoe2@yahoo.cn
Message-ID: <0229e355-faff-4da5-8243-ac11928a6910@b64g2000hsa.googlegroups.com>
Source record: 26000

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wholesale Nike Shox Classic Shoes Suppliers
wholesale Nike Shox Dendara Trainer
wholesale Nike Air Jordan 1 Seller
wholesale Nike Air Jordan 2 Shoes Seller
wholesale Nike Air Jordan 3 Collection
wholesale Nike Air Jordan 4 Shoes Collection
wholesale Nike Air Jordan 5 Chaussure Shoes
wholesale Nike Air Jordan 6 Catalog
wholesale Nike Air Jordan 7 Shoes Catalog
wholesale Nike Air Jordan 8 Customized
wholesale Nike Air Jordan 9 Shoes Customized
wholesale Nike Air Jordan 10 Wholesalers
wholesale Nike Jordan 11 Shoes Wholesalers
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wholesale Nike Air Jordan 13 Shoes Factory
wholesale Nike Air Jordan 14 Shoes Sell
wholesale Nike Air Jordan 16 Exporter
wholesale Nike Air Jordan 17 Shoes Exporter
wholesale Nike Air Jordan 18 Offer
wholesale Nike Air Jordan 19 Shoes Offer
wholesale Nike Air Jordan 20 Manufacture
wholesale Nike Jordan 21 Shoes Manufacture
wholesale Nike Air Force 1 Low Directory
wholesale Air Force 1 High Shoes Directory
wholesale Nike Air Force 1 Custom Importer
wholesale Air Force 1 Dollar Shoes Importer
wholesale Nike Air Force 1 Clear Sales
wholesale Air Force 1 Carving Shoes Sales
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wholesale Timberland Boots Low Sell
wholesale Timberland Boots Mid Shoes Buyer
wholesale Timberland Boots Womens Buyer
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wholesale Adidas Basketball Shoes Discount
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Air China Jordans Wholesale
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Nike Air Jordan Wholesale
Nike Golf Wholesale
Wholesale Jordans
Wholesale Nike Shox
Wholesale Basketball Shoes Nike
Air Jordans Price Wholesale
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Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 18:52:16 UTC
From: ebayshoe2@yahoo.cn
Message-ID: <36a29d43-81c2-4a1d-847d-849895204243@e67g2000hsa.googlegroups.com>
Source record: 26001

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wholesale Air Force 1 Dollar Shoes Importer
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wholesale Timberland Boots High Offers
wholesale Timberland Boots Low Sell
wholesale Timberland Boots Mid Shoes Buyer
wholesale Timberland Boots Womens Buyer
wholesale Adidas Good Year Buy
wholesale Adidas Running Shoes Buy
wholesale Adidas Football Shoes Selection
wholesale Adidas Basketball Shoes Discount
wholesale Adidas 35 Years 35th Anniversary
wholesale Adidas T MAC 3.5 4.5 5 6
wholesale Adidas 35 Years 35th Anniversary
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Cheap Jordans Wholesale
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4331. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 18:59:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <l6NNj.4504$iK6.361@nlpi069.nbdc.sbc.com>
Source record: 26002

Barrett wrote:
> Just went out to get things ready to try the Ariel's out tomorrow and it
> occurred to me that the 20ft pole is resting on the patio. To make this
> work, would I need to lift the pole off the floor and would 1ft be enough?

Depends on whether the patio is conductive or not.
Probably best to rest the base on an insulator.
Also be aware that, at 100 watts, there will be
hundreds, if not thousands of volts present at
the base of the pole. I once keyed down while
a cat was standing on one of my radials. Not
sure where it went, but it might have gone
into orbit. Have you considered sleeving the
pole inside PVC pipe for safety reasons?
--
73, Cecil http://www.w5dxp.com

4332. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 19:05:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <kg7f04t4risv10iikcogpeqeeloj5v164u@4ax.com>
Source record: 26003

On Thu, 17 Apr 2008 19:17:23 +0100, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>Just went out to get things ready to try the Ariel's out tomorrow and it
>occurred to me that the 20ft pole is resting on the patio. To make this
>work, would I need to lift the pole off the floor and would 1ft be enough?

Hi Barrett,

Not something I would worry about. Others may, and they will
certainly chime in if they do. I had a 10M vertical off-center dipole
mounted about 1 foot above ground and it seemed to work fine; but not
as well as my buddies with higher antennas. My guess is that an 80M
version may suffer more. I fed the transmission line up through the
bottom section.

73's
Richard Clark, KB7QHC

4333. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 19:10:32 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <bkagHDPoC6BIFwzN@g3ohx.demon.co.uk>
Source record: 26004

In message <l6NNj.4504$iK6.361@nlpi069.nbdc.sbc.com>, Cecil Moore
<nospam@w5dxp.com> writes
>Barrett wrote:
>> Just went out to get things ready to try the Ariel's out tomorrow and
>>it occurred to me that the 20ft pole is resting on the patio. To make
>>this work, would I need to lift the pole off the floor and would 1ft
>>be enough?
>
>Depends on whether the patio is conductive or not.
>Probably best to rest the base on an insulator.
>Also be aware that, at 100 watts, there will be
>hundreds, if not thousands of volts present at
>the base of the pole. I once keyed down while
>a cat was standing on one of my radials. Not
>sure where it went, but it might have gone
>into orbit. Have you considered sleeving the
>pole inside PVC pipe for safety reasons?

A glass jar (eg a jam jar) makes an effective insulator for the base of
a pole. Or a polythene bucket!
--
Ian

4334. china cheap wholesale ugg boots ed hardy shoes timberland boots gucci chanel lv boots nike work boots

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 19:19:09 UTC
From: ebayshoe2@yahoo.cn
Message-ID: <32a807ae-4c24-43d1-b3ee-0ddbe8362c28@8g2000hse.googlegroups.com>
Source record: 26005

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wholesale Nike Air Max Ltd Shoes Catalogs
wholesale Nike Air Max Tn Men's Shoes
wholesale Nike Air Max Tn 2 Women's Shoes
wholesale Nike Air Max Tn 3 Customize
wholesale Nike Air Max Tn 4 Shoes Customize
wholesale Nike Air Max Tn 6 Supply
wholesale Nike Shox NZ Shoes Supply
wholesale Nike Shox OZ Sale
wholesale Nike Shox TL Store
wholesale Nike Shox TL 2 Shoes Store
wholesale Nike Shox TL 3 Distributor
wholesale Nike Shox Bmw Shoes Distributor
wholesale Nike Shox Elite Shoes Manufacturer

wholesale Nike Shox Monster Manufacturer
wholesale Nike Shox R4 Running Shoes
wholesale Nike Shox R5 Mens Shoes
wholesale Nike Shox Ride Womens Shoes
wholesale Nike Shox Rival Shoes Wholesaler
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wholesale Nike Shox Turbo Suppliers
wholesale Nike Shox Classic Shoes Suppliers
wholesale Nike Shox Dendara Trainer
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wholesale Nike Air Jordan 2 Shoes Seller
wholesale Nike Air Jordan 3 Collection
wholesale Nike Air Jordan 4 Shoes Collection
wholesale Nike Air Jordan 5 Chaussure Shoes
wholesale Nike Air Jordan 6 Catalog
wholesale Nike Air Jordan 7 Shoes Catalog
wholesale Nike Air Jordan 8 Customized
wholesale Nike Air Jordan 9 Shoes Customized
wholesale Nike Air Jordan 10 Wholesalers
wholesale Nike Jordan 11 Shoes Wholesalers
wholesale Nike Air Jordan 12 Factory
wholesale Nike Air Jordan 13 Shoes Factory
wholesale Nike Air Jordan 14 Shoes Sell
wholesale Nike Air Jordan 16 Exporter
wholesale Nike Air Jordan 17 Shoes Exporter
wholesale Nike Air Jordan 18 Offer
wholesale Nike Air Jordan 19 Shoes Offer
wholesale Nike Air Jordan 20 Manufacture
wholesale Nike Jordan 21 Shoes Manufacture
wholesale Nike Air Force 1 Low Directory
wholesale Air Force 1 High Shoes Directory
wholesale Nike Air Force 1 Custom Importer
wholesale Air Force 1 Dollar Shoes Importer
wholesale Nike Air Force 1 Clear Sales
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wholesale Timberland Boots High Offers
wholesale Timberland Boots Low Sell
wholesale Timberland Boots Mid Shoes Buyer
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wholesale Adidas Good Year Buy
wholesale Adidas Running Shoes Buy
wholesale Adidas Football Shoes Selection
wholesale Adidas Basketball Shoes Discount
wholesale Adidas 35 Years 35th Anniversary
wholesale Adidas T MAC 3.5 4.5 5 6
wholesale Adidas 35 Years 35th Anniversary
Jordans Wholesale
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Wholesale Custom Jordans
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Jordans Retro Wholesale
Nike Air Jordan Wholesale
Nike Golf Wholesale
Wholesale Jordans
Wholesale Nike Shox
Wholesale Basketball Shoes Nike
Air Jordans Price Wholesale
Jordans Kid Wholesale
Wholesale Air Force One And Jordans
Jordans Shoes Wholesale
Wholesale Air Jordans
Air Jordans At Wholesale Price
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4335. Re: Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 19:37:49 UTC
From: Bob Miller <NOSPAM@neosoft.com>
Message-ID: <0f9f04lga5r0r0bt43kdh2q2ntqnnh169k@4ax.com>
Source record: 26006

On Thu, 17 Apr 2008 04:26:34 -0700 (PDT), Tim Shoppa
<shoppa@trailing-edge.com> wrote:

>Are there any companies that sell the big-ass glass/ceramic antenna
>strain and standoff insulators anymore?

In the past I've purchased ceramics from Surplus Sales of Nebraska,
and they're still on the web site. Go to the alphabetical index and
look under "I" for insulator -- prices range from 98 cents to $795,
depending on how "big-ass" you want to go :-)

bob
k5qwg

>
>Most of the ham antenna places that sell wire antennas have a single
>style of really tiny ceramic strain insulator, and one or two plastic
>strain insulators, but they all obviously are made by the same company
>and imported. Nothing wrong with them, but the ceramic one really will
>not hold any rope above 3/16", and the plastic one won't take any rope
>above 1/4" (and even that only with some effort.)
>
>I have been buying good insulating plastics (e.g. G-10, Polycarbonate,
>etc.) and making my own insulators, but if there were a good source of
>the big classic ceramic and/or glass ribbed insulators - not just
>strain but also the standoffs - I'd buy them in a hearbeat.
>
>Cool old insulators do show up on E-bay etc. but they're generally
>onesies-twosies and obviously being sold to collectors, not hams who
>string them up on antennas.
>
>I can go to the industrial supplier indices and find companies, even
>local companies, that custom-make ceramic and glass insulators for the
>electrical industries, but they have no intention, or even mechanism
>if I call them, of selling a dozen insulators to an individual ham. If
>anyone knows of an exception, please let me know!

4336. 20m whip on 30m?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 20:59:24 UTC
From: kuzen001@duke.edu
Message-ID: <fu8dnc$s8v$1@gargoyle.oit.duke.edu>
Source record: 26007

I'm in a tiny apartment for a while and plan to put a Hamstick-style whip on a mount clamped to a windowframe, to see if I can work a little PSK31.

I wanted a HF whip for 30m but couldn't easily find one. I bought whips for 20 and 40. They're the usual things--5' fiberglass rod, 3/8-24 fittings at each end, loading wound onto the fiberglass rod, with a flexible whip at the end, adjustable in length, for tuning.

I'm wondering about making an extension for the base--a length of aluminum or something, with 3/8-24 fittings at each end, and trying to get the 20meter whip's resonance down close to 30meters. Anybody tried this, have any advice/suggestion/information? TIA!
--Ken AC4RD

_____
Ken Kuzenski AC4RD atsign mindspring dotsign com
_____
All disclaimers apply, see? www.duke.edu/~kuzen001

4337. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 22:04:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RPPNj.6991$GE1.3025@nlpi061.nbdc.sbc.com>
Source record: 26009

Ian Jackson wrote:
> A glass jar (eg a jam jar) makes an effective insulator for the base of
> a pole. Or a polythene bucket!

Remember when we used to use those one quart
Coca-Cola bottles that down-spouts fit over
perfectly?
--
73, Cecil http://www.w5dxp.com

4338. Re: 20m whip on 30m?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 22:05:15 UTC
From: nm5k@wt.net
Message-ID: <f887fa85-0ecd-4c56-a10e-efb1c8cdd54a@d45g2000hsc.googlegroups.com>
Source record: 26010

On Apr 17, 3:59 pm, <kuzen...@duke.edu> wrote:
> I'm in a tiny apartment for a while and plan to put a Hamstick-style whip
> on a mount clamped to a windowframe, to see if I can work a little PSK31.
>
> I wanted a HF whip for 30m but couldn't easily find one. I bought whips
> for 20 and 40. They're the usual things--5' fiberglass rod, 3/8-24
> fittings at each end, loading wound onto the fiberglass rod, with a
> flexible whip at the end, adjustable in length, for tuning.
>
> I'm wondering about making an extension for the base--a length of aluminum
> or something, with 3/8-24 fittings at each end, and trying to get the
> 20meter whip's resonance down close to 30meters. Anybody tried this, have
> any advice/suggestion/information? TIA!
> --Ken AC4RD

It would take much less length if you extended the stinger vs
extending
the base below the windings. It will take a lot of mast to tune it to
30m
if you keep the same stinger length. I'm talking in feet, not inches.
But you can extend the stinger just a few inches and tune it to 30m.
You will need to find a longer stinger if that one won't extend out
enough, and it probably won't unless there is plenty left after
tuning it for 20m. For maximum efficiency, extend both ends.

4339. Re: Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 22:08:24 UTC
From: Bruce <xxx@yyy.zzz>
Message-ID: <Xns9A83B89AB5353xxxyyyzzz@216.77.188.18>
Source record: 26011

Tim Shoppa <shoppa@trailing-edge.com> wrote in news:9bd48768-b888-4d34-9e47-5b1ce4439f83@y21g2000hsf.googlegroups.com:

> Are there any companies that sell the big-ass glass/ceramic antenna
> strain and standoff insulators anymore?

Look for the insulators used in tower guying systems.

-Bruce

4340. G5RV Half size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-17 23:24:58 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <f%QNj.94969$qj3.27626@newsfe20.ams2>
Source record: 26012

If I join some extra wire to the ends of the G5RV half size and bring them down towards the bottom of the 300 Ohm slotted feeder to make a triangle shape, kept vertical. Would this radiate ok or would it be a waist of time?

Is there a modelling program I could buy for HF antennas?

Thanks

4341. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 02:17:23 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <73336793-1fc3-43ec-ba0d-12d2c3d1747e@a1g2000hsb.googlegroups.com>
Source record: 26013

On Apr 17, 7:35 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > It was such a good example that it just stopped you in
> > your tracks.
>
> Not at all. Everything I have said applies to a
> distributed network. Since you insist on using a
> lumped circuit source in a distributed network
> example, further discussion is futile because
> you are mixing apples and oranges.

So you are saying that ideal voltage sources work differently
in distributed networks than they do in lumped circuits.

Perhaps you could expand on the differences using the
following two circuits. This one is lumped.

```
50 ohms
+----------\/\/\/\/-----------+
+| +|
Vsl=100 VDC Vsr=50 VDC
| |
+-----------------------------+
```

And this one is similar but includes a transmission line.

```
50 ohms
+----------\/\/\/\/----+----------------+-------+
+| arbitrary +|
Vsl=100 VDC length, any Vsr=50 VDC
| impedance line |
+---------------------+----------------+-------+
```

After the circuit has settled how will the ideal voltage
sources on the right be behaving differently in the two
examples? If you think it matters, try 50 ohm line.

Where does the energy being absorbed by these ideal voltage
sources go?

> What you perceive as the source absorbing energy is
> the reverse traveling wave energy flowing back through
> the source unimpeded. After all, how much energy can
> be absorbed by 0+j0 ohms?

None. But pushing a current against a voltage (regardless of
the cause of the voltage) will definitely use energy.

> The illusion of energy
> absorption is the direct result of you refusing to
> deal with the component wave energies.

These circuits are DC, but Vf and Vr still work. The line settles to a constant (over length) 50 V regardless of the line impedance, but the value of Vf and Vr will depend on the impedance of the line. Why does it settle to 50 V? What else can it do? It is connected to a 50 VDC ideal voltage source.

Using a line impedance of 50 ohms, compute Vr. Ooopppps. Vr is equal to 0: no reflected power.

The ideal voltage source on the right, after the circuits settle, will be absorbing 50 joules/s in both cases.

...Keith

4342. Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 04:56:01 UTC
From: Al Lorona <al_lorona@agilent.com>
Message-ID: <IQVNj.8690$V14.7742@nlpi070.nbdc.sbc.com>
Source record: 26014

Hi, Everybody,

In the process of modeling a vertical antenna (specifically, I am using EZNEC 5.0) I am noticing an effect I did not expect which could be the result of a modeling error on my part.

The antenna is a 34-foot vertical above (12) 34-foot radials, making it a 1/4 wave on 40 and a 1/2 wave on 20.

On 40, the antenna works as I expected; as the ground conductivity goes up, the gain and efficiency of the antenna both increase, too.

But on 20, if I increase the ground conductivity from, say, 0.005 to 0.008 S/m, the max gain and efficiency *decrease*! This is counter-intuitive to me.

Can anyone point to something I'm doing wrong?

Thanks,

Al W6LX

4343. spam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 06:44:18 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <439bffe8-89a0-4188-9733-ede7fe73b1bc@x41g2000hsb.googlegroups.com>
Source record: 26015

subject change

4344. spam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 06:45:18 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <53c731ff-5287-4d02-ae26-7954e42417b6@b64g2000hsa.googlegroups.com>
Source record: 26016

subject change

4345. spam

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 06:46:15 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <a65b8db6-ab00-4ded-bf84-bdea65f23b07@2g2000hsn.googlegroups.com>
Source record: 26017

subject change

4346. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 07:27:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <IP6dnXpJO_Tu0JXVnZ2dnUVZ_jGdnZ2d@easystreetonline>
Source record: 26018

Roger Sparks wrote:
> . . . But how can we have a source with zero resistance, zero
> capacitance, and zero inductance because in the real world, any
> source has impedance? The short has "zero resistance, zero
> capacitance, and zero inductance but it does not emit energy nor have
> a reverese voltage, both properties of the voltage source. It is not
> reasonable to assign the properties of the short to the voltage
> source, ignoring the reverse voltage situation, and expect reflectons
> from the source to be identical to reflections from a short.

None of the ideal components we use for linear circuit analysis exist in the real world. We use ideal resistances which have no inductance or capacitance, capacitances which have no resistance or inductance, ideal inductances which have no resistance or capacitance, ideal controlled sources which operate over an infinite range of control and output values. And try making anything even vaguely resembling an ideal transformer. So what's the problem in accepting an ideal voltage source as another model element? If you want a better approximation of something you can build in the real world, add an ideal resistance to the ideal voltage source, and you'll have a much better representation of most real sources.

As for the way the source reacts to an impinging wave, note that the voltage across a short circuit doesn't change when a wave hits it. Neither does the voltage across an ideal voltage source. Consequently, they do have exactly the same effect on waves.

Roy Lewallen, W7EL

4347. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 07:37:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <p4CdnVoHG_g30pXVnZ2dnUVZ_vudnZ2d@easystreetonline>
Source record: 26019

Al Lorona wrote:
> Hi, Everybody,
>
> In the process of modeling a vertical antenna (specifically, I am using
> EZNEC 5.0) I am noticing an effect I did not expect which could be the
> result of a modeling error on my part.
>
> The antenna is a 34-foot vertical above (12) 34-foot radials, making it a
> 1/4 wave on 40 and a 1/2 wave on 20.
>
> On 40, the antenna works as I expected; as the ground conductivity goes up,
> the gain and efficiency of the antenna both increase, too.
>
> But on 20, if I increase the ground conductivity from, say, 0.005 to 0.008
> S/m, the max gain and efficiency *decrease*! This is counter-intuitive to
> me.
>
> Can anyone point to something I'm doing wrong?
>
> Thanks,
>
> Al W6LX

Ground loss is a sort of impedance matching problem. If you have perfectly conducting ground, there is no ground loss. If you have perfectly insulating ground, there is no ground loss. There's always some ground conductivity in between those extremes at which the loss is maximum. This value depends on the frequency among other things. Try a wider range of conductivities and you'll find this point.

You should also be aware that if you have radials which are above but close to the ground, half wavelength ones can be considerably less efficient than quarter wavelength ones. One reason is that the points of maximum current are out near the centers of the radials, where they induce current into the lossy ground. When the radials are a quarter wavelength or shorter, the current maxima are near the center, so their fields nearly cancel. Another often-overlooked fact is that radials very close to the ground are electrically considerably longer than when more elevated. So radials which are a quarter wavelength in free space can have their current maxima well out from the center which results in lower efficiency.

Roy Lewallen, W7EL

4348. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 08:25:49 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <f1kg04ld5m4cse2chubldrb36dk6nonqr8@4ax.com>
Source record: 26020

On Wed, 16 Apr 2008 09:48:34 -0700, "Jim, K7JEB" <k7jeb_2@yahoo.com>
wrote:

>Jouko, OH5RM wrote:
>
>> Take 20m of wire, that is half of a dipole.
>> Put a 1/4 electric wavelength shorted stub for 10,1MHz so that the open end
>> is 7,25m from center and the shorted end pointing to the tip of antenna. One
>> side of stub is the 20m wire itself, like in the upper picture.
>
>I did just that with EZNEC, but with a free-space dipole. Without the
>stubs, the antenna resonated at 3.6 MHz. With the stubs, that dropped
>to 2.75 MHz and additional low-impedance points were noted at 6.5 and
>11 MHz. The patterns at 2.75 and 6.5 had the desired dipole shape,
>but the 11 MHz pattern had multiple lobes.
>
>Jim Bromley, K7JEB
>Glendale, AZ, USA

I only have EZNEC 3 and the EZNEC 4 demo.

I don't remember the dimensions, but I remember that in the
instructions, EZNEC could not make accurate measurements with parallel
wires within a certain distance like 8-10 inches.

(someone correct me here.)

holding that assumption...

I have not modeled that antenna or made one, but I had an experience
with an 80 meter dipole that may relate. I cut a wire way too long
for 80 meters, I think it was something like 140 feet or so. I use
insulated stranded copper wire so I tried folding back the ends until
I shortened the antenna to 75 meters. What I discovered was, that the
change in frequency of the antenna did not match the reduced length of
the wire. After trying for quite some time, even after measuring the
antenna, I found it physically shorter than the calculated length, but
the center frequency, which changed a little, hadn't changed
significantly as expected. My conclusion was that I basically made a
linear-loaded dipole and the total electrical length of the antenna
was basically the wire length minus a small amount for interaction
between the folded back wire and the original leg. It wasn't until I
trimmed the wire itself that I raised the frequency of the antenna.

The wire I used had the ends loosely wrapped around the main wire of
the dipole, not tightly wrapped like the turns on a hangman's noose.

It was insulated THHN stranded copper.

Let's look at the 40/80 meter antenna cut for the CW portions (3.5 & 7 MHz). Assume, for the sake of argument that the 468/f = length in feet accounts for the velocity factor and that it is the same for the 40 meter portion as the whole wire...

In theory, the Lattin antenna should be a total of 133.7 feet long, with 66.85 (1/2) of the total length being the 40 meter wire and 1/2 on each end being the 40 meter decoupling trap. Overall there is a total length of 200 feet of wire which theoretically would give you 40 and 80 meters. UNLESS the RF reacts according to my experience above which would produce an antenna which would be tuned for 7.0 and 2.3 MHz (give or take reaction)

If this is true, and even with the reaction, the 40 meter dipole would work, but you couldn't make the Lattin antenna work with the those two bands. I might assume that 30 and 80 meters would work as the total length of the 30 meter portion with trap would be less than 133 feet and the 80 meter dipole would extend past the trap as an additional extension of wire. Presumeably, that antenna would be resonant on 30 meters, 80 meters and somewhere else, maybe close to 6 or 7 mhz (Total length of the wire from feed to end of trap.)

I don't know how the diagram shows, I hope you get an understanding of what I am saying.

Comments?

==========

PS, after writing all that, I re-read your post more carefully. I think your EZNEC model reflected what i said all along. The difference being that the continuation of the 80 meter dipole element seems to be overlooked by EZNEC.

(ok, done this time :)

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4349. Re: Linear decoupling traps, FINAL PLAN

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 09:07:39 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <48085fd9$0$23828$9b536df3@news.fv.fi>
Source record: 26021

"JN" <jnxx@vfemail.net> wrote in message
news:4800f763$0$8161$9b536df3@news.fv.fi...
>I am planning a two band antenna for 30 and 80m using linear traps.
> The idea is to build the antenna of zip-cord type line 140ohm vf 0.73.
> Trap is made using 1/4 wave shorted stub, decoupling occurs at the open
> end.

Thanks to everybody for valuable comments.
Special thanks to Jim K7JEB, who made the simulation and verified that the
antenna
works as expected.

After much confusion with the text graphics, I learned the lesson to never
use them again

So here is how the antenna works
http://farm4.static.flickr.com/3078/2423002784_8c7c03acc4_o.jpg

I am going to use this kind of material, which is very commonly used by
telephone companies here.
http://www.saunalahti.fi/hohtola/ham/killu/killu.html

And here is how it will be made:

http://farm3.static.flickr.com/2072/2422189823_285653e9b9_o.jpg

Why not normal traps? Easier to build
Why not parallell dipoles? Much shorter
You get three bands if needed very easily

73 Jouko OH5RM

4350. Re: G5RV Half size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 09:40:06 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <V%ZNj.2946$Rr7.2308@newsfe29.ams2>
Source record: 26022

I think its called a modelling program? I was told a long time ago that's there is a program where you can input the shape and size of an antenna and it will predict how well it would work.

Is there such a program and how simple is it to use?

At the moment I'm trying all different setups to try and get the best I can, because of the space and the neighbours.

Many thanks

"Barrett" <barrett@blueyounder.co.uk> wrote in message news:f%QNj.94969$qj3.27626@newsfe20.ams2...
> If I join some extra wire to the ends of the G5RV half size and bring them
> down towards the bottom of the 300 Ohm slotted feeder to make a triangle
> shape, kept vertical. Would this radiate ok or would it be a waist of
> time?
>
> Is there a modelling program I could buy for HF antennas?
>
> Thanks
>
>

4351. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 11:08:47 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <3j%Nj.163827$833.42126@newsfe17.ams2>
Source record: 26023

Cecil, got a question for you.
I have another 20ft pole mounted on the back of my house and it is rested on the patio floor. I plane to put up a Cushcraft MA5B on this pole and a 2/70 collinear on top. Does this mean that there will be high voltage on the pole beneath the beam from the beam or from the collinear?

The children will be out in the garden when the weather gets better.

Thanks

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:l6NNj.4504$iK6.361@nlpi069.nbdc.sbc.com...
> Barrett wrote:
>> Just went out to get things ready to try the Ariel's out tomorrow and it
>> occurred to me that the 20ft pole is resting on the patio. To make this
>> work, would I need to lift the pole off the floor and would 1ft be
>> enough?
>
> Depends on whether the patio is conductive or not.
> Probably best to rest the base on an insulator.
> Also be aware that, at 100 watts, there will be
> hundreds, if not thousands of volts present at
> the base of the pole. I once keyed down while
> a cat was standing on one of my radials. Not
> sure where it went, but it might have gone
> into orbit. Have you considered sleeving the
> pole inside PVC pipe for safety reasons?
> --
> 73, Cecil http://www.w5dxp.com
>

4352. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 12:09:17 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <5874a5ff-7be0-4177-85cc-80796a471a2c@u69g2000hse.googlegroups.com>
Source record: 26024

On Apr 18, 3:27 am, Roy Lewallen <w...@eznec.com> wrote:
> Roger Sparks wrote:
> > . . . But how can we have a source with zero resistance, zero
> > capacitance, and zero inductance because in the real world, any
> > source has impedance? The short has "zero resistance, zero
> > capacitance, and zero inductance but it does not emit energy nor have
> > a reverese voltage, both properties of the voltage source. It is not
> > reasonable to assign the properties of the short to the voltage
> > source, ignoring the reverse voltage situation, and expect reflectons
> > from the source to be identical to reflections from a short.
>
> None of the ideal components we use for linear circuit analysis exist in
> the real world. We use ideal resistances which have no inductance or
> capacitance, capacitances which have no resistance or inductance, ideal
> inductances which have no resistance or capacitance, ideal controlled
> sources which operate over an infinite range of control and output
> values. And try making anything even vaguely resembling an ideal
> transformer. So what's the problem in accepting an ideal voltage source
> as another model element? If you want a better approximation of
> something you can build in the real world, add an ideal resistance to
> the ideal voltage source, and you'll have a much better representation
> of most real sources.
>
> As for the way the source reacts to an impinging wave, note that the
> voltage across a short circuit doesn't change when a wave hits it.
> Neither does the voltage across an ideal voltage source. Consequently,
> they do have exactly the same effect on waves.
>
> Roy Lewallen, W7EL

Perhaps it would help clarify the thinking to plot some voltage-
current
curves.

If we plot V versus I for a resistor (with V on the vertical access)
we
get a line with a slope equal to R. This line passes through the
origin.

For a short, the line is horizontal (i.e. slope and R are zero) and
for
an open the line is vertical (i.e. slope and R are infinite).

Now plot the V-I characteristic of a resistor in series with an ideal
voltage source. Again it is a line with a slope equal to R, but it

does
not pass through the origin, it crosses the vertical axis at the
voltage
provided by the source. So the y-axis crossing is controlled by the
voltage source and the slope is controlled by the resistor. If you
reduce the resistor to zero, you get a horizontal line crossing
the y-axis at the voltage of the source. The line being horizontal
means that no amount of current will change the voltage.

We often talk of resistance as V/I, but there are many situations in
which it is better to think of it as deltaV/deltaI (or, in the limit,
dV/dI); that is, the change in voltage that accompanies a change
in current. This is exactly the slope of the V/I curve at that point
and works for computing resistance regardless of whether there is a
voltage offset present.

And this is how the source resistance of a battery or power supply
would be measured. Measure the voltage and current at one load,
change the load, measure the new voltage and current, compute the
source resistance from the changes in the voltage and current.

This dV/dI view of resistance is extremely useful and can be
applied to devices with very complex V-I curves. Consider a
tunnel diode (http://en.wikipedia.org/wiki/Tunnel_diode).
Over part of its V-I curve, the slope (i.e. resistance) is
negative. If we put a tunnel diode in a circuit with appropriate
bias such that the tunnel diode only operates over this range
of its V-I curve, then for the purposes of that circuit it
can be modelled as a resistor with negative resistance.

Think R=dV/dI, not R=V/I.

...Keith

4353. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 13:16:20 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080418061620.c9a763df.rsparks@elltel.net>
Source record: 26025

On Thu, 17 Apr 2008 18:43:41 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > Yes, in nature the returning power will affect the
> > frequency of the source.
>
> If the reflected wave is a sine wave coherent with
> the forward wave, why would the frequency change
> when they are superposed?
>

I grant that the case for true frequency change was overstated. There is a one time phase change, causing a frequency "bump" for one cycle. This phase change is a one time event, occuring for each successive and diminishing reflected wave.

> >> GND--Vs--x--Rs--------45deg 50 ohm----short
> >> 100v 50ohm
> >>
> > This circuit has an impedance of 73.5 + J44.1 ohms
> > at the point x. Energy sinking into the source occurs
> > during the cycle. It is not an illusion.
>
> I got a different impedance value but for purposes
> of discussion, all that matters is that the impedance
> is NOT 50 ohms.
>
Right, in my haste, I picked up the impedance for a 12.5 ohm load. Sorry. The impedance should be 50 + 50j ohms.

> Let's assume your impedance is correct. That means
> the ratio of reflected power to forward power at
> point 'x' is 0.1452 in the 50 ohm environment.
> Why would reflected energy flowing back through
> the source be considered "energy sinking". Why
> cannot the reflected energy flow back through the
> source unimpeded by the 0+j0 impedance and be
> reflected by the short to ground on the other side?
> That same thing happens all the time to standing
> wave current on the outside of the coax braid.
> Why do the laws of physics change inside a source?
>
It is the arbitrariness that I object to. As you say, you chose 50 ohms to calculate the reflection factor. So we have a 50 ohm transmission line zero length long, reflecting from a short circuit. This does nothing for us. We still have the source absorbing power, but

now we have now added a mechanism for how the absorbed power behaves within the source.

> In this example, we are delivering 100 watts to Rs.
> With a power reflection coefficient of 0.1452, the
> forward power has to be 117 watts making the reflected
> power equal to 17 watts at point 'x'. That reflected
> power of 17 watts is not absorbed by the source. It
> flows back through the source, unimpeded by the 0+j0
> impedance, and is reflected by the short to ground.
> It joins the 100 watts being generated by the source
> to become the forward wave of 117 watts. No absorbing
> of energy required - just good old distributed network
> physics.
>
> Once this 17 watt wave is tracked back through the
> source, reflected, and superposed with the 100 watts
> being generated by the source, all will become clear
> without any power absorption by the source being
> necessary. Here's a diagram of what's happening.
>
> 100w 100w
> GND--------Vs----------Rs--------45deg----------short
> 17w--> 117w--> 50w-->
> <--17w <--17w <--50w
>
> All energy flows balance perfectly and there is no
> absorption by the source.
> --
>
This is much too arbitrary for me.
--
73, Roger, W7WKB

4354. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 13:29:11 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080418062911.76e06446.rsparks@elltel.net>
Source record: 26026

On Fri, 18 Apr 2008 00:27:48 -0700
Roy Lewallen <w7el@eznec.com> wrote:

> Roger Sparks wrote:
> > . . . But how can we have a source with zero resistance, zero
> > capacitance, and zero inductance because in the real world, any
> > source has impedance? The short has "zero resistance, zero
> > capacitance, and zero inductance but it does not emit energy nor have
> > a reverese voltage, both properties of the voltage source. It is not
> > reasonable to assign the properties of the short to the voltage
> > source, ignoring the reverse voltage situation, and expect reflectons
> > from the source to be identical to reflections from a short.
>
> None of the ideal components we use for linear circuit analysis exist in
> the real world. We use ideal resistances which have no inductance or
> capacitance, capacitances which have no resistance or inductance, ideal
> inductances which have no resistance or capacitance, ideal controlled
> sources which operate over an infinite range of control and output
> values. And try making anything even vaguely resembling an ideal
> transformer. So what's the problem in accepting an ideal voltage source
> as another model element? If you want a better approximation of
> something you can build in the real world, add an ideal resistance to
> the ideal voltage source, and you'll have a much better representation
> of most real sources.
>
> As for the way the source reacts to an impinging wave, note that the
> voltage across a short circuit doesn't change when a wave hits it.
> Neither does the voltage across an ideal voltage source. Consequently,
> they do have exactly the same effect on waves.
>
> Roy Lewallen, W7EL

I think we have had a discussion about this previously. I can see that within this thread we have at least three expectations of what happens within the source when a reflection arrives; absorbed, controled reflection, and acts like a short. Vigourus arguments are presented for each expectation, but who can measure what happens within an imaginary device? The seed for an endless argument!
--
73, Roger, W7WKB

4355. Re: G5RV Half size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 13:30:13 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fua7p6fju1@f04n12.cac.psu.edu>
Source record: 26027

Barrett wrote:
> I think its called a modelling program? I was told a long time ago that's
> there is a program where you can input the shape and size of an antenna and
> it will predict how well it would work.
>
> Is there such a program and how simple is it to use?

There are a couple programs out there that are free for use. The demo program of EZ-nec, and 4Nec2.

What I would suggest is getting a copy of EZNEC. Then go through the tutorials.

As for easy or difficult, you sound like a real new guy - that's okay, no one was born knowing all this stuff, and we all have to start somewhere. The important thing is to start. It will probably be a little daunting for a while.

How familiar are you with the basic concepts? Then we'll know where to start. There are some good web references out there, depending on where you want to start.

- 73 de Mike N3LI -

4356. Re: G5RV Half size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 13:32:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Mp1Oj.908$ix6.433@newssvr11.news.prodigy.net>
Source record: 26028

Barrett wrote:
> If I join some extra wire to the ends of the G5RV half size and bring them
> down towards the bottom of the 300 Ohm slotted feeder to make a triangle
> shape, kept vertical. Would this radiate ok or would it be a waist of time?

The 300 ohm line is a series-section transformer that
works with the G5RVjr antenna feedpoint impedances
encountered on 40m, 20m, 10m, and 6m. If you change
the antenna, you change the antenna feedpoint impedance.
It would be a virtually impossible coincidence if the
same series-matching transformer worked well on a
different antenna.

> Is there a modelling program I could buy for HF antennas?

EZNEC is available from www.eznec.com. Before buying,
you can test drive the free demo version which has
a 20 segment limit. EZNEC is a very time efficient
way to learn about antennas.
--
73, Cecil http://www.w5dxp.com

4357. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 14:48:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Yw2Oj.1535$FF6.1208@newssvr29.news.prodigy.net>
Source record: 26029

Keith Dysart wrote:
> So you are saying that ideal voltage sources work differently
> in distributed networks than they do in lumped circuits.

"Work differently" is a loaded expression. Since both
lumped circuit and distributed network models exist,
it is safe to say that the lumped circuit model and
the distributed network model indeed "work differently".
If they didn't "work differently", there would be no
need for both of them to exist.

Your previous error is obvious. You were using the
lumped circuit model on the left side of Rs and
using the distributed network model on the right
side of Rs. If it is necessary to use the distributed
network model for part of the network, then it is
absolutely necessary to be consistent for all of
the network.

When you switched to the lumped circuit model on
the right side of Rs, the energies balanced. When
you switch to the distributed network model on
the left of Rs, the energies will also balance.

The lumped circuit model is a subset of the distributed
network model. See: http://www.ttr.com/corum/ and
http://www.ttr.com/TELSIKS2001-MASTER-1.pdf

Here's some quotes: "Lumped circuit theory fails because
it's a *theory* whose presuppositions are inadequate.
Every EE in the world was warned of this in their first
sophomore circuits course. ... Lumped circuit theory
isn't absolute truth, it's only an analytical *theory*.
... Distributed theory encompasses lumped circuits and
always applies."

> Where does the energy being absorbed by these ideal voltage
> sources go?

0+j0 ohms cannot absorb energy. As Eugene Hecht said:
"If the quantity to be measured is the net energy per unit
area received, it depends on 'T' and is therefore of limited
utility. If however, the 'T' is now divided out, a highly
practical quantity results, one that corresponds to the
average energy per unit area per unit time, namely 'I'."
'I' is the irradiance (*AVERAGE* power density).

You seem to have discovered that "limited utility".
You have an instantaneous power calculated over an
infinitesimally small amount of time being dissipated
or stored in an impedance of 0+j0. Compared to that
assertion, the Virgin Birth seems pretty tame. :-)
--
73, Cecil http://www.w5dxp.com

4358. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 15:13:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MU2Oj.2134$I55.241@newssvr22.news.prodigy.net>
Source record: 26030

Barrett wrote:
> Cecil, got a question for you.
> I have another 20ft pole mounted on the back of my house and it is rested on
> the patio floor. I plan to put up a Cushcraft MA5B on this pole and a 2/70
> collinear on top. Does this mean that there will be high voltage on the pole
> beneath the beam from the beam or from the collinear?

Are the beam and collinear isolated from the pole?
If so, there's probably no real problem.

If a mobile antenna is being used with the pole as
the counterpoise, then about half of the RF energy
flows in the pole. RF burns can be the result.
--
73, Cecil http://www.w5dxp.com

4359. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 15:57:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Fx3Oj.7125$GE1.4232@nlpi061.nbdc.sbc.com>
Source record: 26031

Roger Sparks wrote:
> This is much too arbitrary for me.

It's not arbitrary at all - it's the result of very
carefully chosen boundary conditions including specifying
a 100% 50 ohm system with ideal components. It agrees with
Roy's posting about ideal source impedances and short-circuits.

The bottom line is: If the distributed network model
is used to the right of Rs, it must also be used to
the left of Rs. Once the distributed network principles
are applied to the source, the results are the posted values.
Since no other values are possible, it is certainly not
arbitrary.

What *is* arbitrary is willy-nilly using the distributed
network model for part of the network and using the
lumped circuit model for the other part.

I have updated the diagram to the values that I calculated
for the shorted 45 degree line.

```
100v 50ohm 45deg
GND--------Vs----------Rs--------50ohm----------short
25w--> 125w--> 50w-->
<--25w <--25w <--50w
```

The net voltages and currents are the result of the
superposition of the component voltages and currents.
The forward and reflected power readings are what
an ideal directional wattmeter would indicate.
--
73, Cecil http://www.w5dxp.com

4360. Re: Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 16:44:07 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <4808cfd1$0$7058$4c368faf@roadrunner.com>
Source record: 26032

"Tim Shoppa" <shoppa@trailing-edge.com> wrote in message
news:9bd48768-b888-4d34-9e47-5b1ce4439f83@y21g2000hsf.googlegroups.com...
> Are there any companies that sell the big-ass glass/ceramic antenna
> strain and standoff insulators anymore?
>
> Most of the ham antenna places that sell wire antennas have a single
> style of really tiny ceramic strain insulator, and one or two plastic
> strain insulators, but they all obviously are made by the same company
> and imported. Nothing wrong with them, but the ceramic one really will
> not hold any rope above 3/16", and the plastic one won't take any rope
> above 1/4" (and even that only with some effort.)
>
> I have been buying good insulating plastics (e.g. G-10, Polycarbonate,
> etc.) and making my own insulators, but if there were a good source of
> the big classic ceramic and/or glass ribbed insulators - not just
> strain but also the standoffs - I'd buy them in a hearbeat.
>
> Cool old insulators do show up on E-bay etc. but they're generally
> onesies-twosies and obviously being sold to collectors, not hams who
> string them up on antennas.
>
> I can go to the industrial supplier indices and find companies, even
> local companies, that custom-make ceramic and glass insulators for the
> electrical industries, but they have no intention, or even mechanism
> if I call them, of selling a dozen insulators to an individual ham. If
> anyone knows of an exception, please let me know!

Try some of the farm supply places. We call them feed and seed stores around
here.

You can still get a lot of stuff made for electric fences in ceramic and
farmers often have to do their own power distibution so the y carry big
porcelan insulators with lag or SAE thread bolts. Getting to know someone
who works for the local PoCo helps.

Jimmie

4361. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 16:52:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Tk4Oj.2786$%V7.1186@newssvr14.news.prodigy.net>
Source record: 26033

Roger Sparks wrote:
> I can see that within this thread we have at least
> three expectations of what happens within the source
> when a reflection arrives; absorbed, controled
> reflection, and acts like a short.

Since a short causes a reflection, it seems that
(2) and (3) are essentially the same thing and
since 0+j0 cannot absorb energy and always
reflects energy, seems (1) can be discarded as
an over-simplification, something for which the
lumped circuit model is famous. For instance:

Given a loading coil installed in a traveling
wave antenna - reckon why EZNEC gives completely
different delays through the inductance when it
is modeled as a lumped inductance vs when it is
modeled using EZNEC's helix feature?
--
73, Cecil http://www.w5dxp.com

4362. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 17:02:23 UTC
From: Al Lorona <al_lorona@agilent.com>
Message-ID: <Qt4Oj.7139$GE1.4110@nlpi061.nbdc.sbc.com>
Source record: 26034

Very cool, Roy. Thank you for this, this is good information that makes sense to me. There is a lot in there to think about and apply to the application for which I'm analyzing this antenna.

When you talk about the current maximum and loss of a radial, you bring up another question. My 1/2 wave vertical is going to have a much higher feedpoint impedance than a standard 1/4 wave vertical. Let's say it's somewhere around 2000 ohms as compared to 40 or so ohms for a 1/4 wave. What effect does that higher feedpoint impedance have on the radial system? Does it relax the requirements for the number or radials or the length of them? Does it mask the loss that you'd have normally? Or do the "rules" of adding radials apply no matter what the vertical's input impedance?

Thanks very much.

Al W6LX

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:p4CdnVoHG_g30pXVnZ2dnUVZ_vudnZ2d@easystreetonline...
> Al Lorona wrote:
>> Hi, Everybody,
>>
>> In the process of modeling a vertical antenna (specifically, I am using
>> EZNEC 5.0) I am noticing an effect I did not expect which could be the
>> result of a modeling error on my part.
>>
>> The antenna is a 34-foot vertical above (12) 34-foot radials, making it a
>> 1/4 wave on 40 and a 1/2 wave on 20.
>>
>> On 40, the antenna works as I expected; as the ground conductivity goes
>> up, the gain and efficiency of the antenna both increase, too.
>>
>> But on 20, if I increase the ground conductivity from, say, 0.005 to
>> 0.008 S/m, the max gain and efficiency *decrease*! This is
>> counter-intuitive to me.
>>
>> Can anyone point to something I'm doing wrong?
>>
>> Thanks,
>>
>> Al W6LX
>
> Ground loss is a sort of impedance matching problem. If you have perfectly
> conducting ground, there is no ground loss. If you have perfectly
> insulating ground, there is no ground loss. There's always some ground

> conductivity in between those extremes at which the loss is maximum. This
> value depends on the frequency among other things. Try a wider range of
> conductivities and you'll find this point.
>
> You should also be aware that if you have radials which are above but
> close to the ground, half wavelength ones can be considerably less
> efficient than quarter wavelength ones. One reason is that the points of
> maximum current are out near the centers of the radials, where they induce
> current into the lossy ground. When the radials are a quarter wavelength
> or shorter, the current maxima are near the center, so their fields nearly
> cancel. Another often-overlooked fact is that radials very close to the
> ground are electrically considerably longer than when more elevated. So
> radials which are a quarter wavelength in free space can have their
> current maxima well out from the center which results in lower efficiency.
>
> Roy Lewallen, W7EL

4363. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 17:26:50 UTC
From: Al Lorona <al_lorona@agilent.com>
Message-ID: <EQ4Oj.7140$GE1.6372@nlpi061.nbdc.sbc.com>
Source record: 26035

Roy,

This is blowing my mind. What you said about ground loss peaking at some certain conductivity makes perfect sense but I never thought about it before as applied to a vertical antenna system like this.

Sure enough, I found a maximum. This is wild. We always think, "The better the ground, the better the antenna system," but it's not that simple. It's funny to think that really terrible ground can have an advantage over pretty good ground.

Next I'm going to play with the radial length so I can see the other effect you described for me.

Regards,

Al W6LX

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:p4CdnVoHG_g30pXVnZ2dnUVZ_vudnZ2d@easystreetonline...
> Al Lorona wrote:
>> Hi, Everybody,
>>
>> In the process of modeling a vertical antenna (specifically, I am using
>> EZNEC 5.0) I am noticing an effect I did not expect which could be the
>> result of a modeling error on my part.
>>
>> The antenna is a 34-foot vertical above (12) 34-foot radials, making it a
>> 1/4 wave on 40 and a 1/2 wave on 20.
>>
>> On 40, the antenna works as I expected; as the ground conductivity goes
>> up, the gain and efficiency of the antenna both increase, too.
>>
>> But on 20, if I increase the ground conductivity from, say, 0.005 to
>> 0.008 S/m, the max gain and efficiency *decrease*! This is
>> counter-intuitive to me.
>>
>> Can anyone point to something I'm doing wrong?
>>
>> Thanks,
>>
>> Al W6LX
>
> Ground loss is a sort of impedance matching problem. If you have perfectly
> conducting ground, there is no ground loss. If you have perfectly
> insulating ground, there is no ground loss. There's always some ground

> conductivity in between those extremes at which the loss is maximum. This
> value depends on the frequency among other things. Try a wider range of
> conductivities and you'll find this point.
>
> You should also be aware that if you have radials which are above but
> close to the ground, half wavelength ones can be considerably less
> efficient than quarter wavelength ones. One reason is that the points of
> maximum current are out near the centers of the radials, where they induce
> current into the lossy ground. When the radials are a quarter wavelength
> or shorter, the current maxima are near the center, so their fields nearly
> cancel. Another often-overlooked fact is that radials very close to the
> ground are electrically considerably longer than when more elevated. So
> radials which are a quarter wavelength in free space can have their
> current maxima well out from the center which results in lower efficiency.
>
> Roy Lewallen, W7EL

4364. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 17:51:14 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <27nh04pgpavjjp0ekohrej142g6vrc1e8t@4ax.com>
Source record: 26036

On Fri, 18 Apr 2008 10:26:50 -0700, "Al Lorona"
<al_lorona@agilent.com> wrote:

>This is blowing my mind. What you said about ground loss peaking at some
>certain conductivity makes perfect sense but I never thought about it before
>as applied to a vertical antenna system like this.
>
>Sure enough, I found a maximum. This is wild. We always think, "The better
>the ground, the better the antenna system," but it's not that simple. It's
>funny to think that really terrible ground can have an advantage over pretty
>good ground.

Hi Al,

There are two sides to this coin and you are only looking at one.

Let's take for example the vaunted superlatives that are often tied to
swamp land, or even planting your antenna farm offshore (ah that
seawater!). There is more loss there than if you planted your antenna
farm on a 100 foot sand dune (think glass).

So, why do so many eyes mist up with the opportunity of being in a
swap or in the ocean? Launch angle.

That same high (lossy) conductivity is also responsible for what is
called the Brewster angle when it comes to vertical antennas. The
higher the conductivity, the lower the Brewster angle, the lower the
launch angle possibilities, the longer out to the first skip - DX!

Longer radials will not lower that Brewster angle unless you extend
them out very far with a lot of them (think of carpeting the soil out
with a copper mesh for several 10s of wavelengths).

So, returning to your comment:
>"The better
>the ground, the better the antenna system,"
Better ground may subtract power in the near proximity, but better
ground may also boost relative power at low angles. So, you need to
define what is meant by "better" because this is a choice of opposite
alternatives.

73's
Richard Clark, KB7QHC

4365. Re: G5RV Half size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 18:00:40 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <al5Oj.17661$_h7.16042@newsfe05.ams2>
Source record: 26037

I've just downloaded EZNEC v. 5.0 demo.
I'm only just starting to learn the basic concepts from the beginning.

Thanks

"Michael Coslo" <mjc5@psu.edu> wrote in message
news:fua7p6fju1@f04n12.cac.psu.edu...
> Barrett wrote:
>> I think its called a modelling program? I was told a long time ago that's
>> there is a program where you can input the shape and size of an antenna
>> and it will predict how well it would work.
>>
>> Is there such a program and how simple is it to use?
>
> There are a couple programs out there that are free for use. The demo
> program of EZ-nec, and 4Nec2.
>
> What I would suggest is getting a copy of EZNEC. Then go through the
> tutorials.
>
> As for easy or difficult, you sound like a real new guy - that's okay, no
> one was born knowing all this stuff, and we all have to start somewhere.
> The important thing is to start. It will probably be a little daunting for
> a while.
>
> How familiar are you with the basic concepts? Then we'll know where to
> start. There are some good web references out there, depending on where
> you want to start.
>
> - 73 de Mike N3LI -
>

4366. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 18:03:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0o5Oj.8725$V14.5703@nlpi070.nbdc.sbc.com>
Source record: 26038

Al Lorona wrote:
> It's funny to think that really terrible ground can
> have an advantage over pretty good ground.

Free space is just about the most terrible "ground"
that one can imagine. :-)
--
73, Cecil http://www.w5dxp.com

4367. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 18:04:34 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <Qo5Oj.17662$_h7.7610@newsfe05.ams2>
Source record: 26039

No, the beam and collinear are not isolated from the pole.

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:MU2Oj.2134$I55.241@newssvr22.news.prodigy.net...
> Barrett wrote:
>> Cecil, got a question for you.
>> I have another 20ft pole mounted on the back of my house and it is rested
>> on the patio floor. I plan to put up a Cushcraft MA5B on this pole and a
>> 2/70 collinear on top. Does this mean that there will be high voltage on
>> the pole beneath the beam from the beam or from the collinear?
>
> Are the beam and collinear isolated from the pole?
> If so, there's probably no real problem.
>
> If a mobile antenna is being used with the pole as
> the counterpoise, then about half of the RF energy
> flows in the pole. RF burns can be the result.
> --
> 73, Cecil http://www.w5dxp.com
>

4368. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 18:11:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <VfidnZbNEK-reZXVnZ2dnUVZ_tHinZ2d@easystreetonline>
Source record: 26040

Buck wrote:
> . . .
> I don't remember the dimensions, but I remember that in the
> instructions, EZNEC could not make accurate measurements with parallel
> wires within a certain distance like 8-10 inches.
>
> (someone correct me here.)
> . . .

That's not correct. However, it is essential to align the segment junctions so they're directly across from each other when modeling closely spaced parallel wires.

Roy Lewallen, W7EL

4369. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 18:14:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <VfidnZHNEK9qeZXVnZ2dnUVZ_tHinZ2d@easystreetonline>
Source record: 26041

Keith Dysart wrote:
> Perhaps it would help clarify the thinking to plot some voltage-
> current
> curves.
>
> If we plot V versus I for a resistor (with V on the vertical access)
> we
> get a line with a slope equal to R. This line passes through the
> origin.
>
> For a short, the line is horizontal (i.e. slope and R are zero) and
> for
> an open the line is vertical (i.e. slope and R are infinite).
>
> Now plot the V-I characteristic of a resistor in series with an ideal
> voltage source. Again it is a line with a slope equal to R, but it
> does
> not pass through the origin, it crosses the vertical axis at the
> voltage
> provided by the source. So the y-axis crossing is controlled by the
> voltage source and the slope is controlled by the resistor. If you
> reduce the resistor to zero, you get a horizontal line crossing
> the y-axis at the voltage of the source. The line being horizontal
> means that no amount of current will change the voltage.
>
> We often talk of resistance as V/I, but there are many situations in
> which it is better to think of it as deltaV/deltaI (or, in the limit,
> dV/dI); that is, the change in voltage that accompanies a change
> in current. This is exactly the slope of the V/I curve at that point
> and works for computing resistance regardless of whether there is a
> voltage offset present. . .

Anyone interested in learning more about this and its application can look up "dynamic resistance" on the web or in an appropriate text.

Roy Lewallen, W7EL

4370. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 18:24:53 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <u8mdnbBrEv3uepXVnZ2dnUVZ_tCrnZ2d@easystreetonline>
Source record: 26042

Roger Sparks wrote:
>
> I think we have had a discussion about this previously. I can see
> that within this thread we have at least three expectations of what
> happens within the source when a reflection arrives; absorbed,
> controled reflection, and acts like a short. Vigourus arguments are
> presented for each expectation, but who can measure what happens
> within an imaginary device? The seed for an endless argument!

We can calculate the voltage and current of an imaginary resistance, imaginary capacitance, imaginary inductance, imaginary current-controlled voltage source, imaginary ideal transformer, and ideal lossless transmission line. And we can calculate them for a perfect voltage source, too. From the voltage and current, we know the power, and from its sign the direction of energy flow. Certainly we can't know what happens to the energy which goes into the source. But why should we care? I can tell you, using the fact that an ideal voltage source reflects like a short circuit, the voltage and current in every forward and reflected voltage and current wave from turn-on to steady state of a transmission line/source/load system. At all times, the voltage across the ideal source will be invariant, as it must be, regardless of the current into and out of it. And I can show exactly where every erg of energy is at every instant in any component and at every point along the transmission line. I submit that any analysis technique which can't do this without knowing what happens to energy entering the source is inferior.

Roy Lewallen, W7EL

4371. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 18:50:50 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <4808ed8e$0$8166$9b536df3@news.fv.fi>
Source record: 26043

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:VfidnZbNEK-reZXVnZ2dnUVZ_tHinZ2d@easystreetonline...
> Buck wrote:
>> . . .
>> I don't remember the dimensions, but I remember that in the
>> instructions, EZNEC could not make accurate measurements with parallel
>> wires within a certain distance like 8-10 inches.
>>
>> (someone correct me here.)
>> . . .
>
> That's not correct. However, it is essential to align the segment
> junctions so they're directly across from each other when modeling closely
> spaced parallel wires.
>
> Roy Lewallen, W7EL

Roy,

One question:
Down the list is my posting FINAL PLAN.
Is it possible with EZNEC to simulate it?
It is made of transmission line (partly)

Yes or No is enough.
I have the DEMO version.

73 Jouko OH5RM

4372. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 20:11:06 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <c9ef2f73-6403-4344-a7b2-e1ec42051dbc@f36g2000hsa.googlegroups.com>
Source record: 26044

On 18 abr, 19:02, "Al Lorona" <al_lor...@agilent.com> wrote:
> Very cool, Roy. Thank you for this, this is good information that makes
> sense to me. There is a lot in there to think about and apply to the
> application for which I'm analyzing this antenna.
>
> When you talk about the current maximum and loss of a radial, you bring up
> another question. My 1/2 wave vertical is going to have a much higher
> feedpoint impedance than a standard 1/4 wave vertical. Let's say it's
> somewhere around 2000 ohms as compared to 40 or so ohms for a 1/4 wave. What
> effect does that higher feedpoint impedance have on the radial system? Does
> it relax the requirements for the number or radials or the length of them?
> Does it mask the loss that you'd have normally? Or do the "rules" of adding
> radials apply no matter what the vertical's input impedance?
>
> Thanks very much.
>
> Al W6LX
>
> "Roy Lewallen" <w...@eznec.com> wrote in message
>
> news:p4CdnVoHG_g30pXVnZ2dnUVZ_vudnZ2d@easystreetonline...
>
> > Al Lorona wrote:
> >> Hi, Everybody,
>
> >> In the process of modeling a vertical antenna (specifically, I am using
> >> EZNEC 5.0) I am noticing an effect I did not expect which could be the
> >> result of a modeling error on my part.
>
> >> The antenna is a 34-foot vertical above (12) 34-foot radials, making it a
> >> 1/4 wave on 40 and a 1/2 wave on 20.
>
> >> On 40, the antenna works as I expected; as the ground conductivity goes
> >> up, the gain and efficiency of the antenna both increase, too.
>
> >> But on 20, if I increase the ground conductivity from, say, 0.005 to
> >> 0.008 S/m, the max gain and efficiency *decrease*! This is
> >> counter-intuitive to me.
>
> >> Can anyone point to something I'm doing wrong?
>
> >> Thanks,
>
> >> Al W6LX

>
> > Ground loss is a sort of impedance matching problem. If you have perfectly
> > conducting ground, there is no ground loss. If you have perfectly
> > insulating ground, there is no ground loss. There's always some ground
> > conductivity in between those extremes at which the loss is maximum. This
> > value depends on the frequency among other things. Try a wider range of
> > conductivities and you'll find this point.
>
> > You should also be aware that if you have radials which are above but
> > close to the ground, half wavelength ones can be considerably less
> > efficient than quarter wavelength ones. One reason is that the points of
> > maximum current are out near the centers of the radials, where they induce
> > current into the lossy ground. When the radials are a quarter wavelength
> > or shorter, the current maxima are near the center, so their fields nearly
> > cancel. Another often-overlooked fact is that radials very close to the
> > ground are electrically considerably longer than when more elevated. So
> > radials which are a quarter wavelength in free space can have their
> > current maxima well out from the center which results in lower efficiency.
>
> > Roy Lewallen, W7EL

Hi Al,

From my experience, and simulation, a halve wave vertical has less stringent radial requirements. The current reduces with a factor of about sqrt(2000/50)= 6 (16 dB).

The result is less loss in the vicinity (near field) zone of the antenna. Far field maximum of radiation (elevation) will virtually not change because of canceling effect of reradiated field from ground below the (pseudo) Brewster angle. Because of the somewhat higher radiation center with respect to a 1/4 wave, the elevation of maximum radiation will be somewhat less. Off course when you have high ground conductivity (for example fertilized wet soil), you will have maximum radiation under lower elevation.

It is likely that in the end the produced field under relative low elevation will be higher than that from a horizontal dipole.

Elevated radials give less ground loss. At high frequency, the relative epsilon becomes important. A High dielectric constant and low conductivity may result in less loss. At high frequency a larger part of the current goes to the capacitance of the ground instead of the loss resistance (in a parallel equivalent circuit). See it as having a low loss dielectric under your antenna.

Hope this help you a bit.

Best regards,

Wim
PA3DJS
www.tetech.nl

please remove abc when replying.

4373. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 20:21:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%o7Oj.3015$h75.1481@newssvr27.news.prodigy.net>
Source record: 26045

Barrett wrote:
> No, the beam and collinear are not isolated from the pole.

Are they a "Plumber's Delight" design?
--
73, Cecil http://www.w5dxp.com

4374. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 20:23:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ir7Oj.3016$h75.853@newssvr27.news.prodigy.net>
Source record: 26046

Roy Lewallen wrote:
> Anyone interested in learning more about this and its application can
> look up "dynamic resistance" on the web or in an appropriate text.

Another name for "dynamic resistance" is "virtual resistance".
It is an *EFFECT* of superposition, not a cause of anything.
--
73, Cecil http://www.w5dxp.com

4375. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 20:32:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <kz7Oj.9794$2g1.128@nlpi068.nbdc.sbc.com>
Source record: 26047

Roy Lewallen wrote:
> And I can show exactly
> where every erg of energy is at every instant in any component and at
> every point along the transmission line. I submit that any analysis
> technique which can't do this without knowing what happens to energy
> entering the source is inferior.

I nominate this for "Quote of the year", by acclamation.
Anyone who responds to the question: Where does the energy
go? - with "We do not know and we do not care." does not
deserve to be in the discussion.
--
73, Cecil http://www.w5dxp.com

4376. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 20:45:54 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <zL7Oj.14571$3v1.420@bignews3.bellsouth.net>
Source record: 26048

"Barrett" <barrett@blueyounder.co.uk> wrote in message
news:UuMNj.17107$2b2.8202@newsfe12.ams2...
> Just went out to get things ready to try the Ariel's out tomorrow and it
> occurred to me that the 20ft pole is resting on the patio. To make this
> work, would I need to lift the pole off the floor and would 1ft be enough?
>

Its laying Horizontally??

4377. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 20:54:07 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <NT7Oj.76673$5o5.61520@newsfe15.ams2>
Source record: 26049

Sorry, I don't understand, what do you mean by a Plumber's Delight design?

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:%o7Oj.3015$h75.1481@newssvr27.news.prodigy.net...
> Barrett wrote:
>> No, the beam and collinear are not isolated from the pole.
>
> Are they a "Plumber's Delight" design?
> --
> 73, Cecil http://www.w5dxp.com
>

4378. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 21:00:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uZ7Oj.9798$2g1.3145@nlpi068.nbdc.sbc.com>
Source record: 26050

Barrett wrote:
> Sorry, I don't understand, what do you mean by a Plumber's Delight design?

Sorry, a plumber's delight design is where the support
pole is attached to a voltage node on the antenna so no
RF current flows in the pole. The alternative is to
insulate the balanced Yagi from the pole.
--
73, Cecil http://www.w5dxp.com

4379. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 21:13:27 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <V98Oj.76675$5o5.38242@newsfe15.ams2>
Source record: 25901

Thanks for the explanation.
For the best performance from the Yagi would you recommend to insulate it
from the pole as a standard practice for safety and performance?

Thanks

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:uZ7Oj.9798$2g1.3145@nlpi068.nbdc.sbc.com...
> Barrett wrote:
>> Sorry, I don't understand, what do you mean by a Plumber's Delight
>> design?
>
> Sorry, a plumber's delight design is where the support
> pole is attached to a voltage node on the antenna so no
> RF current flows in the pole. The alternative is to
> insulate the balanced Yagi from the pole.
> --
> 73, Cecil http://www.w5dxp.com
>

4380. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 23:00:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <P9adnbUbhbmPtZTVnZ2dnUVZ_smnnZ2d@easystreetonline>
Source record: 25902

JN wrote:
>
> Roy,
>
> One question:
> Down the list is my posting FINAL PLAN.
> Is it possible with EZNEC to simulate it?
> It is made of transmission line (partly)
>
> Yes or No is enough.
> I have the DEMO version.
>
> 73 Jouko OH5RM

Yes, a simulation should be reasonably accurate. The segmentation limitation of the demo version will probably reduce the accuracy some, but you'll be able to get a very good idea of how it will work.

Roy Lewallen, W7EL

4381. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-18 23:48:04 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080418164804.ded6fe78.rsparks@elltel.net>
Source record: 25903

On Fri, 18 Apr 2008 10:57:24 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:
> > This is much too arbitrary for me.
>
> It's not arbitrary at all - it's the result of very
> carefully chosen boundary conditions including specifying
> a 100% 50 ohm system with ideal components. It agrees with
> Roy's posting about ideal source impedances and short-circuits.
>

It is arbitrary because when using the short circuit model, you limit the discussion to only one example of transmission line termination--the example of a low impedance on one end of the line and a higher impedance on the other. As you well know, two additional examples of transmission line termination are possible--the transmission line impedance is higher (or lower) than the termination at either end.

It is also arbitrary because the reflected wave information is useless. Any reflection from the source is folded into the sine wave to form one wave, which becomes the forward wave. The only real accomplishment from the exercise to to shift the frequency for a one cycle "bump", and that accomplishment does more to introduce confusion than contribute to better understanding.

--
73, Roger, W7WKB

4382. Re: The Rest of the Story

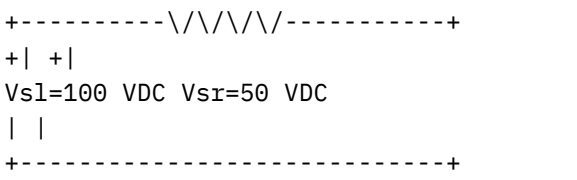
Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 00:14:30 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <84feeef2-ffdd-4b49-9480-e749d90feaf1@a23g2000hsc.googlegroups.com>
Source record: 25904

On Apr 18, 10:48 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > So you are saying that ideal voltage sources work differently
> > in distributed networks than they do in lumped circuits.
>
> "Work differently" is a loaded expression. Since both
> lumped circuit and distributed network models exist,
> it is safe to say that the lumped circuit model and
> the distributed network model indeed "work differently".
> If they didn't "work differently", there would be no
> need for both of them to exist.
>
> Your previous error is obvious. You were using the
> lumped circuit model on the left side of Rs and
> using the distributed network model on the right
> side of Rs. If it is necessary to use the distributed
> network model for part of the network, then it is
> absolutely necessary to be consistent for all of
> the network.
>
> When you switched to the lumped circuit model on
> the right side of Rs, the energies balanced. When
> you switch to the distributed network model on
> the left of Rs, the energies will also balance.
>
> The lumped circuit model is a subset of the distributed
> network model.
See:http://www.ttr.com/corum/andhttp://www.ttr.com/TELSIKS2001-MASTER-1.pdf
>
> Here's some quotes: "Lumped circuit theory fails because
> it's a *theory* whose presuppositions are inadequate.
> Every EE in the world was warned of this in their first
> sophomore circuits course. ... Lumped circuit theory
> isn't absolute truth, it's only an analytical *theory*.
> ... Distributed theory encompasses lumped circuits and
> always applies."

It is a good thing I checked the original references, otherwise
I would have had to assign Corum and Corum immediately to the
flake bucket where they could join some of the other contendors
on this group. But no, it turns out they have the appropriate
qualifications on all their statements about when it is
appropriate to use a lumped analysis and when it is not. And
when is lumped okay, when the physical dimensions of the

elements can be measured in small fractions of a wavelength.
Nothing new there, most of us know that.

Let me remind you of the circuit at hand:



Firstly, there are no inductors to cause any sort of difficulty.
Secondly, it is constructed of ideal components, which have the
luxury of being infinitely small.
And thirdly, it is a DC circuit so the two points above do not
matter any way.

So we are back to the question you keep dodging...

> > Where does the energy being absorbed by these ideal voltage
> > sources go?
>
> 0+j0 ohms cannot absorb energy.

Now that is a non-sequitor. The element absorbing energy is an
ideal voltage source, not a resistor.

> As Eugene Hecht said:
> "If the quantity to be measured is the net energy per unit
> area received, it depends on 'T' and is therefore of limited
> utility. If however, the 'T' is now divided out, a highly
> practical quantity results, one that corresponds to the
> average energy per unit area per unit time, namely 'I'."
> 'I' is the irradiance (*AVERAGE* power density).

It is a DC circuit. This means the instantaneous value is
the average value.

(But poor Hecht, here he is saying power is more useful than
cumulative energy, and you misinterpret him to be comparing
instantaneous to average. And is it the distribution over
the area that is being averaged, or the distribution over
time?)

> You seem to have discovered that "limited utility".
> You have an instantaneous power calculated over an
> infinitesimally small amount of time being dissipated
> or stored in an impedance of 0+j0. Compared to that
> assertion, the Virgin Birth seems pretty tame. :-)

Again, it is a DC circuit since we have had to go back
to learning the fundamentals of ideal voltage sources.

But back to the simple question...

Where does the energy that is flowing into the ideal DC voltage source on the right go?

If no energy is flowing into the ideal voltage source on the right, where is the energy that is being continuously provided by the ideal voltage source on left going? Of the 100 W being provided by the ideal source on the left, only 50 W is being dissipated in the resistor. Where goes the remaining 50 W, if not into the ideal voltage source on the right?

...Keith

4383. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 00:15:10 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <6ee48270-489a-47b3-8812-69af011f0050@m3g2000hsc.googlegroups.com>
Source record: 25905

On Apr 18, 4:23 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roy Lewallen wrote:
> > Anyone interested in learning more about this and its application can
> > look up "dynamic resistance" on the web or in an appropriate text.
>
> Another name for "dynamic resistance" is "virtual resistance".
> It is an *EFFECT* of superposition, not a cause of anything.

Are you suggesting that the negative "dynamic resistance" of a
tunnel diode is an *EFFECT* of superposition?

Please feel free to expand on this claim.

...Keith

4384. Re: Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 01:52:13 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <ksqdnRKbHe4jzZTVnZ2dnUVZ_sGvnZ2d@giganews.com>
Source record: 25906

Tim Shoppa wrote:
> Are there any companies that sell the big-ass glass/ceramic antenna
> strain and standoff insulators anymore?
>
> Most of the ham antenna places that sell wire antennas have a single
> style of really tiny ceramic strain insulator, and one or two plastic
> strain insulators, but they all obviously are made by the same company
> and imported. Nothing wrong with them, but the ceramic one really will
> not hold any rope above 3/16", and the plastic one won't take any rope
> above 1/4" (and even that only with some effort.)
>
> I have been buying good insulating plastics (e.g. G-10, Polycarbonate,
> etc.) and making my own insulators, but if there were a good source of
> the big classic ceramic and/or glass ribbed insulators - not just
> strain but also the standoffs - I'd buy them in a hearbeat.
>
> Cool old insulators do show up on E-bay etc. but they're generally
> onesies-twosies and obviously being sold to collectors, not hams who
> string them up on antennas.
>
> I can go to the industrial supplier indices and find companies, even
> local companies, that custom-make ceramic and glass insulators for the
> electrical industries, but they have no intention, or even mechanism
> if I call them, of selling a dozen insulators to an individual ham. If
> anyone knows of an exception, please let me know!

Dunno 'bout standoff insulators but Davis RF carries porcelain compression insulators: http://www.davisrf.com/. I use their #10-72 (Daburn's PN) for dipoles, supported by ¼" diameter rope. They don't have what I would call good descriptions or even photos but you can search for a part number on Daburn's website: http://www.daburn.com/

Bryan WA7PRC

4385. Re: Yagi Beam Antennas for sale

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 04:47:45 UTC
From: Len B <lennyb_removespamcrap_@telus.net>
Message-ID: <o7ui04d90laj9q6122r5a7297qgq7ktat4@4ax.com>
Source record: 25907

On Sat, 12 Apr 2008 11:59:57 +0100, Highland Ham
<abcgm0csz.kn6whxyz@dsl.pipex.com> wrote:

>Peter wrote:
>> Three Yagi beam antennas for sale. Built for 433.92MHz (amateur band).
>> $50 for the three. Great for remote data transmission etc. Available
>> at Brighton-le-Sands in Sydney, Australia. For details ring me on +61
>> 2 9599-1811 after hours.
>==========
>433.92 MHz is a frequency used for unlicenced low power devices like car
>key fobs ,domestic oil tank level reporting , remote weather station
>sensors ,etc , even while this is in the 70cms amateur band.
>
>Frank GM0CSZ / KN6WH

If I were closer to the seller, I might be interested as I use that
freq. (or close to it) for tracking high power rockets.

I wonder how many elements?

Len Bryan
VE7ZIN

4386. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 06:05:17 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <0r2j04ptoea36fb8jhg5s1rkndi6q8nk7m@4ax.com>
Source record: 25908

On Fri, 18 Apr 2008 11:11:05 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Buck wrote:
>> . . .
>> I don't remember the dimensions, but I remember that in the
>> instructions, EZNEC could not make accurate measurements with parallel
>> wires within a certain distance like 8-10 inches.
>>
>> (someone correct me here.)
>> . . .
>
>That's not correct. However, it is essential to align the segment
>junctions so they're directly across from each other when modeling
>closely spaced parallel wires.
>
>Roy Lewallen, W7EL

Is this true for 3 as behind a version or two.

Thanks

Buck
--
73 for now
Buck, N4PGW

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"Small - broadband - efficient: pick any two."

4387. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 08:56:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <GN2dnTKgcaQhLpTVnZ2dnUVZ_u6dnZ2d@easystreetonline>
Source record: 25909

Buck wrote:
> On Fri, 18 Apr 2008 11:11:05 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>> Buck wrote:
>>> . . .
>>> I don't remember the dimensions, but I remember that in the
>>> instructions, EZNEC could not make accurate measurements with parallel
>>> wires within a certain distance like 8-10 inches.
>>>
>>> (someone correct me here.)
>>> . . .
>> That's not correct. However, it is essential to align the segment
>> junctions so they're directly across from each other when modeling
>> closely spaced parallel wires.
>>
>> Roy Lewallen, W7EL
>
>
> Is this true for 3 as behind a version or two.

This is true for every NEC-based program, which includes all versions of EZNEC. See "Parallel Wires" in the EZNEC manual index.

Roy Lewallen, W7EL

4388. SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 11:00:42 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <rhkOj.232821$833.136510@newsfe17.ams2>
Source record: 25910

I have a 60ft garden and my maximum height I can go is only 20ft. I would like to TX on 80-40 and on 160 if possible but I might be asking the impossible with the 160m..
I do not have a ground system in place. I can put some earth rods in and some surface wire but I have no way of putting any wire into the soil itself. So I am a bit limited.

I have a 150ft of flexweave wire that is uv plastic coated to play with.
I think I have three choices to chose from at the moment.
I can use the SGC-230 with an inverted L.
I can use the SGC-230 with an inverted L with homebrew traps built in.
I can use an inverted L with homebrew traps built in but without the SGC-230.

What would be the best choice and why?

Many thanks

4389. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 11:25:35 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <bflj041m8n5qqj931k9v54p49q52v9gggi@4ax.com>
Source record: 25911

On Sat, 19 Apr 2008 01:56:31 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Buck wrote:
>> On Fri, 18 Apr 2008 11:11:05 -0700, Roy Lewallen <w7el@eznec.com>
>> wrote:
>>
>>> Buck wrote:
>>>> . . .
>>>> I don't remember the dimensions, but I remember that in the
>>>> instructions, EZNEC could not make accurate measurements with parallel
>>>> wires within a certain distance like 8-10 inches.
>>>>
>>>> (someone correct me here.)
>>>> . . .
>>> That's not correct. However, it is essential to align the segment
>>> junctions so they're directly across from each other when modeling
>>> closely spaced parallel wires.
>>>
>>> Roy Lewallen, W7EL
>>
>>
>> Is this true for 3 as behind a version or two.
>
>This is true for every NEC-based program, which includes all versions of
>EZNEC. See "Parallel Wires" in the EZNEC manual index.
>
>Roy Lewallen, W7EL

You wrote the program, so I am not arguing with you, I will check it
out again. I sure feel I remember that being a restriction. Funny
thing is, that I haven't set learning the program to a higher priority
since I didn't think it would model what I want to experiment with,
which is parallel wires/poles.

I'll have to look into that more.

Thanks for the heads up.

BTW what is the upgrade cost for 4.0 and 5.0 from 3.0?

Thanks
Buck
n4PGW

--
73 for now
Buck, N4PGW

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4390. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 11:35:45 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <inlj045aukm0kqg785idhhhmgfiqb556ro@4ax.com>
Source record: 25912

On Sat, 19 Apr 2008 12:00:42 +0100, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>I have a 60ft garden and my maximum height I can go is only 20ft. I would
>like to TX on 80-40 and on 160 if possible but I might be asking the
>impossible with the 160m..
>I do not have a ground system in place. I can put some earth rods in and
>some surface wire but I have no way of putting any wire into the soil
>itself. So I am a bit limited.
>
>I have a 150ft of flexweave wire that is uv plastic coated to play with.
>I think I have three choices to chose from at the moment.
>I can use the SGC-230 with an inverted L.
>I can use the SGC-230 with an inverted L with homebrew traps built in.
>I can use an inverted L with homebrew traps built in but without the
>SGC-230.
>
>What would be the best choice and why?
>
>Many thanks
>
>

I am going to give it a WAG and suggest you would be better off
without the traps. Can the tuner be mounted in the weather? If so,
put it as close to the wire as you can and as high as possible.
If not, does if feed twin-lead? If so, could you make a 150 foot
dipole and feed it with twin-lead to the tuner? I would like that
idea best. Even 300 ohm twin lead from Radio shack would be good.

The inverted L seems to prefer ground radials, but a dipole or random
wire may be better. If you can go up and only in one direction, could
you run 300 ohm up and tap one end? this would be an end-fed Zep, i
believe, and the tuner should tune it.

My thoughts are that you will be better off with as much of your 150
feet of wire horizontal in the air rather than in the inverted L
configuration, given your stated restrictions.

BTW, my tuner is manual, but I operated from a 130 foot dipole about
100 feet high fed with RS tv twin-lead for about a year with 100 watts
and did very well.

73 for now
Buck
N4PGW

--
73 for now
Buck, N4PGW

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4391. Re: 1/4 Wave on 28.500MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 12:28:45 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <1AIOj.3126$h75.914@newssvr27.news.prodigy.net>
Source record: 25913

Barrett wrote:
> For the best performance from the Yagi would you recommend to insulate it
> from the pole as a standard practice for safety and performance?

I would follow the manufacturer's recommendations.
--
73, Cecil http://www.w5dxp.com

4392. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 13:00:34 UTC
From: ltdoc@yahoo.com
Message-ID: <8d35c7f7-3242-4a08-9693-9d08d843b446@m44g2000hsc.googlegroups.com>
Source record: 25914

Barrett,
End fed wires and/or inverted 'L's tend to work much better with an adequate ground system. That 'adequate' is very variable, more is better than less in general. Something like 150 feet is not exactly 'adequate' enough for a 'good' 160 meter 'wire'. Not exactly 'bad' for the higher bands though. A surface ground system will probably do as well as a buried one. Just watch it when mowing the grass!
Either of your options are going to be marginal for 160m. Which would be best? Good question! Hope you let us know the answer when you find it. While putting that tuner at the feed point is almost always the 'best' way of doing it, it's also the hardest. I'm afaid 'practical' wins out over 'best' in most cases.
Not much help, huh? You're right, it isn't. 'Best' is always dependent on the particular circumstances present. Good luck.
- 'Doc

4393. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 13:02:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <k3mOj.4413$vF.4066@newssvr21.news.prodigy.net>
Source record: 25915

Roger Sparks wrote:
> It is arbitrary because when using the short circuit
> model, you limit the discussion to only one example of
> transmission line termination ...

It is not arbitrary - it is what it is. All of the
source impedance, Rs, is separated from Vs. That
leaves only a 0+j0 dead short impedance possible
for the series source. If it was some other value,
the distributed network model would still work.

> Any reflection from the source is folded into the sine
> wave to form one wave, which becomes the forward wave.

Yes, in exact accordance with the distributed network
model. What it means is that the source is not delivering
the folded-in reflected energy at the time the reflected
energy joins the source signal. Since I don't see that
energy in Keith's equations, chances are that is why
they didn't balance.
--
73, Cecil http://www.w5dxp.com

4394. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 13:31:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tumOj.9853$2g1.4679@nlpi068.nbdc.sbc.com>
Source record: 25916

Keith Dysart wrote:
> On Apr 18, 4:23 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> Another name for "dynamic resistance" is "virtual resistance".
>> It is an *EFFECT* of superposition, not a cause of anything.
>
> Are you suggesting that the negative "dynamic resistance" of a
> tunnel diode is an *EFFECT* of superposition?

Sorry, I was mistaken about the definition of "dynamic"
in the context of physical components.
--
73, Cecil http://www.w5dxp.com

4395. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 14:13:41 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080419071341.801e4de3.rsparks@elltel.net>
Source record: 25917

On Sat, 19 Apr 2008 13:02:08 GMT
Cecil Moore <nospam@w5dxp.com> wrote:

> Roger Sparks wrote:

> > Any reflection from the source is folded into the sine
> > wave to form one wave, which becomes the forward wave.
>
> Yes, in exact accordance with the distributed network
> model. What it means is that the source is not delivering
> the folded-in reflected energy at the time the reflected
> energy joins the source signal. Since I don't see that
> energy in Keith's equations, chances are that is why
> they didn't balance.
> --

You are missing an important observation here. When the energy from the reflected wave folds into the forward wave, any further analysis is a replication of the first analysis. Nothing new is learned.

I think what you want to see is a source matched to the load, so that all the energy flows one way, to the resistor Rs. Your proposal is to allow/force reflectons from the source Vs so that effectively, the resistor Rs becomes the only load. This is then a demonstration/proof for what?

--
73, Roger, W7WKB

4396. wholesale nike shoes air jordan 23 sneaker shoes gucci prada dunk puma shoes air force one air max 90 95 89 ltd

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 16:46:12 UTC
From: ebayshoe2@yahoo.cn
Message-ID: <7c747df6-e65c-4cf0-8b8c-5d6866abdd04@p39g2000prm.googlegroups.com>
Source record: 25918

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wholesale Nike Air Max 360 Catalogs
wholesale Nike Air Max Ltd Shoes Catalogs
wholesale Nike Air Max Tn Men's Shoes
wholesale Nike Air Max Tn 2 Women's Shoes
wholesale Nike Air Max Tn 3 Customize
wholesale Nike Air Max Tn 4 Shoes Customize
wholesale Nike Air Max Tn 6 Supply
wholesale Nike Shox NZ Shoes Supply
wholesale Nike Shox OZ Sale
wholesale Nike Shox TL Store
wholesale Nike Shox TL 2 Shoes Store
wholesale Nike Shox TL 3 Distributor
wholesale Nike Shox Bmw Shoes Distributor
wholesale Nike Shox Elite Shoes Manufacturer

wholesale Nike Shox Monster Manufacturer
wholesale Nike Shox R4 Running Shoes
wholesale Nike Shox R5 Mens Shoes
wholesale Nike Shox Ride Womens Shoes
wholesale Nike Shox Rival Shoes Wholesaler
wholesale Nike Shox Energia Wholesaler
wholesale Nike Shox LV Sneaker
wholesale Nike Shox Turbo Suppliers
wholesale Nike Shox Classic Shoes Suppliers
wholesale Nike Shox Dendara Trainer
wholesale Nike Air Jordan 1 Seller
wholesale Nike Air Jordan 2 Shoes Seller
wholesale Nike Air Jordan 3 Collection
wholesale Nike Air Jordan 4 Shoes Collection
wholesale Nike Air Jordan 5 Chaussure Shoes
wholesale Nike Air Jordan 6 Catalog
wholesale Nike Air Jordan 7 Shoes Catalog
wholesale Nike Air Jordan 8 Customized
wholesale Nike Air Jordan 9 Shoes Customized
wholesale Nike Air Jordan 10 Wholesalers
wholesale Nike Jordan 11 Shoes Wholesalers
wholesale Nike Air Jordan 12 Factory
wholesale Nike Air Jordan 13 Shoes Factory
wholesale Nike Air Jordan 14 Shoes Sell
wholesale Nike Air Jordan 16 Exporter
wholesale Nike Air Jordan 17 Shoes Exporter
wholesale Nike Air Jordan 18 Offer
wholesale Nike Air Jordan 19 Shoes Offer
wholesale Nike Air Jordan 20 Manufacture
wholesale Nike Jordan 21 Shoes Manufacture
wholesale Nike Air Force 1 Low Directory
wholesale Air Force 1 High Shoes Directory
wholesale Nike Air Force 1 Custom Importer
wholesale Air Force 1 Dollar Shoes Importer
wholesale Nike Air Force 1 Clear Sales
wholesale Air Force 1 Carving Shoes Sales
wholesale Timberland Boots High Offers
wholesale Timberland Boots Low Sell
wholesale Timberland Boots Mid Shoes Buyer
wholesale Timberland Boots Womens Buyer
wholesale Adidas Good Year Buy
wholesale Adidas Running Shoes Buy
wholesale Adidas Football Shoes Selection
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Nike Shoes Wholesale China
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Wholesale Kid Jordans
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Wholesale Custom Jordans
Air China Jordans Wholesale
Jordans Retro Wholesale
Nike Air Jordan Wholesale
Nike Golf Wholesale
Wholesale Jordans
Wholesale Nike Shox
Wholesale Basketball Shoes Nike
Air Jordans Price Wholesale
Jordans Kid Wholesale
Wholesale Air Force One And Jordans
Jordans Shoes Wholesale
Wholesale Air Jordans
Air Jordans At Wholesale Price
Wholesale Nike Tennis Shoes
Wholesale NIKE Sneakers from our Nike factory to Nike shop & Nike store,sale and Wholesale all of Nike stock Shoes,we have many type of NIKE Sneakers :Nike discount Shoes,Nike cheap Shoes,Nike stock Shoes (Nike Trainers, Nike Sneakers,Nike Running Shoes,Nike Basketball Shoes,Nike Discount Shoes,Nike Cheap Shoes,footwear, Sports Shoes)Nike Shoes Wholesale sizes include:Nike men's Shoes,Nike women's Shoes,Nike mens Shoes,Nike womens Shoes, Nike men Shoes,Nike women Shoes,Nike kids Shoes, Nike child Shoes.Nike discount Shoes,Nike in www.china-sneakers.com
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4397. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 17:02:43 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <480a25a6$0$40214$4fafbaef@reader5.news.tin.it>
Source record: 25919

After running the required simulations it was possible to conclude the following:

- the antenna impedance can clearly be transformed into 50 ohm or into 200 ohm by just changing the driven element length and the hairpin length. By selecting the proper lengths, an identical SWR curve can be obtained for the two cases, this meaning that the matching system impedance has virtually no influence on the SWR bandwidth of the antenna under simulation

- however, for a given RF power, in the 200-ohm case the RF current in the hairpin is about 1.8 times higher than in the 50-ohm case. This means that in the former case the power lost in the hairpin ohmic resistance would be about 3.2 times that of the latter case.

73

Tony I0JX

4398. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 19:24:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <BsudnZktDqBB25fVnZ2dnUVZ_jKdnZ2d@easystreetonline>
Source record: 25920

Buck wrote:
>
> You wrote the program, so I am not arguing with you, I will check it
> out again. I sure feel I remember that being a restriction. Funny
> thing is, that I haven't set learning the program to a higher priority
> since I didn't think it would model what I want to experiment with,
> which is parallel wires/poles.
>
> I'll have to look into that more.
>

Perhaps you're remembering a restriction with MININEC-based programs, which had problems with close spaced parallel wires.

> Thanks for the heads up.
>
> BTW what is the upgrade cost for 4.0 and 5.0 from 3.0?

Sorry, the upgrade price is available only to people who have purchased EZNEC. You can find information on purchasing a new program at http://eznec.com.

> Thanks
> Buck
> n4PGW

Roy Lewallen, W7EL

4399. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 19:46:27 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <e294b386-bd7b-49c7-9fb2-2c0dc45facba@24g2000hsh.googlegroups.com>
Source record: 25921

On 19 abr, 19:02, "Antonio Vernucci" <vernu...@tin.it> wrote:
> After running the required simulations it was possible to conclude the
> following:
>
> - the antenna impedance can clearly be transformed into 50 ohm or into 200 ohm
> by just changing the driven element length and the hairpin length. By selecting
> the proper lengths, an identical SWR curve can be obtained for the two cases,
> this meaning that the matching system impedance has virtually no influence on
> the SWR bandwidth of the antenna under simulation
>
> - however, for a given RF power, in the 200-ohm case the RF current in the
> hairpin is about 1.8 times higher than in the 50-ohm case. This means that in
> the former case the power lost in the hairpin ohmic resistance would be about
> 3.2 times that of the latter case.
>
> 73
>
> Tony I0JX

Hello Tony,

Probably you convinced yourself for 100% that the antenna limits the
bandwidth.

One can generally say when the bandwidth of the L network is far
greater then the antenna bandwidth (without matching, with respect to
a reference impedance equal to the resonance [real] impedance), the
overall BW is just a little less then the antenna bandwidth.

Or you can say when the antenna Q is far higher then the Q of the
matching network, overall Q factor is determined by the antenna. The Q
of an L network is about sqrt(Zin/Zout −1), when Zin<Zout, uses
sqrt(Zout/Zin-1). For a step from 20 to 200 Ohms, the VSWR=1.5
Bandwidth is about 11% (5.72 MHz in your case)

A nice exercise can be modeling your antenna's impedance (without
matching) as a LCR series circuit and put this into a lumped circuit
simulator (for example a PSPICE simulator). Some simulators allow
direct entry of S-parameters.

Now you can add every other component (also lossy and lossless
transmission lines) and see the effect on the overall BW.

As other people said, the Q of a hairpin made of 5…10mm tubing is over
100. As the BW of your L match is far below that (also for the 200 Ohm
case), losses in the hairpin are that low, that they can practically

not be measured via field strength measurement. So 3.2 times higher then in the 50 Ohms case is still negligible.

After all the calculations and simulations, I hope your 6m Yagi is still useful for you.

Best regards,

Wim
PA3DJS
www.tetech.nl
please remove abc from the mail address when replying directly

4400. Homebrew RF chokes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 20:04:22 UTC
From: No Spam <no@spam.com>
Message-ID: <p_adnaCJmYjbzZfVnZ2dnUVZ_g6dnZ2d@comcast.com>
Source record: 25922

Could one use a length of iron or copper pipe as an RF choke on coax or speaker leads? I've seen lengths (1m) of ungrounded copper pipe on coax used as lightning chokes.

4401. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 20:26:01 UTC
From: Yuri Blanarovich <K3BU@optonline.net>
Message-ID: <fudkj0svj1@aioe.org>
Source record: 25923

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:0o5Oj.8725$V14.5703@nlpi070.nbdc.sbc.com...
> Al Lorona wrote:
>> It's funny to think that really terrible ground can have an advantage
>> over pretty good ground.
>
> Free space is just about the most terrible "ground"
> that one can imagine. :-)
> --
> 73, Cecil http://www.w5dxp.com

So much disinformation by W8JI School of DC circuitry :-)

Modeling various configurations shows benefits of good ground, especially for taller than 1/4 wave radiators.
Myth that half wave radiators do not need ground is spreading like snake oil wild fire. They need it but "looking" for it further out, not just at the base.
I will anytime trade good ground (mirror) for lossy (RF sponge) ground. Its just where the radiator is "looking" for the mirror, taller one - further out, enhancing signals at lower angles.
3/8 vertical with some 3/8 physical length radials start morphing into far field.

Yuri, K3BU.us

4402. Re: Homebrew RF chokes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 21:15:50 UTC
From: jgboyles@aol.com
Message-ID: <d9e13744-cf42-48e3-8870-ca795d39cec5@59g2000hsb.googlegroups.com>
Source record: 25924

On Apr 19, 3:04 pm, No Spam <n...@spam.com> wrote:
> Could one use a length of iron or copper pipe as an RF choke on coax or
> speaker leads? I've seen lengths (1m) of ungrounded copper pipe on coax
> used as lightning chokes.

I don't know about iron or copper, but in the early 90's someone suggested that a tube of steel wool could effectively replace the ferrite beads normally used in choke baluns. That was proven to be a bad idea. I would suspect that iron or copper pipe would be far less effective than ferrite beads. If you check the choking impedance of say 50 beads vs. an equal length of pipe, you will find the beads vastly superior.

Gary N4AST

4403. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 21:20:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <z8WdnThgM7y9_5fVnZ2dnUVZ_gWdnZ2d@easystreetonline>
Source record: 25925

There are two quite separate ways which ground affects a vertical
antenna's performance.

The first is loss due to current returning to the antenna base when the
antenna is grounded, or induced in the ground under an elevated radial
system. To minimize loss, you want as much of the current to flow
through radial wires as you can. The power loss is I^2 * R. For a given
power input, I is much lower for a half wave bottom fed vertical than a
quarter wave bottom fed vertical. So the loss due to the conducted or
induced current is much less, and you can get by with a much simpler
ground system with the half wave vertical and still have low loss.

This ground loss is usually the chief determining factor of a vertical's
efficiency.

The other effect of ground is that the field from the antenna reflects
from it some distance from the antenna. The reflected field adds to the
directly radiated field to form a net field which is different at each
elevation angle. This is a major factor in determining the antenna's
elevation pattern. The conductivity and permittivity (dielectric
constant) of the ground affect the magnitude and phase of the the
reflected field, so the pattern changes with ground quality. In general,
the more conductive the ground the better the low angle radiation.
However, you can't compensate for this factor when the ground is poor by
improving the ground system. The reason is that the reflection takes
place much farther from the antenna than nearly any ground system
extends. And low angle radiation, where the improvement is most needed,
reflects the greatest distance away. The only way to improve the
situation is to move the antenna to a location where the ground is
better, which usually isn't possible or practical.

Because of the two separate effects, the overall field strength might be
better or worse as the ground conductivity improves, and it might even
be better at some elevation angles and worse at others.

Roy Lewallen, W7EL

Yuri Blanarovich wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:0o5Oj.8725$V14.5703@nlpi070.nbdc.sbc.com...
>> Al Lorona wrote:
>>> It's funny to think that really terrible ground can have an advantage
>>> over pretty good ground.
>> Free space is just about the most terrible "ground"
>> that one can imagine. :-)
>> --

>> 73, Cecil http://www.w5dxp.com
>
> So much disinformation by W8JI School of DC circuitry :-)
>
> Modeling various configurations shows benefits of good ground, especially
> for taller than 1/4 wave radiators.
> Myth that half wave radiators do not need ground is spreading like snake oil
> wild fire. They need it but "looking" for it further out, not just at the
> base.
> I will anytime trade good ground (mirror) for lossy (RF sponge) ground. Its
> just where the radiator is "looking" for the mirror, taller one - further
> out, enhancing signals at lower angles.
> 3/8 vertical with some 3/8 physical length radials start morphing into far
> field.
>
> Yuri, K3BU.us
>
>
>
>

4404. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 21:35:28 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A85946EE2EF4Huckleberrybigvalley@198.186.192.196>
Source record: 25926

Very nicely put, Roy. Although I "knew" this in the recesses of
memory, the refresher will stick with my memory more, now. Thanks.

In my case, I am considering the use of a vertical at a new residence
built on sand. Since I am not concerned about low angle radiation
characteristics, the Half Wave may be something to consider..... giving me
a fairly efficient vertical operation with some NVIS characteristics.

Ed K7AAT

4405. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-19 23:36:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <880l04teole5ign674pn50ted9h727nncr@4ax.com>
Source record: 25927

On 19 Apr 2008 21:35:28 GMT, "Ed_G"
<Huckleberry_REMOVE_@bigvalley.net> wrote:

> In my case, I am considering the use of a vertical at a new residence
>built on sand. Since I am not concerned about low angle radiation
>characteristics, the Half Wave may be something to consider..... giving me
>a fairly efficient vertical operation with some NVIS characteristics.

Hi Ed,

Efficient? A vertical has almost no Near Vertical radiation for Near
Vertical Incidence Skywave. You can get along with "almost no," or
you can simply use a low horizontal which would exhibit "a lot of"
Near Vertical Incidence Skywave.

Good ground, bad ground, radials, no radials won't change efficiency
much for the vertical's incidence overhead (there's a hole in that
pattern).

73's
Richard Clark, KB7QHC

4406. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 00:34:42 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A85B2D27B2F5Huckleberrybigvalley@198.186.192.196>
Source record: 25928

Richard Clark <kb7qhc@comcast.net> wrote in
news:880l04teole5ign674pn50ted9h727nncr@4ax.com:

> On 19 Apr 2008 21:35:28 GMT, "Ed_G"
> <Huckleberry_REMOVE_@bigvalley.net> wrote:
>
>> In my case, I am considering the use of a vertical at a new
>> residence
>>built on sand. Since I am not concerned about low angle radiation
>>characteristics, the Half Wave may be something to consider.....
>>giving me a fairly efficient vertical operation with some NVIS
>>characteristics.
>
> Hi Ed,
>
> Efficient? A vertical has almost no Near Vertical radiation for Near
> Vertical Incidence Skywave. You can get along with "almost no," or
> you can simply use a low horizontal which would exhibit "a lot of"
> Near Vertical Incidence Skywave.
>
> Good ground, bad ground, radials, no radials won't change efficiency
> much for the vertical's incidence overhead (there's a hole in that
> pattern).
>
> 73's
> Richard Clark, KB7QHC
>

Richard,

By "efficient" I was referring to the transfer of power.... to a
presumed 50 ohm antenna input, not to any radiation characteristics !
As I understood it, a half wave vertical can give me this, with a
little effort. I also understood it to have a fairly high take off
angle.... which will certainly give me better in-state coverage than a
good low angle takeoff would..... wouldn't it?

Yes, I know a proper NVIS antenna would be far better than this....
that is why I used the term "some NVIS" characteristics.

TNX

Ed

4407. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 01:30:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <tMCdnWpCwcIAAZfVnZ2dnUVZ_o3inZ2d@posted.easystreetonline>
Source record: 25929

Ed,

It won't be suitable for NVIS, as you can see from a model.

Roy Lewallen, W7EL

Ed_G wrote:
> Very nicely put, Roy. Although I "knew" this in the recesses of
> memory, the refresher will stick with my memory more, now. Thanks.
>
> In my case, I am considering the use of a vertical at a new residence
> built on sand. Since I am not concerned about low angle radiation
> characteristics, the Half Wave may be something to consider..... giving me
> a fairly efficient vertical operation with some NVIS characteristics.
>
>
>
> Ed K7AAT
>

4408. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 01:34:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <oo6dnUq414kqAJfVnZ2dnUVZ_qelnZ2d@easystreetonline>
Source record: 25930

Ed_G wrote:
>
> Richard,
>
> By "efficient" I was referring to the transfer of power.... to a
> presumed 50 ohm antenna input, not to any radiation characteristics !
> As I understood it, a half wave vertical can give me this, with a
> little effort. I also understood it to have a fairly high take off
> angle.... which will certainly give me better in-state coverage than a
> good low angle takeoff would..... wouldn't it?
>
> Yes, I know a proper NVIS antenna would be far better than this....
> that is why I used the term "some NVIS" characteristics.
>
> TNX
>
>
> Ed

All the radiation from an antenna isn't concentrated at some "takeoff angle", but radiates at all angles at various amounts. That distribution is known as the "elevation pattern" and trying to replace it with a single "takeoff angle" value loses nearly all the information about how and where the antenna radiates. The half wavelength vertical radiates very little above about 60 degrees elevation angle regardless of the ground characteristics.

Roy Lewallen, W7EL

4409. Re: G5RV Half size

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 02:55:02 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9A85E9A312A17mcoslocomcastnet@216.196.97.136>
Source record: 25931

"Barrett" <barrett@blueyounder.co.uk> wrote in
news:al5Oj.17661$_h7.16042@newsfe05.ams2:

> I've just downloaded EZNEC v. 5.0 demo.
> I'm only just starting to learn the basic concepts from the beginning.

Okay Barrett,

One of the basic concepts that is helpful is the "wavelength".

The speed of an RF signal in free space is the speed of light.

Imagine a pure RF sine wave. Starting at zero, the sine will increase to maximum, then turn around, cross zero again, then go to the other maximum, and then return to zero. The distance traveled while that happens is the wavelength. Pretty simple, that, but all the other parts are related to it. A lower frequency travels further before returning than a higher one does.

Now in order to have an antenna that will cooperate with our transceivers, it needs a particular impedence, or near to it. What most equipment uses is 50 ohms impedence. Some equipment use 75 ohms, but nothing we're interested in Amateur radio.

So if you are designing a single band antenna that uses coax, you'll want to hit around that value of impedence.

There is a relationship between the length of the antenna and the wavelength. In the case of a typical antenna for amateur radio use, the dipole, you'll end up with around a half wavelength antenna, 1/4 wavelength on each side to get near that impedence. Other antennas may use more complicated ways of coming up with the proper impedence.

These are generalizations. There are some other aspects, such as changes in the speed of the RF through cables and insulated wires being different than in free space, but what I gave you so far is pretty much the basic basics.

- 73 de Mike N3LI -

4410. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 03:13:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <zxyOj.20808$%41.5312@nlpi064.nbdc.sbc.com>
Source record: 25932

Roger Sparks wrote:
> You are missing an important observation here. When the
> energy from the reflected wave folds into the forward wave,
> any further analysis is a replication of the first analysis.
> Nothing new is learned.

I'm posting steady-state values. If it is already
steady-state, nothing new is needed. The point is
that some of the steady-state forward energy is
not being delivered by the source.

> Your proposal is to allow/force reflectons from the source
> Vs so that effectively, the resistor Rs becomes the only load.

No, the resistor Rs is not the only load. The resistor
plus the rest of the network is the load. With a 45 deg
shorted stub the load is 50+j50 as you previously
reported.
--
73, Cecil http://www.w5dxp.com

4411. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 03:23:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_GyOj.20809$%41.7173@nlpi064.nbdc.sbc.com>
Source record: 25933

Keith Dysart wrote:
> So we are back to the question you keep dodging...

I'm not dodging anything. I am ignoring irrelevant
examples. The context under discussion is configurations
of single source systems with reflections where the
average interference is zero. So please explain how
your example applies to what we are discussing. Where
are the reflections? Where is the average interference
equal to zero?
--
73, Cecil http://www.w5dxp.com

4412. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 08:24:34 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <15DOj.39004$t05.4475@newsfe09.ams2>
Source record: 25934

"Buck" <usenet01@lumpuckeroo.com> wrote in message
news:inlj045aukm0kqg785idhhhmgfiqb556ro@4ax.com...
> On Sat, 19 Apr 2008 12:00:42 +0100, "Barrett"
> <barrett@blueyounder.co.uk> wrote:
>
>>I have a 60ft garden and my maximum height I can go is only 20ft. I would
>>like to TX on 80-40 and on 160 if possible but I might be asking the
>>impossible with the 160m..
>>I do not have a ground system in place. I can put some earth rods in and
>>some surface wire but I have no way of putting any wire into the soil
>>itself. So I am a bit limited.
>>
>>I have a 150ft of flexweave wire that is uv plastic coated to play with.
>>I think I have three choices to chose from at the moment.
>>I can use the SGC-230 with an inverted L.
>>I can use the SGC-230 with an inverted L with homebrew traps built in.
>>I can use an inverted L with homebrew traps built in but without the
>>SGC-230.
>>
>>What would be the best choice and why?
>>
>>Many thanks
>>
>>
>
> I am going to give it a WAG and suggest you would be better off
> without the traps. Can the tuner be mounted in the weather? Yes
If so,
> put it as close to the wire as you can and as high as possible.
> If not, does if feed twin-lead? Yes, so far as I know.
If so, could you make a 150 foot
> dipole and feed it with twin-lead to the tuner? I would like that
> idea best. Even 300 ohm twin lead from Radio shack would be good. This is
> out due to getting it through the house wall.

The garden is only 60ft long, so fitting in 150ft won't work here. I could
make a Z up but the end of one end would have to drop to garage roof height
(9ft) and it would put the other end of the Z running (clipped onto the
plastic gutter). This would put the Aerial very close to the house and very
close to the neighbours TV and radio aerial.

>
> The inverted L seems to prefer ground radials, but a dipole or random
> wire may be better. If you can go up and only in one direction, could
> you run 300 ohm up and tap one end? this would be an end-fed Zep, i

> believe, and the tuner should tune it.

I could do but my nax height would be 20ft would this work? Also I have a 20ft scaffold pole note grounded that the G5RV is supported by won't this interfere with it?

>
> My thoughts are that you will be better off with as much of your 150
> feet of wire horizontal in the air rather than in the inverted L
> configuration, given your stated restrictions.
>
> BTW, my tuner is manual, but I operated from a 130 foot dipole about
> 100 feet high fed with RS tv twin-lead for about a year with 100 watts
> and did very well.
>
> 73 for now
> Buck
> N4PGW
>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."
>

4413. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 11:24:54 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <4u9m04pcu69v1s0210tbr6lmu9mqim3l01@4ax.com>
Source record: 25935

On Sat, 19 Apr 2008 12:24:14 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Buck wrote:
>>
>> You wrote the program, so I am not arguing with you, I will check it
>> out again. I sure feel I remember that being a restriction. Funny
>> thing is, that I haven't set learning the program to a higher priority
>> since I didn't think it would model what I want to experiment with,
>> which is parallel wires/poles.
>>
>> I'll have to look into that more.
>>
>
>Perhaps you're remembering a restriction with MININEC-based programs,
>which had problems with close spaced parallel wires.
>
>> Thanks for the heads up.
>>
>> BTW what is the upgrade cost for 4.0 and 5.0 from 3.0?
>
>Sorry, the upgrade price is available only to people who have purchased
>EZNEC. You can find information on purchasing a new program at
>http://eznec.com.
>
>> Thanks
>> Buck
>> n4PGW
>
>Roy Lewallen, W7EL

My wife purchased it at a hamfest about three years ago before we
married.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4414. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 12:17:35 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <480b2f56$0$23850$9b536df3@news.fv.fi>
Source record: 25936

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:P9adnbUbhbmPtZTVnZ2dnUVZ_smnnZ2d@easystreetonline...
> JN wrote:
>>
>> Roy,
>>
>> One question:
>> Down the list is my posting FINAL PLAN.
>> Is it possible with EZNEC to simulate it?
>> It is made of transmission line (partly)
>>
>> Yes or No is enough.
>> I have the DEMO version.
>>
>> 73 Jouko OH5RM
>
> Yes, a simulation should be reasonably accurate. The segmentation
> limitation of the demo version will probably reduce the accuracy some, but
> you'll be able to get a very good idea of how it will work.
>
> Roy Lewallen, W7EL

Yes indeed, the simulation verified that my FINAL PLAN is working OK
Two very clean resonances at 3.6MHz and 10.1MHz SWR abt 1.3 on both bands
Antenna length only 26m instead of normal 41m for 80m dipole.
For the stub section I used 0.003m=3mm spacing and 1.5mm insulation on 1mm
wire DielC 2.6.

Is there any possibility in EZNEC to calculate how long is quarter WL on
10.1MHz
with these stub variables?

By using transmmission line objects it could have been possible to use the
VF of line 0.73.

I did run out of segments to simulate tri-band version with additional
parallel dipole.

All simulation was made in free space and probably needs some minor tuning
in real life.

73 Jouko OH5RM

4415. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 12:43:10 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fufdp0$a51$1@aioe.org>
Source record: 25937

"Roy Lewallen"
> However, you can't compensate for this factor when the ground is poor by
> improving the ground system. The reason is that the reflection takes place
> much farther from the antenna than nearly any ground system extends. And
> low angle radiation, where the improvement is most needed, reflects the
> greatest distance away.

Roy, didn't the experiments of Brown, Lewis & Epstein of RCA in ~1937 show that the h-plane field measured 3/10 mile from a vertical monopole of about 60 to 88 degrees in height, over a set of 113 buried radials each 0.41 WL, was within several percent of the theoretical maximum for the applied power as radiated by a perfect monopole over a perfect ground plane? And conductivity at the NJ test site was poor -- 4 mS/m or less.

That tends to show that the fields radiated at very low elevation angles also will be close to their theoretical values when measured at this radial distance, even though ground conductivity at the antenna site is poor. The relative field (E/Emax) for radiators of these heights and propagation paths approximately equals the cosine of the elevation angle.

The greatest radiated fields always will be directed in or near the horizontal plane when measured/calculated for such conditions. This also will be true for any monopole from infinitesimal to 5/8 wavelength in height, although the elevation pattern of monopoles from /4- to 5/8-WL no longer are described by the cosine function (see http://i62.photobucket.com/albums/h85/rfry-100/MWElPatComparison.jpg).

Elevation patterns show maximum relative field centered at various elevation angles above the horizon, when those fields are measured at progressively longer radial distances from the monopole, due to the propagation loss for the surface wave over other than a perfect, flat, infinite ground for those ranges. Earth curvature and terrain diffraction add to those losses for longer surface wave paths over real earth, and for very great distances the h-plane relative fields falls to ~zero.

But that pattern shape is not the pattern shape originally radiated by the monopole, it also includes the effects of the propagation environment at the range where it was measured (or calculated).

If this were not true then MW broadcast stations would have essentially zero coverage area for their groundwave signals.

RF

4416. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 13:05:13 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <j9bm04hh3lo407sg8nee96g8n9m3n36gom@4ax.com>
Source record: 25938

On Sat, 19 Apr 2008 14:20:33 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>There are two quite separate ways which ground affects a vertical
>antenna's performance.
>
>The first is loss due to current returning to the antenna base when the
>antenna is grounded, or induced in the ground under an elevated radial
>system. To minimize loss, you want as much of the current to flow
>through radial wires as you can. The power loss is I^2 * R. For a given
>power input, I is much lower for a half wave bottom fed vertical than a
>quarter wave bottom fed vertical. So the loss due to the conducted or
>induced current is much less, and you can get by with a much simpler
>ground system with the half wave vertical and still have low loss.
>
>This ground loss is usually the chief determining factor of a vertical's
>efficiency.
>
>The other effect of ground is that the field from the antenna reflects
>from it some distance from the antenna. The reflected field adds to the
>directly radiated field to form a net field which is different at each
>elevation angle. This is a major factor in determining the antenna's
>elevation pattern. The conductivity and permittivity (dielectric
>constant) of the ground affect the magnitude and phase of the the
>reflected field, so the pattern changes with ground quality. In general,
>the more conductive the ground the better the low angle radiation.
>However, you can't compensate for this factor when the ground is poor by
>improving the ground system. The reason is that the reflection takes
>place much farther from the antenna than nearly any ground system
>extends. And low angle radiation, where the improvement is most needed,
>reflects the greatest distance away. The only way to improve the
>situation is to move the antenna to a location where the ground is
>better, which usually isn't possible or practical.
>
>Because of the two separate effects, the overall field strength might be
>better or worse as the ground conductivity improves, and it might even
>be better at some elevation angles and worse at others.
>
>Roy Lewallen, W7EL

Maybe I should change the subject line, but here goes.
First of all, i am fishing for information, not challenging anyone's
intelligence.

I understand from books I have read, that a ground mounted vertical antenna needs many radials. IIRC, the point of diminishing returns on adding radials falls somewhere between 64-128 radials. I imagine the best radial-based ground I could have for 20 meters would be a solid copper disk with about 16 feet radius, give or take. However, I recall in the ARRL Antenna handbook, not the latest version, but one prior to this one, there is no noticeable difference between a raised ground plane antenna with 4 elements as opposed to 128. (From here, or another antenna forum, I heard for the first time that it holds true for two radials.)

I am still trying to figure out why so many radials are needed on the ground and a few feet higher so few are needed.

Actually, more important than the why, is how high is high enough to reduce the optimum number of radials? For example, i want to build a 20 meter vertical. I understand the best place for it is on top of a 100 foot+ tower, but somewhere in between, there has to be a place where 4 radials above ground is noticeably better than the same 4 radials on the ground.

Another point I have heard in the forums, but not confirmed, is that a reduced size vertical element doesn't gain much by adding radials longer than the antenna is high.

73 for now,
N4PGW
Buck

--
73 for now
Buck, N4PGW

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4417. Re: Homebrew RF chokes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 13:09:28 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <t0gm049f2043b0tf96tor7o8krafngk72m@4ax.com>
Source record: 25939

On Sat, 19 Apr 2008 14:15:50 -0700 (PDT), jgboyles@aol.com wrote:

>On Apr 19, 3:04?pm, No Spam <n...@spam.com> wrote:
>> Could one use a length of iron or copper pipe as an RF choke on coax or
>> speaker leads? ?I've seen lengths (1m) of ungrounded copper pipe on coax
>> used as lightning chokes.
>
>I don't know about iron or copper, but in the early 90's someone
>suggested that a tube of steel wool could effectively replace the
>ferrite beads normally used in choke baluns. That was proven to be a
>bad idea. I would suspect that iron or copper pipe would be far less
>effective than ferrite beads. If you check the choking impedance of
>say 50 beads vs. an equal length of pipe, you will find the beads
>vastly superior.
>
>Gary N4AST

I believe that in order for a pipe to be effective, it would have to
be some distinct fraction of a wavelength of the signal you want to
block. If you have problems with 80 meters, it could be a very long
pipe.

On the other hand, the ferrite beads can cover many more frequencies
in much less space.

Buck
N4PGW

--
73 for now
Buck, N4PGW

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4418. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 13:09:45 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <e44189fd-0422-4b12-ba89-026825759b7f@c58g2000hsc.googlegroups.com>
Source record: 25940

On Apr 19, 11:23 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > So we are back to the question you keep dodging...
>
> I'm not dodging anything. I am ignoring irrelevant
> examples. The context under discussion is configurations
> of single source systems with reflections where the
> average interference is zero. So please explain how
> your example applies to what we are discussing. Where
> are the reflections? Where is the average interference
> equal to zero?

Your explanations are predicated on a misunderstanding of
the behaviour of ideal voltage sources. Despite your
protests to the contrary, ideal voltage sources can, and
do, absorb energy.

The discussion needs to digress to address this fundamental
misunderstanding since this misunderstanding renders all
else moot. And so...

Let me remind you of the circuit at hand:

```
50 ohms
+----------\/\/\/\/-----------+
+| +|
Vsl=100 VDC Vsr=50 VDC
| |
+-----------------------------+
```

And we are back to the question you keep dodging...

Where does the energy that is flowing into the ideal
DC voltage source on the right go?

If no energy is flowing into the ideal voltage source
on the right, where is the energy that is being
continuously provided by the ideal voltage source on
left going? Of the 100 W being provided by the ideal
source on the left, only 50 W is being dissipated in
the resistor. Where goes the remaining 50 W, if not
into the ideal voltage source on the right?

Once it is agreed that ideal DC voltage sources can indeed
absorb energy, we can discuss the same for ideal AC voltage
sources. Once that is agreed, we can return to the
discussion of your 'interference free' circuit.

...Keith

4419. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 13:10:51 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <shHOj.30289$Q95.2459@newsfe23.ams2>
Source record: 25941

I came across this web site http://www.paulnic.com/ekrs/aom_sep04.htm after searching for weeks on how to construct a pair of 80m conductor add-ons. I might go down this root short term, just to get on the air.

I wonder if I could use some 42 strand speaker wire to make the conductor or will I have to order some enamelled SWG20 copper wire as stated?

Thanks

<ltdoc@yahoo.com> wrote in message
news:8d35c7f7-3242-4a08-9693-9d08d843b446@m44g2000hsc.googlegroups.com...
>
>
> Barrett,
> End fed wires and/or inverted 'L's tend to work much better with an
> adequate ground system. That 'adequate' is very variable, more is
> better than less in general. Something like 150 feet is not exactly
> 'adequate' enough for a 'good' 160 meter 'wire'. Not exactly 'bad'
> for the higher bands though. A surface ground system will probably do
> as well as a buried one. Just watch it when mowing the grass!
> Either of your options are going to be marginal for 160m. Which would
> be best? Good question! Hope you let us know the answer when you
> find it. While putting that tuner at the feed point is almost always
> the 'best' way of doing it, it's also the hardest. I'm afaid
> 'practical' wins out over 'best' in most cases.
> Not much help, huh? You're right, it isn't. 'Best' is always
> dependent on the particular circumstances present. Good luck.
> - 'Doc
>
>
>

4420. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 13:26:26 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <cdOdnQaWvK-m2ZbVnZ2dnUVZ8rGdnZ2d@pipex.net>
Source record: 25942

> I understand from books I have read, that a ground mounted vertical
> antenna needs many radials. IIRC, the point of diminishing returns on
> adding radials falls somewhere between 64-128 radials. I imagine the
> best radial-based ground I could have for 20 meters would be a solid
> copper disk with about 16 feet radius, give or take. However, I
> recall in the ARRL Antenna handbook, not the latest version, but one
> prior to this one, there is no noticeable difference between a raised
> ground plane antenna with 4 elements as opposed to 128. (From here,
> or another antenna forum, I heard for the first time that it holds
> true for two radials.)
==========
Instead of an approx 16 ft radius disc ,you might consider an area
covered with chicken wire mesh with the antenna in its centre.If that's
laid on a lawn the grass will quickly grow over it . In a few weeks time
the wire mesh will no longer be visible and the lawnmower can just run
over .
A Butternut (vertical)antenna with a mesh ground plane compared with
none gave an improvement of 1 to 2 S points on 20 ,15 and 10 m.

Frank GM0CSZ / KN6WH

4421. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 13:31:09 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <h6hm041peoduhb5g7kdepfjjg38g04cviq@4ax.com>
Source record: 25943

>Yes indeed, the simulation verified that my FINAL PLAN is working OK
>Two very clean resonances at 3.6MHz and 10.1MHz SWR abt 1.3 on both bands
>Antenna length only 26m instead of normal 41m for 80m dipole.
>For the stub section I used 0.003m=3mm spacing and 1.5mm insulation on 1mm
>wire DielC 2.6.
>
>Is there any possibility in EZNEC to calculate how long is quarter WL on
>10.1MHz
> with these stub variables?
>
>By using transmmission line objects it could have been possible to use the
>VF of line 0.73.
>
>I did run out of segments to simulate tri-band version with additional
>parallel dipole.
>
>All simulation was made in free space and probably needs some minor tuning
>in real life.
>
>73 Jouko OH5RM
>
>

Do you have the ARRL version of the demo, or just the one downloaded
from EZNEC?

If you have the ARRL version, you can modify a sample design and get
all the segments you need; you just can't save the antenna.

--
73 for now
Buck, N4PGW

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4422. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 13:35:22 UTC
From: JN <jnxx@vfemail.net>
Message-ID: <480b4191$0$23852$9b536df3@news.fv.fi>
Source record: 25944

>
> Do you have the ARRL version of the demo, or just the one downloaded
> from EZNEC?
>
> If you have the ARRL version, you can modify a sample design and get
> all the segments you need; you just can't save the antenna.
>
>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

Hi Buck,

I downlowded the Demo and it is limited to 20 segments.
My ARRL antenna book is so old that it had no EZNEC.

73 Jouko OH5RM

4423. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 14:20:56 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <8dhm04d59fo802j6o7cvvda2s91i04lrh8@4ax.com>
Source record: 25945

>>
>>Perhaps you're remembering a restriction with MININEC-based programs,
>>which had problems with close spaced parallel wires.

I apologize. I think I mentioned that your program had limitations
that would not allow me to model what I wanted, which in my case is
close parallel elements. I was pretty sure that was why I quit using
it. Maybe there was another reason.

Whatever the case, I have, and still do, appreciate hearing your
knowledge and information.

It isn't my desire to design a new earth-shattering antenna or to
super-fine tune a yagi, but to use the rules of thumb in antennas to
build antennas with specific purposes in mind such as for portability,
maximum number of HF bands with minimal losses, and maximum gain with
minimum cost.

I gave up on an all-band HF antenna. there are just too many bands
these days. I built one from 80 - 6 meters in parallel dipole format.
It became such a bear to handle that it wasn't worth the effort trying
to keep it untangled, not to mention the weight of it.

I guess I digress.

73 for now
N4PGW
Buck

--
73 for now
Buck, N4PGW

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4424. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 16:30:34 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <i2lm04hopba7pehjn0hu1ugh92d95mhgcm@4ax.com>
Source record: 25946

Ok, Barrett,

First of all, I missed your british accent the first time around, and
I have also read the instruction manual that came with the tuner.

Now that I understand you and the tuner (coupler) better, I can make
better informed recommendations.

>>>I have a 60ft garden and my maximum height I can go is only 20ft. I would
>>>like to TX on 80-40 and on 160 if possible but I might be asking the
>>>impossible with the 160m..

Your coupler says it only needs 23 feet to tune 160m. At that rate,
you would not be one of the big fishes in the pond, but you would be
there.

>>>I do not have a ground system in place. I can put some earth rods in and
>>>some surface wire but I have no way of putting any wire into the soil
>>>itself. So I am a bit limited.
>>>

You might have more of a ground than you think. hang in there...

>>>I have a 150ft of flexweave wire that is uv plastic coated to play with.
>>>I think I have three choices to chose from at the moment.
>>>I can use the SGC-230 with an inverted L.
>>>I can use the SGC-230 with an inverted L with homebrew traps built in.
>>>I can use an inverted L with homebrew traps built in but without the
>>>SGC-230.
>>>
>>>What would be the best choice and why?

The best choice is the one that will give you effective communications
given your resources and abilities. I think you will do well.

>> I am going to give it a WAG and suggest you would be better off
>> without the traps.

your coupler supersedes your need for traps.

>> Can the tuner be mounted in the weather? Yes
See Page 7 in the users manual. Can you acquire or spare a plastic
garbage can?

SNIP

>If so, could you make a 150 foot
>> dipole and feed it with twin-lead to the tuner? I would like that

>> idea best. Even 300 ohm twin lead from Radio shack would be good. This is
>> out due to getting it through the house wall.

I assume you can get a piece of coax out from the radio to the
coupler?

>
>
>The garden is only 60ft long, so fitting in 150ft won't work here. I could
>make a Z up but the end of one end would have to drop to garage roof height
>(9ft) and it would put the other end of the Z running (clipped onto the
>plastic gutter). This would put the Aerial very close to the house and very
>close to the neighbours TV and radio aerial.
>
>
>>
>> The inverted L seems to prefer ground radials, but a dipole or random
>> wire may be better. If you can go up and only in one direction, could
>> you run 300 ohm up and tap one end? this would be an end-fed Zep, i
>> believe, and the tuner should tune it.
>
>
> I could do but my nax height would be 20ft would this work? Also I have a
>20ft scaffold pole note grounded that the G5RV is supported by won't this
>interfere with it?

:) :) :)

To me, this is your ace in the hole :)

See the diagram at the top of page 7?

Here is what I would do assuming the trees or other supports
cooperate.

Get a protective cover for the coupler as shown. Mount the coupler as
high up the pole as you can. Ground the coupler to the pole well
where you mount it, and cover the coupler as in the diagram.

at the base of the pole, set one of the ground rods and ground the
pole to the rod. You don't need any wire going from the tuner to the
ground rod as the scaffold pole will be the conductor.

From the tuner, stretch your wire out as far as you can to the other
supports. Weave it around, if you must, but try to get as close to 80
feet of wire strung out as possible. Make a "T" in the wire if
necessary giving the wire three points, one at the tuner and two going
different directions. For me, the more wire, the better. The more
spread out, the better.

Now, when you reach your limit, take the rest of the wire and make as
much of ground radials as you can as you see in the diagram on pages 7
& 16.

If you can't run them far, go as far as you can.

The second alternative? Replace your G5RV with the installation shown in the diagram on page 17.

If you can't raise the coupler up the pole very high, you could mount it as high as possible on the pole, and run the hot lead up beside the pole (separated as far as possible) loop it thru an insulator near the top of the pole and continue trying to get as much wire out as possible.

I imagine that if I walked thru your garden and saw it in person, I would make different suggestions, but based on my perception of what I have never seen, I can only take a bit of a guess.

Let me know how it goes.

Thanks

--
73 for now
Buck, N4PGW

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4425. Re: Efficiency of 200-ohm hairpin matching

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 16:39:57 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <480b71d1$0$29589$4fafbaef@reader1.news.tin.it>
Source record: 25947

Probably you convinced yourself for 100% that the antenna limits the bandwidth.

Yes, I had overestimated the effect of the matching system, and, as you say, the antenna Q is far higher then the Q of the matching network. The fact that the capacitance (corresponding to the capacitive reactance of the shortened D.E) varies with frequency does not change things.

As other people said, the Q of a hairpin made of 5ï¿½10mm tubing is over 100. As the BW of your L match is far below that (also for the 200 Ohm case), losses in the hairpin are that low, that they can practically not be measured via field strength measurement. So 3.2 times higher then in the 50 Ohms case is still negligible.

I agree with the conclusion

After all the calculations and simulations, I hope your 6m Yagi is still useful for you.

Yes, after precisely tuning the D.E., it shows a good SWR all over the band of my interest. Nevertheless, before mounting the antenna, I would not have suspected such a narrow SWR response.

73

Tony I0JX

4426. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 18:49:37 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <0fMOj.114903$qj3.102465@newsfe20.ams2>
Source record: 25948

Buck, here are some photo's of the antenna at the moment. The new one will have to be in a similar position.
http://www.hobby.pwp.blueyonder.co.uk/antenna/3.jpg
http://www.hobby.pwp.blueyonder.co.uk/antenna/4.jpg

Not sure what to cover the SGC with to keep the rain out. Plus it will be in direct sun all day on top of the pole. Garden is Roughly North to south.. South being at the pole end of the garden.
I can disconnect the homebrew G5RV and move the ugly coax balun I made up to the pole and add some new coax in-between. I know its a lot of connections but it will have to do for the time being.

Hope this helps.

Thanks

"Buck" <usenet01@lumpuckeroo.com> wrote in message news:i2lm04hopba7pehjn0hu1ugh92d95mhgcm@4ax.com...
> Ok, Barrett,
>
> First of all, I missed your british accent the first time around, and
> I have also read the instruction manual that came with the tuner.
>
> Now that I understand you and the tuner (coupler) better, I can make
> better informed recommendations.
>
>
>>>>I have a 60ft garden and my maximum height I can go is only 20ft. I
>>>>would
>>>>like to TX on 80-40 and on 160 if possible but I might be asking the
>>>>impossible with the 160m..
>
> Your coupler says it only needs 23 feet to tune 160m. At that rate,
> you would not be one of the big fishes in the pond, but you would be
> there.
>
>>>>I do not have a ground system in place. I can put some earth rods in and
>>>>some surface wire but I have no way of putting any wire into the soil
>>>>itself. So I am a bit limited.
>>>>
>
> You might have more of a ground than you think. hang in there...
>
>>>>I have a 150ft of flexweave wire that is uv plastic coated to play with.
>>>>I think I have three choices to chose from at the moment.

>>>>I can use the SGC-230 with an inverted L.
>>>>I can use the SGC-230 with an inverted L with homebrew traps built in.
>>>>I can use an inverted L with homebrew traps built in but without the
>>>>SGC-230.
>>>>
>>>>What would be the best choice and why?
>
> The best choice is the one that will give you effective communications
> given your resources and abilities. I think you will do well.
>
>
>>> I am going to give it a WAG and suggest you would be better off
>>> without the traps.
>
> your coupler supersedes your need for traps.
>
>
>>> Can the tuner be mounted in the weather? Yes
> See Page 7 in the users manual. Can you acquire or spare a plastic
> garbage can?
>
>
> SNIP
>
>>If so, could you make a 150 foot
>>> dipole and feed it with twin-lead to the tuner? I would like that
>>> idea best. Even 300 ohm twin lead from Radio shack would be good. This
>>> is
>>> out due to getting it through the house wall.
>
> I assume you can get a piece of coax out from the radio to the
> coupler?
>
>>
>>
>>The garden is only 60ft long, so fitting in 150ft won't work here. I could
>>make a Z up but the end of one end would have to drop to garage roof
>>height
>>(9ft) and it would put the other end of the Z running (clipped onto the
>>plastic gutter). This would put the Aerial very close to the house and
>>very
>>close to the neighbours TV and radio aerial.
>>
>>
>>>
>>> The inverted L seems to prefer ground radials, but a dipole or random
>>> wire may be better. If you can go up and only in one direction, could
>>> you run 300 ohm up and tap one end? this would be an end-fed Zep, i
>>> believe, and the tuner should tune it.
>>

>>
>> I could do but my nax height would be 20ft would this work? Also I have a
>>20ft scaffold pole note grounded that the G5RV is supported by won't this
>>interfere with it?
>
> :) :) :)
>
>
> To me, this is your ace in the hole :)
>
> See the diagram at the top of page 7?
>
> Here is what I would do assuming the trees or other supports
> cooperate.
>
> Get a protective cover for the coupler as shown. Mount the coupler as
> high up the pole as you can. Ground the coupler to the pole well
> where you mount it, and cover the coupler as in the diagram.
>
> at the base of the pole, set one of the ground rods and ground the
> pole to the rod. You don't need any wire going from the tuner to the
> ground rod as the scaffold pole will be the conductor.
>
> From the tuner, stretch your wire out as far as you can to the other
> supports. Weave it around, if you must, but try to get as close to 80
> feet of wire strung out as possible. Make a "T" in the wire if
> necessary giving the wire three points, one at the tuner and two going
> different directions. For me, the more wire, the better. The more
> spread out, the better.
>
> Now, when you reach your limit, take the rest of the wire and make as
> much of ground radials as you can as you see in the diagram on pages 7
> & 16.
>
> If you can't run them far, go as far as you can.
>
> The second alternative? Replace your G5RV with the installation shown
> in the diagram on page 17.
>
> If you can't raise the coupler up the pole very high, you could mount
> it as high as possible on the pole, and run the hot lead up beside the
> pole (separated as far as possible) loop it thru an insulator near the
> top of the pole and continue trying to get as much wire out as
> possible.
>
>
> I imagine that if I walked thru your garden and saw it in person, I
> would make different suggestions, but based on my perception of what I
> have never seen, I can only take a bit of a guess.
>

> Let me know how it goes.
>
> Thanks
>
>
>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."
>

4427. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 20:58:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <ieKdnQYT39vyM5bVnZ2dnUVZ_jSdnZ2d@easystreetonline>
Source record: 25949

Richard Fry wrote:
> "Roy Lewallen"
>> However, you can't compensate for this factor when the ground is poor
>> by improving the ground system. The reason is that the reflection
>> takes place much farther from the antenna than nearly any ground
>> system extends. And low angle radiation, where the improvement is most
>> needed, reflects the greatest distance away.
> ----------
>
> Roy, didn't the experiments of Brown, Lewis & Epstein of RCA in ~1937
> show that the h-plane field measured 3/10 mile from a vertical monopole
> of about 60 to 88 degrees in height, over a set of 113 buried radials
> each 0.41 WL, was within several percent of the theoretical maximum for
> the applied power as radiated by a perfect monopole over a perfect
> ground plane? And conductivity at the NJ test site was poor -- 4 mS/m
> or less.
>
> That tends to show that the fields radiated at very low elevation angles
> also will be close to their theoretical values when measured at this
> radial distance, even though ground conductivity at the antenna site is
> poor. The relative field (E/Emax) for radiators of these heights and
> propagation paths approximately equals the cosine of the elevation angle.

I believe we've discussed this before, so I'll be brief.

Their calculation of the field at the receiving site when the radial system is perfect was adjusted for the effect of ground wave attenuation caused by the imperfect ground conductivity. If the ground between the antenna and receiving site were perfect, the field strength would have been greater.

Also, I'm speaking of sky wave. Ground reflection isn't a factor in determining surface wave, which is what they measured and which isn't of interest to most amateurs.

> The greatest radiated fields always will be directed in or near the
> horizontal plane when measured/calculated for such conditions. This
> also will be true for any monopole from infinitesimal to 5/8 wavelength
> in height, although the elevation pattern of monopoles from /4- to
> 5/8-WL no longer are described by the cosine function (see
> http://i62.photobucket.com/albums/h85/rfry-100/MWElPatComparison.jpg).
>
> Elevation patterns show maximum relative field centered at various
> elevation angles above the horizon, when those fields are measured at
> progressively longer radial distances from the monopole, due to the

> propagation loss for the surface wave over other than a perfect, flat,
> infinite ground for those ranges. Earth curvature and terrain
> diffraction add to those losses for longer surface wave paths over real
> earth, and for very great distances the h-plane relative fields falls to
> ~zero.

As I thought you were aware, the surface wave propagates considerably
differently than the sky wave.

> But that pattern shape is not the pattern shape originally radiated by
> the monopole, it also includes the effects of the propagation
> environment at the range where it was measured (or calculated).
>
> If this were not true then MW broadcast stations would have essentially
> zero coverage area for their groundwave signals.

It would be a mistake to design HF antenna systems based on optimizing
surface wave propagation as AM broadcasters do, unless you desire
communication for distances not exceeding a few miles.

Roy Lewallen, W7EL

4428. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 21:07:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <jYmdnecGLMUwLZbVnZ2dnUVZ_s-pnZ2d@easystreetonline>
Source record: 25950

Buck wrote:
>
> Maybe I should change the subject line, but here goes.
> First of all, i am fishing for information, not challenging anyone's
> intelligence.
>
> I understand from books I have read, that a ground mounted vertical
> antenna needs many radials. IIRC, the point of diminishing returns on
> adding radials falls somewhere between 64-128 radials. I imagine the
> best radial-based ground I could have for 20 meters would be a solid
> copper disk with about 16 feet radius, give or take. However, I
> recall in the ARRL Antenna handbook, not the latest version, but one
> prior to this one, there is no noticeable difference between a raised
> ground plane antenna with 4 elements as opposed to 128. (From here,
> or another antenna forum, I heard for the first time that it holds
> true for two radials.)

When a ground system is a long distance above ground, only two radials are needed for high efficiency and a circular pattern at zero elevation angle. The pattern does become non-circular at higher angles, which can be prevented by adding two more radials. A ground system which is above but close to the ground requires fewer radials for good efficiency than one with radials which are buried or much closer to the ground.

> I am still trying to figure out why so many radials are needed on the
> ground and a few feet higher so few are needed.

The ground is very lossy. When the radial system is on or in the ground, current flowing to the radials is forced to flow through the lossy ground.

> Actually, more important than the why, is how high is high enough to
> reduce the optimum number of radials? For example, i want to build a
> 20 meter vertical. I understand the best place for it is on top of a
> 100 foot+ tower, but somewhere in between, there has to be a place
> where 4 radials above ground is noticeably better than the same 4
> radials on the ground.

That's a good question without a single good answer. It depends at least on the ground conductivity and permittivity (down to a considerable depth), frequency, and radial length. Modeling can give you a good idea of the tradeoffs, although the very simple minded ground model might not be adequate to make a very accurate comparison.

> Another point I have heard in the forums, but not confirmed, is that a
> reduced size vertical element doesn't gain much by adding radials
> longer than the antenna is high.

I don't believe that's true. I'll gladly consider any supporting evidence. Hearing something on forums is among the worst justification for believing it, in my opinion.

Roy Lewallen, W7EL

4429. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 21:08:43 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <jYmdneYGLMVELZbVnZ2dnUVZ_s_inZ2d@easystreetonline>
Source record: 25851

Buck wrote:
> On Sat, 19 Apr 2008 12:24:14 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>> Buck wrote:
>>> You wrote the program, so I am not arguing with you, I will check it
>>> out again. I sure feel I remember that being a restriction. Funny
>>> thing is, that I haven't set learning the program to a higher priority
>>> since I didn't think it would model what I want to experiment with,
>>> which is parallel wires/poles.
>>>
>>> I'll have to look into that more.
>>>
>> Perhaps you're remembering a restriction with MININEC-based programs,
>> which had problems with close spaced parallel wires.
>>
>>> Thanks for the heads up.
>>>
>>> BTW what is the upgrade cost for 4.0 and 5.0 from 3.0?
>> Sorry, the upgrade price is available only to people who have purchased
>> EZNEC. You can find information on purchasing a new program at
>> http://eznec.com.
>>
>>> Thanks
>>> Buck
>>> n4PGW
>> Roy Lewallen, W7EL
>
> My wife purchased it at a hamfest about three years ago before we
> married.

Buck, send me an email so we can get this sorted out off-line.

Roy Lewallen, W7EL

4430. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 21:24:28 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <ptcn04plgpahc3sbe07j13id0idibhfaqf@4ax.com>
Source record: 25852

On Sun, 20 Apr 2008 14:26:26 +0100, Highland Ham
<abcgm0csz.kn6whxyz@dsl.pipex.com> wrote:

>==========
>Instead of an approx 16 ft radius disc ,you might consider an area
>covered with chicken wire mesh with the antenna in its centre.If that's
>laid on a lawn the grass will quickly grow over it . In a few weeks time
>the wire mesh will no longer be visible and the lawnmower can just run
>over .

Thanks, Frank, but the example was for illustrative purposes only.
I'd hate to think of the cost of that solid sheet of copper hihi.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4431. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 21:29:37 UTC
From: Yuri Blanarovich <K3BU@optonline.net>
Message-ID: <480bb609$0$25036$607ed4bc@cv.net>
Source record: 25853

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:z8WdnThgM7y9_5fVnZ2dnUVZ_gWdnZ2d@easystreetonline...
> There are two quite separate ways which ground affects a vertical
> antenna's performance.
>
> The first is loss due to current returning to the antenna base when the
> antenna is grounded, or induced in the ground under an elevated radial
> system. To minimize loss, you want as much of the current to flow through
> radial wires as you can. The power loss is I^2 * R. For a given power
> input, I is much lower for a half wave bottom fed vertical than a quarter
> wave bottom fed vertical. So the loss due to the conducted or induced
> current is much less, and you can get by with a much simpler ground system
> with the half wave vertical and still have low loss.
>
> This ground loss is usually the chief determining factor of a vertical's
> efficiency.

Here we are again forgetting that we are dealing with standing wave circuit
and cos/sin current distribution along the elements. Half wave vertical
might have low current at the base but quarter wave away it will be max
(assuming half wave elevated electrical radial). The radiation pattern is
formed between the radiator and radials (and how they are affected by ground
under).
Radials close to ground couple to it and depending on ground RF quality we
are dealing with decent reflecting mirror or "RF eating sponge".

>
> The other effect of ground is that the field from the antenna reflects
> from it some distance from the antenna. The reflected field adds to the
> directly radiated field to form a net field which is different at each
> elevation angle. This is a major factor in determining the antenna's
> elevation pattern. The conductivity and permittivity (dielectric constant)
> of the ground affect the magnitude and phase of the the reflected field,
> so the pattern changes with ground quality. In general, the more
> conductive the ground the better the low angle radiation. However, you
> can't compensate for this factor when the ground is poor by improving the
> ground system. The reason is that the reflection takes place much farther
> from the antenna than nearly any ground system extends. And low angle
> radiation, where the improvement is most needed, reflects the greatest
> distance away. The only way to improve the situation is to move the
> antenna to a location where the ground is better, which usually isn't
> possible or practical.
>

Dense radial field with electrical length of radials around wavelength has
shown remarkable imrpovement in low angle performance over "regular"ground.

> Because of the two separate effects, the overall field strength might be
> better or worse as the ground conductivity improves, and it might even be
> better at some elevation angles and worse at others.
>
> Roy Lewallen, W7EL
>

Yuri, K3BU.us

> Yuri Blanarovich wrote:
>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>> news:0o5Oj.8725$V14.5703@nlpi070.nbdc.sbc.com...
>>> Al Lorona wrote:
>>>> It's funny to think that really terrible ground can have an advantage
>>>> over pretty good ground.
>>> Free space is just about the most terrible "ground"
>>> that one can imagine. :-)
>>> --
>>> 73, Cecil http://www.w5dxp.com
>>
>> So much disinformation by W8JI School of DC circuitry :-)
>>
>> Modeling various configurations shows benefits of good ground, especially
>> for taller than 1/4 wave radiators.
>> Myth that half wave radiators do not need ground is spreading like snake
>> oil wild fire. They need it but "looking" for it further out, not just at
>> the base.
>> I will anytime trade good ground (mirror) for lossy (RF sponge) ground.
>> Its just where the radiator is "looking" for the mirror, taller one -
>> further out, enhancing signals at lower angles.
>> 3/8 vertical with some 3/8 physical length radials start morphing into
>> far field.
>>
>> Yuri, K3BU.us
>>
>>
>>

4432. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-20 23:03:29 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fugi43$8gh$1@aioe.org>
Source record: 25854

Previously, about BL&E's 1937 measurements:

> Their calculation of the field at the receiving site when the radial
> system is perfect was adjusted for the effect of ground wave attenuation
> caused by the imperfect ground conductivity.

Anybody: Just wondering -- how does this conclusion flow from the findings published in the 1937 I.R.E.paper of BL&E?

The theoretical (not measured) BL&E groundwave field at 1 mile for 1 kW radiated from a perfect monopole over a perfect ground plane as shown in the BL&E I.R.E. paper is not the equivalent/adjusted field they measured from the monopole heights they tested. But, as BL&E published, the groundwave fields they measured from these real monopoles over real earth was within several percent of that theoretical maximum, when working against 113 buried radials each of 0.41WL -- even for the poor conductivity at/near their antenna site.

> Also, I'm speaking of sky wave. Ground reflection isn't a factor in
> determining surface wave, ...

But neither theory nor practice supports this, does it? If so, then the groundwave fields that BL&E measured at 3/10 of a mile would have been at least 29.3% less than that theoretical maximum field, which included a perfect (3 dB) ground reflection -- not just the several percent they measured. And this measured performance just beyond the near field radius has been re-proven in thousands of groundwave r.m.s. field strength measurements of AM broadcast stations over many decades since the BL&E work.

> It would be a mistake to design HF antenna systems based on optimizing
> surface wave propagation as AM broadcasters do, unless you desire
> communication for distances not exceeding a few miles.

Just to note that since the 1930s (at least), AM broadcasters have been aware of the effects of the differing propagation characteristics of groundwaves and skywaves. This is evident in the fact that most 50 kW, fulltime, AM broadcast stations in the US use a radiator height that minimizes the self-interference of their skywave with their groundwave, so as to ~maximize their interference-free coverage areas when skywave propagation occurs. The great majority of these stations use a monopole radiator height of about 195 degrees.

RF

4433. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 03:32:57 UTC
From: nm5k@wt.net
Message-ID: <54520c12-66b5-4f04-9b35-0234920c350d@b5g2000pri.googlegroups.com>
Source record: 25855

On Apr 20, 8:05 am, Buck <usene...@lumpuckeroo.com> wrote:

>
> Maybe I should change the subject line, but here goes.
> First of all, i am fishing for information, not challenging anyone's
> intelligence.
>
> I understand from books I have read, that a ground mounted vertical
> antenna needs many radials. IIRC, the point of diminishing returns on
> adding radials falls somewhere between 64-128 radials. I imagine the
> best radial-based ground I could have for 20 meters would be a solid
> copper disk with about 16 feet radius, give or take. However, I
> recall in the ARRL Antenna handbook, not the latest version, but one
> prior to this one, there is no noticeable difference between a raised
> ground plane antenna with 4 elements as opposed to 128. (From here,
> or another antenna forum, I heard for the first time that it holds
> true for two radials.)
>
> I am still trying to figure out why so many radials are needed on the
> ground and a few feet higher so few are needed.
>
> Actually, more important than the why, is how high is high enough to
> reduce the optimum number of radials? For example, i want to build a
> 20 meter vertical. I understand the best place for it is on top of a
> 100 foot+ tower, but somewhere in between, there has to be a place
> where 4 radials above ground is noticeably better than the same 4
> radials on the ground.
>
If you used 120 radials on the ground as optimum, even raising only
1/8 wave off the ground will enable one to reduce the number of
radials
to equal the same performance.
But... You will still probably need at least 60 radials at 1/8 wave up
to equal the 120 on the ground. So even at that low elevated height,
4 radials is better than 4 on the ground. But... Still not very
good.. :/
At 1/4 wave in height, you will need about 8-10 radials to equal the
120 on the ground. Only when you approach 1/2 wave in height can
you use 2-4 radials and have the same appx ground losses as the
120 on the ground.
You *must* think in terms of wavelength off the ground, not just feet
in general. A 160m vertical will need to be about 250 ft off the
ground
to be able to use 2-4 radials with optimum results.

A 10m vertical can be 16 ft off the ground with 2-4 radials and have
the same performance.
If you had the 20m vertical at 16 ft, "1/4 wave", and used 4 radials,
it would be equal to a ground mount using about 60 radials.
Pretty decent antenna.

In the case of your 20m vertical, it will need to be 32 ft high to
be able to use 2-4 radials and appx equal 120 on the ground.
But a 20m vertical at 8 ft off the ground with 4 radials will
be better than the same vertical on the ground with 4 radials.
But if you want that 8 ft high vertical to equal 120 on the ground,
you will need about 60 or so, being it is only 1/8 wave up at that
frequency. This would give pretty decent performance.
Much better than the 4 radials at 1/8 wave up where 4 radials
is equal to about 8-10 on the ground. Neither one of those
is going to set the woods on fire..

Obviously, an elevated multi band vertical with radials for
each band will have varying degrees of ground loss depending
on the band in use at the time.
If you had a multi band 1/4 wave vertical "GP" at 32 ft, and had 4
radials for each band, you would have much less ground loss on
10m, than on 80m.
On 10m, it's 1 wavelength, and just 1 radial will be enough to
make an efficient antenna, except you have a dipole.
If you use two radials 180 degrees apart, that should actually
be a tad lower ground loss than 120 radials on the ground
being it's at 2 wavelengths up.
On 20m, it's at 1/2 wave up, and still very low loss.
At this point the 4 radials should be very close to
the 120 on the ground mount.
On 40m, it's at 1/4 wave up, and the 4 radials will
be equal to about 50-60 on the ground.
The antenna will still work quite well.
On 80m, it's at 1/8 wave up, and the 4 radials
would be about equal to about 8-10 on the ground.
A good bit of loss on that band. You will be able to
operate, but not with the gusto of the higher bands. :(

Maybe this will give you an idea of the appx level of loss
for a given number of radials at certain heights, vs the 120
on the ground. The most important thing to remember is
to think in terms of wavelength off the ground for the band
to be used.

>
> Another point I have heard in the forums, but not confirmed, is that a
> reduced size vertical element doesn't gain much by adding radials
> longer than the antenna is high.

Nope, I don't really agree. In fact, I think using the shorter
radiator makes the use of the lower ground loss radial set

even more important and worthwhile if you are trying to
approach full size performance.
You would see a difference I'm fairly sure.
BTW, a lot of the info I just wrote a novel about came
from the Bill Orr handbooks. He has sections on the subject,
and also graphs that match the levels of loss I mentioned
at the various heights.
In testing various verticals, including a full size 40m ground
plane which I could vary the height, I've never seen anything
to show his data is incorrect. It's from one of those blasted
books Art has problems with, but I happen to trust it as fairly
accurate.
All this pertains to the usual 1/4 wave elevated ground planes
vs a ground mount.

4434. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 03:38:35 UTC
From: nm5k@wt.net
Message-ID: <1a53a9b7-9204-418f-bfb2-71898a4385e5@i36g2000prf.googlegroups.com>
Source record: 25856

On Apr 20, 10:32 pm, n...@wt.net wrote:

> All this pertains to the usual 1/4 wave elevated ground planes
> vs a ground mount.

BTW, using a larger number of radials will not
improve the ground conditions of the far field,
but being that improving the efficiency of a given
height vertical improves the gain equally in all directions,
you should see an improvement for all types of propagation.
The ground wave, space wave, and sky wave will all
improve by increasing antenna efficiency.

4435. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 04:24:27 UTC
From: nm5k@wt.net
Message-ID: <50975a7b-0595-4dbf-945f-fb7ab5513220@v26g2000prm.googlegroups.com>
Source record: 25857

On Apr 20, 10:32 pm, n...@wt.net wrote:

> If you use two radials 180 degrees apart, that should actually
> be a tad lower ground loss than 120 radials on the ground
> being it's at 2 wavelengths up.

Make that one wave up for 10m.. :/ But the rest should still apply.
Two should be slightly lower loss than the 120 on the ground,
being 20m is the frequency where they should be about equal.
I was rereading all that to see if I molested any numbers..
I knew I'd find one.. :(

4436. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 05:23:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <sxVOj.1160$ix6.649@newssvr11.news.prodigy.net>
Source record: 25858

Keith Dysart wrote:
> Where does the energy that is flowing into the ideal
> DC voltage source on the right go?

I'll just quote you on that one:

> Where does this energy go?
> We do not know and we do not care.
--
73, Cecil http://www.w5dxp.com

4437. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 07:21:41 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <2gXOj.34927$Ka7.17712@newsfe30.ams2>
Source record: 25859

Does it have to be a T shape and why?
How important is it to make all angles at least 90 degrees?

I have neighbours both sides of my house. My neighbours to my right looking down to the pole is ok with the wire antenna but the neighbours to my left, I'm having problems with.I have a feeling that they do not want anything near there side and truth be know they would rather not see any of it. I'm sure they had some thing to do with the planning officer paying a visit to my house about 12 months ago, when I had a I-max 2000 antenna for 10-18Mhz up on a 10ft pole on near there side So I have to try and keep the wire to the one side of my garden if possible.

Thanks

"Buck" <usenet01@lumpuckeroo.com> wrote in message
news:i2lm04hopba7pehjn0hu1ugh92d95mhgcm@4ax.com...
> Ok, Barrett,
>
> First of all, I missed your british accent the first time around, and
> I have also read the instruction manual that came with the tuner.
>
> Now that I understand you and the tuner (coupler) better, I can make
> better informed recommendations.
>
>
>>>>I have a 60ft garden and my maximum height I can go is only 20ft. I
>>>>would
>>>>like to TX on 80-40 and on 160 if possible but I might be asking the
>>>>impossible with the 160m..
>
> Your coupler says it only needs 23 feet to tune 160m. At that rate,
> you would not be one of the big fishes in the pond, but you would be
> there.
>
>>>>I do not have a ground system in place. I can put some earth rods in and
>>>>some surface wire but I have no way of putting any wire into the soil
>>>>itself. So I am a bit limited.
>>>>
>
> You might have more of a ground than you think. hang in there...
>
>>>>I have a 150ft of flexweave wire that is uv plastic coated to play with.
>>>>I think I have three choices to chose from at the moment.
>>>>I can use the SGC-230 with an inverted L.
>>>>I can use the SGC-230 with an inverted L with homebrew traps built in.

>>>>I can use an inverted L with homebrew traps built in but without the
>>>>SGC-230.
>>>>
>>>>What would be the best choice and why?
>
> The best choice is the one that will give you effective communications
> given your resources and abilities. I think you will do well.
>
>
>>> I am going to give it a WAG and suggest you would be better off
>>> without the traps.
>
> your coupler supersedes your need for traps.
>
>
>>> Can the tuner be mounted in the weather? Yes
> See Page 7 in the users manual. Can you acquire or spare a plastic
> garbage can?
>
>
> SNIP
>
>>If so, could you make a 150 foot
>>> dipole and feed it with twin-lead to the tuner? I would like that
>>> idea best. Even 300 ohm twin lead from Radio shack would be good. This
>>> is
>>> out due to getting it through the house wall.
>
> I assume you can get a piece of coax out from the radio to the
> coupler?
>
>>
>>
>>The garden is only 60ft long, so fitting in 150ft won't work here. I could
>>make a Z up but the end of one end would have to drop to garage roof
>>height
>>(9ft) and it would put the other end of the Z running (clipped onto the
>>plastic gutter). This would put the Aerial very close to the house and
>>very
>>close to the neighbours TV and radio aerial.
>>
>>
>>>
>>> The inverted L seems to prefer ground radials, but a dipole or random
>>> wire may be better. If you can go up and only in one direction, could
>>> you run 300 ohm up and tap one end? this would be an end-fed Zep, i
>>> believe, and the tuner should tune it.
>>
>>
>> I could do but my nax height would be 20ft would this work? Also I have a

>>20ft scaffold pole note grounded that the G5RV is supported by won't this
>>interfere with it?
>
> :) :) :)
>
>
> To me, this is your ace in the hole :)
>
> See the diagram at the top of page 7?
>
> Here is what I would do assuming the trees or other supports
> cooperate.
>
> Get a protective cover for the coupler as shown. Mount the coupler as
> high up the pole as you can. Ground the coupler to the pole well
> where you mount it, and cover the coupler as in the diagram.
>
> at the base of the pole, set one of the ground rods and ground the
> pole to the rod. You don't need any wire going from the tuner to the
> ground rod as the scaffold pole will be the conductor.
>
> From the tuner, stretch your wire out as far as you can to the other
> supports. Weave it around, if you must, but try to get as close to 80
> feet of wire strung out as possible. Make a "T" in the wire if
> necessary giving the wire three points, one at the tuner and two going
> different directions. For me, the more wire, the better. The more
> spread out, the better.
>
> Now, when you reach your limit, take the rest of the wire and make as
> much of ground radials as you can as you see in the diagram on pages 7
> & 16.
>
> If you can't run them far, go as far as you can.
>
> The second alternative? Replace your G5RV with the installation shown
> in the diagram on page 17.
>
> If you can't raise the coupler up the pole very high, you could mount
> it as high as possible on the pole, and run the hot lead up beside the
> pole (separated as far as possible) loop it thru an insulator near the
> top of the pole and continue trying to get as much wire out as
> possible.
>
>
> I imagine that if I walked thru your garden and saw it in person, I
> would make different suggestions, but based on my perception of what I
> have never seen, I can only take a bit of a guess.
>
> Let me know how it goes.
>

> Thanks
>
>
>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."
>

4438. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 07:25:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3kXOj.4598$vF.2220@newssvr21.news.prodigy.net>
Source record: 25860

Keith Dysart wrote:
> Despite your
> protests to the contrary, ideal voltage sources can, and
> do, absorb energy.

From the "IEEE Dictionary":

"Absorption: (2) A general term for the process by which
incident flux is converted to another form of energy,
usually and ultimately to heat. (4) The irreversible
conversion of the energy of an EM wave into another form
of energy as a result of wave interaction with matter."

By what mechanism does an ideal source with an impedance
of 0+j0 manage to dissipate heat? Since the energy absorption
by the ideal source is *irreversible*, where is the heat
(or other form of energy) stored and for how long?
--
73, Cecil http://www.w5dxp.com

4439. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 09:24:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <xMWdnZdkMa6vwJHVnZ2dnUVZ_s6mnZ2d@easystreetonline>
Source record: 25861

Richard Fry wrote:
>. . .

I've discussed the difference between sky and ground wave, and Brown, Lewis, and Epstein's measurements a number of times on this newsgroup in response to pretty much the same questions by Richard, so there's no need to do it again. Anyone interested in my comments can do a search of my postings which include "ground wave" or "surface wave".

Roy Lewallen, W7EL

4440. Re: Ground conductivity's effect on vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 09:52:40 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <kcno04p4cneclmnurub6aroo08obb40k3e@4ax.com>
Source record: 25862

On Sun, 20 Apr 2008 14:07:59 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Buck wrote:

>> Another point I have heard in the forums, but not confirmed, is that a
>> reduced size vertical element doesn't gain much by adding radials
>> longer than the antenna is high.
>
>I don't believe that's true. I'll gladly consider any supporting
>evidence. Hearing something on forums is among the worst justification
>for believing it, in my opinion.
>
>Roy Lewallen, W7EL

Long ago, I discovered that anyone can become an "expert" on the
internet by making a statement and having someone else agree with them
or back them up. This is, of course, why I included the statement
"but not confirmed."

Very recently I heard a conversation on the air between a ham who was
"elmering" a new ham and another ham. The "elmer" was trying to help
the new ham convert a "vertical dipole" so it would operate on HF. It
was rather confusing for a bit until he better described it. It
turned out to be some kind of VHF ground plane antenna.

I understand ignorance.... but this worries me.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4441. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 10:13:56 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <dbed6ebe-b876-4a47-99a6-89ffe79a9c81@2g2000hsn.googlegroups.com>
Source record: 25863

On Apr 21, 1:23 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Where does the energy that is flowing into the ideal
> > DC voltage source on the right go?
>
> I'll just quote you on that one:
>
> > Where does this energy go?
> > We do not know and we do not care.

Finally, you have got the correct answer.

Having accepted that ideal voltage sources can remove energy
from a circuit, you can now re-evaluate your explanations.

With an ideal voltage source being capable of removing
energy, it should no longer be necessary for you to
propose strange notions of energy flowing through an
ideal voltage source and bouncing off the ground.

...Keith

4442. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 10:14:01 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <9274d525-4bee-4483-a4d0-f0ca697bbd25@l42g2000hsc.googlegroups.com>
Source record: 25864

On Apr 21, 3:25 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Despite your
> > protests to the contrary, ideal voltage sources can, and
> > do, absorb energy.
>
> From the "IEEE Dictionary":
>
> "Absorption: (2) A general term for the process by which
> incident flux is converted to another form of energy,
> usually and ultimately to heat. (4) The irreversible
> conversion of the energy of an EM wave into another form
> of energy as a result of wave interaction with matter."
>
> By what mechanism does an ideal source with an impedance
> of 0+j0 manage to dissipate heat? Since the energy absorption
> by the ideal source is *irreversible*, where is the heat
> (or other form of energy) stored and for how long?

Just as ideal voltage sources can provide energy to a circuit,
they can also remove energy from a circuit.

Feel free to substitute the word of your choice for 'remove'.

Dissipate is not a good choice since it usually implies
conversion to heat.

Absorb is not a good word for you, since you can find absorption
in the IEEE dictionary and it also suggests conversion to heat.

The thesaurus (http://thesaurus.reference.com/ suggests 'consume',
'assimilate', 'digest', 'imbibe',
'take up', 'sop up', and 'devour'.

Pick the word that you find least confusing.

Recalling that an ideal voltage source can provide (deliver,
furnish, supply, transfer) energy to a circuit, we need a
non confusing word to describe the concept that an ideal
voltage source can also remove energy from a circuit.

A word that gives no hint about where this energy goes would
be best, since, just as we do not know where the energy
that an ideal voltage source delivers to a circuit comes
from, we do not know where the energy that an ideal voltage
source removes from a circuit goes.

...Keith

4443. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 10:26:59 UTC
From: ltdoc@yahoo.com
Message-ID: <5ceb7809-b634-4cac-b265-080c6bc1a370@u69g2000hse.googlegroups.com>
Source record: 25865

Barrett,
A little speculating.
Is there any chance of finding an 'anchor' point on your home's roof? Nothing very spectacular or noticeable from the 'street' side, but one that would add a few feet/yards to your present antenna supports? How would your neighbors feel about a fairly tall pole supporting a bird house? (And naturally, you would want to guy that pole to keep the bird house from falling, right?) Several possibilities there!

The conductor used for an antenna must be conductive with a low resistive value. After that, almost anything will work (just fine, in most cases). Who wouldn't want gold/silver conductors if po$$ible, but copper works well for us poorer people ;).

If whatever you end up with works, it not being one of the classical 'shapes' for an antenna isn't exactly a "biggy". Having lived in places that were not the 'ideal' antenna sites for most of my life, when confronted with a site that could hold almost any antenna, I was really at a loss as to what to do. And since the antennas I have used prior to that were never 'ideal', I ended up using one of those "less than ideal" antennas and did just fine. Did I have the 'best' signal on the band? Not exactly! But so what, it was "good enough". I think you are in about the same situation, sort of. (I also do not have a planning commission or deed restrictions to worry about, so guess I'm 'ahead' of you in that regard.)
Good luck!
- 'Doc

(Pssst! Put that tuner on the roof, cover with something that looks like a "sun roof" thingy, support the antenna wire with a post with a weather vane on the top. If questioned, say the @#$ thing has been there for ages, those @#$ - ^%%^ neighbors don't know what they are talking about!)

4444. Grounding Possibilities

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 13:54:15 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <yZydnY0O_LYcAZHVnZ2dnUVZ_rGhnZ2d@comcast.com>
Source record: 25866

I live in a 1 story home with a accessible attic.

I have an Icom AH-4 tuner mounted in the attic, and need to run a real ground to the 8' ground rod we just pounded in.

My question is - should the ground wire coming from the AH-4 be of a wire gauge of #12, or should I consider running 1/4" copper tubing? The total length of the run is approximately 30'

73's

4445. Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 14:21:36 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <RtydnRDA8Y1wP5HVnZ2dnUVZ_gWdnZ2d@bright.net>
Source record: 25867

I looked through saved messages and the only reference to type 31 ferrite (Fair-Rite) was in March of 2005. That reference had to do with ignition wires.

Recommendations for HF choking ferrites have centered on the 70 series with type 43 being favorably recommended for the upper portion of HF and VHF. However, Fair-Rite seems to be recommending type 31 for HF. See Figure 26 in:
http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf

Am I missing something? It seems to me that for the purpose of choking common mode current (on the outside of the outer conductor of coax) from 3 to 25 MHz one should prefer the use of type 31. This is a receiving application with a long run of coax.

73, Mac N8TT

P.S. I will also appreciate ideas about places to purchase ferrite in addition to Mouser.

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net

4446. Re: Grounding Possibilities

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 14:26:57 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <__adndmFR651PpHVnZ2dnUVZ8vudnZ2d@pipex.net>
Source record: 25868

Howard W3CQH wrote:
> I live in a 1 story home with a accessible attic.
>
> I have an Icom AH-4 tuner mounted in the attic, and need to run a real
> ground to the 8' ground rod we just pounded in.
>
> My question is - should the ground wire coming from the AH-4 be of a wire
> gauge of #12, or should I consider running 1/4" copper tubing? The total
> length of the run is approximately 30'
==========
That 30 ft run ,whether wire or tubing could possibly radiate RF ,hence
it might be better to have an artificial ground (a series resonant tuned
circuit + a length of insulated wire) located on the loft .
The unit is tuned for maximum current .

Such a unit can be easily homebrewed ,however it can also be purchased
from MFJ (their model MFJ-931) , be it that it is to be locally
operated which might be a problem when the Icom AH-4 tuner is remotely
operated away from the loft.

Frank GM0CSZ / KN6WH

4447. Re: Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 14:29:54 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <adbd4b7e-9539-47fe-9998-0604c023ca1f@m1g2000pre.googlegroups.com>
Source record: 25869

On Apr 18, 9:52 pm, "Bryan" <bryan.swadenerNOS...@comcast.net> wrote:
> Dunno 'bout standoff insulators but Davis RF carries porcelain compression
> insulators:http://www.davisrf.com/. I use their #10-72 (Daburn's PN) for
> dipoles, supported by ¼" diameter rope. They don't have what I would call
> good descriptions or even photos but you can search for a part number on
> Daburn's website:http://www.daburn.com/
>
> Bryan WA7PRC

Thank you Bryan - now I know that a lot of the interesting stuff in
the Daburn catalog can be ordered from Davis RF, and that satisfies
almost all my wants and desires. Thanks so so much for pointing that
out, as well as the immediate relation between the Davis catalog and
the Daburn part numbers!

The Daburn 10-52 (also in the Davis RF catalog) is a very very
impressive feedthrough - I'm very happy to see it mentioned,
available, and at an affordable price!

Tim.

4448. wholesale oem brand sport shoes(www.ec-myth.com)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 15:49:15 UTC
From: ecmyth@gmail.com
Message-ID: <d8cf5ad1-ca19-40da-8754-e9d1c6a9510e@y18g2000pre.googlegroups.com>
Source record: 25870
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Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 15:54:28 UTC
From: ecmyth@gmail.com
Message-ID: <85ab9768-2817-4e90-8bec-a5db6976a0fd@m1g2000pre.googlegroups.com>
Source record: 25871
Cross-posted to: alt.gossip.celebrities,rec.radio.amateur.antenna,misc.fitness.misc,rec.sport.basketball.pro

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Wholesale Air jordan 4 x air force 1 fusions (www.ec-myth.com)
Wholesale cheap jordans and air force ones site at (www.ec-myth.com)
wholesale Air Jordan 12 Fusion,air jordan 5 x air force 1 Fusion (www.ec-myth.com)
(www.ec-myth.com) Wholesale New Air Jordan 12 Fusion,Air Jordan 12 X Air Force 1 Wholesale New Air Jordan 12 Fusion,Air Jordan 12 X Air Force 1
cheap Air Jordan 5 x Air Force one Fusion (www.ec-myth.com)
discount Air Jordan 5 and Air Force one Fusion (www.ec-myth.com)
Air Jordan 12 x Air Force One china online store (www.ec-myth.com)
(www.ec-myth.com) Air Jordan V x Air Force 1 Fusion
Air Jordan 12 x Air Force Ones Fusion (www.ec-myth.com)
Nike AF1 x Air Jordan 5.
Nike Air Force Ones Shoes & Air Jordan 5.
wholesale Air Jordan 5 (V) x Air Force 1 Fusion (www.ec-myth.com)

4450. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 16:11:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <G03Pj.6030$GO4.2870@newssvr19.news.prodigy.net>
Source record: 25872

Keith Dysart wrote:
> Cecil Moore <nos...@w5dxp.com> wrote:
>> I'll just quote you on that one:
>>
>>> Where does this energy go?
>>> We do not know and we do not care.
>
> Finally, you have got the correct answer.
>
> Having accepted that ideal voltage sources can remove energy
> from a circuit, you can now re-evaluate your explanations.

No, I can quit wasting my time thinking about it
because "we do not care". We not caring takes away
any reason or purpose for continuing the discussion.

> With an ideal voltage source being capable of removing
> energy, it should no longer be necessary for you to
> propose strange notions of energy flowing through an
> ideal voltage source and bouncing off the ground.

The discussion is moot unless you can prove that an
ideal source in a single-source system can absorb
AVERAGE power. So there's your challenge. If you
cannot do that, my article about average power
stands as written.
--
73, Cecil http://www.w5dxp.com

4451. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 16:26:20 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Me3Pj.6033$GO4.5531@newssvr19.news.prodigy.net>
Source record: 25873

Keith Dysart wrote:
> Feel free to substitute the word of your choice for 'remove'.

That's the first time you have used the word "remove".
Have you changed your mind about energy being "absorbed",
by the source, i.e. turned into heat?

> Dissipate is not a good choice since it usually implies
> conversion to heat.

Whoa there Keith, "absorb" is equally not a good choice
since it usually implies conversion to heat as in the IEEE
definitions. If the source only removes energy, then that
is a plus for my side of the argument. If the source has
the ability to remove the destructive interference and
supply it back 90 degrees later as constructive interference,
the entire mystery of where the reflected power goes is
solved. When I previously offered that as a solution, you
turned it down flat. Now you seem to be agreeing with it.

> Absorb is not a good word for you, since you can find absorption
> in the IEEE dictionary and it also suggests conversion to heat.

That's why I have been arguing loud and long against the
absorption of energy by the source. It would imply that
the source is heating up or has an infinite ability to
"irreversibly convert the energy of an EM wave into another
form of energy". That irreversible energy conversion is
what I have been objecting to. There is no way an impedance
of 0+j0 can cause an irreversible energy conversion.

> A word that gives no hint about where this energy goes would
> be best, ...

So you can sweep it under the rug and "not care where it
went"? As I said, further discussion is pointless. You
have a magic source that obeys your every whim. Why didn't
you just say that in the first place?
--
73, Cecil http://www.w5dxp.com

4452. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 16:39:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Nq3Pj.6035$GO4.1931@newssvr19.news.prodigy.net>
Source record: 25874

J. Mc Laughlin wrote:
> It seems to me that for the purpose of choking
> common mode current (on the outside of the outer conductor of coax) from 3
> to 25 MHz one should prefer the use of type 31.

Did you find any information on their fancy
'K' material?
--
73, Cecil http://www.w5dxp.com

4453. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 17:26:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2iip04hk8h3t7aobe4cn02jp818ehp91hn@4ax.com>
Source record: 25875

On Mon, 21 Apr 2008 10:21:36 -0400, "J. Mc Laughlin"
<jcm@power-net.net> wrote:
>Am I missing something? It seems to me that for the purpose of choking
>common mode current (on the outside of the outer conductor of coax) from 3
>to 25 MHz one should prefer the use of type 31. This is a receiving
>application with a long run of coax.

Hi Mac,

I can't say that I have any familiarity with type 31, but certainly
the rest and others. My reference is a 13 year old hard-copy that
does not have this material listed, so it is hard to make side-by-side
comparisons for like-sized beads. Looking at the other charts it
would seem that type 31 would have less "bulk" Z (it would take more
beads at any particular frequency to equal other formulations).

As for your application, and if it is a particularly long run along
ground, or underground, ground itself may provide sufficient snubbing
of Common Mode currents. Except, of course, 60Hz which could be
particularly vicious and I would recommend running a parallel bare
ground wire to the remote ground. In that regard, you may even need
tri-ax.

73's
Richard Clark, KB7QHC

4454. Re: Grounding Possibilities

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 17:42:17 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fuijlpdih1@news.jpl.nasa.gov>
Source record: 25876

Howard W3CQH wrote:
> I live in a 1 story home with a accessible attic.
>
> I have an Icom AH-4 tuner mounted in the attic, and need to run a real
> ground to the 8' ground rod we just pounded in.
>
> My question is - should the ground wire coming from the AH-4 be of a wire
> gauge of #12, or should I consider running 1/4" copper tubing? The total
> length of the run is approximately 30'
>

Are you running that ground for RF reasons, or electrical safety reasons? For instance, are you using it to match a dipole style antenna or a vertical?

Is the antenna inside or outside?

For electrical safety, the coax shield will probably meet the NEC requirements (assuming you've got the appropriate "shield to electrical safety ground" connection at the bottom). And, if the antenna is entirely inside, there's no issue with the NEC anyway.

From an RF resistance standpoint, the resistance difference between 1/4" copper tubing (3/8" OD (.375")) and AWG #12 (about 0.081 inch diameter) is about 1:5 (skin effect means that you're really concerned about circumference, rather than area). If you're interested in reducing the RF resistance, using the shield of a piece of coax might be better (i.e. it's larger in diameter, and the center isn't carrying any current anyway).. But even for the AWG12, the resistance is pretty low (sub 1 ohm for your 30 foot run)

From a RF impedance standpoint, the inductance is a bigger problem. That 30 feet is about 10 microhenries, not to mention that it is probably a good fraction of a wavelength or more.

4455. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 18:13:06 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fuilfi$ve1$1@news.jpl.nasa.gov>
Source record: 25877

J. Mc Laughlin wrote:
> I looked through saved messages and the only reference to type 31 ferrite
> (Fair-Rite) was in March of 2005. That reference had to do with ignition
> wires.
>
> Recommendations for HF choking ferrites have centered on the 70 series with
> type 43 being favorably recommended for the upper portion of HF and VHF.
> However, Fair-Rite seems to be recommending type 31 for HF. See Figure 26
> in:
> http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>
> Am I missing something? It seems to me that for the purpose of choking
> common mode current (on the outside of the outer conductor of coax) from 3
> to 25 MHz one should prefer the use of type 31. This is a receiving
> application with a long run of coax.
>
> 73, Mac N8TT
>
> P.S. I will also appreciate ideas about places to purchase ferrite in
> addition to Mouser.
>

Fair-rite 31 mix is a new one specifically developed for RF choking applications. As you mention, it has a huge range of frequencies for which it's useful. The recommendations one sees in older literature for 73, 43, etc, were formulated back before the new mix was available. Of course, once something is written, it gets copied over and over without a lot of thought being put into whether the underlying assumptions are still met: in this case, what mixes are available.

Page 888 in the Mouser catalog shows some 31 mix parts..
http://www.mouser.com/catalog/633/888.pdf

You can also go to Fair-rite's website and find a list of their local distributors (Lodestone Pacific, for instance).

The 3&4 digits of the part number are the mix:

xx31yyyyyyy is a 31 mix part.

4456. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 18:20:37 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fuiltl$47e$1@news.jpl.nasa.gov>
Source record: 25878

Richard Clark wrote:
> On Mon, 21 Apr 2008 10:21:36 -0400, "J. Mc Laughlin"
> <jcm@power-net.net> wrote:
>
>>Am I missing something? It seems to me that for the purpose of choking
>>common mode current (on the outside of the outer conductor of coax) from 3
>>to 25 MHz one should prefer the use of type 31. This is a receiving
>>application with a long run of coax.
>
>
> Hi Mac,
>
> I can't say that I have any familiarity with type 31, but certainly
> the rest and others. My reference is a 13 year old hard-copy that
> does not have this material listed, so it is hard to make side-by-side
> comparisons for like-sized beads. Looking at the other charts it
> would seem that type 31 would have less "bulk" Z (it would take more
> beads at any particular frequency to equal other formulations).

I don't know about that... the 31 material is around mu=300-800 in the HF area, which is higher than the venerable 43, and a lot higher than the 61.

Another advantage of the 31 material is better performance at higher temperatures.

K9YC has written up a 50 odd page handbook on RFI suppression, choking, etc., with a whole raft of test data on actual chokes (bead baluns, toroids, etc.) made of various materials.
http://www.audiosystemsgroup.com/RFI-Ham.pdf

>
> As for your application, and if it is a particularly long run along
> ground, or underground, ground itself may provide sufficient snubbing
> of Common Mode currents. Except, of course, 60Hz which could be
> particularly vicious and I would recommend running a parallel bare
> ground wire to the remote ground. In that regard, you may even need
> tri-ax.
>
> 73's
> Richard Clark, KB7QHC

4457. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 20:11:05 UTC
From: "Bruce W. Ellis" <ellis@means.net>
Message-ID: <Ax6Pj.341$KD6.311@newsfe06.lga>
Source record: 25879

On Mon, 21 Apr 2008 10:21:36 -0400, "J. Mc Laughlin"
<jcm@power-net.net> wrote:

SNIP

>P.S. I will also appreciate ideas about places to purchase ferrite in
>addition to Mouser.

also check: www.palomar-engineers.com

Bruce W0BF

4458. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 20:28:47 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <U5idnfuYB4FgZZHVnZ2dnUVZ_tajnZ2d@bright.net>
Source record: 25880

Dear Richard:

Oh my! It appears that you need a new reference. One may order a catalog
from the Fair-Rite site.

Your comment about the effect of ground is useful. However, the direction
of the coax run is such that it could enhance the vertically polarized (E
vector normal to the earth) wave received by the receiving antenna. This
might partially defeat the utility of a receiving antenna distant from noise
sources. I will test that hypothesis with NEC4.

73, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:2iip04hk8h3t7aobe4cn02jp818ehp91hn@4ax.com...
> On Mon, 21 Apr 2008 10:21:36 -0400, "J. Mc Laughlin"
> <jcm@power-net.net> wrote:
>>Am I missing something? It seems to me that for the purpose of choking
>>common mode current (on the outside of the outer conductor of coax) from 3
>>to 25 MHz one should prefer the use of type 31. This is a receiving
>>application with a long run of coax.
>
> Hi Mac,
>
> I can't say that I have any familiarity with type 31, but certainly
> the rest and others. My reference is a 13 year old hard-copy that
> does not have this material listed, so it is hard to make side-by-side
> comparisons for like-sized beads. Looking at the other charts it
> would seem that type 31 would have less "bulk" Z (it would take more
> beads at any particular frequency to equal other formulations).
>
> As for your application, and if it is a particularly long run along
> ground, or underground, ground itself may provide sufficient snubbing
> of Common Mode currents. Except, of course, 60Hz which could be
> particularly vicious and I would recommend running a parallel bare
> ground wire to the remote ground. In that regard, you may even need
> tri-ax.
>
> 73's
> Richard Clark, KB7QHC

4459. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 20:32:00 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <iqidnYx66ukjZJHVnZ2dnUVZ_gadnZ2d@bright.net>
Source record: 25881

Dear Jim: Thanks for the handbook reference. I can not remember if I have looked at it or not, but I sure will do so.

Your material references are more recent than those of Richard. Warm regards, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:fuiltl$47e$1@news.jpl.nasa.gov...
> Richard Clark wrote:
>> On Mon, 21 Apr 2008 10:21:36 -0400, "J. Mc Laughlin"
>> <jcm@power-net.net> wrote:
>>
>>>Am I missing something? It seems to me that for the purpose of choking
>>>common mode current (on the outside of the outer conductor of coax) from
>>>3 to 25 MHz one should prefer the use of type 31. This is a receiving
>>>application with a long run of coax.
>>
>>
>> Hi Mac,
>>
>> I can't say that I have any familiarity with type 31, but certainly
>> the rest and others. My reference is a 13 year old hard-copy that
>> does not have this material listed, so it is hard to make side-by-side
>> comparisons for like-sized beads. Looking at the other charts it
>> would seem that type 31 would have less "bulk" Z (it would take more
>> beads at any particular frequency to equal other formulations).
>
>
> I don't know about that... the 31 material is around mu=300-800 in the HF
> area, which is higher than the venerable 43, and a lot higher than the 61.
>
> Another advantage of the 31 material is better performance at higher
> temperatures.
>
> K9YC has written up a 50 odd page handbook on RFI suppression, choking,
> etc., with a whole raft of test data on actual chokes (bead baluns,
> toroids, etc.) made of various materials.
> http://www.audiosystemsgroup.com/RFI-Ham.pdf
>
>
>>
>> As for your application, and if it is a particularly long run along

>> ground, or underground, ground itself may provide sufficient snubbing
>> of Common Mode currents. Except, of course, 60Hz which could be
>> particularly vicious and I would recommend running a parallel bare
>> ground wire to the remote ground. In that regard, you may even need
>> tri-ax.
>>
>> 73's
>> Richard Clark, KB7QHC

4460. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 20:34:44 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <VrOdnT1_ELv_Z5HVnZ2dnUVZ_o-mnZ2d@bright.net>
Source record: 25882

Dear Jim:

Now I begin to see light. While type 31 must be at least three years old,
the world has not yet caught up to its existence.

Thanks also for the hints. Warm regards, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:fuilfi$ve1$1@news.jpl.nasa.gov...
> J. Mc Laughlin wrote:
>> I looked through saved messages and the only reference to type 31 ferrite
>> (Fair-Rite) was in March of 2005. That reference had to do with ignition
>> wires.
>>
>> Recommendations for HF choking ferrites have centered on the 70 series
>> with type 43 being favorably recommended for the upper portion of HF and
>> VHF. However, Fair-Rite seems to be recommending type 31 for HF. See
>> Figure 26 in:
>> http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>>
>> Am I missing something? It seems to me that for the purpose of choking
>> common mode current (on the outside of the outer conductor of coax) from
>> 3 to 25 MHz one should prefer the use of type 31. This is a receiving
>> application with a long run of coax.
>>
>> 73, Mac N8TT
>>
>> P.S. I will also appreciate ideas about places to purchase ferrite in
>> addition to Mouser.
>>
>
> Fair-rite 31 mix is a new one specifically developed for RF choking
> applications. As you mention, it has a huge range of frequencies for
> which it's useful. The recommendations one sees in older literature for
> 73, 43, etc, were formulated back before the new mix was available. Of
> course, once something is written, it gets copied over and over without a
> lot of thought being put into whether the underlying assumptions are still
> met: in this case, what mixes are available.
>
>
> Page 888 in the Mouser catalog shows some 31 mix parts..
> http://www.mouser.com/catalog/633/888.pdf

>
> You can also go to Fair-rite's website and find a list of their local
> distributors (Lodestone Pacific, for instance).
>
> The 3&4 digits of the part number are the mix:
>
> xx31yyyyyyy is a 31 mix part.
>

4461. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 20:36:26 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <sp-dne5WBMFaZ5HVnZ2dnUVZ_v-hnZ2d@bright.net>
Source record: 25883

Dear Bruce: Thank you. I shall do so. My recollection is that their
prices were on the high side, but that needs to be checked.

Warm regards, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Bruce W. Ellis" <ellis@means.net> wrote in message
news:Ax6Pj.341$KD6.311@newsfe06.lga...
>
> On Mon, 21 Apr 2008 10:21:36 -0400, "J. Mc Laughlin"
> <jcm@power-net.net> wrote:
>
> SNIP
>
>>P.S. I will also appreciate ideas about places to purchase ferrite in
>>addition to Mouser.
>
> also check: www.palomar-engineers.com
>
> Bruce W0BF

4462. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 20:42:56 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <ev6dndeZa6_TYZHVnZ2dnUVZ_jGdnZ2d@bright.net>
Source record: 25884

Dear Bruce: As a follow-up: No type 31 at Palomar. 73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Bruce W. Ellis" <ellis@means.net> wrote in message
news:Ax6Pj.341$KD6.311@newsfe06.lga...
>
> On Mon, 21 Apr 2008 10:21:36 -0400, "J. Mc Laughlin"
> <jcm@power-net.net> wrote:
>
> SNIP
>
>>P.S. I will also appreciate ideas about places to purchase ferrite in
>>addition to Mouser.
>
> also check: www.palomar-engineers.com
>
> Bruce W0BF

4463. SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 20:46:53 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <V27Pj.102710$Lq5.16290@newsfe18.ams2>
Source record: 25885

Hi all

I purchased the SG-230 about 4 years ago. I took it out of its box yesterday for the first time and tested it out on a light bulb as a dummy load and all worked fine. It found a match on all HF bands.
I connected it to an antenna today and it would not tune. It would not reset with the Smartlock. I took the back off the 230 and noticed when I apply the 13.8 Volts all the relays click once and they
all stay in that position until I disconnect the power and if I apply RF, 10-80 watts when the 230 is powered up it does nothing, it doesn't even attempt to tune.. I have also tried 2 lengths of 10ft wire and it does nothing.
There are five LED's inside that are all on (green).

Does anyone know what is causing this problem?

73 Andy

4464. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 21:36:49 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A8794AAA337DHuckleberrybigvalley@198.186.192.196>
Source record: 25886

"Andy" <dx90@blueyounder.co.uk> wrote in
news:V27Pj.102710$Lq5.16290@newsfe18.ams2:

> Hi all
>
> I purchased the SG-230 about 4 years ago. I took it out of its box
> yesterday for the first time and tested it out on a light bulb as a
> dummy load and all worked fine. It found a match on all HF bands.
> I connected it to an antenna today and it would not tune. It would not
> reset with the Smartlock. I took the back off the 230 and noticed when
> I apply the 13.8 Volts all the relays click once and they
> all stay in that position until I disconnect the power and if I apply
> RF, 10-80 watts when the 230 is powered up it does nothing, it doesn't
> even attempt to tune.. I have also tried 2 lengths of 10ft wire and it
> does nothing.
> There are five LED's inside that are all on (green).
>
> Does anyone know what is causing this problem?
>
> 73 Andy
>
>

I recommend you email your question to SGC. My recent experience
with them shows they are fairly good at replies to questions, although
you may have to wait a day or two for an answer.
http://www.sgcworld.com

Ed K7AAT

4465. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 21:54:28 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <f28Pj.119762$qj3.99903@newsfe20.ams2>
Source record: 25887

Hi Ed,

Just sent an e-mail off to them.

73 Andy

"Ed_G" <Huckleberry_REMOVE_@bigvalley.net> wrote in message
news:Xns9A8794AAA337DHuckleberrybigvalley@198.186.192.196...
> "Andy" <dx90@blueyounder.co.uk> wrote in
> news:V27Pj.102710$Lq5.16290@newsfe18.ams2:
>
>> Hi all
>>
>> I purchased the SG-230 about 4 years ago. I took it out of its box
>> yesterday for the first time and tested it out on a light bulb as a
>> dummy load and all worked fine. It found a match on all HF bands.
>> I connected it to an antenna today and it would not tune. It would not
>> reset with the Smartlock. I took the back off the 230 and noticed when
>> I apply the 13.8 Volts all the relays click once and they
>> all stay in that position until I disconnect the power and if I apply
>> RF, 10-80 watts when the 230 is powered up it does nothing, it doesn't
>> even attempt to tune.. I have also tried 2 lengths of 10ft wire and it
>> does nothing.
>> There are five LED's inside that are all on (green).
>>
>> Does anyone know what is causing this problem?
>>
>> 73 Andy
>>
>>
>
>
> I recommend you email your question to SGC. My recent experience
> with them shows they are fairly good at replies to questions, although
> you may have to wait a day or two for an answer.
> http://www.sgcworld.com
>
>
> Ed K7AAT
>
>
>
>

4466. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 22:30:31 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fuj4i7mik1@news.jpl.nasa.gov>
Source record: 25889

J. Mc Laughlin wrote:
> Dear Jim:
>
> Now I begin to see light. While type 31 must be at least three years old,
> the world has not yet caught up to its existence.
>

the *amateur* world hasn't caught up.. I haven't looked, but I'd venture that the ARRL handbook still doesn't mention it (if only because it would be a expensive and herculean task to revise the entire handbook every year). And, folks writing in QST tend not to be in the business, so they're using what they learned in the handbook.

For instance, the RFI/EMC page on the arrl web site says:
"Original text reprinted from February and March 1992 QST "Lab Notes" columns Copyright ï¿½ 1992 by the American Radio Relay League, Inc. All rights reserved."

"Or, you can make a common-mode choke by wrapping 10 to 20 turns of the antenna feed line or CATV cable through a ferrite toroid. Follow the same procedure with the ac line. Use #75 (also known as "J"), #73 or #77 material if the interference is mainly from signals below 10 MHz. Use #43 ferrite material for the higher bands or low VHF."

"To make a ferrite common-mode choke, wrap 5-10 turns of a conductor onto an FT-240-43 ferrite core. (The "240" indicates that the outer diameter of the core is 2.4"; the "43" designates the material. Other materials may be useful, but 43 is a good all-around material.)"

(to be fair, they do link to K9YC's writeup)

4467. Re: techical note from the kosher HaM

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 22:38:38 UTC
From: kd8ctl <punce@genderbend.com>
Message-ID: <fuj4s6$dk3$1@stable.tornevall.net>
Source record: 25888
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.swap,alt.ham-radio.vhf-uhf

"ccr rpsident mrak mrogan" <mrak@kornstain.com> wrote in message
news:ftj22k$s5c$1@stable.tornevall.net...
> http://techkb9rqz.blogspot.com/
>
Freak.

4468. stop thes lies dloyd

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-21 23:35:01 UTC
From: an_old_friend <kb9rqz@gmail.com>
Message-ID: <5a0c3359-7d34-4e79-ae26-c2b63ec7a1b1@u69g2000hse.googlegroups.com>
Source record: 25890
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.swap,alt.ham-radio.vhf-uhf

On Apr 21, 6:38 pm, "kd8ctl" <pu...@genderbend.com> wrote:
>
fake

4469. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 00:43:52 UTC
From: Tad Danley <tdanley@nospamatverizon.net>
Message-ID: <cxaPj.11048$Zk5.1882@trnddc05>
Source record: 25891

Ed_G wrote:

>
> I recommend you email your question to SGC. My recent experience
> with them shows they are fairly good at replies to questions, although
> you may have to wait a day or two for an answer.
> http://www.sgcworld.com
>
>
> Ed K7AAT

I agree. There is also a yahoo Group for Smartuners. It is not
sponsored by SGC but I have found it to be a good source of information.

Good luck and 73,

Tad, K3TD

4470. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 02:59:42 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <qrudnTwHt_4ByZDVnZ2dnUVZ_hynnZ2d@bright.net>
Source record: 25892

Dear Jim: Thank you.

I had read an early version of K9YC's work. It was informative to read the
latest version. He does a good job.

It appears that my question may have had a positive effect and
radio-amateurs will consider type 31 for HF.

73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:fuj4i7mik1@news.jpl.nasa.gov...
> J. Mc Laughlin wrote:
>> Dear Jim:
>>
>> Now I begin to see light. While type 31 must be at least three years
>> old, the world has not yet caught up to its existence.
>>
>
> the *amateur* world hasn't caught up.. I haven't looked, but I'd venture
> that the ARRL handbook still doesn't mention it (if only because it would
> be a expensive and herculean task to revise the entire handbook every
> year). And, folks writing in QST tend not to be in the business, so
> they're using what they learned in the handbook.
>
> For instance, the RFI/EMC page on the arrl web site says:
> "Original text reprinted from February and March 1992 QST "Lab Notes"
> columns Copyright © 1992 by the American Radio Relay League, Inc. All
> rights reserved."
>
> "Or, you can make a common-mode choke by wrapping 10 to 20 turns of the
> antenna feed line or CATV cable through a ferrite toroid. Follow the same
> procedure with the ac line. Use #75 (also known as "J"), #73 or #77
> material if the interference is mainly from signals below 10 MHz. Use #43
> ferrite material for the higher bands or low VHF."
>
> "To make a ferrite common-mode choke, wrap 5-10 turns of a conductor onto
> an FT-240-43 ferrite core. (The "240" indicates that the outer diameter of
> the core is 2.4"; the "43" designates the material. Other materials may be
> useful, but 43 is a good all-around material.)"
>
>

>
>
>
> (to be fair, they do link to K9YC's writeup)

4471. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 04:16:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <JZSdnd4om7o7-5DVnZ2dnUVZ_jCdnZ2d@easystreetonline>
Source record: 25893

J. Mc Laughlin wrote:
> I looked through saved messages and the only reference to type 31 ferrite
> (Fair-Rite) was in March of 2005. That reference had to do with ignition
> wires.
>
> Recommendations for HF choking ferrites have centered on the 70 series with
> type 43 being favorably recommended for the upper portion of HF and VHF.
> However, Fair-Rite seems to be recommending type 31 for HF. See Figure 26
> in:
> http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>
> Am I missing something? It seems to me that for the purpose of choking
> common mode current (on the outside of the outer conductor of coax) from 3
> to 25 MHz one should prefer the use of type 31. This is a receiving
> application with a long run of coax.
>
> 73, Mac N8TT
>
> P.S. I will also appreciate ideas about places to purchase ferrite in
> addition to Mouser.

A fairly brief look at the graphs (Figs. 6 - 8) shows that type 31 has roughly the same or a little higher total complex permeability than 73 over most of the lower HF range and same or higher than 43 on up to 100 MHz. So it should be a good ferrite to use for very wide band applications. However, Table 1 shows that it's available in large parts only. Type 43 is very widely available in a wide variety of sizes, so you might have a lot more luck getting cores of the sizes you need in type 43.

Roy Lewallen, W7EL

4472. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 04:23:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <QqqdndKq2bKv9ZDVnZ2dnUVZ_gOdnZ2d@easystreetonline>
Source record: 25894

J. Mc Laughlin wrote:
>
> P.S. I will also appreciate ideas about places to purchase ferrite in
> addition to Mouser.
>

You might try Amidon (https://www.amidoncorp.com/) or the Wire Man (http://thewireman.com/baluns.html#901). I don't think I've bought anything from Amidon since Bill Amidon sold it, but see their brand on small quantities of cores at the local electronics shop. Press Jones, the Wire Man, is great to do business with.

Roy Lewallen, W7EL

4473. Re: Linear decoupling traps

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 06:10:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <xOednYioKe3wHJDVnZ2dnUVZ_jidnZ2d@easystreetonline>
Source record: 25895

JN wrote:
>
> Yes indeed, the simulation verified that my FINAL PLAN is working OK
> Two very clean resonances at 3.6MHz and 10.1MHz SWR abt 1.3 on both bands
> Antenna length only 26m instead of normal 41m for 80m dipole.
> For the stub section I used 0.003m=3mm spacing and 1.5mm insulation on 1mm
> wire DielC 2.6.
>
> Is there any possibility in EZNEC to calculate how long is quarter WL on
> 10.1MHz
> with these stub variables?

Not directly.

> By using transmmission line objects it could have been possible to use the
> VF of line 0.73.
>
> I did run out of segments to simulate tri-band version with additional
> parallel dipole.
>
> All simulation was made in free space and probably needs some minor tuning
> in real life.

EZNEC isn't able to model some radiating lines. If you use the transmission line model, the line doesn't radiate. If you model it with wires to allow radiation, you can use the wire insulation feature to simulate a thin layer of insulation on the wires. This will have a small (typically 2 - 3%) effect on the effective length of the wires as far as common mode currents go, but very little effect on the differential (transmission line) operation. But there's no way to model insulation between wires, so when it has a significant effect on operation, the analysis won't be accurate. Sometimes it's possible to separately model the common and differential mode characteristics. For example, a folded dipole can be modeled as a conventional dipole (for the common mode) with transmission line model stubs across the feedpoint (representing the differential, or transmission line mode) and a transformer for the impedance transformation. Or a coax can be modeled as described in the EZNEC manual. But in many cases, building such a model is difficult at best. However, you can often get a good idea of how a system will work, even if the actual antenna will require some adjustment compared to the model.

Roy Lewallen, W7EL

4474. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 07:01:24 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <yaos6zEE1YDIFAUM@ifwtech.co.uk>
Source record: 25896

Roy Lewallen wrote:
>
>A fairly brief look at the graphs (Figs. 6 - 8) shows that type 31 has
>roughly the same or a little higher total complex permeability than 73
>over most of the lower HF range and same or higher than 43 on up to 100
>MHz. So it should be a good ferrite to use for very wide band
>applications. However, Table 1 shows that it's available in large parts
>only. Type 43 is very widely available in a wide variety of sizes, so
>you might have a lot more luck getting cores of the sizes you need in
>type 43.
>
>Roy Lewallen, W7EL

Amidon do stock some type 31 products, including FT-240-31 toroids and
the large beads for RG213, but they aren't listed on the website.

Part numbering is the same as normal, so simply substitute a "31" in the
part number you wish to order, and then call 1-800-898-1883.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

4475. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 07:59:39 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <BVgPj.43598$_h7.3602@newsfe05.ams2>
Source record: 25897

Hi Tad,

Joined that one. But I have not had much success yet.

73 Andy

"Tad Danley" <tdanley@nospamatverizon.net> wrote in message
news:cxaPj.11048$Zk5.1882@trnddc05...
> Ed_G wrote:
>
>
>>
>> I recommend you email your question to SGC. My recent experience
>> with them shows they are fairly good at replies to questions, although
>> you may have to wait a day or two for an answer.
>> http://www.sgcworld.com
>>
>>
>> Ed K7AAT
>
>
> I agree. There is also a yahoo Group for Smartuners. It is not sponsored
> by SGC but I have found it to be a good source of information.
>
> Good luck and 73,
>
> Tad, K3TD

4476. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 09:55:57 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A88CAC18F670nonenowhere@61.9.191.5>
Source record: 25898

"J. Mc Laughlin" <jcm@power-net.net> wrote in
news:RtydnRDA8Y1wP5HVnZ2dnUVZ_gWdnZ2d@bright.net:

> I looked through saved messages and the only reference to type 31
> ferrite (Fair-Rite) was in March of 2005. That reference had to do
> with ignition wires.

Mac,

Whilst playing around with models of a Guanella balun, I did compare #31 sleeves with Walt's design using #73 sleeves over the range 1 - 30MHz.

My model of Walt's balun is at http://www.vk1od.net/balun/W2DU/index.htm . I obtained different results to Walt's measurements, but I think that is because Walt's measurements were affected by stray capacitance that was worse than would apply to that type of balun in service.

I also modelled some Fair-rite 2631480002 sleeves and found a slightly longer choke (12 cores at 25.4mm ea) was needed to achieve about the same choking impedance up to about 12MHz, above which the #31 choke had higher impedance than the #73 one.

Whilst I modelled these sleeves because they suited the application, I have not seen anyone selling them in small quantities.

Owen

4477. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 10:33:44 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <173a9397-a65f-4652-9074-401ebd1ad637@k13g2000hse.googlegroups.com>
Source record: 25899

On Apr 21, 12:11 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Cecil Moore <nos...@w5dxp.com> wrote:
> >> I'll just quote you on that one:
>
> >>> Where does this energy go?
> >>> We do not know and we do not care.
>
> > Finally, you have got the correct answer.
>
> > Having accepted that ideal voltage sources can remove energy
> > from a circuit, you can now re-evaluate your explanations.
>
> No, I can quit wasting my time thinking about it
> because "we do not care". We not caring takes away
> any reason or purpose for continuing the discussion.
>
> > With an ideal voltage source being capable of removing
> > energy, it should no longer be necessary for you to
> > propose strange notions of energy flowing through an
> > ideal voltage source and bouncing off the ground.
>
> The discussion is moot unless you can prove that an
> ideal source in a single-source system can absorb
> AVERAGE power. So there's your challenge. If you
> cannot do that, my article about average power
> stands as written.

The best analogy I can think of is someone saying:
"Until you prove the earth is flat, I will not consider
any evidence that it is round".

Another question remains, since it is difficult to
discern from your writings: Have you grasped the
behaviour of an ideal voltage source when current
is flowing into the source?

You now understand that it removes energy from the
circuit?

If you have that for DC ideal voltage sources, we
can move on to discover what happens with AC ideal
voltage sources. After that, we can go back to what
is happening in your circuit.

...Keith

4478. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 10:33:58 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <c95db005-0be3-49fd-acf9-03d6d3193bce@e67g2000hsa.googlegroups.com>
Source record: 25900

On Apr 21, 12:26 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Feel free to substitute the word of your choice for 'remove'.
>
> That's the first time you have used the word "remove".

You need to read more carefully. Not the first time at all.

> Have you changed your mind about energy being "absorbed",
> by the source, i.e. turned into heat?

What I have said is that an ideal voltage source removes energy
from a circuit and that we do not know what it does with the
energy it removes. In practice, devices which are designed to
approximate ideal voltage sources do simply dissipate the energy
they remove from the circuit.

But that is not part of the definition of an ideal voltage source,
for which no statement about where the energy removed goes is
made.

> > Dissipate is not a good choice since it usually implies
> > conversion to heat.
>
> Whoa there Keith, "absorb" is equally not a good choice
> since it usually implies conversion to heat as in the IEEE
> definitions. If the source only removes energy, then that
> is a plus for my side of the argument. If the source has
> the ability to remove the destructive interference and
> supply it back 90 degrees later as constructive interference,
> the entire mystery of where the reflected power goes is
> solved. When I previously offered that as a solution, you
> turned it down flat. Now you seem to be agreeing with it.

No. We do not know what an ideal voltage source does with
energy it removes. We can not say that it stores and then
returns it, though a particular implementation might do
so. Another implementation might not. So this can not be
used as an explanation.

> > Absorb is not a good word for you, since you can find absorption
> > in the IEEE dictionary and it also suggests conversion to heat.
>
> That's why I have been arguing loud and long against the
> absorption of energy by the source. It would imply that
> the source is heating up or has an infinite ability to

> "irreversibly convert the energy of an EM wave into another
> form of energy". That irreversible energy conversion is
> what I have been objecting to. There is no way an impedance
> of 0+j0 can cause an irreversible energy conversion.

I am sorry that the occasional use of the word 'absorb' so
mislead you. I avoided 'dissipate' for that reason. It is
not so obvious why you were mislead by the use of 'remove'.

> > A word that gives no hint about where this energy goes would
> > be best, ...
>
> So you can sweep it under the rug and "not care where it
> went"?

No. Because the definition of an ideal voltage does not specify
where the energy goes. Therefore we had better not care when
we use an ideal voltage source.

> As I said, further discussion is pointless. You
> have a magic source that obeys your every whim. Why didn't
> you just say that in the first place?

No. My ideal voltage source just obeys the definition of an
ideal voltage source. It provides energy to the circuit when
the circuit conditions demand that it do so and similarly it
removes energy when the circuit conditions demand that it do
so. The definition does not tell us where the energy it
provides comes from, nor does it tell us where the energy
it removes goes.

A fairly simple defintion: The voltage at the terminals is
maintained at the desired value, regardless of the current
flow needed to do so.

No magic in the definition whatsoever. And no need to obey
whims.

...Keith

4479. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 11:11:49 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <LJjPj.11515$Rr7.9008@newsfe29.ams2>
Source record: 25801

Is there any where here in the UK that will repair this coupler?

Andy

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:BVgPj.43598$_h7.3602@newsfe05.ams2...
> Hi Tad,
>
> Joined that one. But I have not had much success yet.
>
> 73 Andy
>
>
> "Tad Danley" <tdanley@nospamatverizon.net> wrote in message
> news:cxaPj.11048$Zk5.1882@trnddc05...
>> Ed_G wrote:
>>
>>
>>>
>>> I recommend you email your question to SGC. My recent experience
>>> with them shows they are fairly good at replies to questions, although
>>> you may have to wait a day or two for an answer. http://www.sgcworld.com
>>>
>>>
>>> Ed K7AAT
>>
>>
>> I agree. There is also a yahoo Group for Smartuners. It is not
>> sponsored by SGC but I have found it to be a good source of information.
>>
>> Good luck and 73,
>>
>> Tad, K3TD
>
>

4480. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 11:34:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <i3kPj.1$LQ4.0@newssvr11.news.prodigy.net>
Source record: 25802

Owen Duffy wrote:
> Whilst playing around with models of a Guanella balun, I did compare #31
> sleeves with Walt's design using #73 sleeves over the range 1 - 30MHz.

Owen, have you done any experiments with 'K' material?
I have the Amidon AB240-250 Kit but haven't done
anything with it.
--
73, Cecil http://www.w5dxp.com

4481. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 11:58:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tpkPj.2$LQ4.1@newssvr11.news.prodigy.net>
Source record: 25803

Andy wrote:
> Is there any where here in the UK that will repair this coupler?

I have repaired mine a couple of times. The SGC documentation
is very good. Have you checked the four lines between the
Smartlock and the SGC-230? If the notune line (white wire)
is at ground, the tuner is in perpetual reset. The notune
line should be at a plus voltage when the reset button
is not pushed and go to ground when the reset button is
pushed. The digital control portion of the tuner is super
easy to troubleshoot and a good technician should be able
to diagnose and repair minor problems. All of my problems
have been minor and easy to repair.

The most nagging problem was when the tuner wouldn't tune
while my pickup was in motion but would tune just as soon
as I stopped the vehicle. It was a loose nut inside
the box on the output feedthrough insulator.

Have you tried the tuner without Smartlock in the circuit?
--
73, Cecil http://www.w5dxp.com

4482. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 12:11:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tBkPj.2585$I55.2476@newssvr22.news.prodigy.net>
Source record: 25804

Keith Dysart wrote:
> Another question remains, since it is difficult to
> discern from your writings: Have you grasped the
> behaviour of an ideal voltage source when current
> is flowing into the source?
>
> You now understand that it removes energy from the
> circuit?

It follows that it is futile to try to track any
movement of instantaneous energy. You have convinced
me that you are correct - "We don't care where the
(instantaneous) energy goes."

> If you have that for DC ideal voltage sources, we
> can move on to discover what happens with AC ideal
> voltage sources. After that, we can go back to what
> is happening in your circuit.

Since there is an instantaneous leak in the closed
system, it is useless to proceed. You say you don't
care what happens to the energy. I said a couple of
months ago that I didn't care what happens to
instantaneous power. And indeed, you have convinced
me that any attempt to track instantaneous power is
doomed to failure.

My part 1 article based on a single source and
AVERAGE powers doesn't have those conceptual
problems and stands as written. Here's the second
paragraph from that article:

"Please note that any power referred to in this paper
is an AVERAGE POWER. Instantaneous power is beyond the
scope of this article, irrelevant to the following
discussion, and "of limited utility" according to
Eugene Hecht. [4]

Your challenge is to prove that a single source
removes an average amount of energy from the
network.
--
73, Cecil http://www.w5dxp.com

4483. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 12:18:51 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <LIkPj.3$LQ4.1@newssvr11.news.prodigy.net>
Source record: 25805

Keith Dysart wrote:
> What I have said is that an ideal voltage source removes energy
> from a circuit ...

Sorry, you specifically said that an ideal voltage source
"absorbs" energy, i.e. irreversibly converts energy to
another form, the most common form of which is heat.

> I am sorry that the occasional use of the word 'absorb' so
> mislead you. I avoided 'dissipate' for that reason.

The IEEE Dictionary says that, in this context, "absorb"
and "dissipate" are virtual synonyms.
--
73, Cecil http://www.w5dxp.com

4484. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 12:56:11 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <AflPj.242805$833.212897@newsfe17.ams2>
Source record: 25806

Just doubled checked without the Smartlock connected. No change. I did
notice that the braid of the coax where it connects to the terminal inside
had broke off. Re-soldered this and its still the same. This was due to the
big plastic nut on the back being lose and allowing the cable to turn.
I wish I could fix it myself. But I would have to be talked through how to
check the components to see if they were ok or not.

73 Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:tpkPj.2$LQ4.1@newssvr11.news.prodigy.net...
> Andy wrote:
>> Is there any where here in the UK that will repair this coupler?
>
> I have repaired mine a couple of times. The SGC documentation
> is very good. Have you checked the four lines between the
> Smartlock and the SGC-230? If the notune line (white wire)
> is at ground, the tuner is in perpetual reset. The notune
> line should be at a plus voltage when the reset button
> is not pushed and go to ground when the reset button is
> pushed. The digital control portion of the tuner is super
> easy to troubleshoot and a good technician should be able
> to diagnose and repair minor problems. All of my problems
> have been minor and easy to repair.
>
> The most nagging problem was when the tuner wouldn't tune
> while my pickup was in motion but would tune just as soon
> as I stopped the vehicle. It was a loose nut inside
> the box on the output feedthrough insulator.
>
> Have you tried the tuner without Smartlock in the circuit?
> --
> 73, Cecil http://www.w5dxp.com
>

4485. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 13:37:57 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <VSIPj.14$To6.11@newssvr21.news.prodigy.net>
Source record: 25807

Andy wrote:
> But I would have to be talked through how to
> check the components to see if they were ok or not.

Do you know any fellow hams who are electronic
technicians or engineers, preferably electrical?
--
73, Cecil http://www.w5dxp.com

4486. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 13:47:44 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <858d30c3-157b-4cc4-a99a-8e13730a8ad6@a22g2000hsc.googlegroups.com>
Source record: 25808

On Apr 21, 10:21 am, "J. Mc Laughlin" <j...@power-net.net> wrote:
> I looked through saved messages and the only reference to type 31 ferrite
> (Fair-Rite) was in March of 2005. That reference had to do with ignition
> wires.
>
> Recommendations for HF choking ferrites have centered on the 70 series with
> type 43 being favorably recommended for the upper portion of HF and VHF.
> However, Fair-Rite seems to be recommending type 31 for HF. See Figure 26
> in:http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>
> Am I missing something? It seems to me that for the purpose of choking
> common mode current (on the outside of the outer conductor of coax) from 3
> to 25 MHz one should prefer the use of type 31. This is a receiving
> application with a long run of coax.
>
> 73,   Mac   N8TT
>
> P.S. I will also appreciate ideas about places to purchase ferrite in
> addition to Mouser.
>
> --
> J. McLaughlin; Michigan, USA
> Home: J...@power-net.net

I think the type 31 is entended for use on things like power cords and
computer cables to prevent unwanted radiation/pickup of RF. Im not
sure how well it would meet your requirements but I suspect it may be
OK in a receive only situation. I have tried using some unknown types
of cores removed from various computer cables for a balun and the
vinyl tape holding them to the coax got very soft when they heated up.
Perhaps some experimentation using these cores is in order.

Jimmie

4487. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 13:57:03 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <29001704-c212-4fba-8c3c-a74d4d1034ae@f63g2000hsf.googlegroups.com>
Source record: 25809

On Apr 22, 9:47 am, JIMMIE <JIMMIEDEE...@yahoo.com> wrote:
> On Apr 21, 10:21 am, "J. Mc Laughlin" <j...@power-net.net> wrote:
>
>
>
>
>
> > I looked through saved messages and the only reference to type 31 ferrite
> > (Fair-Rite) was in March of 2005. That reference had to do with ignition
> > wires.
>
> > Recommendations for HF choking ferrites have centered on the 70 series with
> > type 43 being favorably recommended for the upper portion of HF and VHF.
> > However, Fair-Rite seems to be recommending type 31 for HF. See Figure 26
> > in:http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>
> > Am I missing something? It seems to me that for the purpose of choking
> > common mode current (on the outside of the outer conductor of coax) from 3
> > to 25 MHz one should prefer the use of type 31. This is a receiving
> > application with a long run of coax.
>
> > 73,   Mac   N8TT
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> > P.S. I will also appreciate ideas about places to purchase ferrite in
> > addition to Mouser.
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> > --
> > J. McLaughlin; Michigan, USA
> > Home: J...@power-net.net
>
> I think the type 31 is entended for use on things like power cords and
> computer cables to prevent unwanted radiation/pickup of RF. Im not
> sure how well it would meet your requirements but I suspect it may be
> OK in a receive only situation. I have tried using some unknown types
> of cores removed from various computer cables for a balun and the
> vinyl tape holding them to the coax got very soft when they heated up.
> Perhaps some experimentation using these cores is in order.
>
> Jimmie- Hide quoted text -
>
> - Show quoted text -

Apparently this testing has already been done.
Just google "type 31 ferrite" for results.

Jimmie

4488. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 14:06:56 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6769p1F2ngraaU1@mid.individual.net>
Source record: 25810

Andy wrote:
> Hi all
>
> I purchased the SG-230 about 4 years ago. I took it out of its box
> yesterday for the first time and tested it out on a light bulb as a
> dummy load and all worked fine. It found a match on all HF bands.
> I connected it to an antenna today and it would not tune. It would
> not reset with the Smartlock. I took the back off the 230 and noticed
> when I apply the 13.8 Volts all the relays click once and they
> all stay in that position until I disconnect the power and if I apply
> RF, 10-80 watts when the 230 is powered up it does nothing, it
> doesn't even attempt to tune.. I have also tried 2 lengths of 10ft
> wire and it does nothing.
> There are five LED's inside that are all on (green).
>
> Does anyone know what is causing this problem?

Verify there's a good RF ground connected to the tuner.
Even if you're using some kind of balanced antenna,
my tuners are happier with a little metal on the ground.
I have a simple, 12' piece of braid bolted to the
tuner/transciever cases and simply laying on the sand.

Craig 'Lumpy' Lemke

www.n0eq.com

4489. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 14:12:23 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <0nmPj.132948$cj2.4142@newsfe13.ams2>
Source record: 25811

Unfortunately I don't know anyone.
I have been off the air for a long time. After the move to here and having very good neighbours I am able to get back on the air. Well until the tuner stopped working.

I did find this PDF doc just now. I have the model after the year 2000.

73 Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:VSlPj.14$To6.11@newssvr21.news.prodigy.net...
> Andy wrote:
>> But I would have to be talked through how to check the components to see
>> if they were ok or not.
>
> Do you know any fellow hams who are electronic
> technicians or engineers, preferably electrical?
> --
> 73, Cecil http://www.w5dxp.com

4490. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 14:26:46 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <676au7F2n5tnpU1@mid.individual.net>
Source record: 25812

Barrett wrote:
> Does it have to be a T shape and why?...

It "has to be" a piece of metal in the air.
That's about the only constraint. And seeing as
there are underground antennas, that constraint
is not always constant.

Put metal in the air. Tune it up. Work the world.

I'm on 20 and 40 meters on 5 watts on a
~75' dipole through a tuner every day. I make
contacts with Austraila, S America, Euro, Hawaii,
all from my little remote QRP SSB station in Arizona.
My dipole isn't tuned. It's simply two halves of a 150'
piece of wire I had.

I've done the same thing on a 35' wire, a ham stick
vert and a pair of hamsticks horizontal. I've loaded
up an aluminum lawn chair and worked Canada and the
USA midwest, Florida, New England. The difference
in any of the signals received is perhaps a couple
of dB.

Craig 'Lumpy' Lemke

www.n0eq.com

4491. Ferrite Bead Installation Guide

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 16:55:38 UTC
From: Radio_Dick <rspost@mail.com>
Message-ID: <4dad30d8-f066-4a48-ad54-cf5386e9574b@l64g2000hse.googlegroups.com>
Source record: 25813

Greetings All,

Saw the posts about Mix 31 ferrites, which I use on my mobile installations with good luck, using HiQ 5/160 antenna and Icom IC7000. If anyone is interested, I recently posted on my web site a document the describes the installation of ferrites for HF installations. This is based on what has worked for me, information from Fair Rite's web site, and ideas from various past posings. Also listed is a partial list of suppliers - as always check the prices as they can vary a lot!

Check it out and let me know (direct email) if you have any other suggestions and if you find this useful, as this is meant to be a "continous improvement" document. I also plan to write additional guidelines as time permits: www.repdesign.us , go to the "Downloads" page (left side of screen towards the bottom), and go to the third group to download or simply open to read the PDF document.

73,
Dick Post, N7EMW
www.repdesign.us

4492. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 17:12:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <X%oPj.2623$I55.2390@newssvr22.news.prodigy.net>
Source record: 25814

Cecil Moore wrote:
> Keith Dysart wrote:
>> What I have said is that an ideal voltage source removes energy
>> from a circuit ...
>
> Sorry, you specifically said that an ideal voltage source
> "absorbs" energy, i.e. irreversibly converts energy to
> another form, the most common form of which is heat.

In case you have forgotten :-), here is what you posted
over the past few days:

>> When it is sinking current, it is *absorbing* energy.
>>
>> You will find that for some of the time
>> energy is being *absorbed* by the source.
>>
>> But we do know that when the sign of Ps(t) is
>> negative, the source is *absorbing* energy from
>> the system,
>>
>> When current flows into a voltage source, the
>> voltage source is *absorbing* energy.
>>
>> And how do you know the ideal source does not dispose
>> of the energy it receives by getting warm?

This certainly implies that you consider the dissipation
of "absorbed" energy to be a distinct probability.

>> The source provides or *absorbs* energy.
>>
>> When 1.5 amps is flowing into the positive terminal,
>> the ideal voltage source is *absorbing* 15 joules per
>> second from the circuit.
>>
>> The ideal voltage source on the right is *absorbing*
>> 5 joules/second from the circuit.
>>
>> An ideal source provides or *absorbs* energy to
>> satisfy its basic function which is to hold the
>> voltage across its terminals at the desired value.
>>
>> When it is providing energy we do not know where
>> this energy comes from and when it is *absorbing*

>> energy we do not know where this energy goes.
>>
>> But was this because you have learned that you were
>> in error and now better understand the behaviour of
>> sources when they are *absorbing* energy?
>>
>> The ideal voltage source on the right, after the
>> circuits settle, will be absorbing 50 joules/s
>> in both cases.
>>
>> Where does the energy being *absorbed* by these ideal
>> voltage sources go?
>>
>> The element *absorbing* energy is an ideal voltage
>> source, not a resistor.
>>
>> Despite your protests to the contrary, ideal voltage
>> sources can, and do, *absorb* energy.

You know, Keith, if you were just ethical enough to
answer my questions, I wouldn't have to treat you
this way.
--
73, Cecil http://www.w5dxp.com

4493. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 17:17:57 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <ful6k5$af5$1@news.jpl.nasa.gov>
Source record: 25815

Roy Lewallen wrote:
> J. Mc Laughlin wrote:
>
>> I looked through saved messages and the only reference to type 31
>> ferrite (Fair-Rite) was in March of 2005. That reference had to do
>> with ignition wires.
>>
>> Recommendations for HF choking ferrites have centered on the 70 series
>> with type 43 being favorably recommended for the upper portion of HF
>> and VHF. However, Fair-Rite seems to be recommending type 31 for HF.
>> See Figure 26 in:
>> http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>>
>> Am I missing something? It seems to me that for the purpose of
>> choking common mode current (on the outside of the outer conductor of
>> coax) from 3 to 25 MHz one should prefer the use of type 31. This is
>> a receiving application with a long run of coax.
>>
>> 73, Mac N8TT
>>
>> P.S. I will also appreciate ideas about places to purchase ferrite in
>> addition to Mouser.
>
>
> A fairly brief look at the graphs (Figs. 6 - 8) shows that type 31 has
> roughly the same or a little higher total complex permeability than 73
> over most of the lower HF range and same or higher than 43 on up to 100
> MHz. So it should be a good ferrite to use for very wide band
> applications. However, Table 1 shows that it's available in large parts
> only. Type 43 is very widely available in a wide variety of sizes, so
> you might have a lot more luck getting cores of the sizes you need in
> type 43.

Large, in this context, isn't all that big. You can't get it in tiny ferrite beads to slip over a AWG30 wire. You can get it in 0.485" OD 0.5" long beads with a 0.2" hole in the middle.... $0.42 each from Mouser. Similar snap on cases too..

Small, for Fair-rite, means things like those little 1/4" diameter multi hole cores for making wound EMI filters, or chip components.

I buy it in 2.4" toroids so I can put multiple turns of coax on.

4494. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 17:23:56 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <ful6vc$e0i$1@news.jpl.nasa.gov>
Source record: 25817

Owen Duffy wrote:
> "J. Mc Laughlin" <jcm@power-net.net> wrote in
> news:RtydnRDA8Y1wP5HVnZ2dnUVZ_gWdnZ2d@bright.net:
>
>
>>I looked through saved messages and the only reference to type 31
>>ferrite (Fair-Rite) was in March of 2005. That reference had to do
>>with ignition wires.
>
>
> Mac,
>
> Whilst playing around with models of a Guanella balun, I did compare #31
> sleeves with Walt's design using #73 sleeves over the range 1 - 30MHz.
>
> My model of Walt's balun is at http://www.vk1od.net/balun/W2DU/index.htm
> . I obtained different results to Walt's measurements, but I think that
> is because Walt's measurements were affected by stray capacitance that
> was worse than would apply to that type of balun in service.
>
> I also modelled some Fair-rite 2631480002 sleeves and found a slightly
> longer choke (12 cores at 25.4mm ea) was needed to achieve about the same
> choking impedance up to about 12MHz, above which the #31 choke had higher
> impedance than the #73 one.
>
> Whilst I modelled these sleeves because they suited the application, I
> have not seen anyone selling them in small quantities.

Mouser has them.. Don't know if they ship in VK land or not. Shipping
of what is basically iron bars is going to be punitive. FairRite has
distribution there (Specialised Conductives in Victoria), but perhaps
not retail. But, since one typically isn't looking to buy just one, but
dozens, this might not be a problem.

One should be careful about modeling these things.. that gets you close,
but parasitics are a real bugabear. K9YC's paper has actual
measurements on actual chokes made with a variety of cores (which are
decidedly non-trivial to make..)

Snelling's book is the tome of choice, if you can find it...

4495. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 17:25:56 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <ful734$e0i$2@news.jpl.nasa.gov>
Source record: 25816

JIMMIE wrote:
> On Apr 21, 10:21 am, "J. Mc Laughlin" <j...@power-net.net> wrote:
>
>>I looked through saved messages and the only reference to type 31 ferrite
>>(Fair-Rite) was in March of 2005. That reference had to do with ignition
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>>
>>Recommendations for HF choking ferrites have centered on the 70 series with
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>>However, Fair-Rite seems to be recommending type 31 for HF. See Figure 26
>>in:http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>>
>>Am I missing something? It seems to me that for the purpose of choking
>>common mode current (on the outside of the outer conductor of coax) from 3
>>to 25 MHz one should prefer the use of type 31. This is a receiving
>>application with a long run of coax.
>>
>>73, Mac N8TT
>>
>>P.S. I will also appreciate ideas about places to purchase ferrite in
>>addition to Mouser.
>>
>>--
>>J. McLaughlin; Michigan, USA
>>Home: J...@power-net.net
>
>
> I think the type 31 is entended for use on things like power cords and
> computer cables to prevent unwanted radiation/pickup of RF. Im not
> sure how well it would meet your requirements but I suspect it may be
> OK in a receive only situation. I have tried using some unknown types
> of cores removed from various computer cables for a balun and the
> vinyl tape holding them to the coax got very soft when they heated up.
> Perhaps some experimentation using these cores is in order.
>
> Jimmie

#31 is specifically made for our kind of application (transmitting).. it has a higher temperature rating than the other popular materials. The key on managing dissipation is making sure you have enough impedance so that the current is small.

It's a long way from the miscellaneous stuff used for RFI on power cords and keyboards..

4496. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 18:39:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <OhqPj.6149$GO4.2736@newssvr19.news.prodigy.net>
Source record: 25818

Jim Lux wrote:
> I buy it in 2.4" toroids so I can put multiple turns of coax on.

Jim, have you or anyone else you know of taken
a look at 'K' material?
--
73, Cecil http://www.w5dxp.com

4497. Re: Who sells glass/ceramic insulators/standoffs anymore?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 20:27:58 UTC
From: amdx <amdx@knology.net>
Message-ID: <60dc6$480e4c51$18d66097$527@KNOLOGY.NET>
Source record: 25819

"Tim Shoppa" <shoppa@trailing-edge.com> wrote in message
news:9bd48768-b888-4d34-9e47-5b1ce4439f83@y21g2000hsf.googlegroups.com...
> Are there any companies that sell the big-ass glass/ceramic antenna
> strain and standoff insulators anymore?
>
This place has 59 different style standoffs and insulators, mostly
plastic, some
interesting mounts.

This one is porcelain with lag screw.

http://www.farmsupplystore.com/departments/special-insulators/large-porcelain-insulator

And then the whole list of 59.

http://www.farm,supplystore.com/s.nl/sc.13/.f?search=insulator&range=1%2C30%2C59

Mike

4498. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 21:05:53 UTC
From: Radio_Dick <rspost@mail.com>
Message-ID: <5db96100-1005-4751-b7ff-dc2ea28a9f92@y21g2000hsf.googlegroups.com>
Source record: 25820

The following is a copy of my message posted earlier to the general group, but I had wanted to preply directly to this topic as it's very pertinent to the discussion of ferrites, so here is the message again (sorry if you see this twice).

Greetings All,

Saw the posts about Mix 31 ferrites, which I use on my mobile installations with good results, using a HiQ 5/160 antenna and Icom IC7000.
If anyone is interested, I recently posted on my web site a document the describes the installation of ferrites for HF installations: : www.repdesign.us ,
(go to the "Downloads" page (left side of screen towards the bottom), and go to the third group to download or simply open to read the PDF document).

This is based on what has worked well for me, information from Fair Rite's web
site, and ideas from various past posings. Also listed is a partial list of suppliers - as always check the prices as they can vary a lot!

Check it out and let me know (direct email) if you have any other suggestions and if you find this useful, as this is meant to be a "continous improvement" document. I also plan to write additional guidelines as time permits.

73,
Dick Post, N7EMW
www.repdesign.us

On Apr 21, 10:21 am, "J. Mc Laughlin" <j...@power-net.net> wrote:
> I looked through saved messages and the only reference to type 31 ferrite
> (Fair-Rite) was in March of 2005. That reference had to do with ignition
> wires.
>
> Recommendations for HF choking ferrites have centered on the 70 series with
> type 43 being favorably recommended for the upper portion of HF and VHF.
> However, Fair-Rite seems to be recommending type 31 for HF. See Figure 26
> in:http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
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> Am I missing something? It seems to me that for the purpose of choking
> common mode current (on the outside of the outer conductor of coax) from 3
> to 25 MHz one should prefer the use of type 31. This is a receiving
> application with a long run of coax.

>
> 73,   Mac   N8TT
>
> P.S. I will also appreciate ideas about places to purchase ferrite in
> addition to Mouser.
>
> --
> J. McLaughlin; Michigan, USA
> Home: J...@power-net.net

4499. L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 21:08:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <Y-mdnS2yMplHzpPVnZ2dnUVZ_sqinZ2d@easystreetonline>
Source record: 25821

I'm very sad to report that I've just received word that L.B. Cebik, W4RNL, has passed away.

Roy Lewallen, W7EL

4500. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 21:42:14 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A894E5C2D40Anonenowhere@61.9.191.5>
Source record: 25823

Jim Lux <james.p.lux@jpl.nasa.gov> wrote in
news:ful6vc$e0i$1@news.jpl.nasa.gov:

> Mouser has them.. Don't know if they ship in VK land or not.

Yes, but shipping anything from them and some other big suppliers is
prohibitive.

> Shipping of what is basically iron bars is going to be punitive.
> FairRite has distribution there (Specialised Conductives in Victoria),
> but perhaps not retail. But, since one typically isn't looking to buy
> just one, but dozens, this might not be a problem.

For some reason, magnetics ex USA through Aussie distributors / retailers
are outrageously expensive. Typically on Ebay one can buy 10 cores ex USA
for the price of one from a Aussie retailer.

> One should be careful about modeling these things.. that gets you
> close, but parasitics are a real bugabear. K9YC's paper has actual

Yes, agreed. I have made measurements of a number of choke
configurations, albeit only with a TAPR VNA (hate the software), and
calibrated my models to the measured values. It is certainly a balancing
act to put enough turns on a toroid to get high Z, but few enough turns
that Z hasn't gone seriously south at the top end of the desired range.

Predicting magnetics behaviour is a bit of a black art, but models help
to guide one to a better understanding of behaviour.

It is little wonder than balun specifications, where they are given, bear
little relation to the intended application.

Owen

4501. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 21:43:13 UTC
From: N2EY@aol.com
Message-ID: <b3c2d430-e846-4563-8189-f4df0c010590@59g2000hsb.googlegroups.com>
Source record: 25822

On Apr 22, 5:08 pm, Roy Lewallen <w...@eznec.com> wrote:
> I'm very sad to report that I've just received word that L.B. Cebik,
> W4RNL, has passed away.

I never met him but he was one of my Elmers anyway.

73 de Jim, N2EY

More detail, forwarded from another group:

quoting Mr. Stone:

Folks:

This is the saddest announcement we have had to make:

It was discovered this morning that LB Cebik, W4RNL
had passed away.

He was a friend to us all and will leave behind
a great void. His beloved wife, Jean passed several
years before and he missed her greatly.

He was my friend and associate for 10+ years and I
shall always remember him for his warmth and kindness.

A tribute to this "kind and gentle giant" shall
appear in my column in the next issue of antenneX.

Jack L. Stone, Publisher
antenneX Online Magazine
http://www.antennex.com
jack@antennex.com

4502. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 22:57:33 UTC
From: Tehrasha Darkon <darkon@netins.net>
Message-ID: <Pine.OSF.4.33.0804221755490.9111-100000@worf.netins.net>
Source record: 25824

On Tue, 22 Apr 2008, Roy Lewallen wrote:

> I'm very sad to report that I've just received word that L.B. Cebik,
> W4RNL, has passed away.
>
> Roy Lewallen, W7EL
>

I hope all of the articles on his website are backed-up. I havent
finished learning from him yet!

--
My mailbox is NOT an advertisement medium. Tehrasha Darkon
My address is NOT for sale, lease or rent. darkon@netins.net
Send me spam, lose your account. Get it? TINLC-1372
http://tehrasha.mamehost.com/bastard B.A.S.T.A.R.D

4503. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-22 23:47:09 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A88AAC3E88CBHuckleberrybigvalley@198.186.192.196>
Source record: 25825

:
>
>> I'm very sad to report that I've just received word that L.B. Cebik,
>> W4RNL, has passed away.
>>

>
> I hope all of the articles on his website are backed-up. I havent
> finished learning from him yet!
>

Me too ! I am very upset to hear of his passing as I had been looking
forward to learning much more from him in upcoming years.

Ed K7AAT

4504. L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 00:30:27 UTC
From: Rick <ricknj10@hotmail.com>
Message-ID: <480e8325$0$25061$607ed4bc@cv.net>
Source record: 25826

A wonderful, generous man. If you read the stuff other than antennas on his web you will see that he cared for a loved one who was incapacitated for a long time. He tells you how to deal with it.

A great loss to antenna enthusiasts the world over. RIP OM, and 73

Rick K2XT

4505. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 00:42:19 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <N6mdnX3wx7h1GJPVnZ2dnUVZ_o-mnZ2d@bright.net>
Source record: 25827

Thanks Roy for passing on the sad and unexpected news.

Professor Cebik's life is a good example of the positive influence that a fan can have on a technical subject. Antennas are most distant from his professional work, and yet we all know how much he contributed to an understanding of our favorite subject.

We are diminished. Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:Y-mdnS2yMplHzpPVnZ2dnUVZ_sqinZ2d@easystreetonline...
> I'm very sad to report that I've just received word that L.B. Cebik,
> W4RNL, has passed away.
>
> Roy Lewallen, W7EL

4506. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 00:55:00 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <1OvPj.92375$497.49981@newsfe14.phx>
Source record: 25828

Tehrasha Darkon wrote:
>
> I hope all of the articles on his website are backed-up. I havent
> finished learning from him yet!

Yeah, there ought to be a perpetually endowed web server
somewhere for his work. I volunteer the gigabytes on
www.arizona-am.net in the meantime.

Jim Bromley, K7JEB

4507. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 00:59:52 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <kqCdnTylco6YF5PVnZ2dnUVZ_sOrnZ2d@bright.net>
Source record: 25829

Dear Roy: The use of small and large in this context is not clear. So far, I have found the sizes of type 31 to be about the right size. On the other hand, some of the 7X types seem only to be available in sizes that are too small.

Your point that the type, and its performance, is only part of the issue. One must also have parts that fit.

Thanks, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:JZSdnd4om7o7-5DVnZ2dnUVZ_jCdnZ2d@easystreetonline...
> J. Mc Laughlin wrote:
>> I looked through saved messages and the only reference to type 31 ferrite
>> (Fair-Rite) was in March of 2005. That reference had to do with ignition
>> wires.
>>
>> Recommendations for HF choking ferrites have centered on the 70 series
>> with type 43 being favorably recommended for the upper portion of HF and
>> VHF. However, Fair-Rite seems to be recommending type 31 for HF. See
>> Figure 26 in:
>> http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>>
>> Am I missing something? It seems to me that for the purpose of choking
>> common mode current (on the outside of the outer conductor of coax) from
>> 3 to 25 MHz one should prefer the use of type 31. This is a receiving
>> application with a long run of coax.
>>
>> 73, Mac N8TT
>>
>> P.S. I will also appreciate ideas about places to purchase ferrite in
>> addition to Mouser.
>
> A fairly brief look at the graphs (Figs. 6 - 8) shows that type 31 has
> roughly the same or a little higher total complex permeability than 73
> over most of the lower HF range and same or higher than 43 on up to 100
> MHz. So it should be a good ferrite to use for very wide band
> applications. However, Table 1 shows that it's available in large parts
> only. Type 43 is very widely available in a wide variety of sizes, so you
> might have a lot more luck getting cores of the sizes you need in type 43.
>
> Roy Lewallen, W7EL

4508. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 01:02:56 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <480e8abd$0$3390$4c368faf@roadrunner.com>
Source record: 25830

"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:ful734$e0i$2@news.jpl.nasa.gov...
> JIMMIE wrote:
>> On Apr 21, 10:21 am, "J. Mc Laughlin" <j...@power-net.net> wrote:
>>
>>>I looked through saved messages and the only reference to type 31 ferrite
>>>(Fair-Rite) was in March of 2005. That reference had to do with ignition
>>>wires.
>>>
>>>Recommendations for HF choking ferrites have centered on the 70 series
>>>with
>>>type 43 being favorably recommended for the upper portion of HF and VHF.
>>>However, Fair-Rite seems to be recommending type 31 for HF. See Figure
>>>26
>>>in:http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>>>
>>>Am I missing something? It seems to me that for the purpose of choking
>>>common mode current (on the outside of the outer conductor of coax) from
>>>3
>>>to 25 MHz one should prefer the use of type 31. This is a receiving
>>>application with a long run of coax.
>>>
>>>73, Mac N8TT
>>>
>>>P.S. I will also appreciate ideas about places to purchase ferrite in
>>>addition to Mouser.
>>>
>>>--
>>>J. McLaughlin; Michigan, USA
>>>Home: J...@power-net.net
>>
>>
>> I think the type 31 is entended for use on things like power cords and
>> computer cables to prevent unwanted radiation/pickup of RF. Im not
>> sure how well it would meet your requirements but I suspect it may be
>> OK in a receive only situation. I have tried using some unknown types
>> of cores removed from various computer cables for a balun and the
>> vinyl tape holding them to the coax got very soft when they heated up.
>> Perhaps some experimentation using these cores is in order.
>>
>> Jimmie
>
> #31 is specifically made for our kind of application (transmitting).. it
> has a higher temperature rating than the other popular materials. The key

> on managing dissipation is making sure you have enough impedance so that
> the current is small.
>
> It's a long way from the miscellaneous stuff used for RFI on power cords
> and keyboards..

Interesting, I had assumed otherwise since we probably have a couple of hundred snap on pieces we use here at work for keeping rf out of control cables an audio lines.

Jimmie

4509. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 01:50:54 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <GrydnfJw_vtmCJPVnZ2dnUVZ_hmtnZ2d@bright.net>
Source record: 25831

Dear Ian (also my father's name): Thank you for your note. It is a
mystery to me why those who sell via the Internet do not work hard at
keeping their sites up-to-date. 73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Ian White GM3SEK" <gm3sek@ifwtech.co.uk> wrote in message
news:yaos6zEE1YDIFAUM@ifwtech.co.uk...
> Roy Lewallen wrote:
>>
>>A fairly brief look at the graphs (Figs. 6 - 8) shows that type 31 has
>>roughly the same or a little higher total complex permeability than 73
>>over most of the lower HF range and same or higher than 43 on up to 100
>>MHz. So it should be a good ferrite to use for very wide band
>>applications. However, Table 1 shows that it's available in large parts
>>only. Type 43 is very widely available in a wide variety of sizes, so you
>>might have a lot more luck getting cores of the sizes you need in type 43.
>>
>>Roy Lewallen, W7EL
>
>
> Amidon do stock some type 31 products, including FT-240-31 toroids and the
> large beads for RG213, but they aren't listed on the website.
>
> Part numbering is the same as normal, so simply substitute a "31" in the
> part number you wish to order, and then call 1-800-898-1883.
>
>
> --
>
> 73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.co.uk/g3sek

4510. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 01:53:23 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <FaSdnTYdfvYNC5PVnZ2dnUVZ_vudnZ2d@bright.net>
Source record: 25832

Dear Jim: Right. Small and large have somewhat unexpected uses by
Fair-Rite.

Thanks for the useful observation, 73 Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:ful6k5$af5$1@news.jpl.nasa.gov...
> Roy Lewallen wrote:
>> J. Mc Laughlin wrote:
>>
>>> I looked through saved messages and the only reference to type 31
>>> ferrite (Fair-Rite) was in March of 2005. That reference had to do with
>>> ignition wires.
>>>
>>> Recommendations for HF choking ferrites have centered on the 70 series
>>> with type 43 being favorably recommended for the upper portion of HF and
>>> VHF. However, Fair-Rite seems to be recommending type 31 for HF. See
>>> Figure 26 in:
>>> http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf
>>>
>>> Am I missing something? It seems to me that for the purpose of choking
>>> common mode current (on the outside of the outer conductor of coax) from
>>> 3 to 25 MHz one should prefer the use of type 31. This is a receiving
>>> application with a long run of coax.
>>>
>>> 73, Mac N8TT
>>>
>>> P.S. I will also appreciate ideas about places to purchase ferrite in
>>> addition to Mouser.
>>
>>
>> A fairly brief look at the graphs (Figs. 6 - 8) shows that type 31 has
>> roughly the same or a little higher total complex permeability than 73
>> over most of the lower HF range and same or higher than 43 on up to 100
>> MHz. So it should be a good ferrite to use for very wide band
>> applications. However, Table 1 shows that it's available in large parts
>> only. Type 43 is very widely available in a wide variety of sizes, so you
>> might have a lot more luck getting cores of the sizes you need in type
>> 43.
>
> Large, in this context, isn't all that big. You can't get it in tiny
> ferrite beads to slip over a AWG30 wire. You can get it in 0.485" OD 0.5"

> long beads with a 0.2" hole in the middle.... $0.42 each from Mouser.
> Similar snap on cases too..
>
> Small, for Fair-rite, means things like those little 1/4" diameter multi
> hole cores for making wound EMI filters, or chip components.
>
> I buy it in 2.4" toroids so I can put multiple turns of coax on.

4511. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 01:55:03 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <0uGdndA5lYBoC5PVnZ2dnUVZ_oSunZ2d@bright.net>
Source record: 25833

Dear Roy: I think that I looked at those sites, however I will take
another look.

73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:QqqdndKq2bKv9ZDVnZ2dnUVZ_gOdnZ2d@easystreetonline...
> J. Mc Laughlin wrote:
>>
>> P.S. I will also appreciate ideas about places to purchase ferrite in
>> addition to Mouser.
>>
>
> You might try Amidon (https://www.amidoncorp.com/) or the Wire Man
> (http://thewireman.com/baluns.html#901). I don't think I've bought
> anything from Amidon since Bill Amidon sold it, but see their brand on
> small quantities of cores at the local electronics shop. Press Jones, the
> Wire Man, is great to do business with.
>
> Roy Lewallen, W7EL

4512. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 02:00:41 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <-8GdnQn-fM7UBZPVnZ2dnUVZ_rKtnZ2d@bright.net>
Source record: 25834

Dear Owen: Stray capacitance due to more than one source has a big effect.
Your getting similar results with a few more 31 types than 73 types is
certainly above the noise level and reinforces the utility of 31.

Thanks. 73, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Owen Duffy" <none@no.where> wrote in message
news:Xns9A88CAC18F670nonenowhere@61.9.191.5...
> "J. Mc Laughlin" <jcm@power-net.net> wrote in
> news:RtydnRDA8Y1wP5HVnZ2dnUVZ_gWdnZ2d@bright.net:
>
>> I looked through saved messages and the only reference to type 31
>> ferrite (Fair-Rite) was in March of 2005. That reference had to do
>> with ignition wires.
>
> Mac,
>
> Whilst playing around with models of a Guanella balun, I did compare #31
> sleeves with Walt's design using #73 sleeves over the range 1 - 30MHz.
>
> My model of Walt's balun is at http://www.vk1od.net/balun/W2DU/index.htm
> . I obtained different results to Walt's measurements, but I think that
> is because Walt's measurements were affected by stray capacitance that
> was worse than would apply to that type of balun in service.
>
> I also modelled some Fair-rite 2631480002 sleeves and found a slightly
> longer choke (12 cores at 25.4mm ea) was needed to achieve about the same
> choking impedance up to about 12MHz, above which the #31 choke had higher
> impedance than the #73 one.
>
> Whilst I modelled these sleeves because they suited the application, I
> have not seen anyone selling them in small quantities.
>
> Owen
>

4513. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 02:53:26 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <5311e0fe-6bce-4907-a792-342c3f524845@l42g2000hsc.googlegroups.com>
Source record: 25835

On Apr 22, 8:11 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > Another question remains, since it is difficult to
> > discern from your writings: Have you grasped the
> > behaviour of an ideal voltage source when current
> > is flowing into the source?
>
> > You now understand that it removes energy from the
> > circuit?
>
> It follows that it is futile to try to track any
> movement of instantaneous energy. You have convinced
> me that you are correct - "We don't care where the
> (instantaneous) energy goes."

The wordy non-sequitor leaves us with nagging doubts about
whether the fundamentals of DC ideal voltage sources have
been grasped.

> > If you have that for DC ideal voltage sources, we
> > can move on to discover what happens with AC ideal
> > voltage sources. After that, we can go back to what
> > is happening in your circuit.
>
> Since there is an instantaneous leak in the closed
> system, it is useless to proceed.

Doubts now confirmed.

> You say you don't
> care what happens to the energy. I said a couple of
> months ago that I didn't care what happens to
> instantaneous power. And indeed, you have convinced
> me that any attempt to track instantaneous power is
> doomed to failure.
>
> My part 1 article based on a single source and
> *AVERAGE* powers doesn't have those conceptual
> problems and stands as written. Here's the second
> paragraph from that article:
>
> "Please note that any power referred to in this paper
> is an AVERAGE POWER. Instantaneous power is beyond the
> scope of this article, irrelevant to the following
> discussion, and "of limited utility" according to

> Eugene Hecht. [4]
>
> Your challenge is to prove that a single source
> removes an average amount of energy from the
> network.

But since the whole work is predicated on a misunderstanding
of the behaviour of ideal voltage sources, any conclusions
retain no value.

...Keith

4514. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 02:53:44 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <1f9f8315-8c7a-4c03-8a17-c8afb42eb63e@34g2000hsh.googlegroups.com>
Source record: 25836

On Apr 22, 8:18 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Keith Dysart wrote:
> > What I have said is that an ideal voltage source removes energy
> > from a circuit ...
>
> Sorry, you specifically said that an ideal voltage source
> "absorbs" energy, i.e. irreversibly converts energy to
> another form, the most common form of which is heat.

I did use the word 'absorb' to convey the concept of removing
energy from a circuit without knowing where the energy went.
You misinterpreted my use of 'absorb' to mean something else.

These things happen. Most readers, upon learning the intended
meaning of a word was different than expected, would simply
re-read the affected passages to glean the intended meaning.

This seems difficult for you. May I suggest that substituting
'remove' for 'absorb' might help you gain an understanding
of the intent.

> > I am sorry that the occasional use of the word 'absorb' so
> > mislead you. I avoided 'dissipate' for that reason.
>
> The IEEE Dictionary says that, in this context, "absorb"
> and "dissipate" are virtual synonyms.

Don't worry. Knowing your difficulty with detecting the
intended meaning of words, in future I shall avoid 'absorb'
when I mean "removing energy from a circuit without knowing
where the energy goes."

...Keith

4515. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 02:54:50 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <326cb2a1-f845-478c-b54b-8b9c3f78f3ca@f36g2000hsa.googlegroups.com>
Source record: 25837

On Apr 22, 1:12 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Cecil Moore wrote:
> > Keith Dysart wrote:
> >> What I have said is that an ideal voltage source removes energy
> >> from a circuit ...
>
> > Sorry, you specifically said that an ideal voltage source
> > "absorbs" energy, i.e. irreversibly converts energy to
> > another form, the most common form of which is heat.
>
> In case you have forgotten :-), here is what you posted
> over the past few days:

With your difficulty using the word 'absorb' to represent the
abstract concept of removing energy without knowing where it
goes, for a better understanding please re-read these passages
substituting 'remove' for 'absorb'.

> >> When it is sinking current, it is *absorbing* energy.
>
> >> You will find that for some of the time
> >> energy is being *absorbed* by the source.
>
> >> But we do know that when the sign of Ps(t) is
> >> negative, the source is *absorbing* energy from
> >> the system,
>
> >> When current flows into a voltage source, the
> >> voltage source is *absorbing* energy.
>
> >> And how do you know the ideal source does not dispose
> >> of the energy it receives by getting warm?
>
> This certainly implies that you consider the dissipation
> of "absorbed" energy to be a distinct probability.

It certainly is one of the many possible things that might
happen to the energy that is removed. As I wrote previously,
"In practice, devices which are designed to approximate
ideal voltage sources do simply dissipate the energy they
remove from the circuit."

Still, since we do not *know* what happens to the energy removed
by an ideal voltage source, we can make no assumptions.

> >> The source provides or *absorbs* energy.
>
> >> When 1.5 amps is flowing into the positive terminal,
> >> the ideal voltage source is *absorbing* 15 joules per
> >> second from the circuit.
>
> >> The ideal voltage source on the right is *absorbing*
> >> 5 joules/second from the circuit.
>
> >> An ideal source provides or *absorbs* energy to
> >> satisfy its basic function which is to hold the
> >> voltage across its terminals at the desired value.
>
> >> When it is providing energy we do not know where
> >> this energy comes from and when it is *absorbing*
> >> energy we do not know where this energy goes.
>
> >> But was this because you have learned that you were
> >> in error and now better understand the behaviour of
> >> sources when they are *absorbing* energy?
>
> >> The ideal voltage source on the right, after the
> >> circuits settle, will be absorbing 50 joules/s
> >> in both cases.
>
> >> Where does the energy being *absorbed* by these ideal
> >> voltage sources go?
>
> >> The element *absorbing* energy is an ideal voltage
> >> source, not a resistor.
>
> >> Despite your protests to the contrary, ideal voltage
> >> sources can, and do, *absorb* energy.
>
> You know, Keith, if you were just ethical enough to
> answer my questions, I wouldn't have to treat you
> this way.

Perhaps. But I doubt that it would actually alter your
behaviours.

...Keith

4516. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 03:28:20 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <d2bt04h85q5i57hm5j4tva1vs9mrj237mo@4ax.com>
Source record: 25838

I am deeply saddened by his passing.

Antennex will be publishing his articles for the next two years as
planned. I know he has quite a website, will someone be able to pick
it up and keep it available?

I am sure he would want it that way.

On Tue, 22 Apr 2008 14:08:42 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>I'm very sad to report that I've just received word that L.B. Cebik,
>W4RNL, has passed away.
>
>Roy Lewallen, W7EL

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4517. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 04:06:29 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <480eb5c6$0$1119$8046368a@newsreader.iphouse.net>
Source record: 25839

Tehrasha Darkon wrote:
> On Tue, 22 Apr 2008, Roy Lewallen wrote:
>
>> I'm very sad to report that I've just received word that L.B. Cebik,
>> W4RNL, has passed away.
>>
>> Roy Lewallen, W7EL
>>
>
> I hope all of the articles on his website are backed-up. I havent
> finished learning from him yet!
>

I have 3 snapshots, 2 likely complete from 06 and 07, and one I just tried this evening. Antennex is blocking site duplications a bit, plus the site is slightly broken, which make a snapshot no longer possible, at least easily.

So, summarizing, I have a probably good snapshot from about a year ago, one probably good from about 2 years ago, and one from today that is maybe 15% complete.

tom
K0TAR

4518. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 04:14:38 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <480eb7af$0$93277$8046368a@newsreader.iphouse.net>
Source record: 25840

Roy Lewallen wrote:
> I'm very sad to report that I've just received word that L.B. Cebik,
> W4RNL, has passed away.
>
> Roy Lewallen, W7EL

I am so sorry to hear that. He was smart enough to always have
something to talk about, articulate enough to say it well, sly enough to
say it simply when possible, and young enough to put it on a web page.

tom
K0TAR

4519. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 04:24:25 UTC
From: Tehrasha Darkon <darkon@netins.net>
Message-ID: <Pine.OSF.4.33.0804222320080.9111-100000@worf.netins.net>
Source record: 25841

On Tue, 22 Apr 2008, Tom Ring wrote:

> I have 3 snapshots, 2 likely complete from 06 and 07, and one I just
> tried this evening. Antennex is blocking site duplications a bit, plus
> the site is slightly broken, which make a snapshot no longer possible,
> at least easily.

Oh, I was only thinking of the 'Tales and Technicals' on cebik.com,
I hadnt considered the mirroring of antennex.

--
My mailbox is NOT an advertisement medium. Tehrasha Darkon
My address is NOT for sale, lease or rent. darkon@netins.net
Send me spam, lose your account. Get it? TINLC-1372
http://tehrasha.mamehost.com/bastard B.A.S.T.A.R.D

4520. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 04:47:48 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <480ebf74$0$1118$8046368a@newsreader.iphouse.net>
Source record: 25842

Tehrasha Darkon wrote:
> On Tue, 22 Apr 2008, Tom Ring wrote:
>
>> I have 3 snapshots, 2 likely complete from 06 and 07, and one I just
>> tried this evening. Antennex is blocking site duplications a bit, plus
>> the site is slightly broken, which make a snapshot no longer possible,
>> at least easily.
>
> Oh, I was only thinking of the 'Tales and Technicals' on cebik.com,
> I hadnt considered the mirroring of antennex.
>

The snapshot of I took today seems to be intact with respect to
"Tales...", but I only human randomly checked about 25% of the links.

tom
K0TAR

4521. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 04:57:14 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <480ec1aa$0$93290$8046368a@newsreader.iphouse.net>
Source record: 25843

Tehrasha Darkon wrote:
> On Tue, 22 Apr 2008, Tom Ring wrote:
>
>> I have 3 snapshots, 2 likely complete from 06 and 07, and one I just
>> tried this evening. Antennex is blocking site duplications a bit, plus
>> the site is slightly broken, which make a snapshot no longer possible,
>> at least easily.
>
> Oh, I was only thinking of the 'Tales and Technicals' on cebik.com,
> I hadnt considered the mirroring of antennex.
>

And I think "Tales..." is intact.

tom
K0TAR

4522. Re:Tennamast cage, how to elongate the holes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 09:49:04 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <8CDPj.40071$Q95.9820@newsfe23.ams2>
Source record: 25844

Hi

Just purchased a Tennamast cage and the holes don't match that of the bolts on my rotator. Trust mine to be different

What is the best method to elongate the hole that are already there?

73 Andy

4523. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 11:15:16 UTC
From: wood@itd.nrl.navy.mil
Message-ID: <wood-2304080715160001@jbw-mac.itd.nrl.navy.mil>
Source record: 25845

In article <N6mdnX3wx7h1GJPVnZ2dnUVZ_o-mnZ2d@bright.net>, "J. Mc Laughlin"
<jcm@power-net.net> wrote:

> Thanks Roy for passing on the sad and unexpected news.
>
> Professor Cebik's life is a good example of the positive influence that a
> fan can have on a technical subject. Antennas are most distant from his
> professional work, and yet we all know how much he contributed to an
> understanding of our favorite subject.
>
> We are diminished. Mac N8TT

Hello, all, and it is always sad when another silent key is added. I
don't make a habit of reading articles posted on antennex.com since it was
they who were (still are?) backers of the CFA and other flawed (IMO)
concepts. (I was surprised some years back when antennex.com published
Dr. John (Jack) Belrose's mythbusting paper on the CFA using the results
of a NEC model of that antenna.)
No doubt antennex.com also has promulgated some viable antenna designs.
Now, if non-engineers/non-physicists would just refrain from trying to
explain the underlying "theory" of operation behind their revolutionary
spare-time antenna designs. Please excuse the rant and I don't mean to
imply that W4RNL contributed to any of this. My best to W4RNL's family.
Sincerely, and 73's from N4GGO,

John Wood (Code 5550) e-mail: wood@itd.nrl.navy.mil
Naval Research Laboratory
4555 Overlook Avenue, SW
Washington, DC 20375-5337

4524. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 12:09:58 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qGFPj.116$506.41@newssvr27.news.prodigy.net>
Source record: 25846

Keith Dysart wrote:
>> Your challenge is to prove that a single source
>> removes an average amount of energy from the
>> network.
>
> But since the whole work is predicated on a misunderstanding
> of the behaviour of ideal voltage sources, any conclusions
> retain no value.

Keith, if you can prove that a single source removes
an average amount of energy from the network during
steady-state conditions, I will worship at your feet.
--
73, Cecil http://www.w5dxp.com

4525. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 12:15:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ZLFPj.10508$2g1.10395@nlpi068.nbdc.sbc.com>
Source record: 25847

Keith Dysart wrote:
> I did use the word 'absorb' to convey the concept of removing
> energy from a circuit without knowing where the energy went.
> You misinterpreted my use of 'absorb' to mean something else.

No, I assumed the standard IEEE Definition of the word.
You mistakenly neglected to state the non-standard definition
that you were using.
--
73, Cecil http://www.w5dxp.com

4526. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 12:58:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <doGPj.9684$V14.1356@nlpi070.nbdc.sbc.com>
Source record: 25848

Keith Dysart wrote:
> Perhaps. But I doubt that it would actually alter your
> behaviours.

Well, let's try one more time and see. Assuming a 50 ohm
environment (by definition) in the following example, what
will an ideal 50 ohm directional wattmeter indicate at
point 'x' for forward power (Pf1) and reverse power (Pr1)?

```
Pf1--> 50 ohm Pf2=50w-->
+----x-----/\/\/\/\-------45 deg 50 ohm-----short
| <--Pr1 Rs <--Pr2=50w
| 100w
Vs=100v
|
Gnd
```

It's a simple question with easily calculated and
quantifiable answers.
--
73, Cecil http://www.w5dxp.com

4527. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 13:24:46 UTC
From: Roger Sparks <rsparks@elltel.net>
Message-ID: <20080423062446.b9ff3d36.rsparks@elltel.net>
Source record: 25849

On Wed, 23 Apr 2008 07:58:49 -0500
Cecil Moore <nospam@w5dxp.com> wrote:

> Well, let's try one more time and see. Assuming a 50 ohm
> environment (by definition) in the following example, what
> will an ideal 50 ohm directional wattmeter indicate at
> point 'x' for forward power (Pf1) and reverse power (Pr1)?
>
> Pf1--> 50 ohm Pf2=50w-->
> +----x-----/\/\/\/\-------45 deg 50 ohm-----short
> | <--Pr1 Rs <--Pr2=50w
> | 100w
> Vs=100v
> |
> Gnd
>
> It's a simple question with easily calculated and
> quantifiable answers.

Your circuit is incomplete. The circuit parameters are not fully defined.

Is this the same circuit that you wish to analyze?

```
Pf1--> 50 ohm Pf2=50w-->
+----x-----/\/\/\/\-------45 deg 50 ohm-----+
| <--Pr1 Rs <--Pr2=50w |
| 100w |
Vs=100v |
| |
Gnd Gnd
```

What is the impedance of the voltage delivered from Vs before the wave encounters the resistor Rs?

What reflection characteristics should we assume for the voltage source Vs?
--
73, Roger, W7WKB

4528. Re: Re:Tennamast cage, how to elongate the holes

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 13:48:45 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <R6HPj.19411$Rr7.4851@newsfe29.ams2>
Source record: 25850

All sorted. Just used the side of the drill bit. Don't know why I didn't
think of that in the first place.

73 Andy

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:8CDPj.40071$Q95.9820@newsfe23.ams2...
> Hi
>
> Just purchased a Tennamast cage and the holes don't match that of the
> bolts on my rotator. Trust mine to be different
>
> What is the best method to elongate the hole that are already there?
>
> 73 Andy
>
>

4529. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 13:53:18 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <7bHPj.19412$Rr7.12600@newsfe29.ams2>
Source record: 25701

Anyone know of a shop that could repair my SG-230 coupler here in the UK?
I was told last night that SGC is now over charging there customers for
repairs.

73 Andy

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:6769p1F2ngraaU1@mid.individual.net...
> Andy wrote:
>> Hi all
>>
>> I purchased the SG-230 about 4 years ago. I took it out of its box
>> yesterday for the first time and tested it out on a light bulb as a
>> dummy load and all worked fine. It found a match on all HF bands.
>> I connected it to an antenna today and it would not tune. It would
>> not reset with the Smartlock. I took the back off the 230 and noticed
>> when I apply the 13.8 Volts all the relays click once and they
>> all stay in that position until I disconnect the power and if I apply
>> RF, 10-80 watts when the 230 is powered up it does nothing, it
>> doesn't even attempt to tune.. I have also tried 2 lengths of 10ft
>> wire and it does nothing.
>> There are five LED's inside that are all on (green).
>>
>> Does anyone know what is causing this problem?
>
> Verify there's a good RF ground connected to the tuner.
> Even if you're using some kind of balanced antenna,
> my tuners are happier with a little metal on the ground.
> I have a simple, 12' piece of braid bolted to the
> tuner/transciever cases and simply laying on the sand.
>
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com
>
>

4530. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 15:22:59 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <pvku045e30mu3thn6l9gs6ofueberlftu5@4ax.com>
Source record: 25702

Barrett,
ur pics spek lots, but im busy w/baby es will respond tonite or
tomorrow.

sri fer shorthand, baby in hand is fussy.

On Sun, 20 Apr 2008 19:49:37 +0100, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>Buck, here are some photo's of the antenna at the moment. The new one will
>have to be in a similar position.
>http://www.hobby.pwp.blueyonder.co.uk/antenna/3.jpg
>http://www.hobby.pwp.blueyonder.co.uk/antenna/4.jpg
>
>Not sure what to cover the SGC with to keep the rain out. Plus it will be in
>direct sun all day on top of the pole. Garden is Roughly North to south..
>South being at the pole end of the garden.
>I can disconnect the homebrew G5RV and move the ugly coax balun I made up to
>the pole and add some new coax in-between. I know its a lot of connections
>but it will have to do for the time being.
>
>
>Hope this helps.
>
>Thanks
>
>
>"Buck" <usenet01@lumpuckeroo.com> wrote in message
>news:i2lm04hopba7pehjn0hu1ugh92d95mhgcm@4ax.com...
>> Ok, Barrett,
>>
>> First of all, I missed your british accent the first time around, and
>> I have also read the instruction manual that came with the tuner.
>>
>> Now that I understand you and the tuner (coupler) better, I can make
>> better informed recommendations.
>>
>>
>>>>>>I have a 60ft garden and my maximum height I can go is only 20ft. I
>>>>>would
>>>>>like to TX on 80-40 and on 160 if possible but I might be asking the
>>>>>impossible with the 160m..
>>
>> Your coupler says it only needs 23 feet to tune 160m. At that rate,
>> you would not be one of the big fishes in the pond, but you would be

>> there.
>>
>>>>>I do not have a ground system in place. I can put some earth rods in and
>>>>>some surface wire but I have no way of putting any wire into the soil
>>>>>itself. So I am a bit limited.
>>>>>
>>
>> You might have more of a ground than you think. hang in there...
>>
>>>>>I have a 150ft of flexweave wire that is uv plastic coated to play with.
>>>>>I think I have three choices to chose from at the moment.
>>>>>I can use the SGC-230 with an inverted L.
>>>>>I can use the SGC-230 with an inverted L with homebrew traps built in.
>>>>>I can use an inverted L with homebrew traps built in but without the
>>>>>SGC-230.
>>>>>
>>>>>What would be the best choice and why?
>>
>> The best choice is the one that will give you effective communications
>> given your resources and abilities. I think you will do well.
>>
>>
>>>> I am going to give it a WAG and suggest you would be better off
>>>> without the traps.
>>
>> your coupler supersedes your need for traps.
>>
>>
>>>> Can the tuner be mounted in the weather? Yes
>> See Page 7 in the users manual. Can you acquire or spare a plastic
>> garbage can?
>>
>>
>> SNIP
>>
>>>If so, could you make a 150 foot
>>>> dipole and feed it with twin-lead to the tuner? I would like that
>>>> idea best. Even 300 ohm twin lead from Radio shack would be good. This
>>>> is
>>>> out due to getting it through the house wall.
>>
>> I assume you can get a piece of coax out from the radio to the
>> coupler?
>>
>>>
>>>
>>>The garden is only 60ft long, so fitting in 150ft won't work here. I could
>>>make a Z up but the end of one end would have to drop to garage roof
>>>height
>>>(9ft) and it would put the other end of the Z running (clipped onto the

>>>plastic gutter). This would put the Aerial very close to the house and
>>>very
>>>close to the neighbours TV and radio aerial.
>>>
>>>
>>>>
>>>> The inverted L seems to prefer ground radials, but a dipole or random
>>>> wire may be better. If you can go up and only in one direction, could
>>>> you run 300 ohm up and tap one end? this would be an end-fed Zep, i
>>>> believe, and the tuner should tune it.
>>>
>>>
>>> I could do but my nax height would be 20ft would this work? Also I have a
>>>20ft scaffold pole note grounded that the G5RV is supported by won't this
>>>interfere with it?
>>
>> :) :) :)
>>
>>
>> To me, this is your ace in the hole :)
>>
>> See the diagram at the top of page 7?
>>
>> Here is what I would do assuming the trees or other supports
>> cooperate.
>>
>> Get a protective cover for the coupler as shown. Mount the coupler as
>> high up the pole as you can. Ground the coupler to the pole well
>> where you mount it, and cover the coupler as in the diagram.
>>
>> at the base of the pole, set one of the ground rods and ground the
>> pole to the rod. You don't need any wire going from the tuner to the
>> ground rod as the scaffold pole will be the conductor.
>>
>> From the tuner, stretch your wire out as far as you can to the other
>> supports. Weave it around, if you must, but try to get as close to 80
>> feet of wire strung out as possible. Make a "T" in the wire if
>> necessary giving the wire three points, one at the tuner and two going
>> different directions. For me, the more wire, the better. The more
>> spread out, the better.
>>
>> Now, when you reach your limit, take the rest of the wire and make as
>> much of ground radials as you can as you see in the diagram on pages 7
>> & 16.
>>
>> If you can't run them far, go as far as you can.
>>
>> The second alternative? Replace your G5RV with the installation shown
>> in the diagram on page 17.
>>

>> If you can't raise the coupler up the pole very high, you could mount
>> it as high as possible on the pole, and run the hot lead up beside the
>> pole (separated as far as possible) loop it thru an insulator near the
>> top of the pole and continue trying to get as much wire out as
>> possible.
>>
>>
>> I imagine that if I walked thru your garden and saw it in person, I
>> would make different suggestions, but based on my perception of what I
>> have never seen, I can only take a bit of a guess.
>>
>> Let me know how it goes.
>>
>> Thanks
>>
>>
>>
>> --
>> 73 for now
>> Buck, N4PGW
>>
>> www.lumpuckeroo.com
>>
>> "Small - broadband - efficient: pick any two."
>>
>

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4531. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 16:03:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <z5JPj.150$506.139@newssvr27.news.prodigy.net>
Source record: 25703

Roger Sparks wrote:
> Pf1--> 50 ohm Pf2=50w-->
> +----x-----/\/\/\/\-------45 deg 50 ohm-----+
> | <--Pr1 Rs <--Pr2=50w |
> | 100w |
> Vs=100v |
> | |
> Gnd--------------------------Braid------------+

The coax is shorted at the end, and Gnd is 45
degrees away from the short.

> What is the impedance of the voltage delivered from Vs before the wave encounters the resistor Rs?

Assume that Rs is 100% of the source impedance.

> What reflection characteristics should we assume for the voltage source Vs?

Assuming that Rs is 100% of the source impedance
should answer that question.
--
73, Cecil http://www.w5dxp.com

4532. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 17:35:49 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <VrKPj.87097$rd2.8954@pd7urf3no>
Source record: 25704

Roy Lewallen wrote:
> I'm very sad to report that I've just received word that L.B. Cebik,
> W4RNL, has passed away.
>
> Roy Lewallen, W7EL

Sorry to hear this. His contributions in explaining
various aspects of antennas taught me a lot.

Irv VE6BP

4533. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 20:26:38 UTC
From: Keith Dysart <Keith.Dysart@gmail.com>
Message-ID: <dc7b0373-1b08-467f-82cf-c3970dda75ae@a23g2000hsc.googlegroups.com>
Source record: 25705

On Apr 23, 12:03 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Roger Sparks wrote:
> > Pf1--> 50 ohm Pf2=50w-->
> > +----x-----/\/\/\/\-------45 deg 50 ohm-----+
> > | <--Pr1 Rs <--Pr2=50w |
> > | 100w |
> > Vs=100v |
> > | |
> > Gnd--------------------------Braid------------+
>
> The coax is shorted at the end, and Gnd is 45
> degrees away from the short.
>
> > What is the impedance of the voltage delivered from Vs before the wave encounters the resistor Rs?
>
> Assume that Rs is 100% of the source impedance.
>
> > What reflection characteristics should we assume for the voltage source Vs?
>
> Assuming that Rs is 100% of the source impedance
> should answer that question.

Is this a standard ideal voltage source which provides energy
to the circuit when the product of its voltage and current is
positive and removes energy from the circuit when the product
of its voltage and current is negative?

Or have you assigned it some other non-standard definition?

...Keith

4534. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-23 23:48:33 UTC
From: mercywildchild <mercywildchild.255ae4d@radiobanter.com>
Message-ID: <mercywildchild.255ae4d@radiobanter.com>
Source record: 25712

Roy Lewallen;627899 Wrote:
> I'm very sad to report that I've just received word that L.B. Cebik,
> W4RNL, has passed away.
>
> Roy Lewallen, W7EL

Please, someone. I had surgery last Thursday and my friend Roy last
sent me flowers then. Via e-mail of course. When I tried to contact him
on Friday to let him know I was doing well, I got no reply. What
happened to him?

--
mercywildchild

4535. Amidon Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 00:01:30 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fuoikq$56d$1@news.jpl.nasa.gov>
Source record: 25707

J. Mc Laughlin wrote:
> Dear Ian (also my father's name): Thank you for your note. It is a
> mystery to me why those who sell via the Internet do not work hard at
> keeping their sites up-to-date. 73, Mac N8TT
>

Amidon is sort of on-again/off-again when it comes to supporting the retail ham market. Sometimes they are pretty good, but other times they're just terrible. Might have something to do with changes in ownership and management over the years, or just whether they get busy with bread and butter commerical customers. They've also used a wide variety of suppliers over the years.

And the whole Amidon, Amidon Associates, Applied Magnetics, BTC Power Electronics, Flat Transformer Technology, thing...

It's been a long time since Bill Amidon ran it from his garage in North Hollywood providing retail distribution for Fair-Rite and Micrometals products.

4536. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 00:54:14 UTC
From: Tehrasha Darkon <darkon@netins.net>
Message-ID: <Pine.OSF.4.33.0804231951480.2434-100000@worf.netins.net>
Source record: 25706

On Tue, 22 Apr 2008, Tehrasha Darkon wrote:

> On Tue, 22 Apr 2008, Tom Ring wrote:
>
> > I have 3 snapshots, 2 likely complete from 06 and 07, and one I just
> > tried this evening. Antennex is blocking site duplications a bit, plus
> > the site is slightly broken, which make a snapshot no longer possible,
> > at least easily.
>
> Oh, I was only thinking of the 'Tales and Technicals' on cebik.com,
> I hadnt considered the mirroring of antennex.
>

Wow, that was fast.
Antennex now requires registration (free) to access the cebik.com site.
I wonder how many thousand websites now contain broken reference links.

--
My mailbox is NOT an advertisement medium. Tehrasha Darkon
My address is NOT for sale, lease or rent. darkon@netins.net
Send me spam, lose your account. Get it? TINLC-1372
http://tehrasha.mamehost.com/bastard B.A.S.T.A.R.D

4537. Public Service - NWS

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 02:00:08 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <UfidnauLY5ICdJLVnZ2dnUVZ_v-hnZ2d@comcast.com>
Source record: 25708

You should use this system if you are traveling and not in a familiar area
to do your reporting.

73's
USA Skywarn
National Toll Free Number Update
The National Weather Service National Toll Free Severe Weather Hotline is
now up and operational.
NATIONAL SEVERE WEATHER REPORTING HOTLINE 877-633-6772

The National Weather Service encourages everyone to report severe weather.

TO REPORT SEVERE WEATHER,

To Use This System you Need to Have Either your,

1: Latitude Longitude by Degrees and Minutes

2: Or Zip Code

If either of these two items are not available then you must leave a very
detailed voice message as to your location at the end of the call such as
nearest:

City, County, & State

Nearest Cross Streets

Land Marks Highway Mile Markers Etc....

SEVERE WEATHER REPORTING BASIC GUIDE LINES

1: TORNADO: A violently rotating column of air in contact with the ground
and extending from the base of a thunderstorm.

2: FUNNEL CLOUD: Violently rotating column of air that is not in contact
with the ground.

3: HAIL: Penny sized hail or larger.

4: DAMAGING WINDS: Trees/power lines knocked down, damage to homes, etc. If
you have an anemometer, report any sustained winds over 45 or
gusts over 58 mph. (Note: sustained winds are a one minute average.)

4a: High Winds: Wind gusts in excess of 58 mph. (Large Limbs or Trees Down
Wide Spread Damage)

5: Flash flooding.

6: Weather Related Damage to structures, buildings, barns, or cars and trees.

7: SNOW: One inch accumulation or more in three hours. 4 inches in 12 hours or less.

8: FREEZING PRECIPITATION: Any accumulation of sleet or freezing rain/drizzle.

9: POOR VISIBILITY: Reduced visibility adversely impacting transportation. Less than one-half miles for: BLOWING DUST and VOLCANIC ASH. Less than 1/4 Mile for: DENSE FOG and BLOWING SNOW.

When Prompted to leave a Voice Message:

Be as descriptive as possible, rainfall amounts and any damage or weather occurrence you feel is important to report.

4538. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 02:03:11 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A8A7A99FF003nonenowhere@61.9.191.5>
Source record: 25709

Tehrasha Darkon <darkon@netins.net> wrote in
news:Pine.OSF.4.33.0804231951480.2434-100000@worf.netins.net:

> Wow, that was fast.
> Antennex now requires registration (free) to access the cebik.com
> site. I wonder how many thousand websites now contain broken reference
> links.

I am not surprised.

Antennax are commercial publishers, and they are the publishers of
cebik.com .

Whilst Cebik implored people to not bulk copy his site, he did offer the
option of a $35 CD from Antennax. The site contained measured to prevent
certain kinds of access. No doubt Antennax's action is to protect their
revenue stream.

I am sure that many publishers will be revising their websites to remove
links to Antennax's archived / restricted cebik.com site.

Owen

4539. Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 02:17:28 UTC
From: ve2pid <ve2pid@videotron.ca>
Message-ID: <3bb7a264-ea13-45d6-b7ed-868eca21cd57@e53g2000hsa.googlegroups.com>
Source record: 25710

Hi to all,

Until now, I used a 4:1 Van Gorden Balun with an OCF dipole and of course a coax line to the tuner. I am now trying a 450 Window ladder line. For now, the antenna is still connected to the balun, but I removed the coax from it, and I use the balanced line connector of my MFJ-949E antenna tuner (a 4:1 balun is in that tuner).

My question: Should I remove the old balun or may I keep it, i.e. does it has any influence even if the coax is removed?

I find it convenient since the balun is a good holder for the antenna's two branches.

73 de Pierre VE2PID
ve2pid@videotron.ca

4540. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 02:32:19 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A8A7F8AE9883nonenowhere@61.9.191.5>
Source record: 25711

"J. Mc Laughlin" <jcm@power-net.net> wrote in
news:GrydnfJw_vtmCJPVnZ2dnUVZ_hmtnZ2d@bright.net:

> Dear Ian (also my father's name): Thank you for your note. It is a
> mystery to me why those who sell via the Internet do not work hard at
> keeping their sites up-to-date. 73, Mac N8TT

Mac, If you have your heart set on #31 mix, this option isn't a good one... but if you can use #73 or #43, you will regularly see sleeves in various sizes and materials on Ebay. Many have Fair-rite numbers so you can check to see if they suit.

Some advertisers state that the cores are Fair-rite cores, if they know that, they should know the part numbers though they don't always state them in the descriptions.

I have bought ferrites from one of the suppliers, the goods seem to comply with the part number descriptions (dimensions, mu) and their service to Australia was quick and cheap.

In this part of the world, product from Asia is available economically... but we have to characterise them and long term product availability is a bit of an issue.

Owen

4541. Antenna Stacking : HF / 2M / Dipole / Directional HDTV Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 03:26:19 UTC
From: Glenn Jensen <ve6dkk@hotmail.com>
Message-ID: <1bWdncYU68WeY5LVnZ2dnUVZ_hCdnZ2d@sasktel>
Source record: 25713

Am putting up a tower, 60', and was wondering if there is any issues with
the following arrangement:

On top and working down to the tower top section...

1) HF Beam Antenna, then
2) 2 Meter Beam Antenna, then
3) Dipole for 40, 80, 160 M, then
4) Directional HDTV antenna, all on the mast, all turned via rotor.

Any problems with this arrangement?

Glenn

4542. Re: Antenna Stacking : HF / 2M / Dipole / Directional HDTV Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 05:38:03 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <r1VPj.16363$CO2.3996@newsfe12.phx>
Source record: 25714

Glenn Jensen wrote:
> Am putting up a tower, 60', and was wondering if there is any issues with
> the following arrangement:
> On top and working down to the tower top section...
> 1) HF Beam Antenna, then
> 2) 2 Meter Beam Antenna, then
> 3) Dipole for 40, 80, 160 M, then
> 4) Directional HDTV antenna, all on the mast, all turned via rotor.
> Any problems with this arrangement?

I think the usual practice is to put the VHF/UHF antennas
on top of the HF beam so that they don't have to "look through"
that larger metal structure and perhaps have their patterns
disrupted by it. Also, I see problems rotating the 40/80/160
dipole ;-)

Jim, K7JEB

4543. Re: Antenna Stacking : HF / 2M / Dipole / Directional HDTV Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 06:08:48 UTC
From: Glenn Jensen <ve6dkk@hotmail.com>
Message-ID: <eqCdnWgInPeWuY3VnZ2dnUVZ_vGdnZ2d@sasktel>
Source record: 25715

Sorry, wasnt too specific in my original post....dipole not stacked, just attached to the tower....main concern is if there is any interferece etc. between the HDTV antenna and the Ham Antennas?

Glenn

"Glenn Jensen" <ve6dkk@hotmail.com> wrote in message news:1bWdncYU68WeY5LVnZ2dnUVZ_hCdnZ2d@sasktel...
> Am putting up a tower, 60', and was wondering if there is any issues with
> the following arrangement:
>
> On top and working down to the tower top section...
>
> 1) HF Beam Antenna, then
> 2) 2 Meter Beam Antenna, then
> 3) Dipole for 40, 80, 160 M, then
> 4) Directional HDTV antenna, all on the mast, all turned via rotor.
>
> Any problems with this arrangement?
>
> Glenn
>

4544. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 10:55:33 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <48106868$0$20176$4c368faf@roadrunner.com>
Source record: 25716

Hi Andy,

I had a similar problem with my SG-231. It turned out to be a corrosion problem in the power/control connector. This made a electrical connection to be made to the Reset/Hold/Tune leads. There was a little corrosion on the back side of the circuit board as well. Look up into the male connector and disassemble the female.

I cleaned up the corrosion problems with a dental pick and fine wire brush. I resealed the connectors with epoxy. The silicon sealant SGC used seems to be effected by moisture as it had become milky looking till it dried out.

Hope this helps.

Chris

Andy wrote:
> Hi all
>
> I purchased the SG-230 about 4 years ago. I took it out of its box yesterday
> for the first time and tested it out on a light bulb as a dummy load and all
> worked fine. It found a match on all HF bands.
> I connected it to an antenna today and it would not tune. It would not reset
> with the Smartlock. I took the back off the 230 and noticed when I apply the
> 13.8 Volts all the relays click once and they
> all stay in that position until I disconnect the power and if I apply RF,
> 10-80 watts when the 230 is powered up it does nothing, it doesn't even
> attempt to tune.. I have also tried 2 lengths of 10ft wire and it does
> nothing.
> There are five LED's inside that are all on (green).
>
> Does anyone know what is causing this problem?
>
> 73 Andy
>
>

4545. Re: Antenna Stacking : HF / 2M / Dipole / Directional HDTV Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 11:44:52 UTC
From: ltdoc@yahoo.com
Message-ID: <9ad964b3-4089-473f-91c7-6bb3f4ef9c1c@b64g2000hsa.googlegroups.com>
Source record: 25717

Glenn,
There shouldn't be any more (or less) interference between the HDTV antenna and the others than there would be for a 'regular' TV antenna. As with either type of TV antenna, distance from things around them will directly affect how much they may be affected by the 'other' antennas simply being there. That says nothing about whether the ham antennas are in use at the time! (Kind'a figured that anyway, huh?)
- 'Doc

4546. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 12:00:28 UTC
From: ltdoc@yahoo.com
Message-ID: <dd7b5e64-f01c-4927-89b2-4f274fc912d3@l64g2000hse.googlegroups.com>
Source record: 25718

Pierre,
If you don't remove that 'old' balun, then you don't have a 4:1 conversion anymore, but with 'both' baluns connected, it's more on the order of an 8:1 conversion. Is that 'bad'? That depends on the antenna's impedance and the feed line's impedance, but in general, I would think that it wouldn't exactly be the 'best' thing you could do. Removing the 'old' balun would probably be your 'best' bet. May make making connections a little more difficult (or at least 'different') but still the 'best' solution.
Then again, before doing that "out with the old" thingy, try it and see what the results are with both baluns in-line. Results 'better' with or without the old balun still in line? Hmm, if I had to 'guess', I'd have to say removing the old balun would probably be your best bet. At the very least, it means a little less weight hanging on the antenna, one less 'point of loss' in the whole thing...
- 'Doc

(May not be the 'best' answer in the world, but it's sure a nice "CYA"... ain't it?;))

4547. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 12:12:22 UTC
From: ltdoc@yahoo.com
Message-ID: <9786e86d-e96b-439b-a93e-acc345c02abf@l64g2000hse.googlegroups.com>
Source record: 25719

... Uhh. May have mis-read your post. If that old balun is only being used as a center insulator, not 'in-line' with the ladder-line, then while it will still be providing some sort of 'impedance bump' because it's too close to the ladder-line, it shouldn't be doing any impedance transforming (the 4:1 thingy to an 8:1 thingy).
Objectionable? Beats me, but probably, too many "depends" in that for a good guess.
- 'Doc

PS - Leaving it-line, but not really doing anything, DOES open the field for all kinds of 'reasons why it's there' when explaining the set up to an interested observer! Can you imagine the B.S. you could invent for that??

4548. eBay: WILTRON S331A Cable/Antenna Analyzer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 14:04:14 UTC
From: Ted <nobody@pseudo.borked.net>
Message-ID: <b0732811c56fad06b07cbd66b11a1d13@pseudo.borked.net>
Source record: 25720
Cross-posted to: alt.ham-radio.marketplace,rec.radio.amateur.antenna,misc.industry.electronics.marketplace

http://www.starturl.com/WiltronAnalyzer

4549. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 17:08:28 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <g83Qj.140863$cj2.32984@newsfe13.ams2>
Source record: 25721

Chris,
I will have a look, but its unlikely to be corrosion due to it being stored in its box in my cupboard for the lat 4 years. But it might help others.

This might help you though. Some one did tell me once to seal the SG-230 with silica gel after putting some silica gel in side so soak up any moister. Its those little packets you get inside the box with new electrical items.

Thanks

"Christopher Cox" <chrisTOPHERcOX@coboxincORORATED.com> wrote in message news:48106868$0$20176$4c368faf@roadrunner.com...
> Hi Andy,
>
> I had a similar problem with my SG-231. It turned out to be a corrosion
> problem in the power/control connector. This made a electrical connection
> to be made to the Reset/Hold/Tune leads. There was a little corrosion on
> the back side of the circuit board as well. Look up into the male
> connector and disassemble the female.
>
> I cleaned up the corrosion problems with a dental pick and fine wire
> brush. I resealed the connectors with epoxy. The silicon sealant SGC used
> seems to be effected by moisture as it had become milky looking till it
> dried out.
>
> Hope this helps.
>
> Chris
>
>
> Andy wrote:
>> Hi all
>>
>> I purchased the SG-230 about 4 years ago. I took it out of its box
>> yesterday for the first time and tested it out on a light bulb as a dummy
>> load and all worked fine. It found a match on all HF bands.
>> I connected it to an antenna today and it would not tune. It would not
>> reset with the Smartlock. I took the back off the 230 and noticed when I
>> apply the 13.8 Volts all the relays click once and they
>> all stay in that position until I disconnect the power and if I apply RF,
>> 10-80 watts when the 230 is powered up it does nothing, it doesn't even
>> attempt to tune.. I have also tried 2 lengths of 10ft wire and it does
>> nothing.
>> There are five LED's inside that are all on (green).

>>
>> Does anyone know what is causing this problem?
>>
>> 73 Andy
>>
>>
>

4550. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 17:08:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <z83Qj.5750$iK6.3626@nlpi069.nbdc.sbc.com>
Source record: 25722

Keith Dysart wrote:
> Is this a standard ideal voltage source ...

Let's save that discussion for later by dropping
Vs out of the example. The specific characteristics
of the source need not be known for the following
subset problem which, I believe, is the source of
our disagreement, having nothing to do with Vs.
In fact, Vs can be located one wavelength away from
Rs and steady-state conditions will be the same.
Let's take a close look at what is happening only
on each side of Rs in this previous example.

```
100v Vg
Gnd---Vs--x--Rs--+----45deg-50ohm---------short
```

The following are given:

A 100% 50 ohm environment by definition.
Reference Voltage = 100v RMS at point 'x'
Rho = 0.4472 @ 63.4 deg at point 'x'

Rho^2 = 0.2 and an ideal 50 ohm directional wattmeter
will provide the following indications.

```
100v Rs=50ohms Vg
------------x---/\/\/\/\/---+--------------
Pf1=125w--> Prs=100w Pf2=50w-->
<--Pr1=25w <--Pr2=50w
```

These are the energy components that you say do not
balance. But I didn't see Pf1(t) or Pr1(t) in any
of your previous equations. I suggest you will
discover that the destructive interference on one
side of Rs is exactly balanced by the constructive
interference on the other side.
--
73, Cecil http://www.w5dxp.com

4551. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 17:16:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Bf3Qj.5845$iK6.5014@nlpi069.nbdc.sbc.com>
Source record: 25723

ve2pid wrote:
> My question: Should I remove the old balun or may I keep it, i.e. does
> it has any influence even if the coax is removed?

It is unclear where you have connected your ladder-
line at the antenna end. Is it connected through the
coax connector or does it bypass the balun and connect
directly to the antenna wire, i.e. are you trying to
use the old balun as your center insulator?
--
73, Cecil http://www.w5dxp.com

4552. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 17:48:32 UTC
From: ve2pid <ve2pid@videotron.ca>
Message-ID: <2636d8f5-1eb9-4e39-b0d2-22f20d35a48f@d1g2000hsg.googlegroups.com>
Source record: 25724

On 24 avr, 13:16, Cecil Moore <nos...@w5dxp.com> wrote:
> ...does it bypass the balun and connect directly to the antenna wire, i.e. are you trying to
> use the old balun as your center insulator?

This is what I intended to do, using the 'eyelets' on the balun to hold each leg and to connect the ladder line to them. Purely a mechanical solution.

But since there is a 0 ohms (DC) resistance between the two posts on the balun, I am concerned abour adverse effects.

4553. 20m 1/4 wave portable vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 17:49:42 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <de71c542-1013-4065-8916-3c43a78897b8@d45g2000hsc.googlegroups.com>
Source record: 25725

Hi all,

Harbor Freight has a new item currently on sale, a telescoping aluminum flag pole, item 92901. It extends to 16 feet, and can be locked at any arbitrary shorter length down to the 62 inch collapsed length. The bottom section is 2 inches diameter and the fourth, top section is 1.5 inches diameter, so it's easily self-supporting if you have a way to secure the base. It's about 6 pounds. There's a top ball that screws in, so there's a very easy place to add a little plate for a place to attach guys. I haven't had mine long enough to try it, but I expect it will make a fine 20meter-and-above 1/4 wave vertical for portable use. With a bit of capacitive hat and a loading coil, it may even work well on 40m. If you get one, be sure that all the sections lock properly--mine may get exchanged because one of the sections doesn't seem to want to lock.

Cheers,
Tom

4554. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 18:59:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9M4Qj.223$1b7.4@newssvr13.news.prodigy.net>
Source record: 25726

ve2pid wrote:
> On 24 avr, 13:16, Cecil Moore <nos...@w5dxp.com> wrote:
>> ...does it bypass the balun and connect directly to the antenna wire, i.e. are you trying to
>> use the old balun as your center insulator?
>
> This is what I intended to do, using the 'eyelets' on the balun to
> hold each leg and to connect the ladder line to them. Purely a
> mechanical solution.
>
> But since there is a 0 ohms (DC) resistance between the two posts on
> the balun, I am concerned about adverse effects.

You need to measure those impedances at the frequencies of
interest. If the antenna feedpoint impedance is much, much
lower than the impedance looking back into the old balun,
you don't have anything to worry about. You can determine
those impedances with a lot of time and effort. Or you can
remove the balun and install an insulator. Personally, I
would install the free insulator out of my junk box. :-)
--
73, Cecil http://www.w5dxp.com

4555. Re: 20m 1/4 wave portable vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 19:13:37 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <BZ4Qj.6690$iK6.4526@nlpi069.nbdc.sbc.com>
Source record: 25727

K7ITM wrote:
> Harbor Freight has a new item currently on sale, a telescoping
> aluminum flag pole, item 92901. It extends to 16 feet, and can be
> locked at any arbitrary shorter length down to the 62 inch collapsed
> length.

That's less expensive than MFJ's 12 foot telescopic
whip and probably lots more sturdy. Have you checked
for continuity between the anodized aluminum sections?
--
73, Cecil http://www.w5dxp.com

4556. Re: L.B. Cebik, W4RNL, SK

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 19:17:30 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <0ef9734e-a331-4048-a57c-0aea08924005@d1g2000hsg.googlegroups.com>
Source record: 25728

On Apr 22, 5:08 pm, Roy Lewallen <w...@eznec.com> wrote:
> I'm very sad to report that I've just received word that L.B.Cebik,
> W4RNL, has passed away.

I never met him, but his books and more than anything his website
contained infinite amounts of wisdom and experience on every subject
from antenna modeling massive UHF arrays on modern computers to
boiling wooden dowels in parrafin to make ladder-line spacers, and
everything in-between. I miss his wisdom already!!!!

N3QE

4557. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 21:34:01 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <8LKdnbpVPtPvYY3VnZ2dnUVZ8qSnnZ2d@pipex.net>
Source record: 25729

ve2pid wrote:
> Hi to all,
>
> Until now, I used a 4:1 Van Gorden Balun with an OCF dipole and of
> course a coax line to the tuner. I am now trying a 450 Window ladder
> line. For now, the antenna is still connected to the balun, but I
> removed the coax from it, and I use the balanced line connector of my
> MFJ-949E antenna tuner (a 4:1 balun is in that tuner).
>
> My question: Should I remove the old balun or may I keep it, i.e. does
> it has any influence even if the coax is removed?
>
> I find it convenient since the balun is a good holder for the
> antenna's two branches.
==========
Although this tread is ongoing for some time I respond to the original posting.

If an Off Centre Fed Dipole is directly connected to a twin wire feeder ,be it ladder line or 300 or 450 Ohms twin feeder (please note I do not use the wording : balanced feeder) the current /voltage in the 2 wires at any point on the feeder will not be the same in magnitude and differ 180 degrees in phase ,hence IMHO the feeder will radiate, which should be avoided

If a symmetrical dipole is used there is a reasonable chance that the feeder will NOT radiate and if that indeed is the case you can call the feeder balanced. This can be checked for example by placing a (split) toroid type of RF current sensor around the twin feeder (differential current measurement).

So it makes no sense to connect an OCF Dipole directly to a twin feeder .

Frank GM0CSZ / KN6WH

4558. TAK-TENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 21:50:21 UTC
From: "patrick.obrien47" <patrick.obrien47@virgin.net>
Message-ID: <xg7Qj.34259$B83.26627@newsfe3-gui.ntli.net>
Source record: 25730

HI
Has anyone bought this small TAK-tenna HF Aerial
? or know anyone that has?

Just wonder how they got on with it.?

Patrick GW1SXN

4559. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 21:50:26 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Ug7Qj.21443$%41.11587@nlpi064.nbdc.sbc.com>
Source record: 25731

Highland Ham wrote:
> So it makes no sense to connect an OCF Dipole directly to a twin feeder .

So exactly to what feedline does it make sense to
connect an OCF Dipole?
--
73, Cecil http://www.w5dxp.com

4560. Re: Use of type 31 ferrite as coax common mode choke

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 22:09:20 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <A-qdnU0wyZmRmIzVnZ2dnUVZ_u6dnZ2d@bright.net>
Source record: 25733

Dear Owen: Always good to receive your insight.

Were I to deal with Ebay, I would have a dedicated computer and ISP just for that purpose. I am much too much a belt and suspenders person to wish to avail myself of their "bargains." I leave that to those who are younger. You have reinforced my expectation that from VK land it simply might be a necessity to deal with Ebay and to measure materials received from any distant source.

As an extension, a new field proposed at our university is that of a specialized engineer who is able to make the importation of parts from all over the world work. This has become a real field. It is much worse than the three metric systems that existed at the beginning of WW2 (American, Canadian, and English) such that bolts might only engage a few threads before seizing.

Your skepticism about type 31 causes me to revisit my assumptions.

As always, 73 Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Owen Duffy" <none@no.where> wrote in message
news:Xns9A8A7F8AE9883nonenowhere@61.9.191.5...
> "J. Mc Laughlin" <jcm@power-net.net> wrote in
> news:GrydnfJw_vtmCJPVnZ2dnUVZ_hmtnZ2d@bright.net:
>
>> Dear Ian (also my father's name): Thank you for your note. It is a
>> mystery to me why those who sell via the Internet do not work hard at
>> keeping their sites up-to-date. 73, Mac N8TT
>
> Mac, If you have your heart set on #31 mix, this option isn't a good
> one... but if you can use #73 or #43, you will regularly see sleeves in
> various sizes and materials on Ebay. Many have Fair-rite numbers so you
> can check to see if they suit.
>
> Some advertisers state that the cores are Fair-rite cores, if they know
> that, they should know the part numbers though they don't always state
> them in the descriptions.
>
> I have bought ferrites from one of the suppliers, the goods seem to
> comply with the part number descriptions (dimensions, mu) and their
> service to Australia was quick and cheap.
>
> In this part of the world, product from Asia is available economically...

> but we have to characterise them and long term product availability is a
> bit of an issue.
>
> Owen
>

4561. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 22:16:10 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <gY-dnVVCzoH7m4zVnZ2dnUVZ8uSdnZ2d@pipex.net>
Source record: 25734

>> Highland Ham wrote:
>> So it makes no sense to connect an OCF Dipole directly to a twin feeder .

> Followed by Cecil Moore writing :
> So exactly to what feedline does it make sense to
> connect an OCF Dipole?
==========
To coax via a (voltage)balun (usually 4:1)
The balun being either a ferrite bar or a toroid , wound with 1 bi-filar
winding eg a 2 to 1 (auto)transformer resulting in 4:1 impedance
transformation.

Frank GM0CSZ / KN6WH

4562. Re: Antenna Stacking : HF / 2M / Dipole / Directional HDTV Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-24 23:04:39 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <NcOdnVGTvY1rnozVnZ2dnUVZ_rCtnZ2d@earthlink.com>
Source record: 25732

"Glenn Jensen" <ve6dkk@hotmail.com> wrote in message
news:1bWdncYU68WeY5LVnZ2dnUVZ_hCdnZ2d@sasktel...
> Am putting up a tower, 60', and was wondering if there is any issues with
> the following arrangement:
>
> On top and working down to the tower top section...
>
> 1) HF Beam Antenna, then
> 2) 2 Meter Beam Antenna, then
> 3) Dipole for 40, 80, 160 M, then
> 4) Directional HDTV antenna, all on the mast, all turned via rotor.
>
> Any problems with this arrangement?
>
> Glenn
>

Outside of wanting to point the ham antenna in one direction and the HDTV at another I doubt you will have any noticable problems. Maybe the ham rig getting into the TV set is all.

I have a 60 foot tower with a 432, 144,50 mhz and then a triband on a single mast. The mast is about 20 feet long and 6 feet is in the tower . The antennas are about 5 feet apart.

At the 45 foot level there is an off center fed antenna I use for 80 and 40 meters.

I don't seem to have any porblems with that setup. YOu just put up what you can with what you have to work with and see what hapens. Here is a web site with some pix of the tower.
http://home.earthlink.net/~ku4pt/images/Beams%20on%20tower/

4563. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 04:39:55 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <gvm214td6olgcuvab13ticeu9jdnujqkiu@4ax.com>
Source record: 25735

Barrett, Sorry for the delay,

I have been pretty busy, but I have time tonight to answer this
better.

A picture is worth 1000 words :)

Based on your pictures, I am guessing you live in the apartment at one
end of the g5rv and the other end is at a shed or carport.

At the apartment, I would mount the antenna coupler to the wall, up
high if possible, but if not, as high as possible, even if it is just
above the ground.
Then run a wire from the coupler to near the roof of the apartment
and across to the far end of where the G5RV is. Then run a ground
wire strait down to one of your ground rods. then take any excess
wire and bury it in your garden under the long wire in the air.

You should have fairly good communications on all bands. If for some
reason one of your bands does not properly tune, then start trimming
off the far end of the wire about 1-2 inches at the time. I don't
think you will have that problem, but it should work if you do.

Before you do, make sure all connections are good.

Again, sorry for the delay.

73 for now.
Buck
N4PGW

On Sun, 20 Apr 2008 19:49:37 +0100, "Barrett"
<barrett@blueyounder.co.uk> wrote:

>Buck, here are some photo's of the antenna at the moment. The new one will
>have to be in a similar position.
>http://www.hobby.pwp.blueyonder.co.uk/antenna/3.jpg
>http://www.hobby.pwp.blueyonder.co.uk/antenna/4.jpg
>
>Not sure what to cover the SGC with to keep the rain out. Plus it will be in
>direct sun all day on top of the pole. Garden is Roughly North to south..
>South being at the pole end of the garden.
>I can disconnect the homebrew G5RV and move the ugly coax balun I made up to
>the pole and add some new coax in-between. I know its a lot of connections
>but it will have to do for the time being.
>
>

>Hope this helps.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4564. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 06:38:03 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <67dcjoF2n1qkbU1@mid.individual.net>
Source record: 25736

ve2pid wrote:

> This is what I intended to do, using the 'eyelets' on the balun to
> hold each leg and to connect the ladder line to them. Purely a
> mechanical solution.
>
> But since there is a 0 ohms (DC) resistance between the two posts on
> the balun, I am concerned abour adverse effects.

Open the box, snip the wire.

Craig 'Lumpy' Lemke

www.n0eq.com

4565. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 10:33:22 UTC
From: ic761icic@gmail.com
Message-ID: <fa993d1b-0025-41ad-8b55-40b15868ac0e@v23g2000pro.googlegroups.com>
Source record: 25737

On Mar 20, 1:34 pm, WB8YKH <lguy...@gmail.com> wrote:
> There is much literature on the inverted "V" antenna but I've found
> nothing on a "V" Dipole Antenna. Can someone help me with resources
> or information on installation and effects of a "V" Dipole? In my
> current location I am unable to raise my center point much more than
> 15 feet off ground. However I can raise the endpoints 30+ feet.
> Before I go through much effort on the install I'd like to know what
> kind of performance I can expect. Thank you for your insights!
>
> 73
> WB8YKH

Don't sweat the low center. I just built one a few days ago and it
worked better than any Inv Vee I've built or used. The reason is the
ends are higher than lower as they would be on an inv vee, therefore
the part of the antenna where it exhibits the highest voltage is
highest above ground helping to eliominate ground losses and increase
efficiency.

You're actually fortunate to have such a nice way to mount the
antenna, in these postage-stamp-size city lots we're lucky to be able
to fit an inv vee, which works, but performs barely OK .

Me thinks you're going to truly love it's performance.

73

4566. Atomic SEO

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 11:53:11 UTC
From: n3hl7oyf <sbb61ab8@gmail.com>
Message-ID: <8d852149-358d-48d3-8459-4c2d1ada461b@8g2000hse.googlegroups.com>
Source record: 25738

Atomic SEO, I used them.

I was very happy with their expertise but really it comes down to results, I dumped my seo guy in new york after i got phone calls the very first day of service, yeah i as getting calls from myspace people the first day so that was pretty cool, so I definetely reccomend them. www.atomicseo.net

4567. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 12:44:16 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <xmkQj.85446$VC1.64173@newsfe10.ams2>
Source record: 25739

It looks like some of the SM 3-pin diodes D10, D9, etc have failed. I was only testing with a 100 watts although it was with a very high SWR at the time

Do I have to go to SGC for the diodes or is there a replacement that I can use instead?

73 Andy

"Andy" <dx90@blueyounder.co.uk> wrote in message news:g83Qj.140863$cj2.32984@newsfe13.ams2...
> Chris,
> I will have a look, but its unlikely to be corrosion due to it being
> stored in its box in my cupboard for the lat 4 years. But it might help
> others.
>
> This might help you though. Some one did tell me once to seal the SG-230
> with silica gel after putting some silica gel in side so soak up any
> moister. Its those little packets you get inside the box with new
> electrical items.
>
> Thanks
>
>
> "Christopher Cox" <chrisTOPHERcOX@coboxincORORATED.com> wrote in message
> news:48106868$0$20176$4c368faf@roadrunner.com...
>> Hi Andy,
>>
>> I had a similar problem with my SG-231. It turned out to be a corrosion
>> problem in the power/control connector. This made a electrical connection
>> to be made to the Reset/Hold/Tune leads. There was a little corrosion on
>> the back side of the circuit board as well. Look up into the male
>> connector and disassemble the female.
>>
>> I cleaned up the corrosion problems with a dental pick and fine wire
>> brush. I resealed the connectors with epoxy. The silicon sealant SGC used
>> seems to be effected by moisture as it had become milky looking till it
>> dried out.
>>
>> Hope this helps.
>>
>> Chris
>>
>>
>> Andy wrote:

>>> Hi all
>>>
>>> I purchased the SG-230 about 4 years ago. I took it out of its box
>>> yesterday for the first time and tested it out on a light bulb as a
>>> dummy load and all worked fine. It found a match on all HF bands.
>>> I connected it to an antenna today and it would not tune. It would not
>>> reset with the Smartlock. I took the back off the 230 and noticed when I
>>> apply the 13.8 Volts all the relays click once and they
>>> all stay in that position until I disconnect the power and if I apply
>>> RF, 10-80 watts when the 230 is powered up it does nothing, it doesn't
>>> even attempt to tune.. I have also tried 2 lengths of 10ft wire and it
>>> does nothing.
>>> There are five LED's inside that are all on (green).
>>>
>>> Does anyone know what is causing this problem?
>>>
>>> 73 Andy
>>>
>>>
>>
>
>

4568. Re: Balun question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 13:32:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <54lQj.452$To6.153@newssvr21.news.prodigy.net>
Source record: 25740

Highland Ham wrote:

I have corrected the attribution marks below.
Wonder what newsreader you are using?

>> Highland Ham wrote:
>>> So it makes no sense to connect an OCF Dipole directly to a twin
>>> feeder .
>
> Cecil Moore wrote:
>> So exactly to what feedline does it make sense to
>> connect an OCF Dipole?
> ==
> To coax via a (voltage)balun (usually 4:1)
> The balun being either a ferrite bar or a toroid , wound with 1 bi-filar
> winding eg a 2 to 1 (auto)transformer resulting in 4:1 impedance
> transformation.

A 4:1 voltage-balun balances the voltages so
with unequal impedances looking in each direction
at the feedpoint, the currents will be unbalanced
causing feedline radiation. That's why the Carolina
"Windom" (sic) has a choke some distance down from
the feedpoint.

So an OCF Dipole seems to have feedline radiation
with either twinlead or coax+voltage-balun. The ARRL
Antenna Book says a 4:1 current-choke-balun will solve
the feedline radiation problem but 4:1 current baluns
usually require two cores.
--
73, Cecil http://www.w5dxp.com

4569. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 13:48:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <TilQj.3305$26.348@newssvr23.news.prodigy.net>
Source record: 25741

Andy wrote:
> It looks like some of the SM 3-pin diodes D10, D9, etc have failed. I was
> only testing with a 100 watts although it was with a very high SWR at the
> time
>
> Do I have to go to SGC for the diodes or is there a replacement that I can
> use instead?

My SGC-230 manual says those are 1N4148 high speed
switching diodes which are one of the most popular
diodes of all time. They should be readily available
almost anywhere.
--
73, Cecil http://www.w5dxp.com

4570. Re: Antenna Stacking : HF / 2M / Dipole / Directional HDTV Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 13:51:18 UTC
From: Karl Beckman <karl.beckman@motorola.com>
Message-ID: <fusnkoge1@engnntp2.cig.mot.com>
Source record: 25758

Your proposal looks upside down to me. The HF beam is normally the largest weight and windload, and would normally go at the bottom of the mast, closest to the rotor. However, you've also listed a rotatable 40/80/160 dipole which must be a huge mechanical monster. If that's accurate, it definitely goes at the bottom of the mast, then the HF beam above, vertically separated by not less than 1/4 wavelength.

The mast needs to be at least 20 feet tall (if the beam starts on 20M), in order to mount the HF beam 16 feet above the rotatable dipole, and then have the 2M beam 20" above the HF beam.

If possible, keep the directional TV antenna far away from all of the above, using a separate support mast and rotor. It's doubtful that your XYL will always want to watch TV stations located in the same general direction that you are working DX. Also, a strong local 2M signal from your beam will probably cause noticeable interference to DTV signals in the VHF Hi TV band (channels 7-13).

Karl WA8NVW

"Glenn Jensen" <ve6dkk@hotmail.com> wrote in message
news:1bWdncYU68WeY5LVnZ2dnUVZ_hCdnZ2d@sasktel...
> Am putting up a tower, 60', and was wondering if there is any issues with
> the following arrangement:
>
> On top and working down to the tower top section...
>
> 1) HF Beam Antenna, then
> 2) 2 Meter Beam Antenna, then
> 3) Dipole for 40, 80, 160 M, then
> 4) Directional HDTV antenna, all on the mast, all turned via rotor.
>
> Any problems with this arrangement?
>
> Glenn
>

4571. HDTV antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 14:46:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <f9mQj.10798$2g1.7800@nlpi068.nbdc.sbc.com>
Source record: 25742

Are there any omnidirectional HDTV antennas?
My LPDA is too directional.

Also, is TVI from ham transmitters reduced with
HDTV?
--
73, Cecil http://www.w5dxp.com

4572. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 17:17:27 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <FmoQj.10$ww6.6@newsfe09.ams2>
Source record: 25743

Cecil,

I had a look at the 1N4148, they are 2-pin.

The diodes in mine are Surface mount 3-pin.

Are the 1N4148 diodes for the old version board, before year 2000?

My board is the newer version, after year 2000

73 Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:TilQj.3305$26.348@newssvr23.news.prodigy.net...
> Andy wrote:
>> It looks like some of the SM 3-pin diodes D10, D9, etc have failed. I was
>> only testing with a 100 watts although it was with a very high SWR at the
>> time
>>
>> Do I have to go to SGC for the diodes or is there a replacement that I
>> can use instead?
>
> My SGC-230 manual says those are 1N4148 high speed
> switching diodes which are one of the most popular
> diodes of all time. They should be readily available
> almost anywhere.
> --
> 73, Cecil http://www.w5dxp.com

4573. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 17:44:06 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <GLoQj.477$To6.442@newssvr21.news.prodigy.net>
Source record: 25744

Andy wrote:
> Cecil,
>
> I had a look at the 1N4148, they are 2-pin.
>
> The diodes in mine are Surface mount 3-pin.
>
> Are the 1N4148 diodes for the old version board, before year 2000?

Yes, my manual is copyright 1994.

> My board is the newer version, after year 2000

What does your schematic say about those diodes?
--
73, Cecil http://www.w5dxp.com

4574. Re: HDTV antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 17:48:17 UTC
From: dplatt@radagast.org
Message-ID: <14i9e5-7ts.ln1@radagast.org>
Source record: 25746

In article <f9mQj.10798$2g1.7800@nlpi068.nbdc.sbc.com>,
Cecil Moore <nospam@w5dxp.com> wrote:

>Are there any omnidirectional HDTV antennas?
>My LPDA is too directional.

Well, considering that there really is no such thing as an HDTV antenna per se, yes. HDTV in the U.S. (ATSC) uses a subset of the same frequencies used by ATSC television, and so all the same considerations apply.

The commonest commercial solution to your need seems to take the form of a saucer-shaped radome, containing an amplified near-omnidirectional UHF/VHF antenna. One source is

http://www.starkelectronic.com/allant.htm

Internally, I believe that these consist of a standard or folded dipole, with the elements "swept" into an S shape. They're probably not terribly good antennas, as far as matching or sensitivity or pattern is concerned, which is likely why an onboard amplifier is included.

If you wanted to tune up only one (or a few closely-spaced) HDTV stations with an omni, you could probably build yourself a turnstile antenna... a crossed pair of bow-tie elements, and a 90-degree phasing harness cut for the middle of the band would probably work. I doubt that'll work as a general-purpose solution for the full band, though.

The specific sort of antenna design you might need to work well in your area, will depend a lot on which frequencies are going to be in use for DTV in your area after The Big Day Next Year. In many areas of the country, all TV signals will be in the UHF band - this simplifies matters for residents of those areas, as only a UHF antenna will be needed.

In more crowded areas of the country (and in some locations where the broadcasters don't want to re-fit their main transmitters) DTV will include stations operating in the VHF high band (channels 7-13) and you'll need an antenna which works on these frequencies as well.

In a very few areas, there will still be stations operating DTV in the VHF low band (channels 2-6), and residents of those areas will still need full-coverage antennas.

>Also, is TVI from ham transmitters reduced with
>HDTV?

It depends.

The worst ham TVI problems seem to have affected Channel 2, due to its proximity to the 6-meter band and its second-harmonic relationship to the 10-meter band. There will be *very* few TV stations using this frequency after The Day, and this may reduce TVI complaints for hams operating on 2 and 6 meters.

Strong-signal overload/desense problems of TVs (or antenna/CATV distribution amplifiers) will probably still exist, especially for TV stations operating in the VHF low and high bands. I imagine that high-power ham transmissions in the 70 cm band may cause overload problems for UHF TV stations in some cases.

The actual behavior of the TV sets, in the face of ham TVI, will definitely be different. No more herringbones in the video, no more desense-related snow. Instead, the picture and audio will be unaffected, until the TVI is severe enough that the DTV tuner and demodulator can no longer get enough of a signal to allow the digital error-correction process to work - at that point, the image will start freezing, breaking up into rectangular "macroblock" artifacts, or disappearing entirely. TVI is likely to present as much more of an "all-or-nothing" thing that it did in the past.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

4575. Re: TAK-TENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 18:07:09 UTC
From: Frank <ve6cb@spamfree.telus.net>
Message-ID: <h5pQj.2328$XI1.150@edtnps91>
Source record: 25745

"patrick.obrien47" <patrick.obrien47@virgin.net> wrote in message
news:xg7Qj.34259$B83.26627@newsfe3-gui.ntli.net...
> HI
> Has anyone bought this small TAK-tenna HF Aerial
> ? or know anyone that has?
>
> Just wonder how they got on with it.?
>
> Patrick GW1SXN

Just for curiosity I once ran a NEC simulation of the "TAK-tenna" on 7 MHz
at 30 ft
above an average ground. The input impedance at resonance is 3.4 ohms, and
radiation efficiency just under 9%. Using 50 ft of RG-213 the input
impedance
is 5.4 + j 12.4 ohms, and line loss 1.72 dB. Maximum gain, at a 30 degree
take-off
angle, shows -7.7 dbi. Nulls off each end are -14 dbi.

With the above results an input power of 100 W radiates 6 W. I believe they
claim
a low input VSWR. Have no idea how they achieve it without a matching
network.

73,

Frank
(VE6CB)

4576. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 18:09:29 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <q7pQj.13$ww6.0@newsfe09.ams2>
Source record: 25747

This is the problem that I have got with my SG-230.
I purchased it new myself. My PCB board is an Q50102000-E. it is what they call the newer version, after the year 2000.

My manual is a Revised: November 2000. The Document number for the schematic, Q30102000E Rev: A Dated February 17, 1992. It looks to me to be the wrong schematic for my PCB board. Maybe some one might know if it is or not or have the correct one that they can send me?

All it says about the diodes is that they are either D5, D7, D9 etc. It doesn't say what they are.

73 Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:GLoQj.477$To6.442@newssvr21.news.prodigy.net...
> Andy wrote:
>> Cecil,
>>
>> I had a look at the 1N4148, they are 2-pin.
>>
>> The diodes in mine are Surface mount 3-pin.
>>
>> Are the 1N4148 diodes for the old version board, before year 2000?
>
> Yes, my manual is copyright 1994.
>
>> My board is the newer version, after year 2000
>
> What does your schematic say about those diodes?
> --
> 73, Cecil http://www.w5dxp.com
>

4577. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 18:30:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xrpQj.530$506.196@newssvr27.news.prodigy.net>
Source record: 25748

Andy wrote:
> My manual is a Revised: November 2000. The Document number for the
> schematic, Q30102000E Rev: A Dated February 17, 1992. It looks to me to be
> the wrong schematic for my PCB board. Maybe some one might know if it is or
> not or have the correct one that they can send me?

This one is copyrighted Nov. 2000

www.sgcworld.com/Publications/Manuals/230man.pdf

> All it says about the diodes is that they are either D5, D7, D9 etc. It
> doesn't say what they are.

Yes, it doesn't say but if it were me, I would replace the
blown diodes with 1N4148's (assuming discrete diodes will
fit in the SMD pad space).
--
73, Cecil http://www.w5dxp.com

4578. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 18:55:39 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <HOpQj.124020$Lq5.45901@newsfe18.ams2>
Source record: 25749

Yes, that is exactly the same manual as mine.
How would I connect the 1N4148 2-pin to the 3 pads that are under the SM
3-pin diodes, will this even work?

If it is possible I would have to mount them vertical.

73 Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:xrpQj.530$506.196@newssvr27.news.prodigy.net...
> Andy wrote:
>> My manual is a Revised: November 2000. The Document number for the
>> schematic, Q30102000E Rev: A Dated February 17, 1992. It looks to me to
>> be the wrong schematic for my PCB board. Maybe some one might know if it
>> is or not or have the correct one that they can send me?
>
> This one is copyrighted Nov. 2000
>
> www.sgcworld.com/Publications/Manuals/230man.pdf
>
>> All it says about the diodes is that they are either D5, D7, D9 etc. It
>> doesn't say what they are.
>
> Yes, it doesn't say but if it were me, I would replace the
> blown diodes with 1N4148's (assuming discrete diodes will
> fit in the SMD pad space).
> --
> 73, Cecil http://www.w5dxp.com

4579. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 21:00:12 UTC
From: dplatt@radagast.org
Message-ID: <sbt9e5-s6i.ln1@radagast.org>
Source record: 25750

>> All it says about the diodes is that they are either D5, D7, D9 etc. It
>> doesn't say what they are.
>
>Yes, it doesn't say but if it were me, I would replace the
>blown diodes with 1N4148's (assuming discrete diodes will
>fit in the SMD pad space).

I wonder whether these diodes might not be MMBD4148 or some such?
These are 1N4148-type fast switching diodes in an 3-pin SOT323
surface-mount package.

Mouser and Digi-Key carry several variants of these. The MCC versions
are $.10-$.15 each in onesies and are good to 75V, 150 mA. The Diodes
INc. versions are around half a buck each in onesies, and are good to
75V, 200 mW. I'm not sure whether you'd want apples, or oranges :-)

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4580. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 22:09:11 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <7EsQj.124476$qj3.113217@newsfe20.ams2>
Source record: 25751

In my SG-230, it says 5DL on the top of diode. Don't know if that is an ID:
code of sorts.

73 Andy

"Dave Platt" <dplatt@radagast.org> wrote in message
news:sbt9e5-s6i.ln1@radagast.org...
>>> All it says about the diodes is that they are either D5, D7, D9 etc. It
>>> doesn't say what they are.
>>
>>Yes, it doesn't say but if it were me, I would replace the
>>blown diodes with 1N4148's (assuming discrete diodes will
>>fit in the SMD pad space).
>
> I wonder whether these diodes might not be MMBD4148 or some such?
> These are 1N4148-type fast switching diodes in an 3-pin SOT323
> surface-mount package.
>
> Mouser and Digi-Key carry several variants of these. The MCC versions
> are $.10-$.15 each in onesies and are good to 75V, 150 mA. The Diodes
> INc. versions are around half a buck each in onesies, and are good to
> 75V, 200 mW. I'm not sure whether you'd want apples, or oranges :-)
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

4581. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 22:20:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NOsQj.2278$LQ4.1280@newssvr11.news.prodigy.net>
Source record: 25752

Andy wrote:
> Yes, that is exactly the same manual as mine.
> How would I connect the 1N4148 2-pin to the 3 pads that are under the SM
> 3-pin diodes, will this even work?

I'm pretty sure it would work if you get the pads right.
One is probably grounded. One is probably the cathode.
One is probably the anode. You should be able to figure
out which is which using a digital ohm-meter.
--
73, Cecil http://www.w5dxp.com

4582. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 22:32:21 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <RZsQj.24362$Rr7.18839@newsfe29.ams2>
Source record: 25753

I found this just a few minutes ago, on a web site.
The diodes are in a small 3-leaded SM package. Looking down at the
package with it oriented so that the single lead is on top, the
cathode is the top tab and the anode is the left tab on the bottom.

It looks like the bottom right out of the two is not used.
Wonder if anyone can confirm the above?

73 Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:NOsQj.2278$LQ4.1280@newssvr11.news.prodigy.net...
> Andy wrote:
>> Yes, that is exactly the same manual as mine.
>> How would I connect the 1N4148 2-pin to the 3 pads that are under the SM
>> 3-pin diodes, will this even work?
>
> I'm pretty sure it would work if you get the pads right.
> One is probably grounded. One is probably the cathode.
> One is probably the anode. You should be able to figure
> out which is which using a digital ohm-meter.
> --
> 73, Cecil http://www.w5dxp.com

4583. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 23:18:08 UTC
From: ml <m@di.net>
Message-ID: <m-B9BCAF.19180825042008@news.optonline.net>
Source record: 25754

In article <BVgPj.43598$_h7.3602@newsfe05.ams2>,
"Andy" <dx90@blueyounder.co.uk> wrote:

> Hi Tad,
>
> Joined that one. But I have not had much success yet.
>
> 73 Andy
>
>
> "Tad Danley" <tdanley@nospamatverizon.net> wrote in message
> news:cxaPj.11048$Zk5.1882@trnddc05...
> > Ed_G wrote:
> >
> >
> >>
> >> I recommend you email your question to SGC. My recent experience
> >> with them shows they are fairly good at replies to questions, although
> >> you may have to wait a day or two for an answer.
> >> http://www.sgcworld.com
> >>
> >>
> >> Ed K7AAT
> >
> >
> > I agree. There is also a yahoo Group for Smartuners. It is not sponsored
> > by SGC but I have found it to be a good source of information.
> >
> > Good luck and 73,
> >
> > Tad, K3TD

did you try asking SGC to sell you just the part?

or at least confirm for you the part i bet any tech there would do that
much u cuould then buy them cheep anyplace

seems easiest route ? ii dunno

4584. Re: HDTV antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 23:23:29 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <0fSdnRpWlNZs-o_VnZ2dnUVZ_vmlnZ2d@comcast.com>
Source record: 25755

"Dave Platt" <dplatt@radagast.org> wrote in message
news:14i9e5-7ts.ln1@radagast.org...
> In article <f9mQj.10798$2g1.7800@nlpi068.nbdc.sbc.com>,
> Cecil Moore <nospam@w5dxp.com> wrote:
> .....
> The worst ham TVI problems seem to have affected Channel 2, due to its
> proximity to the 6-meter band and its second-harmonic relationship to
> the 10-meter band. There will be *very* few TV stations using this
> frequency after The Day, and this may reduce TVI complaints for hams
> operating on 2 and 6 meters.
>
By my count there will only be 7 stations in the whole country on CH2 after
the switcover: Flagstaff, Grand Junction, Bangor, Nort Platte NE, Las Vegas,
Rapid City SD, and Jackson WY.

Tam/WB2TT
> -- .....
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

4585. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 23:29:24 UTC
From: dplatt@radagast.org
Message-ID: <k36ae5-1na.ln1@radagast.org>
Source record: 25756

>In my SG-230, it says 5DL on the top of diode. Don't know if that is an ID:
>code of sorts.

Yes, that's an ID code.

According to one set of notes I've found, Fairchild use 5D as the code
for an MMBD914, which is a fast switching diode similar to the 4148,
in a 3-lead SOT-23 case. The MMBD4148 would have a 5H code. The two
parts look *very* similar on the data sheets, and from what I've seen
in practice they're interchangeable in most applications.

If this is what you've got, then the pinout is as follows: if you
look down from the top of the diode, with the two-leaded side on the
left and the one-leaded side on the right: pin 1 at the top left is
the diode's anode, pin 3 at the right center is the diode's cathode,
and pin 2 at the lower left is not connected to the diode.

The pinouts are the same for the MMBD914 and MMBD4148.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4586. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-25 23:33:57 UTC
From: dplatt@radagast.org
Message-ID: <5c6ae5-1na.ln1@radagast.org>
Source record: 25757

In article <RZsQj.24362$Rr7.18839@newsfe29.ams2>,
Andy <dx90@blueyounder.co.uk> wrote:

>I found this just a few minutes ago, on a web site.
>The diodes are in a small 3-leaded SM package. Looking down at the
>package with it oriented so that the single lead is on top, the
>cathode is the top tab and the anode is the left tab on the bottom.
>
>It looks like the bottom right out of the two is not used.
>Wonder if anyone can confirm the above?

That's consistent with what I see in the data sheets for the
surface-mount (SOT-23) switching diodes of type 914 and 4148.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4587. Re: TAK-TENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-26 14:41:30 UTC
From: Frank <ve6cb@spamfree.telus.net>
Message-ID: <uaHQj.2477$XI1.2335@edtnps91>
Source record: 25759

> Just for curiosity I once ran a NEC simulation of the "TAK-tenna" on 7 MHz
> at 30 ft
> above an average ground. The input impedance at resonance is 3.4 ohms,
> and
> radiation efficiency just under 9%. Using 50 ft of RG-213 the input
> impedance
> is 5.4 + j 12.4 ohms, and line loss 1.72 dB. Maximum gain, at a 30 degree
> take-off
> angle, shows -7.7 dbi. Nulls off each end are -14 dbi.
>
> With the above results an input power of 100 W radiates 6 W. I believe
> they claim
> a low input VSWR. Have no idea how they achieve it without a matching
> network.

Running more models, and accounting for the coaxial shield, indicates a
dramatic
improvement in radiation efficiency. Resonances are noted to have a much
better match under these conditions, and are highly dependant on coaxial
cable length and position. The NEC code below shows one version
with an indicated efficiency of 76% and a gain in the region of -1 dbi.

With a modified version of the code, including 29 ft of
vertical transmission line, the input impedance was observed to be
near 25 ohms, and resonant at 7.6 MHz. Probably playing around
with various combinations of antenna taps, transmission line length,
and position would achieve something better. Typically the program
takes 2 minutes to run, so optimizing is very tedious.

It appears that many of these ultra compact antenna designs
rely on radiation from the transmission line.

73,

Frank

```
CM Tek-Tenna
CE
GH 1 203 6.75 0 5 15 0.03205 0.03205 1
GM 0 0 90 90 0 0 0 0
GM 1 1 0 0 0 0 30 0
GM 100 0 0 0 0 0 0 360
GW 3 30 -6.0428 0 360.704 -6.0428 30 360.704 0.03205
GW 4 1 -300 14 1 -300 15 1 0.03205
GW 5 424 -6.0428 15 360.704 -300 14 1 0.03205
GS 0 0 0.025400
```

```
GE 1 -1 0
GN 2 0 0 0 13.0000 0.0050
FR 0 21 0 0 14 0.1
EX 0 4 1 0 1 0
TL 3 15 4 1 50.00 16.317575 ! RG-58C #20 Flex
LD 5 0 0 0 5.8001E7
RP 0 1 361 1000 60 0 1.00000 1.00000
EN
```

4588. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-26 15:47:35 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <m8IQj.60225$_h7.3456@newsfe05.ams2>
Source record: 25760

I have checked diodes D4, D5, D6, D8, D9 and D10 and all of them check out OK.

All 5 LED's are lit and stay lit when I key and de-key the transceiver. There is no clicking of the relays.

In the SGC Smartuner troubleshooting that can be found here http://www.sgcworld.com/Publications/Downloads/troubleshoot.pdf it says,

For newer SG-230's and other SGC antenna couplers:

1. If LEDs do not light, RF sense diodes and bypass capacitors are suspect. Also

check Q1 (ZN2222) and CPU chip (68HC711).

2. If LEDs do light and coupler does not initiate tuning, check the CPU chip. On rare

occasions, the mixer A1 may fail. Verify if you have clock signal on the output of U3

(74HC393) chip. Verify DC voltage at U11, Pin 1 during transmit. Check R1 and if

no voltage is present, check all 4 sensing signal inputs to the CPU chip - FWD, REV,

PHASE, IMPEDANCE. If you have an input signal, you should see the appropriate

LED light. Also verify RF PWR signal is present.

How do I check the mixer A1 to find out if it's working?

What equipment would I need to check for a clock signal on the output of the 74HC393 chip?

What or where is U11 and how can I determine what one is pin 1?

R1 has voltage.

73 Andy

"Dave Platt" <dplatt@radagast.org> wrote in message news:k36ae5-1na.ln1@radagast.org...
> >In my SG-230, it says 5DL on the top of diode. Don't know if that is an
> >ID:
>>code of sorts.

>
> Yes, that's an ID code.
>
> According to one set of notes I've found, Fairchild use 5D as the code
> for an MMBD914, which is a fast switching diode similar to the 4148,
> in a 3-lead SOT-23 case. The MMBD4148 would have a 5H code. The two
> parts look *very* similar on the data sheets, and from what I've seen
> in practice they're interchangeable in most applications.
>
> If this is what you've got, then the pinout is as follows: if you
> look down from the top of the diode, with the two-leaded side on the
> left and the one-leaded side on the right: pin 1 at the top left is
> the diode's anode, pin 3 at the right center is the diode's cathode,
> and pin 2 at the lower left is not connected to the diode.
>
> The pinouts are the same for the MMBD914 and MMBD4148.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

4589. Horizontal Vee Beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-26 19:19:00 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <100714lbbeseuor32b9g5ialnh0n1mcs86@4ax.com>
Source record: 25761

Horizontal Vee Beams

I have been searching for information on the horizontal vee beam antennas.

I am looking for information on the real ones that are more than 1/2 wave, not a hamstick dipole bent forward and claiming to have 3-6 db gain over a dipole.

Thank you
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4590. Re: Horizontal Vee Beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-26 22:29:42 UTC
From: dplatt@radagast.org
Message-ID: <mvmce5-6rh.ln1@radagast.org>
Source record: 25762

>Horizontal Vee Beams
>
>I have been searching for information on the horizontal vee beam
>antennas.
>
>I am looking for information on the real ones that are more than 1/2
>wave, not a hamstick dipole bent forward and claiming to have 3-6 db
>gain over a dipole.

See Ed Laport's "Radio Antenna Engineering", section 3.22, page 311
and following, for a basic writeup. Following sections discuss
rhombics, fishbones, and inverted-V travelling wave antennas.

A scan of this book is available as a free download:

http://snulbug.mtview.ca.us/books/RadioAntennaEngineering/

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4591. Re: SG-230 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-27 03:22:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ikSQj.2945$LQ4.633@newssvr11.news.prodigy.net>
Source record: 25763

Andy wrote:
> What equipment would I need to check for a clock signal on the output of the
> 74HC393 chip?

Unfortunately, you need an oscilloscope for troubleshooting
at that level.

> What or where is U11 and how can I determine what one is pin 1?

Good question. I don't see U11 on the schematic.
--
73, Cecil http://www.w5dxp.com

4592. Re: Horizontal Vee Beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-27 10:47:13 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <DZOdnYFjJ9nMxInVnZ2dnUVZ8hidnZ2d@pipex.net>
Source record: 25764

Dave Platt wrote:
> See Ed Laport's "Radio Antenna Engineering", section 3.22, page 311
> and following, for a basic writeup. Following sections discuss
> rhombics, fishbones, and inverted-V travelling wave antennas.
>
> A scan of this book is available as a free download:
>
> http://snulbug.mtview.ca.us/books/RadioAntennaEngineering/
==========
Dave, Congrats ; a real feat to preserve this book ,bringing it in the
public domain .

Frank GM0CSZ / KN6WH

4593. Re: Horizontal Vee Beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-27 13:06:23 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <D9KdnXJSY9z56onVnZ2dnUVZ_gadnZ2d@comcast.com>
Source record: 25765

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:DZOdnYFjJ9nMxInVnZ2dnUVZ8hidnZ2d@pipex.net...
> Dave Platt wrote:
>> See Ed Laport's "Radio Antenna Engineering", section 3.22, page 311
>> and following, for a basic writeup. Following sections discuss
>> rhombics, fishbones, and inverted-V travelling wave antennas.
>>
>> A scan of this book is available as a free download:
>>
>> http://snulbug.mtview.ca.us/books/RadioAntennaEngineering/
> ============================
> Dave, Congrats ; a real feat to preserve this book ,bringing it in the
> public domain .
>
> Frank GM0CSZ / KN6WH
>
That's a heck of a good job he did on the book - WTG.

4594. Re: TAK-TENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-27 13:44:02 UTC
From: Ken Halliwell <Halliwell.KJ@gmail.com>
Message-ID: <0118263f-dee4-4899-96f8-4afab011fa3d@i76g2000hsf.googlegroups.com>
Source record: 25766

On Apr 26, 10:41 am, "Frank" <ve...@spamfree.telus.net> wrote:
>
> It appears that many of these ultra compact antenna designs
> rely on radiation from the transmission line.
>

Thus, the reason folks who attempt to use a balun, feedline choke or balanced line appear to have performance problems with the Tak-tenna -- according to eham.com reviews of the antenna.

Ken - WA8FCI

4595. Antenna analyzer schematic

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-27 18:11:20 UTC
From: Ian Wade <g3nrw@yahoo.co.uk>
Message-ID: <ggOXKHIhFMFIFwUM@ntlworld.com>
Source record: 25767
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

Many years ago (~30) I built a simple antenna analyzer consisting of a passive network of resistors, capacitors and diodes. This was placed in-line between the TX and the antenna.

The network had 5 DC voltage monitoring points, selected by a 5-way switch.

Having measured the 5 voltages, you then had to plot on graph paper a set of circles and lines that were proportional to the voltages -- as I recall, 3 circles and 2 lines. The point of intersection of the 3 circles was a measure of the R +/- jX components of the antenna impedance.

I would like to re-create the analyzer, but I can't find the schematic anywhere. I think I first saw it in a UK ham radio magazine, probably some time in the 1970s.

Does anyone here remember it and/or can tell me where I can find it?

--
73
Ian, G3NRW

4596. Re: Antenna analyzer schematic

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-27 19:18:12 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <Uj4Rj.85287$TT4.27192@attbi_s22>
Source record: 25768
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

> I would like to re-create the analyzer, but I can't find the schematic
> anywhere. I think I first saw it in a UK ham radio magazine, probably some
> time in the 1970s.
>
> Does anyone here remember it and/or can tell me where I can find it?
>
> --
> 73
> Ian, G3NRW

It may have been published in more than one periodical, but what you're describing was done by Peter Dodd, G3LDO and Tom lloyd, G3TML and was presented in our QEX magazine for November 1987 back when QEX was still a functional experimenters exchange instead of just an added source of revenue for the League, publishing garbage when that's all they happen to have on hand.

Contact me off group for help.

W4ZCB

4597. Re: Antenna analyzer schematic

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-27 19:55:09 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <xS4Rj.85330$TT4.44123@attbi_s22>
Source record: 25769
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

>> I would like to re-create the analyzer, but I can't find the schematic
>> anywhere. I think I first saw it in a UK ham radio magazine, probably
>> some time in the 1970s.
>>
>> Does anyone here remember it and/or can tell me where I can find it?
>>
>> --
>> 73
>> Ian, G3NRW
>
> It may have been published in more than one periodical, but what you're
> describing was done by Peter Dodd, G3LDO and Tom lloyd, G3TML and was
> presented in our QEX magazine for November 1987 back when QEX was still a
> functional experimenters exchange instead of just an added source of
> revenue for the League, publishing garbage when that's all they happen to
> have on hand.
>
> Contact me off group for help.
>
> W4ZCB
I failed to mention that the original work was done by Doyle Strandlund, W8CGD and published in QST for June 1965. That may be where you originally read of it since it's closer to the date you recall. Peter and Tom simply took the original work and added software Basic programs to solve the equations mathematically on a Personal Computer. (Two pieces of software are provided. TomSmall and TomBig. TomSmall will run on a programable pocket calculator.).

W4ZCB

4598. Re: Antenna analyzer schematic

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-27 20:00:16 UTC
From: Ian Wade <g3nrw@yahoo.co.uk>
Message-ID: <bB7JSeJ3oNFIFwgq@ntlworld.com>
Source record: 25770
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

From: Harold E. Johnson <W4ZCB@mchsi.com>
Date: Sun, 27 Apr 2008 Time: 19:18:12
>
>It may have been published in more than one periodical, but what you're
>describing was done by Peter Dodd, G3LDO and Tom lloyd, G3TML and was
>presented in our QEX magazine for November 1987 back when QEX was still a
>functional experimenters exchange instead of just an added source of revenue
>for the League, publishing garbage when that's all they happen to have on
>hand.
>
>Contact me off group for help.
>
>W4ZCB

Peter Dodd was the name I was trying to remember. Googling for him gave
me http://web.ukonline.co.uk/g3ldo/aegextra.htm and
http://web.ukonline.co.uk/g3ldo/zsmall.htm. Exactly what I was looking
for.

Isn't the Internet wonderful! Many thanks Harold.

--
73
Ian, G3NRW

4599. RE:Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 00:17:24 UTC
From: HRBE <hrbe@bigpond.net.au>
Message-ID: <oI8Rj.5583$ko5.488@news-server.bigpond.net.au>
Source record: 25771

Hello all,
I have a real doosey.

I built an Octopus, along the lines of the one which was featured in the Dec 2007 issue of QST. This article was written by Geoff Haines N1GY.

The Octopus is a 4 band rotatable dipole, using either Hamsticks or Workman mobile whips

I fitted the following Workman whips: 75m, 40m, 20m & 15m.

I can tune all but the 20m whips, there is naturally an interaction between each of the whips, but 20m simply cannot be tuned. its resonance is around 13.6mhz, and no matter what I do with the whip length it cannot be bought into resonance.

I stress that 75m, 40, and 15m are great.

I have tried the 20m whips on their own as a single antenna and they tune well, but as soon as I offer the second whip to complete the dipole, the resonance drops to 13.6mhz.

When I refit all the other elements, it makes not much difference to the 20m whips as far as their resonance is concerned, it does shift a bit which is understandable.

I have tried rearranging the whips out of sequence around the hub, but that made no difference.

Am I missing something, or are the Workman whips poorly designed?

Is there a preferred way of arranging the whips so that I do minimise interaction between the elements?

Why are the 20m whips the only ones giving me trouble?

I am using an MFJ269 Pro to tune each band.

Thanks,
John
VK2KCE

4600. Re: Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 00:41:56 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <G39Rj.23213$%41.3634@nlpi064.nbdc.sbc.com>
Source record: 25772

HRBE wrote:
> Why are the 20m whips the only ones giving me trouble?

Probably what is happening is that you are getting a
self-resonance on 14.2 MHz from the 75m or 40m hamsticks.
That doesn't happen with 1/2WL fan dipoles but it certainly
can happen with hamsticks. For instance, if the self-resonant
feedpoint impedance of the 75m hamstick dipole is lower on
20m than the 20m hamstick dipole, you will not be able to
adjust the 20m hamstick dipole for a 1:1 SWR.

Using only the 75m hamstick dipole, find the 20m impedance.
Then do the same for only the the 40m dipole. You can
probably diagnose the problem but I don't know of a
solution.
--
73, Cecil http://www.w5dxp.com

4601. Re: SGC-230 wire endfed or traped endfed

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 07:52:49 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <bnfRj.62776$Ka7.10175@newsfe30.ams2>
Source record: 25773

Buck, don't worry about the delay. I'm a family man myself and there doesn't seem to be much time for anything else, but the family and home.

I've run the wire like you suggested and it tunes up fine. Not had time to properly test yet, hopefully this weekend.
I will let you know how I get on. Thanks for your help.

73 Andy

"Buck" <usenet01@lumpuckeroo.com> wrote in message news:gvm214td6olgcuvab13ticeu9jdnujqkiu@4ax.com...
> Barrett, Sorry for the delay,
>
> I have been pretty busy, but I have time tonight to answer this
> better.
>
> A picture is worth 1000 words :)
>
> Based on your pictures, I am guessing you live in the apartment at one
> end of the g5rv and the other end is at a shed or carport.
>
>
> At the apartment, I would mount the antenna coupler to the wall, up
> high if possible, but if not, as high as possible, even if it is just
> above the ground.
> Then run a wire from the coupler to near the roof of the apartment
> and across to the far end of where the G5RV is. Then run a ground
> wire strait down to one of your ground rods. then take any excess
> wire and bury it in your garden under the long wire in the air.
>
> You should have fairly good communications on all bands. If for some
> reason one of your bands does not properly tune, then start trimming
> off the far end of the wire about 1-2 inches at the time. I don't
> think you will have that problem, but it should work if you do.
>
> Before you do, make sure all connections are good.
>
> Again, sorry for the delay.
>
> 73 for now.
> Buck
> N4PGW
>
>
>

> On Sun, 20 Apr 2008 19:49:37 +0100, "Barrett"
> <barrett@blueyounder.co.uk> wrote:
>
>>Buck, here are some photo's of the antenna at the moment. The new one will
>>have to be in a similar position.
>>http://www.hobby.pwp.blueyonder.co.uk/antenna/3.jpg
>>http://www.hobby.pwp.blueyonder.co.uk/antenna/4.jpg
>>
>>Not sure what to cover the SGC with to keep the rain out. Plus it will be
>>in
>>direct sun all day on top of the pole. Garden is Roughly North to south..
>>South being at the pole end of the garden.
>>I can disconnect the homebrew G5RV and move the ugly coax balun I made up
>>to
>>the pole and add some new coax in-between. I know its a lot of connections
>>but it will have to do for the time being.
>>
>>
>>Hope this helps.
>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."
>

4602. Re: Antenna analyzer schematic

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 11:25:58 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <_JudnaMSKqxxLojVnZ2dneKdnZydnZ2d@pipex.net>
Source record: 25774
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

Ian Wade wrote:
> Many years ago (~30) I built a simple antenna analyzer consisting of a
> passive network of resistors, capacitors and diodes. This was placed
> in-line between the TX and the antenna.
>
> The network had 5 DC voltage monitoring points, selected by a 5-way switch.
>
> Having measured the 5 voltages, you then had to plot on graph paper a
> set of circles and lines that were proportional to the voltages -- as I
> recall, 3 circles and 2 lines. The point of intersection of the 3
> circles was a measure of the R +/- jX components of the antenna impedance.
>
> I would like to re-create the analyzer, but I can't find the schematic
> anywhere. I think I first saw it in a UK ham radio magazine, probably
> some time in the 1970s.
>
> Does anyone here remember it and/or can tell me where I can find it?
==========
Ian , I found the circuit you are after in Peter Dodd's book :
The Antenna Experimenter's Guide ISBN 0 9516024 0 3

The book was published in 1991 by DD Publications
address: 37 The Ridings - East Preston -West Sussex BN16 2TW

British Library Cataloguing in publication Data 621.3824

The description of the analyser can be found on pages 3.9 to 3.22

Frank GM0CSZ / KN6WH

4603. Re: eBay: WILTRON S331A Cable/Antenna Analyzer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 12:40:08 UTC
From: Ted <nobody@pseudo.borked.net>
Message-ID: <1d99bc17d511506a3186bfe0467420c3@pseudo.borked.net>
Source record: 25775
Cross-posted to: alt.ham-radio.marketplace,rec.radio.amateur.antenna,misc.industry.electronics.marketplace

In article <b0732811c56fad06b07cbd66b11a1d13@pseudo.borked.net>
Ted <nob...@pseudo.borked.net> wrote:
>
> http://www.starturl.com/WiltronAnalyzer

Winning bid $1,884

4604. Re: Antenna analyzer schematic

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 13:49:48 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <4815d5f7$0$3373$4c368faf@roadrunner.com>
Source record: 25776
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

"Ian Wade" <g3nrw@yahoo.co.uk> wrote in message
news:bB7JSeJ3oNFIFwgq@ntlworld.com...
> From: Harold E. Johnson <W4ZCB@mchsi.com>
> Date: Sun, 27 Apr 2008 Time: 19:18:12
>>
>>It may have been published in more than one periodical, but what you're
>>describing was done by Peter Dodd, G3LDO and Tom lloyd, G3TML and was
>>presented in our QEX magazine for November 1987 back when QEX was still a
>>functional experimenters exchange instead of just an added source of
>>revenue
>>for the League, publishing garbage when that's all they happen to have on
>>hand.
>>
>>Contact me off group for help.
>>
>>W4ZCB
>
> Peter Dodd was the name I was trying to remember. Googling for him gave me
> http://web.ukonline.co.uk/g3ldo/aegextra.htm and
> http://web.ukonline.co.uk/g3ldo/zsmall.htm. Exactly what I was looking
> for.
>
> Isn't the Internet wonderful! Many thanks Harold.
>
> --
> 73
> Ian, G3NRW
>
This looks like a really neat device, one of those simple little gadgets
from which you get a huge amount of use.
Hopefully before I got back to work Wednesday I will have one built. Its my
plan to leave out the switch and just bring everything out to test points.

Jimmie

4605. Re: RE:Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 16:45:07 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <7NednSphZNq6YYjVnZ2dnUVZ_qCunZ2d@comcast.com>
Source record: 25777

"HRBE" <hrbe@bigpond.net.au> wrote in message
news:oI8Rj.5583$ko5.488@news-server.bigpond.net.au...
> Hello all,
> I have a real doosey.
>
> I built an Octopus, along the lines of the one which was featured in the
> Dec 2007 issue of QST. This article was written by Geoff Haines N1GY.
>
> The Octopus is a 4 band rotatable dipole, using either Hamsticks or
> Workman mobile whips
>
> I fitted the following Workman whips: 75m, 40m, 20m & 15m.
>
> I can tune all but the 20m whips, there is naturally an interaction
> between each of the whips, but 20m simply cannot be tuned. its resonance
> is around 13.6mhz, and no matter what I do with the whip length it cannot
> be bought into resonance.
>
> I stress that 75m, 40, and 15m are great.
>
> I have tried the 20m whips on their own as a single antenna and they tune
> well, but as soon as I offer the second whip to complete the dipole, the
> resonance drops to 13.6mhz.
>
> When I refit all the other elements, it makes not much difference to the
> 20m whips as far as their resonance is concerned, it does shift a bit
> which is understandable.
>
> I have tried rearranging the whips out of sequence around the hub, but
> that made no difference.
>
> Am I missing something, or are the Workman whips poorly designed?
>
> Is there a preferred way of arranging the whips so that I do minimise
> interaction between the elements?
>
> Why are the 20m whips the only ones giving me trouble?
>
> I am using an MFJ269 Pro to tune each band.
>
> Thanks,
> John
> VK2KCE
>

You might want to attach about 100ft as a counterpoise, then it should load
up.
73's de Howard W3CQH/r

4606. Re: Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 18:04:14 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <ykoRj.10866$Rk6.5041@trnddc07>
Source record: 25778

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:G39Rj.23213$%41.3634@nlpi064.nbdc.sbc.com...
> HRBE wrote:
>> Why are the 20m whips the only ones giving me trouble?
>
> Probably what is happening is that you are getting a
> self-resonance on 14.2 MHz from the 75m or 40m hamsticks.
> That doesn't happen with 1/2WL fan dipoles but it certainly
> can happen with hamsticks. For instance, if the self-resonant
> feedpoint impedance of the 75m hamstick dipole is lower on
> 20m than the 20m hamstick dipole, you will not be able to
> adjust the 20m hamstick dipole for a 1:1 SWR.
>
> Using only the 75m hamstick dipole, find the 20m impedance.
> Then do the same for only the the 40m dipole. You can
> probably diagnose the problem but I don't know of a
> solution.
> --
> 73, Cecil http://www.w5dxp.com

I agree with Cecil,
One of the lower freq whip pairs is resonating on 20M and masking the 20M whips' resonance.
Try this: remove the 20M whips and look for resonance around 20M When you locate the pair of whips that is tuning up, run your finger up and down one of their inductance coils.
You will likely find a great upset in VSWR along the coil- if more than one is found, select the one closest to the base point. Mark this point and then use something like copper tape and a 12" wire to capacity couple to that point. This will have close to zero effect on the band the whip is intended for, but, because it is a voltage loop on 20M, will have a major effect. The idea is to move this whip pair's resonanace well below 14MHz.

Dale W4OP

4607. Re: Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 22:29:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <UcsRj.87$3O7.49@newssvr19.news.prodigy.net>
Source record: 25779

Dale Parfitt wrote:
> I agree with Cecil,

Dale, I hope you know that assertion can get you
ploinked by the gurus. :-)
--
73, Cecil http://www.w5dxp.com

4608. Re: Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-28 23:53:00 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <wrtRj.25615$TS5.1852@trnddc08>
Source record: 25780

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:UcsRj.87$3O7.49@newssvr19.news.prodigy.net...
> Dale Parfitt wrote:
>> I agree with Cecil,
>
> Dale, I hope you know that assertion can get you
> ploinked by the gurus. :-)
> --
> 73, Cecil http://www.w5dxp.com

Bring them on. When you're right, you're right.

Dale W4OP

4609. Re: RE:Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-29 01:21:02 UTC
From: HRBE <hrbe@bigpond.net.au>
Message-ID: <2KuRj.5916$ko5.1160@news-server.bigpond.net.au>
Source record: 25781

Thanks all who contributed.

I re-read N1GY's original and he mentioned in his article about the actual placing of the whips.

I followed his directions and placed the 75m and 40m whips at right angles to each other and the ather two pairs of whips in a like manner.

This then made the whole job a little easier, but the 20m whips are not as sharp in tuning as the other pairs.

I took Dales advice and actually slid a 1" piece of aluminium tubing over the whip and slid them over the whip and found that the VSWR was reduced at a point midway over the loading coil in the whip.

So I have got it working, thanks to you antenna specialists. I appreciate the time taken to reply to my problem.

Regards
John
VK2KCE

"Howard W3CQH" <hsgorden@comcast.net> wrote in message
news:7NednSphZNq6YYjVnZ2dnUVZ_qCunZ2d@comcast.com...
>
> "HRBE" <hrbe@bigpond.net.au> wrote in message
> news:oI8Rj.5583$ko5.488@news-server.bigpond.net.au...
>> Hello all,
>> I have a real doosey.
>>
>> I built an Octopus, along the lines of the one which was featured in the
>> Dec 2007 issue of QST. This article was written by Geoff Haines N1GY.
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>> The Octopus is a 4 band rotatable dipole, using either Hamsticks or
>> Workman mobile whips
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>> I fitted the following Workman whips: 75m, 40m, 20m & 15m.
>>
>> I can tune all but the 20m whips, there is naturally an interaction
>> between each of the whips, but 20m simply cannot be tuned. its resonance
>> is around 13.6mhz, and no matter what I do with the whip length it cannot
>> be bought into resonance.
>>
>> I stress that 75m, 40, and 15m are great.
>>
>> I have tried the 20m whips on their own as a single antenna and they tune

>> well, but as soon as I offer the second whip to complete the dipole, the
>> resonance drops to 13.6mhz.
>>
>> When I refit all the other elements, it makes not much difference to the
>> 20m whips as far as their resonance is concerned, it does shift a bit
>> which is understandable.
>>
>> I have tried rearranging the whips out of sequence around the hub, but
>> that made no difference.
>>
>> Am I missing something, or are the Workman whips poorly designed?
>>
>> Is there a preferred way of arranging the whips so that I do minimise
>> interaction between the elements?
>>
>> Why are the 20m whips the only ones giving me trouble?
>>
>> I am using an MFJ269 Pro to tune each band.
>>
>> Thanks,
>> John
>> VK2KCE
>>
> You might want to attach about 100ft as a counterpoise, then it should
> load up.
> 73's de Howard W3CQH/r
>
>

4610. LMR 400 LLPL

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-29 03:18:12 UTC
From: unlimited <unlimitedtch@yahoo.com>
Message-ID: <f77dca28-19d6-4f52-a3f9-57338eec80af@q1g2000prf.googlegroups.com>
Source record: 25782

I have about 1500 feet of lmr400llpl (its plenum) for sale if you know anybody who needs it please e-mail me unlimitedtch@yahoo.com.thankyou.

4611. Re: Antenna analyzer schematic

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-29 07:22:02 UTC
From: Ian Wade <g3nrw@yahoo.co.uk>
Message-ID: <hiX3aRDHxsFIFwUW@ntlworld.com>
Source record: 25783
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

From: Jimmie D <GFENDER@carolina.rr.com>
Date: Mon, 28 Apr 2008 Time: 09:49:48

>This looks like a really neat device, one of those simple little gadgets
>from which you get a huge amount of use.
>Hopefully before I got back to work Wednesday I will have one built. Its my
>plan to leave out the switch and just bring everything out to test points.
>

It is indeed a really neat device. I found it very useful back in the
70s, but at that time I didn't have a computer, so had to draw the lines
and circles by hand. After doing this a few times I rapidly lost the
will to live!

The one thing to watch is the input signal level. I used to use the
low-level driver output from the TX, which was fine. But I don't have
that TX any more, so will have to use the low-power output of the
current TX. Some kind of voltage dropper will be needed to keep the
output level low enough, otherwise the analyzer components will fry.

--
73
Ian, G3NRW

4612. Stacking beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-29 13:29:11 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <uoFRj.6993$Ta6.395@newsfe14.ams2>
Source record: 25784

I have a Tennamast rotator cage. I want to install a Cushcraft MA5B beam at the bottom and a 9 element crossed Tonna beam for 2 meters with a 2m collinear on top of that.

What should the minimum distance be from the rotator cage to the MA5B?

What should the minimum distance be from the MA5B and the 9 element crossed Tonna?

What should the minimum distance be from the 9 element Tonna to the 2 meter collinear?

Thanks

Andy

4613. Re: Stacking beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-29 21:36:09 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <0xMRj.139437$Lq5.70145@newsfe18.ams2>
Source record: 25785

What I should of asked is, what is the minimum spacing I can get away with, without the antenna's effecting each other or the rotator cage effecting the MA5B?

Thanks

"Andy" <dx90@blueyounder.co.uk> wrote in message news:uoFRj.6993$Ta6.395@newsfe14.ams2...
>I have a Tennamast rotator cage. I want to install a Cushcraft MA5B beam at
>the bottom and a 9 element crossed Tonna beam for 2 meters with a 2m
>collinear on top of that.
>
> What should the minimum distance be from the rotator cage to the MA5B?
>
> What should the minimum distance be from the MA5B and the 9 element
> crossed Tonna?
>
> What should the minimum distance be from the 9 element Tonna to the 2
> meter collinear?
>
> Thanks
>
> Andy
>

4614. Re: Stacking beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-29 23:12:40 UTC
From: "H. Adam Stevens" <mayatwo@earthlink.net>
Message-ID: <hqGdnYqCasX6NorVnZ2dnUVZ_qiinZ2d@earthlink.com>
Source record: 25786

Stacking 20 meter beams at 100 and 200 feet is good.

73, de NQ5H

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:0xMRj.139437$Lq5.70145@newsfe18.ams2...
> What I should of asked is, what is the minimum spacing I can get away
> with, without the antenna's effecting each other or the rotator cage
> effecting the MA5B?
>
> Thanks
>
>
> "Andy" <dx90@blueyounder.co.uk> wrote in message
> news:uoFRj.6993$Ta6.395@newsfe14.ams2...
>>I have a Tennamast rotator cage. I want to install a Cushcraft MA5B beam
>>at the bottom and a 9 element crossed Tonna beam for 2 meters with a 2m
>>collinear on top of that.
>>
>> What should the minimum distance be from the rotator cage to the MA5B?
>>
>> What should the minimum distance be from the MA5B and the 9 element
>> crossed Tonna?
>>
>> What should the minimum distance be from the 9 element Tonna to the 2
>> meter collinear?
>>
>> Thanks
>>
>> Andy
>>
>
>

4615. Re: Stacking beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-29 23:46:43 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <67pqb7F2q4524U1@mid.individual.net>
Source record: 25787

H. Adam Stevens wrote:
> Stacking 20 meter beams at 100 and 200 feet is good.

I can only get my upper one to 193.
Do you think I should use a hamstick instead?

Craig 'Lumpy' Lemke

www.n0eq.com

4616. Re: Stacking beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-30 00:46:53 UTC
From: ltdoc@yahoo.com
Message-ID: <63ca84f6-2299-4ca3-92c3-000835029335@c58g2000hsc.googlegroups.com>
Source record: 25788

Andy,
The best distance between stacked beams is the most you can get and stay sort of practical. If the mast between beams is too long then it's going to bend, which is bad. If too short, then those beams might as well be all on the same boom. And until the distance between them gets really ridiculous, they are going to affect each other no matter what you do. So, I guess it depends on what you can manage. There are probably as many 'rules of thumb's as there are thumbs putting up stacked antennas, so, pick one you can live with.
- 'Doc

4617. Re: Antenna analyzer schematic

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-30 03:32:33 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <4817e84b$0$20164$4c368faf@roadrunner.com>
Source record: 25789
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

"Ian Wade" <g3nrw@yahoo.co.uk> wrote in message
news:hiX3aRDHxsFIFwUW@ntlworld.com...
> From: Jimmie D <GFENDER@carolina.rr.com>
> Date: Mon, 28 Apr 2008 Time: 09:49:48
>
>>This looks like a really neat device, one of those simple little gadgets
>>from which you get a huge amount of use.
>>Hopefully before I got back to work Wednesday I will have one built. Its
>>my
>>plan to leave out the switch and just bring everything out to test points.
>>
>
> It is indeed a really neat device. I found it very useful back in the 70s,
> but at that time I didn't have a computer, so had to draw the lines and
> circles by hand. After doing this a few times I rapidly lost the will to
> live!
>
> The one thing to watch is the input signal level. I used to use the
> low-level driver output from the TX, which was fine. But I don't have that
> TX any more, so will have to use the low-power output of the current TX.
> Some kind of voltage dropper will be needed to keep the output level low
> enough, otherwise the analyzer components will fry.
>
> --
> 73
> Ian, G3NRW
>

To get a source of signals for test purposes I have been know to apply an
audio signal to the mic input of my SSB transceiver, say 1000Hz then adjust
the mic gain/osc level for the appropriate output level.

4618. Re: Stacking beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-30 07:51:57 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <kyVRj.14873$ww6.7020@newsfe09.ams2>
Source record: 25790

Above the rotator cage. NOT FROM THE GROUND!

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:67pqb7F2q4524U1@mid.individual.net...
> H. Adam Stevens wrote:
>> Stacking 20 meter beams at 100 and 200 feet is good.
>
> I can only get my upper one to 193.
> Do you think I should use a hamstick instead?
>
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com
>
>
>

4619. Re: HDTV antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-30 08:32:05 UTC
From: stuff@here.com
Message-ID: <shag14pfsrois1c76b21osh991o6j2acug@4ax.com>
Source record: 25791

On Fri, 25 Apr 2008 10:48:17 -0700, dplatt@radagast.org (Dave Platt)
wrote:

>In article <f9mQj.10798$2g1.7800@nlpi068.nbdc.sbc.com>,
>Cecil Moore <nospam@w5dxp.com> wrote:
>
>>Are there any omnidirectional HDTV antennas?
>>My LPDA is too directional.
>
>Well, considering that there really is no such thing as an HDTV
>antenna per se, yes. HDTV in the U.S. (ATSC) uses a subset of the
>same frequencies used by ATSC television, and so all the same
>considerations apply.

With 2 to 4 stations on the same frequency allotment as the old analog
in some instances. At any rate some squeeze 4 in the space that used
to be used by one. They do this at the expense of bandwidth (IE
resolution)

>
>The commonest commercial solution to your need seems to take the form
>of a saucer-shaped radome, containing an amplified
>near-omnidirectional UHF/VHF antenna. One source is
>
> http://www.starkelectronic.com/allant.htm
>
>Internally, I believe that these consist of a standard or folded
>dipole, with the elements "swept" into an S shape. They're probably
>not terribly good antennas, as far as matching or sensitivity or

They're not! I had one. Also the amp "up there" makes them more
susceptible to overload in interference. They aren't worth the effort
to put them up let alone the price, at least the ones I tried weren't.

>pattern is concerned, which is likely why an onboard amplifier is
>included.

Just a plain old pair of crossed, folded dipoles work just fine. I
have such a set up just below my AV-640 and run about 600 watts on
6-meters.

>
>If you wanted to tune up only one (or a few closely-spaced) HDTV
>stations with an omni, you could probably build yourself a turnstile
>antenna... a crossed pair of bow-tie elements, and a 90-degree phasing
>harness cut for the middle of the band would probably work. I doubt

>that'll work as a general-purpose solution for the full band, though.

It does here at least out to about 40 or 50 miles from 40 feet.

>
>The specific sort of antenna design you might need to work well in
>your area, will depend a lot on which frequencies are going to be in
>use for DTV in your area after The Big Day Next Year. In many areas
>of the country, all TV signals will be in the UHF band - this
>simplifies matters for residents of those areas, as only a UHF antenna
>will be needed.
>

On the big tower I have some long (longest I could get) UHF antennas
with remote mounted amps at 90 feet. One points WNW while the other
points South. They do well for close in stations any where near the
direction they are pointed. I have used them with a combiner but that
results in ghosts on analog and drop outs on digital.

BTW these antennas are about 30 feet below a pair of 12L, vertically
polarized yagis and about 12 feet above the tops of a pair of Diamond
repeater antennas. The tribander is about 8 to 10 feet above the TV
antennas and the 7L 6-meter yagi is about 15 feet above the tribander.
I run the legal limit to the tribander and a 1000 to 1200 PEP on
6-meters. So far no problems.

>In more crowded areas of the country (and in some locations where the
>broadcasters don't want to re-fit their main transmitters) DTV will
>include stations operating in the VHF high band (channels 7-13) and
>you'll need an antenna which works on these frequencies as well.

I receive them just fine on the UHF antennas again out to about 40 to
50 miles.

>
>In a very few areas, there will still be stations operating DTV in the
>VHF low band (channels 2-6), and residents of those areas will still
>need full-coverage antennas.

Only the one in real close (under 30 miles) come in OK on the UHF
antennas. (Ch 5 is about 20 miles)

>
>>Also, is TVI from ham transmitters reduced with
>>HDTV?
>
>It depends.
>
>The worst ham TVI problems seem to have affected Channel 2, due to its
>proximity to the 6-meter band and its second-harmonic relationship to
>the 10-meter band. There will be *very* few TV stations using this
>frequency after The Day, and this may reduce TVI complaints for hams
>operating on 2 and 6 meters.

Only problem I ever had was one neighbor having a foot ball party out
in his garage using rabbit ears for an antenna about 120 feet from the
base of my tower. "Hello Test" with 50 watts to the 12L pair at 130
feet would give him a blank screen on Ch 12. I gave him a directional
TV antenna and from then on I was invited over to the parties and free
beer.

>
>Strong-signal overload/desense problems of TVs (or antenna/CATV distribution
>amplifiers) will probably still exist, especially for TV stations
>operating in the VHF low and high bands. I imagine that high-power
>ham transmissions in the 70 cm band may cause overload problems for
>UHF TV stations in some cases.
>
>The actual behavior of the TV sets, in the face of ham TVI, will
>definitely be different. No more herringbones in the video, no more
>desense-related snow. Instead, the picture and audio will be
>unaffected, until the TVI is severe enough that the DTV tuner and
>demodulator can no longer get enough of a signal to allow the
>digital error-correction process to work - at that point, the image
>will start freezing, breaking up into rectangular "macroblock"
>artifacts, or disappearing entirely. TVI is likely to present as much
>more of an "all-or-nothing" thing that it did in the past.
Roger (K8RI) ARRL Life Member
N833R (World's oldest Debonair)
www.rogerhalstead.com

4620. Re: Stacking beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-30 08:47:32 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <qmWRj.14877$ww6.512@newsfe09.ams2>
Source record: 25792

Doc, thank you for your reply.

I guess its a case of trying different spacing and see what works best. The closer I can get them together the happier the neighbours will be. Hopefully.

73 Andy

<ltdoc@yahoo.com> wrote in message news:63ca84f6-2299-4ca3-92c3-000835029335@c58g2000hsc.googlegroups.com...
> Andy,
> The best distance between stacked beams is the most you can get and
> stay sort of practical. If the mast between beams is too long then
> it's going to bend, which is bad. If too short, then those beams
> might as well be all on the same boom. And until the distance between
> them gets really ridiculous, they are going to affect each other no
> matter what you do. So, I guess it depends on what you can manage.
> There are probably as many 'rules of thumb's as there are thumbs
> putting up stacked antennas, so, pick one you can live with.
> - 'Doc
>
>
>

4621. resonant coil with high phase stability

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-30 15:54:44 UTC
From: huiliu <huiliu.liu@gmail.com>
Message-ID: <8bfccbb5-acc0-4964-b4be-d028950e6ef0@b9g2000prh.googlegroups.com>
Source record: 25793

Hi, all, my current project requires a high phase stability (<1 mill degree @ 10 MHz / oC) resonant surface coil. I am trying to use a LC resonant circuit to drive this surface coil, but its phase stability is really poor (about 40-80 mill degree @ 10 MHz / oC). I guess the main problem comes from the used capacitor whose value is easily changed by temperature. so my question is that can the crystal oscillator help me more? or is there any other method to achieve this requirement?

Thanks a lot.

4622. Re: resonant coil with high phase stability

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-30 18:04:31 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <a977a40a-5db0-4752-8e64-0d8a37430e2a@x35g2000hsb.googlegroups.com>
Source record: 25794

On Apr 30, 8:54 am, huiliu <huiliu....@gmail.com> wrote:
> Hi, all, my current project requires a high phase stability (<1 mill
> degree @ 10 MHz / oC) resonant surface coil. I am trying to use a LC
> resonant circuit to drive this surface coil, but its phase stability
> is really poor (about 40-80 mill degree @ 10 MHz / oC). I guess the
> main problem comes from the used capacitor whose value is easily
> changed by temperature. so my question is that can the crystal
> oscillator help me more? or is there any other method to achieve this
> requirement?
>
> Thanks a lot.

If it is as you suspect, that the capacitor is causing the trouble, why not use a capacitor with low temperature coefficient? C0G dielectric ceramic capacitors are rated at +/-30ppm/C maximum, and I have found some to be very much better than that.

I have no idea what the circuit is that you are driving, but I would expect that if you are driving a high-Q resonant tank, the phase shift will be very rapid with frequency, and that implies the need to use a tank circuit with very good temperature stability. If I'm not mistaken, the rate of phase change at resonance of the impedance of a series RLC, expressed as radians per fractional frequency change, is 2*Q. So for a milliradian change, you need to keep the resonant frequency within f(center)/(2000*Q). A milliradian is 57 millidegrees, so to keep such a tank within 1 millidegree if the Q is only 10, you need to hold the resonant frequency (relative to the excitation) to a little better than one part per million. I'd say that's not a very reasonable goal if the inductor dimensions change with temperature. It will take a decent oscillator just to maintain the excitation frequency to that sort of accuracy. You might actually find a capacitor that will give you that sort of stability, by selecting from C0G caps (or possibly by making your own by plating electrodes on fused quartz...). But that doesn't solve the problem of the inductor itself.

Could you characterize the tank circuit frequency shift versus temperature and compensate by causing the excitation frequency to change synchronously with that?

Cheers,
Tom

4623. Re: HDTV antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-30 20:19:52 UTC
From: dplatt@radagast.org
Message-ID: <8s0ne5-egp.ln1@radagast.org>
Source record: 25795

In article <shag14pfsrois1c76b21osh991o6j2acug@4ax.com>,
<stuff@here.com> wrote:

>>Well, considering that there really is no such thing as an HDTV
>>antenna per se, yes. HDTV in the U.S. (ATSC) uses a subset of the
>>same frequencies used by ATSC television, and so all the same
>>considerations apply.
>
>With 2 to 4 stations on the same frequency allotment as the old analog
>in some instances. At any rate some squeeze 4 in the space that used
>to be used by one. They do this at the expense of bandwidth (IE
>resolution)

They're actually multiplexing two or more digital data streams into a
single RF transmission, coming from a single transmitter and tower.
No matter whether they're sending one HDTV program, or four
independent SDTV digital signals, it's all just one digital bitstream
being sent to the modulator, and sent out in a single 6 MHz slice of
the spectrum (the same slice of spectrum that a single NTSC
transmission would have used).

You're correct, the extra programs are sent at the expense of the main
program... it must reduce its bit-rate, which means either switching
down to a lower resolution, or having more motion artifacts, or
sticking to programs which have relatively little motion on-screen and
are thus easier to compress via MPEG.

>>If you wanted to tune up only one (or a few closely-spaced) HDTV
>>stations with an omni, you could probably build yourself a turnstile
>>antenna... a crossed pair of bow-tie elements, and a 90-degree phasing
>>harness cut for the middle of the band would probably work. I doubt
>>that'll work as a general-purpose solution for the full band, though.
>
>It does here at least out to about 40 or 50 miles from 40 feet.

Very good to know - thanks!

>BTW these antennas are about 30 feet below a pair of 12L, vertically
>polarized yagis and about 12 feet above the tops of a pair of Diamond
>repeater antennas. The tribander is about 8 to 10 feet above the TV
>antennas and the 7L 6-meter yagi is about 15 feet above the tribander.
>I run the legal limit to the tribander and a 1000 to 1200 PEP on
>6-meters. So far no problems.

My complements to your filters and amplifiers and your care in setting
up the whole system!

>Only problem I ever had was one neighbor having a foot ball party out
>in his garage using rabbit ears for an antenna about 120 feet from the
>base of my tower. "Hello Test" with 50 watts to the 12L pair at 130
>feet would give him a blank screen on Ch 12. I gave him a directional
>TV antenna and from then on I was invited over to the parties and free
>beer.

Now *that* is the kind of QRM-resolution situation we should all
strive for!

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4624. PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-04-30 23:53:38 UTC
From: HRBE <hrbe@bigpond.net.au>
Message-ID: <6E7Sj.6487$ko5.2207@news-server.bigpond.net.au>
Source record: 25796

Hello to all,
I have just bought a Ground plane adaptor off Ebay (yeah I know!) (China! Yeah I know!) it was advertised as a PL259/SO239 male/female thread to enable a groundplane to be fitted to a mobile antenna.

I assumed wrongly that there was an International standard with regard to the PL259/SO239.

Naturally when a known part number is advertised, one would expect that the normal 5/8" x 24 threads per inch standard (UNEF) would be followed.

Not so! What was sent was a 16 x 1mm adaptor.

Naturally the language difference is making it hard for me to convince the seller that he MUST advertise the adaptor on Ebay having a metric thread.

Can anyone tell me if there is a move towards the metrification of the PL259/SO239 connectors?

If this happens all hell will break loose, imagine trying to connect antenna to coax at say a field day or even worse in an emergency situation?

John
VK2KCE

4625. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 01:17:44 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <YS8Sj.144196$D_3.106522@bgtnsc05-news.ops.worldnet.att.net>
Source record: 25797

Cecil Moore wrote:
> Gene Fuller wrote:
>> Dump Hecht ...
>
> Dump Gene Fuller. :-)

Cecil,

Since you are so concerned about ethics these days I suppose this was an ethical ad hominem.

I have been away for about a month, but it is no surprise to see that this thread lingers on. Fortunately, it appears that all of the technical issues have been decided in favor of well established science. Unfortunately, bickering over the exact meaning of ordinary words remains.

8-)

73,
Gene
W4SZ

4626. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 02:35:00 UTC
From: ltdoc@yahoo.com
Message-ID: <9e56d5fc-e065-46e3-8e2d-d142c3d563bc@k37g2000hsf.googlegroups.com>
Source record: 25798

John,
The only change in 'standards' is with truth in advertising. Not
thread size.
- 'Doc

4627. 2M yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 04:36:58 UTC
From: Richard Neilsen <richardneilsen@optusnet.com.au>
Message-ID: <481948db$0$30462$afc38c87@news.optusnet.com.au>
Source record: 25799

Anyone out there have any good 2m yagi plans?

Looking for 3 or 4 elements for SSB on 2m

Cheers
Richard

4628. Re: 2M yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 05:43:58 UTC
From: John VK2KCE <hrbe@bigpond.net.au>
Message-ID: <yMcSj.6606$ko5.1325@news-server.bigpond.net.au>
Source record: 25800

Richard,

There is one at this site, I have built 2 of them.

http://www.hy-gain.com/products.php?prodid=VB-23FM

73
John
"Richard Neilsen" <richardneilsen@optusnet.com.au> wrote in message
news:481948db$0$30462$afc38c87@news.optusnet.com.au...
> Anyone out there have any good 2m yagi plans?
>
> Looking for 3 or 4 elements for SSB on 2m
>
> Cheers
> Richard
>
>
>

4629. LDG Z100 to TS50s interface

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 05:48:20 UTC
From: John VK2KCE <hrbe@bigpond.net.au>
Message-ID: <EQcSj.6607$ko5.2393@news-server.bigpond.net.au>
Source record: 25601

Anybody got an idea where I can buy or get a circuit diagram to make one up?

John

4630. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 07:30:23 UTC
From: Jeff <jeff@local.host>
Message-ID: <481971d8$0$6436$834e42db@reader.greatnowhere.com>
Source record: 25603

Metric PL259's are quite common on some Japanese white stick antennas.
'Normal' Pl259's will not screw up tightly. I think that they are normally
known as PL259(M) although I think that there is another designation as
well.

73
Jeff

4631. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 08:15:17 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <rZ6dnd80cd-V84TVnZ2dnUVZ_q-jnZ2d@earthlink.com>
Source record: 25602

"HRBE" <hrbe@bigpond.net.au> wrote in message
news:6E7Sj.6487$ko5.2207@news-server.bigpond.net.au...
> Hello to all,
> I have just bought a Ground plane adaptor off Ebay (yeah I know!) (China!
> Yeah I know!) it was advertised as a PL259/SO239 male/female thread to
> enable a groundplane to be fitted to a mobile antenna.
>
> I assumed wrongly that there was an International standard with regard to
> the PL259/SO239.
>
> Naturally when a known part number is advertised, one would expect that
> the normal 5/8" x 24 threads per inch standard (UNEF) would be followed.
>
> Not so! What was sent was a 16 x 1mm adaptor.
>
> Naturally the language difference is making it hard for me to convince the
> seller that he MUST advertise the adaptor on Ebay having a metric thread.
>
> Can anyone tell me if there is a move towards the metrification of the
> PL259/SO239 connectors?
>
> If this happens all hell will break loose, imagine trying to connect
> antenna to coax at say a field day or even worse in an emergency
> situation?
>
> John
> VK2KCE

I am thinking MFJ put out some antenna tuners a few years back that had some oddball so239 connectors. The threads almost matched up and youcould force them to mate, but it was not smooth. Also think they would send you some replacements for the so239s.

4632. Re: Stacking beams

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 12:35:55 UTC
From: "H. Adam Stevens" <mayatwo@earthlink.net>
Message-ID: <rcqdnebQN6W0JITVnZ2dnUVZ_t2inZ2d@earthlink.com>
Source record: 25604

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:67pqb7F2q4524U1@mid.individual.net...
> H. Adam Stevens wrote:
>> Stacking 20 meter beams at 100 and 200 feet is good.
>
> I can only get my upper one to 193.
> Do you think I should use a hamstick instead?
>
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com
>
>

ROFL!

4633. Re: resonant coil with high phase stability

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 13:46:14 UTC
From: huiliu <huiliu.liu@gmail.com>
Message-ID: <0ddb753f-31f7-4954-83d0-b500c84bbe37@z24g2000prf.googlegroups.com>
Source record: 25605

On May 1, 2:04 am, K7ITM <k7...@msn.com> wrote:
> On Apr 30, 8:54 am, huiliu <huiliu....@gmail.com> wrote:
>
> > Hi, all, my current project requires a high phase stability (<1 mill
> > degree @ 10 MHz / oC) resonant surface coil. I am trying to use a LC
> > resonant circuit to drive this surface coil, but its phase stability
> > is really poor (about 40-80 mill degree @ 10 MHz / oC). I guess the
> > main problem comes from the used capacitor whose value is easily
> > changed by temperature. so my question is that can the crystal
> > oscillator help me more? or is there any other method to achieve this
> > requirement?
>
> > Thanks a lot.
>
> If it is as you suspect, that the capacitor is causing the trouble,
> why not use a capacitor with low temperature coefficient? C0G
> dielectric ceramic capacitors are rated at +/-30ppm/C maximum, and I
> have found some to be very much better than that.
>
> I have no idea what the circuit is that you are driving, but I would
> expect that if you are driving a high-Q resonant tank, the phase shift
> will be very rapid with frequency, and that implies the need to use a
> tank circuit with very good temperature stability. If I'm not
> mistaken, the rate of phase change at resonance of the impedance of a
> series RLC, expressed as radians per fractional frequency change, is
> 2*Q. So for a milliradian change, you need to keep the resonant
> frequency within f(center)/(2000*Q). A milliradian is 57
> millidegrees, so to keep such a tank within 1 millidegree if the Q is
> only 10, you need to hold the resonant frequency (relative to the
> excitation) to a little better than one part per million. I'd say
> that's not a very reasonable goal if the inductor dimensions change
> with temperature. It will take a decent oscillator just to maintain
> the excitation frequency to that sort of accuracy. You might actually
> find a capacitor that will give you that sort of stability, by
> selecting from C0G caps (or possibly by making your own by plating
> electrodes on fused quartz...). But that doesn't solve the problem of
> the inductor itself.
>
> Could you characterize the tank circuit frequency shift versus
> temperature and compensate by causing the excitation frequency to
> change synchronously with that?
>
> Cheers,
> Tom

Thanks again.

I am trying to use temperature compensated crystal quartz to take next measurement. It is a great idea to compensate the frequency shift caused by temperature. Hope it can work.

4634. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 16:05:00 UTC
From: richardharrison@webtv.net
Message-ID: <22642-4819EA2C-207@storefull-3256.bay.webtv.net>
Source record: 25606

Green Xenon wrote:
"So I ask what would be the disadvantage of using AM instead of FM for this?"

Short answer is: losing insensitivity to carrier level when recovering the modulation.

Advantage of AM is reduced bandwidth and simpler demodulation.

Advantage of FM is that once a certain minimum carrier level is applied to the detector.
the demodulated signal is independent of the carrier level. A balanced detector allows non-linear RF amplification, insensitivity to amplitude variations, and no response to noise which is amplitude (AM) in nature.

Disadvantage of FM is that it requires about twice the bandwidth of FM.

Best regards, Richard Harrison, KB5WZI

4635. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 17:49:07 UTC
From: richardharrison@webtv.net
Message-ID: <22243-481A0293-193@storefull-3254.bay.webtv.net>
Source record: 25607

I miswrote. FM requires about twice the bandwidth of AM.

Best regards, Richard Harrison, KB5WZI

4636. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 18:14:15 UTC
From: Barrett <barrett@blueyounder.co.uk>
Message-ID: <WLnSj.823$815.588@newsfe16.ams2>
Source record: 25608

This is unbelievable. I was sent another new unit, my second MFJ-259Z from WSPLC and its another bad unit. The batteries won't charge. It does have 39mA on the jumper switch this time. But still will not charge the batteries. I will phone them again tomorrow after the unit has been on charge for over 24 hours.

Andy

"Howard W3CQH" <hsgorden@comcast.net> wrote in message
news:faqdnbHMMfAokZzVnZ2dnUVZ_uOmnZ2d@comcast.com...
>
> "Barrett" <barrett@blueyounder.co.uk> wrote in message
> news:0uwLj.22067$fx2.22066@newsfe08.ams2...
>> Hi Dave
>>
>>
>>
>> I checked the voltages in all the cells and they were all even voltages.
>> The batteries should be ok.
>>
>>
>>
>> I checked the current on the two pins like you said and there was no
>> reading.
>>
>> I checked the voltage on the two pins. No voltage on the outside pin and
>> 5 volts on the middle pin.
>>
>> I checked the voltage coming from the charger and its 18 volts.
>>
>> I checked the voltage from the + side to the - side of the battery pack
>> with the charger on and got the 12.6 volts.
>>
>> I checked the voltage from the + side to the - side of the battery pack
>> with the charger off and unplugged and got 12.6 volts.
>>
>> I checked the voltage from the battery pack with the charger on and using
>> the case as the ground. It was 17.9 volts.
>>
>>
>>
>> The charger says output voltage 12VDC 300mA 3.6VA.
>>
>>
>>

>> Hope you can point me in the right direction. Do you know what sort of
>> voltages I should expect when it's charging properly?
>>
>>
>>
>> Many thanks
>>
>>
>>
>> Barrett
>>
>>
>>
>>
>>
>>
>> "Dave Platt" <dplatt@radagast.org> wrote in message
>> news:d432d5-o7n.ln1@radagast.org...
>>> >I have had the batteries on charge in the MFJ-259Z for over a day now.
>>> >The
>>>>>jumper inside the unit is on for charging. The batteries were at 12.6V
>>>>>when
>>>>>put on charge and are still 12.6V. The PSU is working fine. Because I
>>>>>can
>>>>>run the unit off the PSU that came with it.
>>>>>
>>>>>Any ideas on what can be wrong with it now?
>>>
>>> It certainly sounds to me as if the charging circuit is not working,
>>> or is not working effectively.
>>>
>>> 12.6 volts is 1.26 volts per cell, which is what I'd expect to see in
>>> the no-load or light-load case of a NiMH with a fractional charge
>>> (maybe half-charged?). The cell voltage will rise, as charging
>>> continues, to as high as 1.4 volts or more (depending on charging
>>> current).
>>>
>>> It could be that the charging circuit simply isn't working at all.
>>>
>>> It's also possible that the charging circuit is only delivering (by
>>> error or design) just enough of a trickle charge to prevent an
>>> exernally-charged NiMH battery from self-discharging. If the
>>> battery is only receiving 10-20 mA, this would be the case - the
>>> battery will essentially *never* recharge itself completely under
>>> these conditions.
>>>
>>> There's a real tradeoff with NiMH cells. Any simple charger which is
>>> capable of recharging them in a reasonable amount of time (say, a day
>>> or less) should *not* be left hooked up to them indefinitely - it'll
>>> overcharge them and significantly shorten their life. Conversely, a

>>> simple charger which *can* be left hooked up for days at a time, will
>>> not recharge a dead battery rapidly enough to be useful.
>>>
>>> Charger circuits *can* switch between two charging modes (fast and
>>> maintenance) but it requires quite a bit more complexity.
>>>
>>> So... what to do now. My suggestions:
>>>
>>> [1] First, measure the voltage across each individual cell in the
>>> battery. If they're all around 1.25 or so, then the cells are
>>> probably OK, and the problem is in the charging.
>>>
>>> If you find that most of the cells have a higher voltage, and one
>>> is very low, then that one cell is junk and should be recycled and
>>> replaced.
>>>
>>> [2] Get a digital multimeter with small alligator-clip leads. Set it
>>> on its "DC current" scale, remove the charging jumper in the MFJ,
>>> and connect the two leads of the multimeter to the two pins that
>>> had been jumpered together (stick a bit of paper between them to
>>> prevent the multimeter leads from shorting). Plug the MFJ into
>>> its wallwart (with the power switch turned off) and read the
>>> current on your DMM. This will tell you how much current is
>>> flowing into the battery through the charging circuit (assuming
>>> that it's a simple linear charger and not a pulse-charger).
>>>
>>> If the current consistently reads zero, then the charger is not
>>> working at all.
>>>
>>> If it's charging at a rate of below 50 mA, then it's just a
>>> maintenance trickle-charger... sufficient to keep charged
>>> batteries alive in standby mode, but insufficient to recharge them
>>> in any reasonable amount of time. You'll need to do the major
>>> charging using an external charger.
>>>
>>> If it's charging at 100-200 mA, then it'll take a day or more to
>>> fully recharge.
>>>
>>> If it's charging at over 200 mA, then it'll recharge effectively
>>> in under a day, but should *not* be left hooked up indefinitely...
>>> it'll overcharge the batteries and shorten their service life.
>>>
>>> --
>>> Dave Platt <dplatt@radagast.org> AE6EO
>>> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>>> I do _not_ wish to receive unsolicited commercial email, and I will
>>> boycott any company which has the gall to send me such ads!
>>>
>>
> you should check out these sites:

>
> http://www.w8ji.com/mfj-259b_calibration.htm
>
> http://www.mfjenterprises.com/man/pdf/MFJ-259B.pdf?PHPSESSID=344dae9ca8f4ab6932849d4b5163ded5
>
> http://www.mfjenterprises.com/MFJ-259Bcalibration.php?PHPSESSID=344dae9ca8f4ab6932849d4b5163ded5
>
> http://qrp.kd4ab.org/2002/020129/0029.html
>

4637. Re: MFJ-259Z

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 19:36:38 UTC
From: dplatt@radagast.org
Message-ID: <6nipe5-16e.ln1@radagast.org>
Source record: 25609

In article <WLnSj.823$815.588@newsfe16.ams2>,
Barrett <barrett@blueyounder.co.uk> wrote:

>This is unbelievable.

Alas, MFJ equipment's reputation for sterling quality control would
cause some to disagree with you.

> I was sent another new unit, my second MFJ-259Z from
>WSPLC and its another bad unit. The batteries won't charge. It does have
>39mA on the jumper switch this time. But still will not charge the
>batteries. I will phone them again tomorrow after the unit has been on
>charge for over 24 hours.

39 mA is probably *not* enough to effectively charge 2000 mAh NiMH
cells. It only a C/50 rate.

NiMH cells have a low "charge acceptance" efficiency at such low
current rates... relatively little of the energy going into them
actually goes into the electrochemistry. The manufacturer's
literature I've read, recommends against using this sort of "trickle
charge" with NiMH cells... it just doesn't work very well. It might
be adequate to maintain fully-charged NiMH cells against
self-discharge, but it's apparently less than idea even for that.

40 mA of charge current might make sense if you loaded the analyzer up
with typical 1000 mAh NiCd cells - it'd be a C/25 rate, and since
this battery chemistry responds reasonably well to low charge rates
you'd probably find the batteries topped up in 36 hours or so.

As it is, you might need to wait a week or more for the NiMH batteries
to charge up, *if* they do so at all.

Seems to me you have three workable alternatives:

- Return this charger and insist that they provide you one with a
more sophisticated/effective NiMH charging circuit. Seems unlikely
to me that they have one at this time - it would require
significantly fancier circuitry.

- Figure out how the charging circuit works, and modify it yourself
to provide a significantly higher charging current. NiMH cells
seem to react well to a C/10 charge rate - around 14-16 hours from
a fully-discharged state seems to bring them up to full power and
break them in properly. This change might require no more than
replacing a single resistor in the charging circuit, depending on
how MFJ designed it.

- Use NiCd cells rather than NiMH (which is what I do with my MFJ 259/269 analyzers). 36 hours of charging should bring 'em up to the Plimsoll line.

- Use a real NiMH AA charger to break in and charge your NiMH cells outside the analyzer, then install them and plug it into the brick for a few hours a day to keep the batteries from self-discharging. Remove the batteries and recharge externally whenever they've been run down significantly.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

4638. 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 19:49:00 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <2i7k14pdts0lgltr6lv309mp7sqfo0q2tt@4ax.com>
Source record: 25610

If I have a low dipole about 10 feet off the ground for 75 meters,
would it be better if I put a hamstick 75 meter vertical up and
connect the dipole wires to the ground side for a vertical?

Buck
N4PGW

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4639. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 21:02:00 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9A92478BFA986nonenowhere@61.9.191.5>
Source record: 25611

"HRBE" <hrbe@bigpond.net.au> wrote in
news:6E7Sj.6487$ko5.2207@news-server.bigpond.net.au:

> Hello to all,
> I have just bought a Ground plane adaptor off Ebay (yeah I know!)
> (China! Yeah I know!) it was advertised as a PL259/SO239 male/female
> thread to enable a groundplane to be fitted to a mobile antenna.
>
> I assumed wrongly that there was an International standard with regard
> to the PL259/SO239.
>
> Naturally when a known part number is advertised, one would expect
> that the normal 5/8" x 24 threads per inch standard (UNEF) would be
> followed.
>
> Not so! What was sent was a 16 x 1mm adaptor.
>
> Naturally the language difference is making it hard for me to convince
> the seller that he MUST advertise the adaptor on Ebay having a metric
> thread.
>
> Can anyone tell me if there is a move towards the metrification of the
> PL259/SO239 connectors?
>
> If this happens all hell will break loose, imagine trying to connect
> antenna to coax at say a field day or even worse in an emergency
> situation?
>
> John
> VK2KCE
>
>

John,

I see you have asked this question in several places. I have read some
for what they are worth.

The Japanese manufacturers seems to have gotten a mind about a JIS for an
'equivalent' connector. I don't know this for sure, but I have come
across some incompatible look alike connectors on some well known
Japanese brand high power amplifiers.

Your Chinese parts may have been copied from one of these incompatible
connectors.

Owen

4640. Re: The Rest of the Story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 22:49:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0OrSj.12423$V14.1338@nlpi070.nbdc.sbc.com>
Source record: 25612

Gene Fuller wrote:
> Fortunately, it appears that all of the
> technical issues have been decided in favor of well established science.

Yes, the distributed network analysis is well
established science. Too bad the lumped circuit
zealots can't see that and still assert almost
zero delays through a 75m bugcatcher coil.

It seems that all energies balance perfectly
when the distributed network analysis is used
for the entire example rather than just half
of the example.
--
73, Cecil http://www.w5dxp.com

4641. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 23:02:12 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <TZrSj.12424$V14.10857@nlpi070.nbdc.sbc.com>
Source record: 25613

Richard Harrison wrote:
> I miswrote. FM requires about twice the bandwidth of AM.

Quoting my 1957 ARRL Handbook: "Narrow-band f.m. or p.m.,
the only type that is authorized for use on the lower
frequencies where the phone bands are crowded, is defined
as f.m. or p.m. that does not occupy a wider channel than
an a.m. signal having the same audio modulating frequencies.
Narrow-band operation requires using a relatively small
modulation index." It goes on to say a modulation index
of 0.6 is about optimum for those conditions.

Is NBFM still allowed?
--
73, Cecil http://www.w5dxp.com

4642. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 23:10:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <C5sSj.12425$V14.3122@nlpi070.nbdc.sbc.com>
Source record: 25614

Buck wrote:
> If I have a low dipole about 10 feet off the ground for 75 meters,
> would it be better if I put a hamstick 75 meter vertical up and
> connect the dipole wires to the ground side for a vertical?

The low dipole is probably much more efficient than the
hamstick and most of the radiation is straight up which
is not necessarily a bad thing on 75m. Your question reminds
me of one on a clinical psychological test. "Would you rather
take one or two days to die an agonizing death?" :-)
--
73, Cecil http://www.w5dxp.com

4643. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-01 23:29:39 UTC
From: dplatt@radagast.org
Message-ID: <3c0qe5-f4b.ln1@radagast.org>
Source record: 25615

In article <TZrSj.12424$V14.10857@nlpi070.nbdc.sbc.com>,
Cecil Moore <nospam@w5dxp.com> wrote:

>Quoting my 1957 ARRL Handbook: "Narrow-band f.m. or p.m.,
>the only type that is authorized for use on the lower
>frequencies where the phone bands are crowded, is defined
>as f.m. or p.m. that does not occupy a wider channel than
>an a.m. signal having the same audio modulating frequencies.
>Narrow-band operation requires using a relatively small
>modulation index." It goes on to say a modulation index
>of 0.6 is about optimum for those conditions.
>
>Is NBFM still allowed?

I read through the current Part 97 regs a few months ago, and
concluded that it is. See 97.305 (Authorized Emission Types), and
97.307 (f) (1).

The current standard allows a modulation index of up to 1, at the
highest modulating frequency. This applies to all angle-modulation
modes (PM and FM).

The rules aren't specifically worded as "f.m. or p.m. that does not
occupy a wider channel than an a.m. signal having the same audio
modulating frequencies" these days - the restrictions are in terms of
the modulation index, and the general requirement that one not use
"more bandwidth than necessary for the information rate and emission
type being transmitted, in accordance with good amateur practice."

I don't recall having run across any narrowband FM on the HF bands...
I think there are still a few 10-meter repeaters operating around the
country somewhere, but FM HF simplex seems to be either completely
dead, or used just by occasional experimenters.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4644. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 03:36:58 UTC
From: nm5k@wt.net
Message-ID: <94befaea-9bf1-4136-98f2-c25a77625e55@u36g2000prf.googlegroups.com>
Source record: 25616

On May 1, 2:49 pm, Buck <usene...@lumpuckeroo.com> wrote:
> If I have a low dipole about 10 feet off the ground for 75 meters,
> would it be better if I put a hamstick 75 meter vertical up and
> connect the dipole wires to the ground side for a vertical?
>

No.

4645. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 07:17:08 UTC
From: Jeff <jeff@local.host>
Message-ID: <481ac040$0$6434$834e42db@reader.greatnowhere.com>
Source record: 25617

>
> I see you have asked this question in several places. I have read some
> for what they are worth.
>
> The Japanese manufacturers seems to have gotten a mind about a JIS for an
> 'equivalent' connector. I don't know this for sure, but I have come
> across some incompatible look alike connectors on some well known
> Japanese brand high power amplifiers.
>
> Your Chinese parts may have been copied from one of these incompatible
> connectors.
>
> Owen
>

The problem of metric PL259's is well known in the UK at least , and
adaptors and 'metric' connectors are available from Ham Radio dealers.

73
Jeff

4646. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 10:37:06 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <2d83bdc4-57b5-4076-8a13-a2d422079864@d19g2000prm.googlegroups.com>
Source record: 25618

On May 2, 3:17 am, "Jeff" <j...@local.host> wrote:
> > I see you have asked this question in several places. I have read some
> > for what they are worth.
>
> > The Japanese manufacturers seems to have gotten a mind about a JIS for an
> > 'equivalent' connector. I don't know this for sure, but I have come
> > across some incompatible look alike connectors on some well known
> > Japanese brand high power amplifiers.
>
> > Your Chinese parts may have been copied from one of these incompatible
> > connectors.
>
> > Owen
>
> The problem of metric PL259's is well known in the UK at least , and
> adaptors and 'metric' connectors are available from Ham Radio dealers.
>
> 73
> Jeff

That may explain the problem I had with a couple of connectors . I was
able to borrow a die to run over them. The metric threads must be very
close to the SAE. After rethreading them they worked but I didnt like
the way the threads looked so i trashed them.

Jimmie

4647. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 11:24:28 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <481afab9$0$7055$4c368faf@roadrunner.com>
Source record: 25619

Cecil Moore wrote:
> Buck wrote:
>
>> If I have a low dipole about 10 feet off the ground for 75 meters,
>> would it be better if I put a hamstick 75 meter vertical up and
>> connect the dipole wires to the ground side for a vertical?
>
>
> The low dipole is probably much more efficient than the
> hamstick and most of the radiation is straight up which
> is not necessarily a bad thing on 75m. Your question reminds
> me of one on a clinical psychological test. "Would you rather
> take one or two days to die an agonizing death?" :-)

I think the original post needs a couple of questions asked.

Agreed the low lying dipole is ideal for a NVIS antenna.
It would be interesting to see what kind of results would be had for
contacts greater than 600 miles between the two antenna's.

Chris

4648. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 13:09:49 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <fvf3qt$11gc$1@f04n12.cac.psu.edu>
Source record: 25620

Christopher Cox wrote:
> Cecil Moore wrote:
>> Buck wrote:
>>
>>> If I have a low dipole about 10 feet off the ground for 75 meters,
>>> would it be better if I put a hamstick 75 meter vertical up and
>>> connect the dipole wires to the ground side for a vertical?
>>
>>
>> The low dipole is probably much more efficient than the
>> hamstick and most of the radiation is straight up which
>> is not necessarily a bad thing on 75m. Your question reminds
>> me of one on a clinical psychological test. "Would you rather
>> take one or two days to die an agonizing death?" :-)
>
> I think the original post needs a couple of questions asked.
>
> Agreed the low lying dipole is ideal for a NVIS antenna.
> It would be interesting to see what kind of results would be had for
> contacts greater than 600 miles between the two antenna's.

That Hamstick isn't going to be very efficient, so I guess it comes down to whether or not the reduced efficiency of the dipole at the desired DX angle allows for greater signal than the bad efficiency of the Hamstick at all angles...

Suffice it to say that it probably isn't a very good option to run a Hamstick setup at home when there are any other options available.

- 73 de Mike N3LI -

4649. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 13:27:58 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A92604F8BDF4jxp16psuedu@128.118.141.40>
Source record: 25621

Michael Coslo <mjc5@psu.edu> wrote in
news:fvf3qt$11gc$1@f04n12.cac.psu.edu:

> Christopher Cox wrote:
>> Cecil Moore wrote:
>>> Buck wrote:
>>>
>>>> If I have a low dipole about 10 feet off the ground for 75 meters,
>>>> would it be better if I put a hamstick 75 meter vertical up and
>>>> connect the dipole wires to the ground side for a vertical?
>>>
>>>
>>> The low dipole is probably much more efficient than the
>>> hamstick and most of the radiation is straight up which
>>> is not necessarily a bad thing on 75m. Your question reminds
>>> me of one on a clinical psychological test. "Would you rather
>>> take one or two days to die an agonizing death?" :-)
>>
>> I think the original post needs a couple of questions asked.
>>
>> Agreed the low lying dipole is ideal for a NVIS antenna.
>> It would be interesting to see what kind of results would be had for
>> contacts greater than 600 miles between the two antenna's.
>
>
> That Hamstick isn't going to be very efficient, so I guess it
> comes
> down to whether or not the reduced efficiency of the dipole at the
> desired DX angle allows for greater signal than the bad efficiency of
> the Hamstick at all angles...
>
> Suffice it to say that it probably isn't a very good option to run a
> Hamstick setup at home when there are any other options available.
>
> - 73 de Mike N3LI -

Your not going to gain anything from the swap. I've compared a full size
dipole to a hamstick dipole on 80m at the same hight. The dipole was
20db (about 3 S-units) better than the hamsticks. You will not gain
anything close to 20db by putting the hamstick dipole up higer. On 40m a
hamstick dipole is only about 10db worse than a full size dipole, better
still on the higher bands. And yes I'm talking about hamstick dipoles
using the right models for each band. On 80m the 2:1 SWR bandwidth is
about 60KHz, wider on 40m but still narrower than a dipole on all bands.

Ham stick dipoles seems attractive, but they fall into the better than nothing class on the lower bands.

John Passaneau

4650. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 14:33:37 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <tdOdnQG7uMVEuIbVnZ2dnUVZ8q-rnZ2d@pipex.net>
Source record: 25622

```
> I don't recall having run across any narrowband FM on the HF bands...
> I think there are still a few 10-meter repeaters operating around the
> country somewhere, but FM HF simplex seems to be either completely
> dead, or used just by occasional experimenters.
==================================
When the 10m band opens , here in Europe FM is quite common between
29.5 and 29.7 MHz . It is sometimes even possible to open the Boston
Mass. repeater on 29.600 MHz.

Frank GM0CSZ / KN6WH
```

4651. Re: 2M yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 14:40:45 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <5t9fUOCtfyGIFwui@b-howie.demon.co.uk>
Source record: 25623

In message <481948db$0$30462$afc38c87@news.optusnet.com.au>, Richard Neilsen <richardneilsen@optusnet.com.au> writes
>Anyone out there have any good 2m yagi plans?
>
>Looking for 3 or 4 elements for SSB on 2m
>
>Cheers
>Richard
>
>
>

Loads to chose from here:-

Http://www.dk7zb.fox28.de/start1.htm

I built a 9ele recently to his design , it works well.

Brian GM4DIJ

--
Brian Howie

4652. Sharmans Diamond clones

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 14:54:52 UTC
From: networkrail@mailinator.com
Message-ID: <1f952332-a4c4-496b-8a13-9e3fe3bddb22@y21g2000hsf.googlegroups.com>
Source record: 25624

A web outlet I sometimes use has some antennas that are branded as Sharmans but seem to be identical to the Diamond rage except for one thing – price. These antennas are about half the price. Has anyone here ever used any of these things? I don’t want to be paying for some else’s cast offs.

thanks

4653. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 15:46:42 UTC
From: richardharrison@webtv.net
Message-ID: <989-481B3762-22@storefull-3252.bay.webtv.net>
Source record: 25625

Cecil wrote:
"Is NBFM still allowed?"

Interesting question but I was responding to the question in the thread tille.

FM usually occupies about twice the bandwidth of AM. Spread spectrum ordinarily occupies more bandwidth.

Spread spectrum was patented by Nikola Tesla in 1903. FCC now codifies rules for spread spectrum in Wi-Fi, Bluetooth, cordless phones, etc.

Terman says about twice the bandwidth is required for FM as compared with AM on pages 589 and page 590 of his 1955 opus.

The signal for spread spectrum is a form of FM but usually the signal is transmitted on a bandwidth considerably larger than the frequency content of the original information says Wikipedia.

Best regards, Richard Harrison, KB5WZI

4654. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 16:11:19 UTC
From: richardharrison@webtv.net
Message-ID: <988-481B3D27-281@storefull-3252.bay.webtv.net>
Source record: 25626

Frank, GM0CZ / KN6WH wrote:
"It is sometimes even possible to open the Boston, Mass. repeater on
29.600 MHz."

FM is almost essential to repeater operation due to the inherent
automatic gain control of the FM mode. Once the weak signal point called
the "FM improvement threshold" is exceeded, further carrier strength
increases have no effect on the recovered modulation. The pip squeak is
as loud as the power house. Remodulate that on the repeater output.

Best regards, Richard Harrison, KB5WZI

4655. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 16:15:40 UTC
From: Jeff <jeff@local.host>
Message-ID: <481b4214$0$6433$834e42db@reader.greatnowhere.com>
Source record: 25628

> The problem of metric PL259's is well known in the UK at least , and
> adaptors and 'metric' connectors are available from Ham Radio dealers.
>
> 73
> Jeff

>That may explain the problem I had with a couple of connectors . I was
able to borrow a die to run over them. The metric threads must be very
close to the SAE. After rethreading them they worked but I didnt like
the way the threads looked so i trashed them.

Yes, they normally do up most of the way and then bind just before the inner
part has mated with the serrated teeth, so it is easy to miss if you don't
check that the cable is not free to rotate.

73
Jeff

4656. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 16:25:05 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <ckrre5-c8r.ln1@mail.specsol.com>
Source record: 25627

Richard Harrison <richardharrison@webtv.net> wrote:
> Cecil wrote:
> "Is NBFM still allowed?"

> Interesting question but I was responding to the question in the thread
> tille.

> FM usually occupies about twice the bandwidth of AM. Spread spectrum
> ordinarily occupies more bandwidth.

> Spread spectrum was patented by Nikola Tesla in 1903. FCC now codifies
> rules for spread spectrum in Wi-Fi, Bluetooth, cordless phones, etc.

> Terman says about twice the bandwidth is required for FM as compared
> with AM on pages 589 and page 590 of his 1955 opus.

> The signal for spread spectrum is a form of FM but usually the signal is
> transmitted on a bandwidth considerably larger than the frequency
> content of the original information says Wikipedia.

> Best regards, Richard Harrison, KB5WZI

The invention of spread spectrum is generally credited to George
Antheil and Hedy Lamarr (yes, the actress) and their patent of 1942.

--
Jim Pennino

Remove .spam.sux to reply.

4657. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 16:45:13 UTC
From: richardharrison@webtv.net
Message-ID: <988-481B4519-287@storefull-3252.bay.webtv.net>
Source record: 25629

Green Xenon wrote:
"But wouldn`t multipath intrference be as much of an issue in FM as in AM?"

Ionospheric multipath mucks up both FM and AM because the sidebands have both phase and amplitude altered almost randomly in transmission. However, FM is less sensitive to amplitude variations and reduces the apparent fading. But, a better way to reduce effects of fading is by diversity reception which automatically switches to the best available signal given several options which are from different carrier frequencies, antenna locations, or antenna polarizations.

Best regards, Richard Harrison, KB5WZI

4658. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 17:15:31 UTC
From: richardharrison@webtv.net
Message-ID: <13049-481B4C33-29@storefull-3258.bay.webtv.net>
Source record: 25630

Jim Pennino wrote:
"The invention of spread spectrum is generally credited to George
Antheil and Hedy Lamarr (yes the actress) and their patent of 1942."

Yes, I believe Lamarr and her husband encoded several tones in sequence using a player-piano roll. The system was used in WW-2. Poor old Tesla only invented the a.c. power system, wireless power transmission, and demonstrated his remote control of a boat using spread spectrum to avoid interference more than 40 years before Hedy Lamarr`s patent. T.A. Edison did his best to deny Tesla credit for anything. That`s commerce.

Best regards, Richard Harrison, KB5WZI

4659. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 17:44:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3qISj.2001$J16.915@newssvr23.news.prodigy.net>
Source record: 25631

Richard Harrison wrote:
> FM usually occupies about twice the bandwidth of AM.

Thanks for adding "usually" to your original statement.
I was just pointing out that if the FM peak deviation
is equal to the maximum modulation frequency, then the
FM signal occupies the same bandwidth as AM. The S/N
ratio advantage usually enjoyed by FM over AM occurs
when the FM peak deviation is *greater than* the maximum
modulation frequency. FM seems to have been the original
"spread spectrum" mode. :-)
--
73, Cecil http://www.w5dxp.com

4660. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 17:46:41 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3sISj.2002$J16.1140@newssvr23.news.prodigy.net>
Source record: 25632

jimp@specsol.spam.sux.com wrote:
> The invention of spread spectrum is generally credited to George
> Antheil and Hedy Lamarr (yes, the actress) and their patent of 1942.

What would be the difference between very wide band
suppressed carrier FM and spread spectrum?
--
73, Cecil http://www.w5dxp.com

4661. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 18:05:04 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <rh1se5-kvj.ln1@mail.specsol.com>
Source record: 25633

Richard Harrison <richardharrison@webtv.net> wrote:
> Jim Pennino wrote:
> "The invention of spread spectrum is generally credited to George
> Antheil and Hedy Lamarr (yes the actress) and their patent of 1942."

> Yes, I believe Lamarr and her husband encoded several tones in sequence
> using a player-piano roll. The system was used in WW-2. Poor old Tesla
> only invented the a.c. power system, wireless power transmission, and
> demonstrated his remote control of a boat using spread spectrum to avoid
> interference more than 40 years before Hedy Lamarr`s patent. T.A. Edison
> did his best to deny Tesla credit for anything. That`s commerce.

> Best regards, Richard Harrison, KB5WZI

George Antheil and Hedy Lamarr were never married. Antheil was a
neighbor.

The didn't encode "serveral tones in sequence on a player-piano roll",
they used a piano roll to produce frequency hopping between 88 different
frequencies with the intention of making radio guides torpedoes hard
to detect or jam.

The first practical use (after technology caught up with the concept)
was by the Navy during a blockade of Cuba in 1962 based on the work
started in 1957 by Sylvania Electronic Systems.

While Tesla and several Europeans had their fingers in various frequency
hopping schemes, the general consensus is that Antheil and Lamarr were
the first originators of the basis for spread spectrum radio systems as
used today.

Both Antheil and Lamarr were given a special award in 1997 in recognition
of that fact.

Other than that, you mostly got it right.

--
Jim Pennino

Remove .spam.sux to reply.

4662. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 18:15:04 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <qq1se5-kvj.ln1@mail.specsol.com>
Source record: 25634

Cecil Moore <nospam@w5dxp.com> wrote:
> jimp@specsol.spam.sux.com wrote:
> > The invention of spread spectrum is generally credited to George
> > Antheil and Hedy Lamarr (yes, the actress) and their patent of 1942.

> What would be the difference between very wide band
> suppressed carrier FM and spread spectrum?

To greatly simplify, spread spectrum is random frequency hopping to
discreate carrier frequencies and says nothing about the modulation
of the carrier.

--
Jim Pennino

Remove .spam.sux to reply.

4663. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 19:33:56 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <uuqm14ppi85uan1f9do89dmj8l4kgrngfg@4ax.com>
Source record: 25635

On Fri, 2 May 2008 13:27:58 +0000 (UTC), John Passaneau
<w3jxp@arrl.net> wrote:

>Michael Coslo <mjc5@psu.edu> wrote in
>news:fvf3qt$11gc$1@f04n12.cac.psu.edu:
>
>> Christopher Cox wrote:
>>> Cecil Moore wrote:
>>>> Buck wrote:
>>>>
>>>>> If I have a low dipole about 10 feet off the ground for 75 meters,
>>>>> would it be better if I put a hamstick 75 meter vertical up and
>>>>> connect the dipole wires to the ground side for a vertical?

John,
The idea I have is to make a vertical ground plane with the HamStick.

>Ham stick dipoles seems attractive, but they fall into the better than
>nothing class on the lower bands.
>
>John Passaneau

i fully understand that the HamStick is not a great antenna fro that
band, but how would the vertical ground plane made of a HamStick and
two full length radials compare to a dipole at the same 10 foot level?

what would the angle of radiation be like?

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4664. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 19:45:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <YaKSj.32$7k7.8@flpi150.ffdc.sbc.com>
Source record: 25636

jimp@specsol.spam.sux.com wrote:
> To greatly simplify, spread spectrum is random frequency hopping to
> discreate carrier frequencies and says nothing about the modulation
> of the carrier.

But frequency-hopping is only one form of spread spectrum.
How about the direct sequence form, DSSS?
--
73, Cecil http://www.w5dxp.com

4665. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 19:48:42 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <deKSj.33$7k7.6@flpi150.ffdc.sbc.com>
Source record: 25637

Buck wrote:
> what would the angle of radiation be like?

Probably about 25 degrees with -20dBi gain.
--
73, Cecil http://www.w5dxp.com

4666. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 19:53:26 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A92A1A72B225jxp16psuedu@128.118.141.40>
Source record: 25638

```
Buck <usenet01@lumpuckeroo.com> wrote in
news:uuqm14ppi85uan1f9do89dmj8l4kgrngfg@4ax.com:

> On Fri, 2 May 2008 13:27:58 +0000 (UTC), John Passaneau
> <w3jxp@arrl.net> wrote:
>
>>Michael Coslo <mjc5@psu.edu> wrote in
>>news:fvf3qt$11gc$1@f04n12.cac.psu.edu:
>>
>>> Christopher Cox wrote:
>>>> Cecil Moore wrote:
>>>>> Buck wrote:
>>>>>
>>>>>> If I have a low dipole about 10 feet off the ground for 75 meters,
>>>>>> would it be better if I put a hamstick 75 meter vertical up and
>>>>>> connect the dipole wires to the ground side for a vertical?
>
>
> John,
> The idea I have is to make a vertical ground plane with the HamStick.
>
>>Ham stick dipoles seems attractive, but they fall into the better than
>>nothing class on the lower bands.
>>
>>John Passaneau
>
> i fully understand that the HamStick is not a great antenna fro that
> band, but how would the vertical ground plane made of a HamStick and
> two full length radials compare to a dipole at the same 10 foot level?
>
> what would the angle of radiation be like?
>
>
```

My suggestion would be to download the trial version of EZNEC and model a 7 wire over ground. That is an easy model to do and will tell you what the pattern will look like. As to the gain it will be just about the same as my tests, about 20db down from a full size antenna. The reason is hamsticks are very lossy on 80m and the bandwidth will still be about 60KHz. Anyway learning how to model antennas is a lot of fun and you can try out a lot of different antennas easly. I can say from experance that modeling works. Everything that Ive carefuly modeled worked just like the model.

```
John Passaneau
```

4667. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 19:59:51 UTC
From: dplatt@radagast.org
Message-ID: <ne8se5-g9h.ln1@radagast.org>
Source record: 25639

In article <qq1se5-kvj.ln1@mail.specsol.com>,
<jimp@specsol.spam.sux.com> wrote:

>> What would be the difference between very wide band
>> suppressed carrier FM and spread spectrum?
>
>To greatly simplify, spread spectrum is random frequency hopping to
>discreate carrier frequencies and says nothing about the modulation
>of the carrier.

That is one specific form of spread-spectrum transmission (FHSS or frequency-hopping). This form tends to be used a lot in lower-cost consumer electronic gear (older-generation cordless phones, for example).

There are other forms of spread spectrum in common use, and in these forms the spreading is tied to the modulation scheme to at least some extent. Two examples:

- Direct-sequence spread spectrum (DSSS). A digital bitstream is XORed with a high-speed pseudorandom "spreading sequence", and the carrier is modulated by the resulting high-speed bitstream. The basic carrier frequency going into the modulator doesnt't change (it's fixed on a per-channel basis) but the energy is spread out as a very broad set of sidebands. 802.11b WLAN uses DSSS.

- Orthogonal frequency-division multiplexing (OFDM), which uses a large number of individual carriers, typically spaced at regular intervals, each modulated at a relatively low rate with some portion of the information being sent. Here, too, the frequency of each individual carrier tends to be fixed. 802.11g, DMT (discrete multitone) DSL modems, and the venerable Telebit Trailblazer phone-line modem use OFDM.

Very-wide-band FM (i.e. FM with a high modulation index) carries little of its energy at the carrier frequency - most of it is in the regularly-spaced sidebands, located at offsets from the carrier which are multiples of the modulating frequency/frequencies. In this sense, its spectrum use would be not dissimilar to that of an FDM spread spectrum (although it would generally not be OFDM because the sidebands aren't spaced in an orthogonal manner).

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will

boycott any company which has the gall to send me such ads!

4668. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 20:28:44 UTC
From: richardharrison@webtv.net
Message-ID: <8186-481B797C-326@storefull-3251.bay.webtv.net>
Source record: 25640

Cecil, W5DXP wrote:
"But frequency hopping is only one form of spread spectrum."

Yes. No more than two frequencies are required to switch between, though the transition produces more frequencies than the originals. Carson`s rule is a close approximation of the required bandwidth and is used by the FCC to determine bandwidth:
BW= 2(Peak Deviation + Highest Mod. Freq.)

FSK or frequency shift keying uses only two frequencies to represent ones and zeros. Switching produces FM and is a form of spread spectrum transmission defined as:
A communications technique in which many different waveforms are transmitted in a wide band. Power is spread thinly over the band so narrow-band radios can operate within the wide band without interference. FSK is often done within the audio frequency band with no radio necessarily used in transmission.

Best regards, Richard Harrison, KB5WZI

4669. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 20:31:53 UTC
From: dplatt@radagast.org
Message-ID: <paase5-vrm.ln1@radagast.org>
Source record: 25642

In article <3qISj.2001$J16.915@newssvr23.news.prodigy.net>,
Cecil Moore <nospam@w5dxp.com> wrote:

>> FM usually occupies about twice the bandwidth of AM.
>
>Thanks for adding "usually" to your original statement.
>I was just pointing out that if the FM peak deviation
>is equal to the maximum modulation frequency, then the
>FM signal occupies the same bandwidth as AM.

I believe that you're mistaken on this point, Cecil.

As I understand it, the spectrum of a frequency-modulated carrier will have energy at the carrier frequency (except at certain very specific modulation indices), and energy at offsets from the carrier which are equal to the modulating frequency and all of its harmonics.

It's entirely possible (and in fact common) for an FM signal to have energy at frequencies which are further away from the nominal carrier frequency, than the maximum instantaneous deviation of the carrier would suggest. For example, a carrier which is modulated with a 1000 Hz tone, but only to the level of having a maximum peak deviation of 500 Hz from nominal, will still have sideband energy out 1000 Hz and 2000 Hz away from the nominal carrier frequency.

This is *really* counter-intuitive, and I haven't been able to fully wrap my brain around the question of just how the math works... but the math says that it's true, and my own spectrum measurements show that it's true.

An FCC-approved NBFM phone signal, which has a modulation index of no more than 1.0 at the highest modulating frequency, *will* have energy out further than the peak deviation would suggest. There will be some amount of sideband energy located out at twice the highest modulating frequency, and a bit at three times.

The levels of these further-away-from-nominal-carrier sidebands will be relatively low - they don't start to become appreciable until you get to a higher modulation index.

An AM signal being modulated by the same intelligence signal would not have any energy out at the multiples, *if* it was generated and transmitted in an entirely-distortion-free manner.

My guess is that in practice, NBMF (per FCC regs), and ham-grade AM, probably have very similar bandwidths. All it would take for the AM signal to be spread out as far as the FM signal, would be a bit of

nonlinear distortion in the audio chain, mixer, or amplifier chain...
this will create a second-harmonic sideband.

I did an introductory presentation to a local hamclub last year (with
some math, admittedly simplified and approximated and covered up with
moderate amounts of hand-waving) which explains some of these
concepts. I included some plots of actual measured spectra, generated
by an HP signal generator and captured using an old Systron Donner
spectrum analyzer.

http://www.radagast.org/~dplatt/hamradio/FARS_presentation_on_modulation.pdf

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4670. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 20:45:19 UTC
From: dplatt@radagast.org
Message-ID: <v3bse5-vrm.ln1@radagast.org>
Source record: 25641

In article <uuqm14ppi85uan1f9do89dmj8l4kgrngfg@4ax.com>,
Buck <usenet01@lumpuckeroo.com> wrote:

>i fully understand that the HamStick is not a great antenna fro that
>band, but how would the vertical ground plane made of a HamStick and
>two full length radials compare to a dipole at the same 10 foot level?

I think it would compare badly to the dipole.

With the dipole, you'll have working in your favor the basic radiation resistance of a dipole in free space, reduced by the proximity of the dipole to the "reflector" (the lossy soil). Working against you, will be the losses in the soil. It'll certainly be a cloudwarmer... good for NVIS, not for DX as there will be little energy at a low radiation angle.

If you short the dipole wires and use it as a two-wire sort-of-elevated radial set, the radiation resistance of these wires will be very close to zero - the far-field radiation from them will cancel out almost entirely. You'll still have substantial losses in the soil, I think, as the wires are only a small fraction of a wavelength above the soil surface. The radiation resistance of the HamStick itself is going to be quite low (an ohm or so??), and it certainly has a substantial amount of loss resistance.

My SWAG is that by making this change, you might drop your radiation efficiency from 25% (low dipole over lossy ground) to 5% or less (lossy short vertical, over an inadequate radial network with substantial ground losses). Don't trust these numbers!

>what would the angle of radiation be like?

Probably much like that of any other very-short monopole over a lossy ground... pretty much omnidirectional, with a modest null pointing straight up.

It *may* have more low-angle radiation in the pattern than the low-dipole arrangement, but I think you'd lose most or all of the pattern advantage due to the lower radiation efficiency.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4671. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 21:03:33 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <FkLSj.2214$506.2122@newssvr27.news.prodigy.net>
Source record: 25643

Dave Platt wrote:
> In article <3qISj.2001$J16.915@newssvr23.news.prodigy.net>,
> Cecil Moore <nospam@w5dxp.com> wrote:
>
>>> FM usually occupies about twice the bandwidth of AM.
>> Thanks for adding "usually" to your original statement.
>> I was just pointing out that if the FM peak deviation
>> is equal to the maximum modulation frequency, then the
>> FM signal occupies the same bandwidth as AM.
>
> I believe that you're mistaken on this point, Cecil.

Yep, you're right. A modulation index of about 0.6
yields approximately the same bandwidth for AM and FM.
--
73, Cecil http://www.w5dxp.com

4672. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 21:26:45 UTC
From: Frank's <frank599@nojunkmailplease.telus.net>
Message-ID: <pGLSj.120$KB3.21@edtnps91>
Source record: 25644

"Buck" <usenet01@lumpuckeroo.com> wrote in message
news:2i7k14pdts0lgltr6lv309mp7sqfo0q2tt@4ax.com...
>
> If I have a low dipole about 10 feet off the ground for 75 meters,
> would it be better if I put a hamstick 75 meter vertical up and
> connect the dipole wires to the ground side for a vertical?
>
> Buck
> N4PGW
>
> --
> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

Assuming a 7 ft monopole, with a lumped element inductor
(located in the middle of the vertical) of Q = 500,
and 100 W input. The total radiated (sky wave) power is 1.4 W.
The gain is -12.7 dbi with a take-off angle of 23 degrees.
At resonance the input impedance is 14 ohms.

73,

Frank

4673. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 22:15:04 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <a4gse5-dp3.ln1@mail.specsol.com>
Source record: 25645

Dave Platt <dplatt@radagast.org> wrote:
> In article <qq1se5-kvj.ln1@mail.specsol.com>,
> <jimp@specsol.spam.sux.com> wrote:

> >> What would be the difference between very wide band
> >> suppressed carrier FM and spread spectrum?
> >
> >To greatly simplify, spread spectrum is random frequency hopping to
> >discreate carrier frequencies and says nothing about the modulation
> >of the carrier.

> That is one specific form of spread-spectrum transmission (FHSS or
> frequency-hopping). This form tends to be used a lot in lower-cost
> consumer electronic gear (older-generation cordless phones, for
> example).

> There are other forms of spread spectrum in common use, and in these
> forms the spreading is tied to the modulation scheme to at least some
> extent. Two examples:

> - Direct-sequence spread spectrum (DSSS). A digital bitstream is
> XORed with a high-speed pseudorandom "spreading sequence", and the
> carrier is modulated by the resulting high-speed bitstream. The
> basic carrier frequency going into the modulator doesnt't change
> (it's fixed on a per-channel basis) but the energy is spread out
> as a very broad set of sidebands. 802.11b WLAN uses DSSS.
>
> - Orthogonal frequency-division multiplexing (OFDM), which uses a large
> number of individual carriers, typically spaced at regular
> intervals, each modulated at a relatively low rate with some
> portion of the information being sent. Here, too, the frequency of
> each individual carrier tends to be fixed. 802.11g, DMT (discrete
> multitone) DSL modems, and the venerable Telebit Trailblazer
> phone-line modem use OFDM.
>
> Very-wide-band FM (i.e. FM with a high modulation index) carries
> little of its energy at the carrier frequency - most of it is in the
> regularly-spaced sidebands, located at offsets from the carrier which
> are multiples of the modulating frequency/frequencies. In this sense,
> its spectrum use would be not dissimilar to that of an FDM spread
> spectrum (although it would generally not be OFDM because the
> sidebands aren't spaced in an orthogonal manner).

What part of "To greatly simplify" are you having problems understanding?

--
Jim Pennino

Remove .spam.sux to reply.

4674. Items I would like to trade

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-02 23:24:31 UTC
From: Mike Kulyk <mkulyk@optonline.net>
Message-ID: <481ba2b0$0$11620$607ed4bc@cv.net>
Source record: 25646
Cross-posted to:
rec.radio.swap,rec.radio.amateur.swap,rec.radio.amateur.homebrew,rec.radio.amateur.antenna,rec.radio.amateur

I have these following items I can't use and I would like to trade for items I can use.

Shure Hand Held Mic.. cm 16r This is a noise canceling mobile mic. with a 6 pin plug NEW.. and I can't use it.

Slinky Dipole antenna. 10-80 mtrs.. With directions. This is a new antenna and it was never installed.

Motorola 12 volt power supply. I was told this is 12 amps.. could be 16 maps

Model HPN 1004A.. Needs minor work.. fraid power cord. other wise its working. not enough current for my needs. And I can't store it in my small apartment.

Motorola white external speaker. No mounting bracket. But in nice shape,

I would be interesting in trading for 20-25 amp power supply,, 12 volts Need not be working. Astron.. or something like it. Or power supply parts.

Antenna tuner,, or parts for a antenna tuner. If it needs work I am open for that. MFJ.. or someother

Please e-mail me at mkulyk@optonline.net

73 mike wb2glw

4675. Re: Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 01:39:10 UTC
From: Fred McKenzie <fmmck@aol.com>
Message-ID: <fmmck-2D248F.21391002052008@nntp.aioe.org>
Source record: 25647

In article <2KuRj.5916$ko5.1160@news-server.bigpond.net.au>,
"HRBE" <hrbe@bigpond.net.au> wrote:

> I re-read N1GY's original and he mentioned in his article about the actual
> placing of the whips.
>
> I followed his directions and placed the 75m and 40m whips at right angles
> to each other and the ather two pairs of whips in a like manner.
>
> This then made the whole job a little easier, but the 20m whips are not as
> sharp in tuning as the other pairs.

John-

I built the Octopus, but decided to go one further. I added a Ten Meter vertical whip on top, thinking the other elements would act as an effective counterpoise. It didn't work! Apparently a Ten Meter counterpoise element is needed.

Just using the basic 4-band design, it seemed to have quite good SWR dips, and responded to tuning. It did not have your problem. It does use whips like (or close to) the ones in the article, not true Hamsticks.

However, I kept trying to add Ten Meters. By changing one of the ground elements to a hot element, and adding two 45 degree upward-tilted grounded elements on a bracket, I was able to "share" one of the dipoles. If one band's hot element is on the north end, then its grounded element is the southern 45 degree element, and vice-versa for the second band.

I tried various pairings of Ten, Fifteen and Twenty, but there was always one band of the two that suffered with either a poor SWR dip and/or a center frequency shifted downward. I ended up sharing Fifteen and Ten Meters, with Ten Meters being the band that suffered. Even with a poor dip, the SWR is below 2:1 over the entire Ten Meter band.

So far, Ten Meters is the only band I've gotten signal reports on, and only for local contacts. In that situation, it seems to compare favorably to a mobile installation with a single whip.

Fred
K4DII

4676. Re: Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 08:01:47 UTC
From: John VK2KCE <hrbe@bigpond.net.au>
Message-ID: <LZUSj.7201$ko5.280@news-server.bigpond.net.au>
Source record: 25648

Thanks Fred for your comments.
Today I tried out the 40m band and got great reports from a mobile op who was over 400miles away to the south of me and another op in his shack about the same distance north, both said I put in a very good signal, and strangely enough I was the same signal strength in comparison to another operator who was operating from his shack 15 miles due west of me, to both other other operators.

I intend to put a 2m/70cm antenna on top, but to do this I will have to do some machining to the hub as it was machined out of a solid billet of aluminium.

It has certainly exceeded my expectations.

73
John
VK2KCE

"Fred McKenzie" <fmmck@aol.com> wrote in message
news:fmmck-2D248F.21391002052008@nntp.aioe.org...
> In article <2KuRj.5916$ko5.1160@news-server.bigpond.net.au>,
> "HRBE" <hrbe@bigpond.net.au> wrote:
>
>> I re-read N1GY's original and he mentioned in his article about the
>> actual
>> placing of the whips.
>>
>> I followed his directions and placed the 75m and 40m whips at right
>> angles
>> to each other and the ather two pairs of whips in a like manner.
>>
>> This then made the whole job a little easier, but the 20m whips are not
>> as
>> sharp in tuning as the other pairs.
>
> John-
>
> I built the Octopus, but decided to go one further. I added a Ten Meter
> vertical whip on top, thinking the other elements would act as an
> effective counterpoise. It didn't work! Apparently a Ten Meter
> counterpoise element is needed.
>
> Just using the basic 4-band design, it seemed to have quite good SWR
> dips, and responded to tuning. It did not have your problem. It does
> use whips like (or close to) the ones in the article, not true Hamsticks.

>
> However, I kept trying to add Ten Meters. By changing one of the ground
> elements to a hot element, and adding two 45 degree upward-tilted
> grounded elements on a bracket, I was able to "share" one of the
> dipoles. If one band's hot element is on the north end, then its
> grounded element is the southern 45 degree element, and vice-versa for
> the second band.
>
> I tried various pairings of Ten, Fifteen and Twenty, but there was
> always one band of the two that suffered with either a poor SWR dip
> and/or a center frequency shifted downward. I ended up sharing Fifteen
> and Ten Meters, with Ten Meters being the band that suffered. Even with
> a poor dip, the SWR is below 2:1 over the entire Ten Meter band.
>
> So far, Ten Meters is the only band I've gotten signal reports on, and
> only for local contacts. In that situation, it seems to compare
> favorably to a mobile installation with a single whip.
>
> Fred
> K4DII
>

4677. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 08:16:25 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <NrKdnaAJIJ3HgoHVnZ2dnUVZ_i2dnZ2d@easystreetonline>
Source record: 25649

Richard Harrison wrote:
> . . .
> Terman says about twice the bandwidth is required for FM as compared
> with AM on pages 589 and page 590 of his 1955 opus.
> . . .

You really should try to understand the context of the various quotations from Terman.

In his _Radio Engineering_, Third Edition (1947), he points out that "When the modulation index is less than 0.5, i.e., when the frequency deviation is less than half the modulating frequency, the second and higher order side-band components are relatively small, and the frequency band required to accommodate the essential part part is the same as in amplitude modulation." This is, of course, what is considered to be narrow band FM.

Unlike an AM signal with its one pair of sidebands containing replicas of the modulating signal, any FM signal contains an infinite number of pairs of sidebands. However, as Terman and any other communications text points out, the relative strengths of some of those sidebands can be made to be very small by the choice of modulation index. In the case of NBFM, all but the first pair are small. That first pair are spaced the same distance from the carrier as AM sidebands, so the bandwidth is essentially the same as for AM.

You can, of course, increase the modulation index which increases the bandwidth by increasing the amplitudes of higher order sideband pairs, making wideband FM. The advantage of doing this is that you can improve the signal/noise ratio of the received signal as a trade for the increased bandwidth.

So FM can be as narrow in bandwidth as AM, or any greater bandwidth, all depending on the modulation index. Saying that "twice the bandwidth is required for FM as compared with AM" is simply not a correct statement and, if said by Terman, was taken out of context which surely qualified it.

Roy Lewallen, W7EL

4678. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 12:49:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AbZSj.1351$nW2.1140@nlpi064.nbdc.sbc.com>
Source record: 25650

Frank's wrote:
> Assuming a 7 ft monopole, with a lumped element inductor
> (located in the middle of the vertical) of Q = 500,
> and 100 W input. The total radiated (sky wave) power is 1.4 W.
> The gain is -12.7 dbi with a take-off angle of 23 degrees.
> At resonance the input impedance is 14 ohms.

And the Q of a hamstick is probably a lot closer to 50
than to 500. Someone else reported the hamstick as -20 dBd.
--
73, Cecil http://www.w5dxp.com

4679. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 13:06:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <zrZSj.91$8i5.84@flpi144.ffdc.sbc.com>
Source record: 25651

jimp@specsol.spam.sux.com wrote:
> What part of "To greatly simplify" are you having problems understanding?

"Everything should be made as simple as it is,
but not simpler." Albert Einstein.
--
73, Cecil http://www.w5dxp.com

4680. Ground gain on real ground

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 17:00:23 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <481c9a18$0$29601$4fafbaef@reader1.news.tin.it>
Source record: 25652

I am simulating on EZNEC an antenna yielding a gain of about 13.5 dB (at zero deg. elevation) when in free space.

The same antenna, placed on an ideal ground, shows a gain of about 18.8 dB (at 10 deg. elevation), thanks to the so-called "ground gain".

If the antenna is placed on a non-ideal ground (according to EZNEC modelling), its gain becomes 18.4 dB.

I am surprised of the small gain difference between the ideal ground case and the non-ideal ground case (just 0.4 dB). As a matter of fact, while the ideal ground may be regarded as a perfectly conductive plane, the non-ideal ground is something having a significant ohmic resistance. I would had thought that most of the RF power incident on a plane having a significant resistance would be absorbed (and hence not reflected).

Any comment please?

73

Tony I0JX

4681. Re: Ground gain on real ground

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 19:25:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <k5-dnVwg1KWPIYHVnZ2dnUVZ_hKdnZ2d@easystreetonline>
Source record: 25653

Antonio Vernucci wrote:
> I am simulating on EZNEC an antenna yielding a gain of about 13.5 dB (at
> zero deg. elevation) when in free space.
>
> The same antenna, placed on an ideal ground, shows a gain of about 18.8
> dB (at 10 deg. elevation), thanks to the so-called "ground gain".
>
> If the antenna is placed on a non-ideal ground (according to EZNEC
> modelling), its gain becomes 18.4 dB.
>
> I am surprised of the small gain difference between the ideal ground
> case and the non-ideal ground case (just 0.4 dB). As a matter of fact,
> while the ideal ground may be regarded as a perfectly conductive plane,
> the non-ideal ground is something having a significant ohmic resistance.
> I would had thought that most of the RF power incident on a plane having
> a significant resistance would be absorbed (and hence not reflected).
>
> Any comment please?

You must be modeling a horizontally polarized antenna. The attenuation caused by ground reflection is quite different for horizontally and vertically polarized fields. When the field is horizontally polarized, nearly any reasonable ground gives a near-perfect reflection at low elevation angles. Only at high elevation angles will you see much difference caused by ground quality.

Unfortunately for people using vertical antennas, the story is quite different when the field is vertically polarized.

There's a good discussion of the effect of imperfect ground and derivations of the ground reflection coefficients in any edition of Kraus' _Antennas_.

Roy Lewallen, W7EL

4682. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 19:59:09 UTC
From: richardharrison@webtv.net
Message-ID: <22243-481CC40D-445@storefull-3254.bay.webtv.net>
Source record: 25654

Roy Lewallen wrote:
"You really should try ro understand the context of the various
quotations from Terman."

I do.

I did not give the quotation from Terman, only its gist. Here it is:
"A useful rule is that a frequency modulated wave contains sideband
components of importance on either side of the carrier wave over a
frequency interval approximating the sum of the frequency deviation and
the modulating frequency. The total bandwidth in which most of the wave
is contained is then twice this value."

The original posting in this thread read:
"Most cell phones and wireless routers, modems, and access points that
use spread spectrum usually broadcast and receive their data on FM-radio
waves. Just out of curiosity, I ask why not use AM?"

Nothing about narrow-band FM in the question and I responded:

"---losing insensitivity to carrier level when recovering modulation."

I did not take Terman out of context to distort his meaning. Ternan was
merely restating Carson`s rule which is the same approximation the FCC
uses to determine bandwidth. I quoted this in my May 2, 3:28 pm posting.
I`ve used this to calculate bandwidth many times with no citations from
the FCC yet.

I make plenty of mistakes but I see only one I`ve made in my postings in
this thread and that is an instance where I typed FM when I meant AM and
I immediately corrected it in the next posting.

Best regards, Richard Harrison, KB5WZI

4683. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 21:53:26 UTC
From: Frank's <frank599@nojunkmailplease.telus.net>
Message-ID: <q95Tj.299$KB3.277@edtnps91>
Source record: 25655

> And the Q of a hamstick is probably a lot closer to 50
> than to 500. Someone else reported the hamstick as -20 dBd.

I would think it would be hard to design a coil with a Q of 50.
I tried to find a picture of a Hamstick to estimate the Q,
but no luck. Anyway, assuming the Q is 50, NEC returns
the following results:

Structure efficiency - 5%
Total radiated sky wave (with 100 W in) = 180 mW.
Input impedance - 112 ohms.

73,

Frank

4684. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 21:57:45 UTC
From: Frank's <frank599@nojunkmailplease.telus.net>
Message-ID: <td5Tj.301$KB3.104@edtnps91>
Source record: 25656

> Structure efficiency - 5%
> Total radiated sky wave (with 100 W in) = 180 mW.
> Input impedance - 112 ohms.

PS -- and the gain is -23 dbi at a 20 deg TOA.

4685. Re: Ground gain on real ground

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 22:29:37 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <481ce744$0$41653$4fafbaef@reader4.news.tin.it>
Source record: 25657

> When the field is horizontally polarized, nearly any reasonable ground gives a
> near-perfect reflection at low elevation angles. Only at high elevation angles
> will you see much difference caused by ground quality.

Good to know. I would have otherwise thought that even sea water is not a good reflective plane, its resistance not being very low.

73

Tony I0JX

4686. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 23:05:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <D4WdnVCTSvE5coHVnZ2dnUVZ_jidnZ2d@easystreetonline>
Source record: 25658

Richard Harrison wrote:
> Roy Lewallen wrote:
> "You really should try ro understand the context of the various
> quotations from Terman."
>
> I do.
>
> I did not give the quotation from Terman, only its gist. Here it is:
> "A useful rule is that a frequency modulated wave contains sideband
> components of importance on either side of the carrier wave over a
> frequency interval approximating the sum of the frequency deviation and
> the modulating frequency. The total bandwidth in which most of the wave
> is contained is then twice this value."
>
> The original posting in this thread read:
> "Most cell phones and wireless routers, modems, and access points that
> use spread spectrum usually broadcast and receive their data on FM-radio
> waves. Just out of curiosity, I ask why not use AM?"
>
> Nothing about narrow-band FM in the question and I responded:
>
> "---losing insensitivity to carrier level when recovering modulation."
>
> I did not take Terman out of context to distort his meaning. Ternan was
> merely restating Carson`s rule which is the same approximation the FCC
> uses to determine bandwidth. I quoted this in my May 2, 3:28 pm posting.
> I`ve used this to calculate bandwidth many times with no citations from
> the FCC yet.
>
> I make plenty of mistakes but I see only one I`ve made in my postings in
> this thread and that is an instance where I typed FM when I meant AM and
> I immediately corrected it in the next posting.
>
> Best regards, Richard Harrison, KB5WZI

How did you conclude from this statement in Terman that the bandwidth required by FM is twice that required by AM?

Roy Lewallen, W7EL

4687. Re: Ground gain on real ground

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-03 23:13:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <P9mdnYlnKvQpbIHVnZ2dnUVZ_rGhnZ2d@easystreetonline>
Source record: 25659

Antonio Vernucci wrote:
>[I wrote:]
>> When the field is horizontally polarized, nearly any reasonable ground
>> gives a near-perfect reflection at low elevation angles. Only at high
>> elevation angles will you see much difference caused by ground quality.
>
> Good to know. I would have otherwise thought that even sea water is not
> a good reflective plane, its resistance not being very low.

The resistivity of sea water is high compared to metal, but very low compared to air. But what counts is its intrinsic impedance compared to that of free space. At 10 MHz, the magnitude of salt water's intrinsic impedance is about 4 ohms, compared to the 377 ohms of free space. So it does a good job of reflecting waves when air is at the other side of the interface.

EZNEC will tell you the intrinsic impedance and other information about any Real ground if you select Ground Info from the Utilities menu in the main window.

Roy Lewallen, W7EL

4688. Re: Disadvantages of using AM for DSSS/FHSS Spread Spectrum?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-04 01:02:43 UTC
From: richardharrison@webtv.net
Message-ID: <4716-481D0B33-51@storefull-3255.bay.webtv.net>
Source record: 25660

Roy Lewallen wrote:
"How did you conclude from this statement in Terman that the bandwidth required by FM is twice that required by AM?"

Easy, I turn up the peak deviation intil twice the bandwidth is occupied with FM as would be required for AM. It is arbitrary and depends on peak deviation. If you make the deviation less than half the modulating frequency, the bandwidth occupied will be about the same as required for AM.

Best regards, Richard Harrison, KB5WZI

4689. Re: Ground gain on real ground

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-04 08:40:57 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <481d768b$0$18153$4fafbaef@reader3.news.tin.it>
Source record: 25661

> The resistivity of sea water is high compared to metal, but very low
> compared to air. But what counts is its intrinsic impedance compared to
> that of free space. At 10 MHz, the magnitude of salt water's intrinsic
> impedance is about 4 ohms, compared to the 377 ohms of free space. So it
> does a good job of reflecting waves when air is at the other side of the
> interface.
>
> EZNEC will tell you the intrinsic impedance and other information about
> any Real ground if you select Ground Info from the Utilities menu in the
> main window.

Thanks Roy, very useful advice.

Tony I0JX

4690. To Find Your Soil's Electric Conductivity

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-04 12:19:53 UTC
From: KA3VID <whax44@NOspamgmail.com>
Message-ID: <JRhTj.3154$ch1.2374@trndny09>
Source record: 25662

Fellow radiators:

To Find Your Soil's Electric Conductivity

1) Go to: http://websoilsurvey.nrcs.usda.gov/app

2) Click on the big green button, "Start WSS".

3) Follow step 1 of "Three Basic Steps" on the first page.

Typing your address under "Quick Navigation" is the

easiest method. Remember to spell out street, circle...

When using the + and - zoom feature, click on + or -.

Then place the cursor at the point you wish to be the

center of your next map and click.

4) Click on "view".

5) Click AOI tab which is just above the map and outline

(draw a box

around) your Fresnel Zone.

6) Follow the second step "View/Explore" by clicking

the "Soil Map" tab.

7) Click the "Soil Data Explorer" tab.

8) Click the "Soil Properties and Qualities" box which is

just above the map.

9) Click the "Soil Chemical Properties" box.

10) Click the "Electrical Conductivity" box.

11) Toward the bottom of the page, locate "Top Depth" and

enter 1.

For the bottom depth enter 144 for 14 Mhz, 360 for 1.8 Mhz.

12) Click inches.

13) Click "View Rating".

14) In the table, read in the column "Rating (millimhos

per centimeter)".

15) Use the millimhos/centimeter number as mS/m.

Thus, 17 millimhos becomes 17 mS/m. This is the

electrical conductivity of your Fresnel Zone.

16) This page is printable from your screen to your printer.

Best regards,
Will

4691. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-04 14:07:04 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <bqjTj.8387$iK6.7786@nlpi069.nbdc.sbc.com>
Source record: 25663

Frank's wrote:
> PS -- and the gain is -23 dbi at a 20 deg TOA.

Someone measured it at -20dBd so that may be
fairly accurate.
--
73, Cecil http://www.w5dxp.com

4692. Re: Octopus a real Doosey

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-04 18:47:38 UTC
From: Fred McKenzie <fmmck@aol.com>
Message-ID: <fmmck-495FA8.14473804052008@nntp.aioe.org>
Source record: 25664

In article <LZUSj.7201$ko5.280@news-server.bigpond.net.au>,
"John VK2KCE" <hrbe@bigpond.net.au> wrote:

> I intend to put a 2m/70cm antenna on top, but to do this I will have to do
> some machining to the hub as it was machined out of a solid billet of
> aluminium.

John-

Yours sounds like it is relatively weatherproof. Mine is definitely not. It may be possible to use a round cap for a 4 or 5 inch PVC sewer pipe to construct one that is. It might also be possible to mount all 10 elements of a 5-band antenna along the circumference.

A vertical 2m/70cm antenna would be worth a try. If it doesn't work against the grounded HF elements, adding a few short resonant radials should correct it. Worst case, a second feed line might be needed.

It occurred to me that my criteria for a "good dip" may be different from yours. I consider it to be one that is distinct, at least 1.5:1 SWR but not necessarily down to 1:1. Using a rig that has an auto-tuner, useable bandwidth should be at least as good as the spread between 3:1 SWR points.

I made one additional modification to mine, swapping one insulated element with one grounded element on the bracket. By pairing Ten and Fifteen Meter elements as before, the previous problem seems to have gone away.

(I'm having trouble posting, so this may appear twice!)

73,
Fred
K4DII

4693. Re: To Find Your Soil's Electric Conductivity

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-04 18:57:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <DKSdnS61XJKDmoPVnZ2dnUVZ_gOdnZ2d@easystreetonline>
Source record: 25665

KA3VID wrote:
> Fellow radiators:
>
> To Find Your Soil's Electric Conductivity
>
> 1) Go to: http://websoilsurvey.nrcs.usda.gov/app
>
> 2) Click on the big green button, "Start WSS".
> . . .

This might be fun to do, but it probably doesn't really tell you your soil's conductivity, which can vary a great deal from lot to lot and even within a yard. And if it does, it's likely to be only the surface conductivity. The skin depth for average soil is around 12 - 15 feet over the HF range, so substantial current flows to that depth and below. Typical soils are stratified, with potentially very different conductivities at different depths.

So, after going through this exercise, you have a number. But that number is of no real use.

Roy Lewallen, W7EL

4694. Re: To Find Your Soil's Electric Conductivity

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-04 21:56:54 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A949813C1B8FHuckleberrybigvalley@198.186.192.196>
Source record: 25666

> This might be fun to do, but it probably doesn't really tell you your
> soil's conductivity, which can vary a great deal from lot to lot and
> even within a yard. And if it does, it's likely to be only the surface
> conductivity. The skin depth for average soil is around 12 - 15 feet
> over the HF range, so substantial current flows to that depth and
below.
> Typical soils are stratified, with potentially very different
> conductivities at different depths.
>
> So, after going through this exercise, you have a number. But that
> number is of no real use.
>
> Roy Lewallen, W7EL
>

I think in my case it was accurate.... we came up with a big fat
zero..... but then again, we are on at least several feet of pretty pure
sand.

Ed K7AAT

4695. Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-04 22:16:27 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <UAqTj.23359$%n2.8015@newsfe12.ams2>
Source record: 25667

I want to buy an antenna analyzer and have narrowed it down to two.

What is the best one to buy from these two, Palstar ZM30 or Kuranishi BR-210
and why?

What are the pro's and con's between these two, if any?

Thanks

4696. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-04 23:13:22 UTC
From: Dan Yemiola AI8O <Dan@Yemiola.Net>
Message-ID: <fvlhsj$8k0$2@news04.infoave.net>
Source record: 25668

"HRBE" <hrbe@bigpond.net.au> wrote in message
news:6E7Sj.6487$ko5.2207@news-server.bigpond.net.au...
>
> I assumed wrongly that there was an International standard with regard to
> the PL259/SO239.
>
> Naturally when a known part number is advertised, one would expect that
> the normal 5/8" x 24 threads per inch standard (UNEF) would be followed.
>
>
The original PL-259 was a World War 2 US military JANAP standard.
It had specifications for all the critical fit parts of a PL-259 connector.
Eventually the JANAP standard morphed into a US Mil-Spec Standard.
The current standard hasn't changed much since WW2.
A metric thread does not meet the standard.
If somebody says its a PL-259; they should meet that standard or say it is
similar but NOT compatible.
Too many manufacturers have gotten sloppy in their QC.

4697. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 03:00:00 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <rrts14t8cjgphk16get5g1brnbcu706ur7@4ax.com>
Source record: 25669

On Thu, 01 May 2008 15:49:00 -0400, Buck <usenet01@lumpuckeroo.com>
wrote:

>
>If I have a low dipole about 10 feet off the ground for 75 meters,
>would it be better if I put a hamstick 75 meter vertical up and
>connect the dipole wires to the ground side for a vertical?
>
>Buck
>N4PGW

In another forum, I was informed that the signal for the vertical was
very low at every angle compared to the dipole.

One of the things i was thinking about was if it would be beneficial
to add a good ground radial to the mobile whip on the car, once
parked. however, it is obvious that if one can raise, even 10 feet, a
full sized 1/2 wave dipole, it would produce much better results being
left in the dipole configuration.

Thank you to all who participated. (Even to the one who simply said
"NO"). that was a short, sweet and to the point answer. :)

73 for now
Buck
n4pgw

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4698. Re: To Find Your Soil's Electric Conductivity

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 08:11:04 UTC
From: KA3VID <whax44@NOspamgmail.com>
Message-ID: <sizTj.662$JF1.319@trndny06>
Source record: 25670

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:DKSdnS61XJKDmoPVnZ2dnUVZ_gOdnZ2d@easystreetonline...
> KA3VID wrote:
>> Fellow radiators:
>>
>> To Find Your Soil's Electric Conductivity
>>
>> 1) Go to: http://websoilsurvey.nrcs.usda.gov/app
>>
>> 2) Click on the big green button, "Start WSS".
>> . . .
>
> This might be fun to do, but it probably doesn't really tell you your
> soil's conductivity, which can vary a great deal from lot to lot and even
> within a yard. And if it does, it's likely to be only the surface
> conductivity. The skin depth for average soil is around 12 - 15 feet over
> the HF range, so substantial current flows to that depth and below.
> Typical soils are stratified, with potentially very different
> conductivities at different depths.
>
> So, after going through this exercise, you have a number. But that number
> is of no real use.
>
> Roy Lewallen, W7EL

My apologies for suggesting it ....

4699. Yagi near ground high lobe pattern...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 11:07:31 UTC
From: Kari B <kba@nic.fi>
Message-ID: <2UBTj.346885$Yg2.252689@reader1.news.saunalahti.fi>
Source record: 25671

After some time spend with an antenna simulator and changing yagi height above the virtual simulated ground there seemed to be a minimum of high angle lobes at 80..90 degr. when the antenna height reached 2 wavelength above the virtual ground... This effect probably remain the same in each 2 wavelengths up.. ?

Just curious is the effect real, useful or detectable in real world or used somewhere in ham world ?

br Kari B

4700. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 14:13:40 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9A95680EFA1F6jxp16psuedu@128.118.141.40>
Source record: 25672

It just occurred to me that I have over looked something that might have some use in this discussion. I just realized that this thread is about a low dipole compared to a vertical Hamstick antenna. I reported that I have compared a Hamstick dipole to a full size dipole and that it was down 20db from the full size dipole. I can also report on a Hamstick vertical compared to a full size dipole on 80m. For some years I've been using a phased vertical system as a receive antenna on the 80m SSB Dx window. It is 2 Hamstick's spaced 1/16 wave apart and feed 90 degrees out of phase with a relay system that lets me switch directions. As a receive antenna it works very well. A friend that has a 900'plus beverage tells me that it compares very well. For me it gives me about at 15db signal to noise advantage over my transmit dipole. The front to back is also about 20db in the most favorite direction. But here is the part that is germane to this thread.
The signal level compared to the dipole is still about 20db down. I don't care as receivers have a lot of extra gain and the increase in signal to noise makes all the difference. I don't have much of a ground system, just 4 10' radials under each vertical but putting down a good ground will not make up 20db, no way. The main advantage that a beverage has over this antenna is that it will cover several ham bands and the Hamstick verticals are only good for about 100Khz around the DX window but that is all I want and it fits in my yard as the spacing is only about 30'.
So I can say that a phased hamstick vertical on 80m with a poor ground is also about 20db down from a full size dipole at 40'.

John, W3JXP

4701. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 15:19:50 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <pAFTj.1858$17.746@newssvr22.news.prodigy.net>
Source record: 25673

John Passaneau wrote:
> So I can say that a phased hamstick vertical on 80m with a poor ground is
> also about 20db down from a full size dipole at 40ï¿½.

It all makes good sense. The best 75m mobile antennas
are about 10 dB down from a 1/2WL dipole. The hamstick
is about 10 dB down from the best 75m mobile antennas.
--
73, Cecil http://www.w5dxp.com

4702. Antenna Patern db over distance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 15:41:00 UTC
From: talkinggoat <johnmclaren_99@yahoo.com>
Message-ID: <a7ce3c28-f129-415d-8928-7bba37920308@a1g2000hsb.googlegroups.com>
Source record: 25674

This is probably going to seem like a stupid question to most of you, but I'm looking at an antenna pattern, which I've seen before. It's a representation of db over degrees. It's the typical pattern showing the lobes of the radiation that the antenna emits. My question is, on what scale are the db represented over what distance? Is there some universal preset saying that -10db is 100m or something like that?

4703. Re: 75 meter hamstick vs low dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 16:23:28 UTC
From: nm5k@wt.net
Message-ID: <b22f270e-ff5f-4b1c-a09c-783547298419@y22g2000prd.googlegroups.com>
Source record: 25675

On May 5, 10:19 am, Cecil Moore <nos...@w5dxp.com> wrote:
> John Passaneau wrote:
> > So I can say that a phased hamstick vertical on 80m with a poor ground is
> > also about 20db down from a full size dipole at 40'.
>
> It all makes good sense. The best 75m mobile antennas
> are about 10 dB down from a 1/2WL dipole. The hamstick
> is about 10 dB down from the best 75m mobile antennas.
> --
> 73, Cecil http://www.w5dxp.com

It's the lack of a decent radial system which makes me
look at it in a negative manner..
It's quite possible for the short vertical to outplay the
low dipole for DX, but... I don't see it happening with
only 2 radials and low to the ground.
The hamstick would actually work better mounted on a
vehicle than it would in that 2 radial scenario I bet.
So it's more the ground radial problem, rather than
the short radiator itself.
On 40m, my mobile outplays my 35-40 ft high dipole
to DX. But, I don't know if that would be the case with
two low radials, vs the usually better RF ground that
my vehicles provide.
With a low vertical on 80m, two radials ain't gonna
get it done as far as avoiding ground loss.
And the short vertical makes things even more critical.

For NVIS use, the low dipole would *smoke* the short
vertical with two radials. I've run low 80m dipoles 5-10 ft
off the ground when camping, and still had fairly
decent results to regional stations.
MK

4704. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 17:10:28 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <%bHTj.20114$AL4.4366@newsfe23.ams2>
Source record: 25676

What can the Palstar ZM30 do that the Kuranishi BR-210 can't do?

I know very little about what Analysers can be used for. So any help and/or advice is welcome.

73 Andy

"Andy" <dx90@blueyounder.co.uk> wrote in message news:UAqTj.23359$%n2.8015@newsfe12.ams2...
>I want to buy an antenna analyzer and have narrowed it down to two.
>
>
>
> What is the best one to buy from these two, Palstar ZM30 or Kuranishi
> BR-210 and why?
>
>
>
> What are the pro's and con's between these two, if any?
>
>
>
> Thanks
>
>
>
>
>

4705. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 18:52:03 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <nHITj.19427$aA1.5610@trnddc05>
Source record: 25677

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:%bHTj.20114$AL4.4366@newsfe23.ams2...
> What can the Palstar ZM30 do that the Kuranishi BR-210 can't do?
>
> I know very little about what Analysers can be used for. So any help
> and/or advice is welcome.
>
> 73 Andy
>
>
> "Andy" <dx90@blueyounder.co.uk> wrote in message
> news:UAqTj.23359$%n2.8015@newsfe12.ams2...
>>I want to buy an antenna analyzer and have narrowed it down to two.
>>
>>
>>
>> What is the best one to buy from these two, Palstar ZM30 or Kuranishi
>> BR-210 and why?
>>
>>
>>
>> What are the pro's and con's between these two, if any?
>>
>>
>>
>> Thanks

Hi Andy

You can get some good comparison of analyzers from PA1ARE
http://homepages.ipact.nl/~pa1are/index.html
You will find good information in his Analyzer section.

Jerry KD6JDJ

4706. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 19:14:05 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <dv-dnd_vy4DjwYLVnZ2dnUVZ8saonZ2d@pipex.net>
Source record: 25678

Andy wrote:
> What can the Palstar ZM30 do that the Kuranishi BR-210 can't do?
>
> I know very little about what Analysers can be used for. So any help and/or
> advice is welcome.

========
Using a MFJ259B (range: 1.8 to 174 MHz) myself I use it regularly for
the following :

1) Finding settings of an antenna matching unit (I prefer NOT to use
the word 'tuner') for the various HF bands.

2) Adjusting VHF antennas (gamma match) for minimum reflected power
(SWR)

3) Determining SWR curve of an antenna within a specific freq range
(part of the technical assessment for the UK Foundation Licence)

4) Determining coax loss

5) Determining inductance of resistors at various frequencies

6) Measuring value of inductors and capacitors at different frequencies

7) Measuring resonant freq of tuned circuits (including self resonance
of inductors /RF chokes)

I find the instrumment invaluable ,even if its accuracy would be debatable.

Frank GM0CSZ / KN6WH

4707. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 19:17:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <U2JTj.296$nl7.62@flpi146.ffdc.sbc.com>
Source record: 25679

Andy wrote:
> What can the Palstar ZM30 do that the Kuranishi BR-210 can't do?
>
> I know very little about what Analysers can be used for. So any help and/or
> advice is welcome.

Here's some comparisons based on ARRL data:

http://arraysolutions.com/Products/aim_comparisons.htm#top%20of%20page
--
73, Cecil http://www.w5dxp.com

4708. Re: Antenna Patern db over distance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 22:13:36 UTC
From: Dave <noone@nowhere.com>
Message-ID: <kELTj.4441$Jb2.3972@trndny03>
Source record: 25680

"talkinggoat" <johnmclaren_99@yahoo.com> wrote in message
news:a7ce3c28-f129-415d-8928-7bba37920308@a1g2000hsb.googlegroups.com...
> This is probably going to seem like a stupid question to most of you,
> but I'm looking at an antenna pattern, which I've seen before. It's a
> representation of db over degrees. It's the typical pattern showing
> the lobes of the radiation that the antenna emits. My question is, on
> what scale are the db represented over what distance? Is there some
> universal preset saying that -10db is 100m or something like that?

the scale from the center of the plot to the line is arbitrary just to keep
the plot on the paper. it has nothing to do with a physical distance of how
the measurement is made.

4709. Re: Yagi near ground high lobe pattern...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 22:17:00 UTC
From: Dave <noone@nowhere.com>
Message-ID: <wHLTj.5165$cD3.1292@trndny02>
Source record: 25681

"Kari B" <kba@nic.fi> wrote in message
news:2UBTj.346885$Yg2.252689@reader1.news.saunalahti.fi...
> After some time spend with an antenna simulator and changing yagi height
> above the virtual simulated ground there seemed to be a minimum of high
> angle lobes at 80..90 degr. when the antenna height reached 2 wavelength
> above the virtual ground... This effect probably remain the same in each 2
> wavelengths up.. ?
>
> Just curious is the effect real, useful or detectable in real world or
> used somewhere in ham world ?
>
> br Kari B

yes, its real and useful if you can control the height of a single antenna.
the effect should be periodic more like every half wave in height.

4710. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 22:21:35 UTC
From: ml <m@di.net>
Message-ID: <m-D6D2BA.18213505052008@news.optonline.net>
Source record: 25682

In article <481971d8$0$6436$834e42db@reader.greatnowhere.com>,
"Jeff" <jeff@local.host> wrote:

> Metric PL259's are quite common on some Japanese white stick antennas.
> 'Normal' Pl259's will not screw up tightly. I think that they are normally
> known as PL259(M) although I think that there is another designation as
> well.
>
> 73
> Jeff

so i wonder why the heck would they bother comming out with a
different sized thread?

4711. Re: Antenna Patern db over distance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-05 22:29:23 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <oMudnTxS-MLbF4LVnZ2dnUVZ_uOdnZ2d@easystreetonline>
Source record: 25683

talkinggoat wrote:
> This is probably going to seem like a stupid question to most of you,
> but I'm looking at an antenna pattern, which I've seen before. It's a
> representation of db over degrees. It's the typical pattern showing
> the lobes of the radiation that the antenna emits. My question is, on
> what scale are the db represented over what distance? Is there some
> universal preset saying that -10db is 100m or something like that?

An antenna pattern is a graph of relative signal strength versus angle. It's not a graph relating anything to distance, nor is it a graph of absolute field strength. What it tells you is how strong the signal is in each direction compared to some reference (0 dB). If you stay the same distance away from the antenna and walk around it in a circle, you'll see the field strengths vary as shown on the graph in the various azimuth directions. This will be true regardless of the distance you choose. (I'm making the assumption here that the graph is for the far field and you stay in the far field for your observations.) dB is a relative measure, so all you can immediately tell from the graph is how strong the signal is in one direction compared to what it is in another, at the same distance.

There is an absolute reference, however, the dBi. That's the field strength an antenna will produce compared to the strength of an isotropic antenna -- one with a perfectly spherical pattern -- with the same power applied. So if you know the gain in any direction in dBi, you can find the field strength for a given power input in V/m or A/m or the power density in W/m^2 at any distance in that direction, and in other directions by using the graph. When in the far field, the field strength decreases in inverse proportion to the distance, so if you know the field strength at one distance, you can find the field strength at other distances in the same direction. The field strength is also directly proportional to the square root of the applied power, so if you know the field strength for one power level, you can calculate what it will be for others.

In short, what you need in order to find the field strength at any distance and direction are:

1. The graph showing the gain in that direction compared to some reference.
2. The dBi or field strength value which that reference represents.
3. The power being applied to the antenna.

Roy Lewallen, W7EL

4712. Re: Antenna Patern db over distance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 02:13:06 UTC
From: Tom Ring <news0004@taring.org>
Message-ID: <481fbeb3$0$237$8046368a@newsreader.iphouse.net>
Source record: 25684

Roy Lewallen wrote:
<snip>
> Roy Lewallen, W7EL

Well said Roy.

tom
K0TAR

4713. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 08:24:02 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <sAUTj.9489$NZ7.9375@newsfe10.ams2>
Source record: 25685

I have done some reading on those web sites and like I said, I am very new
to this. I can't tell from the table figures what is the best ones there and
why.
I don't know enough about the readings in the table to know what they mean.

73 Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:U2JTj.296$nl7.62@flpi146.ffdc.sbc.com...
> Andy wrote:
>> What can the Palstar ZM30 do that the Kuranishi BR-210 can't do?
>>
>> I know very little about what Analysers can be used for. So any help
>> and/or advice is welcome.
>
> Here's some comparisons based on ARRL data:
>
> http://arraysolutions.com/Products/aim_comparisons.htm#top%20of%20page
> --
> 73, Cecil http://www.w5dxp.com
>

4714. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 14:34:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Z%ZTj.8680$iK6.2712@nlpi069.nbdc.sbc.com>
Source record: 25686

Andy wrote:
> I don't know enough about the readings in the table to know what they mean.

I know what they mean but I am happy with
my MFJ-259B anyway.
--
73, Cecil http://www.w5dxp.com

4715. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 17:00:12 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <l80Uj.31825$AL4.12085@newsfe23.ams2>
Source record: 25687

How long does the Ni-Cads take to charge in the MFJ-259B and how long will they run for?

73 Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message news:Z%ZTj.8680$iK6.2712@nlpi069.nbdc.sbc.com...
> Andy wrote:
>> I don't know enough about the readings in the table to know what they
>> mean.
>
> I know what they mean but I am happy with
> my MFJ-259B anyway.
> --
> 73, Cecil http://www.w5dxp.com
>

4716. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 18:27:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9q1Uj.15926$2g1.10379@nlpi068.nbdc.sbc.com>
Source record: 25688

Andy wrote:
> How long does the Ni-Cads take to charge in the MFJ-259B and how long will
> they run for?

IMO, Ni-Cads are a royal pain in the neck. Instead,
I use a YUASA gell cell NP1.2-12 at ~$20. I Velcro
it to the MFJ-259B as it has almost the same form
factor. It is easily recharged using an Astron 12v
(13.8v) power supply, i.e. no "battery charger"
required. After using the NP1.2-12 to power the
MFJ-259B, I would NEVER go back to standard batteries.

If one removes the battery holder, the NP1.2-12 will
almost fit inside the MFJ-259B. When I get time, I am
going to modify the MFJ to accomplish that feat. MFJ
missed a selling point by not making the 259B case a
couple of mm larger to accommodate a standard gell cell.
--
73, Cecil http://www.w5dxp.com

4717. Re: Antenna Pattern db over distance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 19:20:20 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <4820AF74.6020800@yahoo.com>
Source record: 25689

> talkinggoat wrote:
>> This is probably going to seem like a stupid question to most of you,
>> but I'm looking at an antenna pattern, which I've seen before. It's a
>> representation of db over degrees. It's the typical pattern showing
>> the lobes of the radiation that the antenna emits. My question is, on
>> what scale are the db represented over what distance? Is there some
>> universal preset saying that -10db is 100m or something like that?
>
Roy Lewallen wrote:
> An antenna pattern is a graph of relative signal strength versus angle.
> It's not a graph relating anything to distance, nor is it a graph of
> absolute field strength. What it tells you is how strong the signal is
> in each direction compared to some reference (0 dB). If you stay the
> same distance away from the antenna and walk around it in a circle,
> you'll see the field strengths vary as shown on the graph in the various
> azimuth directions. This will be true regardless of the distance you
> choose.....

Good explanation, Roy. (I didn't want to quote the whole article)

Just an additional comment. In the case of a plot of *electric field*
intensity (in volts/meter) vs azimuth angle, usually applied to standard-
broadcast AM stations, the radial distance on that plot does map directly
into the distance at which a particular field strength can be received.
Looking at such a plot, such as those found in the FCC database, does
give a (rough) idea of the "range" of a particular station in various
directions and helps explain why some stations, relatively close-by,
do not reach a particular location (their antenna pattern has a null
in it in that direction).

An interesting program, called BCmap, illustrates this by overlaying
a map of North America with the patterns of AM stations on a particular
frequency, or set of frequencies. It may be downloaded free of charge
from:

http://www.tonnesoftware.com/bcmap.html

Jim Bromley, K7JEB

4718. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 20:47:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6t3Uj.2528$17.1001@newssvr22.news.prodigy.net>
Source record: 25690

Cecil Moore wrote:
> IMO, Ni-Cads are a royal pain in the neck. Instead,
> I use a YUASA gell cell NP1.2-12 at ~$20.

Sorry, my mistake, that is not the battery I use
although it will work. The YUASA battery with the
perfect form factor for the MFJ-259B is the NP2-12
at ~$48. That one failed after many years of use
and I am going to replace it with an NP2.3-12 at
~$29 which is 1.7 times as thick but is higher
capacity and costs 60% as much as the NP2-12.
--
73, Cecil http://www.w5dxp.com

4719. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 20:53:09 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <IamdnV66Jq2yWL3VnZ2dnUVZ8uWdnZ2d@pipex.net>
Source record: 25691

Andy wrote:
> How long does the Ni-Cads take to charge in the MFJ-259B and how long will
> they run for?
==========
I use my MFJ-259B with an 'outboard' small 12V-0.8Ah SLA battery; never
even considered internal batteries.

Frank GM0CSZ / KN6WH

4720. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 21:22:31 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <e_3Uj.40259$%n2.14186@newsfe12.ams2>
Source record: 25692

If I used the 12 volt external socket to supply power to the unit from a external gel battery, would it damage the unit if there were no Ni-Cads in the unit?

73 Andy

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message news:IamdnV66Jq2yWL3VnZ2dnUVZ8uWdnZ2d@pipex.net...
> Andy wrote:
>> How long does the Ni-Cads take to charge in the MFJ-259B and how long
>> will they run for?
> ==
> I use my MFJ-259B with an 'outboard' small 12V-0.8Ah SLA battery; never
> even considered internal batteries.
>
> Frank GM0CSZ / KN6WH
>

4721. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 22:11:37 UTC
From: John VK2KCE <hrbe@bigpond.net.au>
Message-ID: <tl4Uj.8219$ko5.956@news-server.bigpond.net.au>
Source record: 25693

Andy,
I own an MFJ269 Pro, and us an external SLA battery without any internal batteries fitted , and no problems at all.

I have the SLA in a small shoulder bag and connected to the external DC socket, makes the unit very protable and lasts for hours.

73
John
VK2KCE

"Andy" <dx90@blueyounder.co.uk> wrote in message news:e_3Uj.40259$%n2.14186@newsfe12.ams2...
> If I used the 12 volt external socket to supply power to the unit from a
> external gel battery, would it damage the unit if there were no Ni-Cads in
> the unit?
>
> 73 Andy
>
>
> "Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
> news:IamdnV66Jq2yWL3VnZ2dnUVZ8uWdnZ2d@pipex.net...
>> Andy wrote:
>>> How long does the Ni-Cads take to charge in the MFJ-259B and how long
>>> will they run for?
>> ==========
>> I use my MFJ-259B with an 'outboard' small 12V-0.8Ah SLA battery; never
>> even considered internal batteries.
>>
>> Frank GM0CSZ / KN6WH
>>
>
>
>

4722. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 23:06:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Mv5Uj.1721$7k7.1234@flpi150.ffdc.sbc.com>
Source record: 25694

Andy wrote:
> If I used the 12 volt external socket to supply power to the unit from a
> external gel battery, would it damage the unit if there were no Ni-Cads in
> the unit?

No, no problems whatsoever. After trying internal
batteries, everyone I know has gone to an external
gell cell.
--
73, Cecil http://www.w5dxp.com

4723. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-06 23:52:37 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <f724c2a7-aacc-43d1-b791-43ba532e4dbe@y18g2000pre.googlegroups.com>
Source record: 25695

On May 6, 2:27 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Andy wrote:
> > How long does the Ni-Cads take to charge in the MFJ-259B and how long will
> > they run for?
>
> IMO, Ni-Cads are a royal pain in the neck. Instead,
> I use a YUASA gell cell NP1.2-12 at ~$20. I Velcro
> it to the MFJ-259B as it has almost the same form
> factor. It is easily recharged using an Astron 12v
> (13.8v) power supply, i.e. no "battery charger"
> required. After using the NP1.2-12 to power the
> MFJ-259B, I would NEVER go back to standard batteries.
>
> If one removes the battery holder, the NP1.2-12 will
> almost fit inside the MFJ-259B. When I get time, I am
> going to modify the MFJ to accomplish that feat. MFJ
> missed a selling point by not making the 259B case a
> couple of mm larger to accommodate a standard gell cell.
> --
> 73, Cecil http://www.w5dxp.com

I have my gel cell rigged up in a pack I can put on my belt. I also
have an additional 5 and 3 volt regulator circuit so I can use the
pack with my digital cameras. Even used it to inflate an air mattress.
My wife wants me rig up a connection for her cellphone. I am
intentionally dragging my feet on that one.

Jimmie

4724. Seeking New FAQ/Intro Maintainers for rec.radio.amateur.*

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-07 06:05:02 UTC
From: rram@panix.com
Message-ID: <radio/ham-radio/recruitment-1-1210140301@panix.com>
Source record: 25696
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.info

```
Posted-By: auto-faq 3.3.2 beta (PGPMoose V2.0, Perl 5.005)
Archive-name: radio/ham-radio/recruitment
Revision: 1.1 2007/09/29 18:42:47
Posting-Frequency: posted monthly
URL: http://www.faqs.org/faqs/radio/personal-intro/

Changes followed by "|".

The rec.radio.info newsgroup, first established in 1993, has been
recently revived by an active moderation team. We are currently seeking
suitable information, FAQ, and bulletin articles from the entire
rec.radio.* newsgroup hierarchy for simultaneous cross-posting to our
newsgroup.

We are seeking a replacement maintainer for the following information
bulletin formerly posted to rec.radio.amateur.* (and currently archived
at http://www.faqs.org/faqs/radio/personal-intro/ ):

radio/personal-intro
Subject: Guide to the rec.radio Newsgroups
Maintainer: jeffreyh@Hawaii.Edu (Jeffrey Herman)
Last Posted: 9 Nov 2001 06:18:17 GMT
Posting-Frequency: 15th of each month

We are willing to provide any technical support necessary to get this
article updated and automatically posted again at a regular interval.
This would include establishing contact with the original maintainer for
any necessary permissions. We would prefer to seek a new, dedicated
maintainer at this time, rather than start auto-posting the original
article ourselves.

For more information about our newsgroup, see:

http://www.panix.com/~rram/usenet/rri/index.html

Please direct any comments, questions, or criticisms to
rec-radio-info-request@panix.com.
```

4725. Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-07 06:29:18 UTC
From: No Spam <no@spam.com>
Message-ID: <huidnXcf346j0bzVnZ2dnUVZ_o_inZ2d@comcast.com>
Source record: 25697

I'm trying to come up with some ideas for multi-op field day station isolation. Main problem will be front end desens between Voice and CW portion of the same band. Main concern is on 20M

I'm thinking simple stub filters. Though they are wide, I would think that there would be a few DB of isolation 100Khz away. Perhaps several in parallel to narrow it up a bit.

Would a simple LC resonant circuit with perhaps 20-30Khz of BW work?

Any thing else I should be considering?

Thanks You!

4726. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-07 16:59:33 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <55c49564-bb2d-4986-9172-a755829c6f48@2g2000hsn.googlegroups.com>
Source record: 25698

On May 6, 11:29 pm, No Spam <n...@spam.com> wrote:
> I'm trying to come up with some ideas for multi-op field day station
> isolation. Main problem will be front end desens between Voice and CW
> portion of the same band. Main concern is on 20M
>
> I'm thinking simple stub filters. Though they are wide, I would think
> that there would be a few DB of isolation 100Khz away. Perhaps several in
> parallel to narrow it up a bit.
>
> Would a simple LC resonant circuit with perhaps 20-30Khz of BW work?
>
> Any thing else I should be considering?
>
> Thanks You!

In general, you can make a better filter in a given volume by using lumped LC filters at HF frequencies, than by using transmission line stubs. The reverse is true when you get into the hundreds of MHz region.

You need high Q elements to get good isolation and not incur too much loss when frequencies are spaced that closely. A saving grace is that you probably don't need a whole lot of attenuation, assuming the receiver front end you're trying to protect isn't too bad. It's not like you're trying to completely kill the offending signal, just get it down to where it doesn't cause trouble. Intermod (third order distortion) generally drops around 3dB for every dB you drop the signals causing it. Desense should similarly go away fairly rapidly as you drop the big signal levels.

Looks to me like a design with five coils and five capacitors and what at least I consider practical values should give you 25dB differential between the passband and the stopband, with a 100kHz separation between the two, and a loss of about 5dB in the passband if you use Q=500 coils. Air core coils about an inch and a half in diameter should give you Q that high. I haven't tried optimizing the design, and may be able to do a bit better than that with the same number of parts. I can imagine building it "on the cheap" in a string of tin cans soldered together, or else by using pieces of copper-clad soldered together. (I've built several somewhat similar filters using copper clad for the shielding, and they work quite well.) Would a suggested design be helpful?

Another option (or something to consider in addition) is a small loop receiving antenna that you can orient to null the other transmitter.

I believe N6RK just gave a paper on doing this, though with emphasis on lower bands. He may have a PDF of the paper he'd be willing to share.

Cheers,
Tom

4727. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-07 18:53:36 UTC
From: Radio_Dick <rspost@mail.com>
Message-ID: <f4b9f395-fc26-4762-beec-a06666ef5087@x41g2000hsb.googlegroups.com>
Source record: 25699

Here's what I did to solve the rechargable battery issue with the
MFJ-269B antenna analyzer.

The charge rate is way too slow using the internal charge circuit, so
to speed up the charging process using intenral AA NiMH internal
batteries, in the factory battery holder, I installed a power barrel
jack on the bottom of the meter. To charge, I plug in an external
charger into this new jack, and when plugged in this disconnects the
batteries and charger from the unit. You can NOT simply plug a charger
into the factory ext. power jack, so now my analyzer has two jacks, of
DIFFERENT sizes so I do not accidently plug the wrong thing into the
wrong jack. I inserted a 0.5amp fuse inside the charger, in series
with the + battery wire so that if your external charger is set for
too fast a charge rate the fuse will blow (e.g. I have a charger which
can be set for various charge rates, for AAA to D size batteries,
NiMH, etc., up to 50w total).

73,
Dick N7EMW
www.repdesign.us

On May 6, 2:27 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Andy wrote:
> > How long does the Ni-Cads take to charge in the MFJ-259B and how long will
> > they run for?
>
> IMO, Ni-Cads are a royal pain in the neck. Instead,
> I use a YUASA gell cell NP1.2-12 at ~$20. I Velcro
> it to the MFJ-259B as it has almost the same form
> factor. It is easily recharged using an Astron 12v
> (13.8v) power supply, i.e. no "battery charger"
> required. After using the NP1.2-12 to power the
> MFJ-259B, I would NEVER go back to standard batteries.
>
> If one removes the battery holder, the NP1.2-12 will
> almost fit inside the MFJ-259B. When I get time, I am
> going to modify the MFJ to accomplish that feat. MFJ
> missed a selling point by not making the 259B case a
> couple of mm larger to accommodate a standard gell cell.
> --
> 73, Cecil http://www.w5dxp.com

4728. Re: Antenna Pattern db over distance

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-07 20:23:53 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <fvt34saqt1@aioe.org>
Source record: 25700

"Jim, K7JEB wrote"
> Roy Lewallen wrote:
>> An antenna pattern is a graph of relative signal strength versus angle.
>> It's not a graph relating anything to distance, nor is it a graph of
>> absolute field strength. What it tells you is how strong the signal is
>> in each direction compared to some reference (0 dB). If you stay the
>> same distance away from the antenna and walk around it in a circle,
>> you'll see the field strengths vary as shown on the graph in the various
>> azimuth directions. This will be true regardless of the distance you
>> choose.....
>
> Good explanation, Roy. (I didn't want to quote the whole article)
>
> Just an additional comment. In the case of a plot of *electric field*
> intensity (in volts/meter) vs azimuth angle, usually applied to standard-
> broadcast AM stations, the radial distance on that plot does map directly
> into the distance at which a particular field strength can be received.
>....
> An interesting program, called BCmap, illustrates this by overlaying
> a map of North America with the patterns of AM stations on a particular
> frequency, or set of frequencies. It may be downloaded free of charge

---

To both posters above, note that the relative field, h-plane azimuth patterns for AM broadcast stations such as published on the FCC website and in the BCmap program are acceptably accurate only very close to the radiator(s) -- about 1 km or so. These are the net radiation patterns of such stations just beyond the near-field radius, where for such short paths, frequency and earth conductivity have relatively little affect on groundwave field intensity.

Earth conductivity, earth curvature and frequency become very important for long groundwave paths, and those perfect relative field patterns no longer are a very good indicator of relative field intensities for such groundwaves.

There are other websites that do take the applied r-f power and frequency, earth conductivity and earth curvature into account when calculating the distance to a given groundwave field intensity resulting from the h-plane ERP in each direction that is "launched" by an AM broadcast station.

The link next below leads to a graphic showing three groundwave field-intensity contours for WJR, Detroit, which is a 50 kW, non-directional, fulltime station on 760 kHz, using a single, 195-degree monopole radiator.

These groundwave field intensity pattern shapes would be perfect circles for values plotted ~ 1 km from the antenna site.

But the more distant contours shown on this site are far from circular, as a function of the varying groundwave propagation conditions in various compass directions from the transmit antenna location.

http://www.radio-locator.com/cgi-bin/pat?call=WJR&service=AM&status=L&hours=U

RF (WJR staff engineer, mid-1960s)
http://rfry.org

4729. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-07 21:35:21 UTC
From: Dave <noone@nowhere.com>
Message-ID: <tgpUj.38$Td.18@trndny08>
Source record: 25551

"No Spam" <no@spam.com> wrote in message
news:huidnXcf346j0bzVnZ2dnUVZ_o_inZ2d@comcast.com...
> I'm trying to come up with some ideas for multi-op field day station
> isolation. Main problem will be front end desens between Voice and CW
> portion of the same band. Main concern is on 20M
>
> I'm thinking simple stub filters. Though they are wide, I would think
> that there would be a few DB of isolation 100Khz away. Perhaps several in
> parallel to narrow it up a bit.
>
> Would a simple LC resonant circuit with perhaps 20-30Khz of BW work?
>
> Any thing else I should be considering?
>
>
> Thanks You!

coax stubs are too broad... use lumped filters if you need them, but its
hard to get real good isolation within a band. one proven way to help
prevent problems is proper prior planning of the layout, put the cw and ssb
stations as far apart as possible. if both are using dipoles or yagis
arrange them so they are in each others nulls when pointing in the prefered
direction. using one with horizontal antenna and the other vertical may
also help.

4730. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-07 22:05:47 UTC
From: Larry Benko <xxw0qe@comcast.net>
Message-ID: <BNmdneV6a9skur_VnZ2dnUVZ_sGvnZ2d@comcast.com>
Source record: 25552

No Spam wrote:
> I'm trying to come up with some ideas for multi-op field day station
> isolation. Main problem will be front end desens between Voice and CW
> portion of the same band. Main concern is on 20M
>
> I'm thinking simple stub filters. Though they are wide, I would think
> that there would be a few DB of isolation 100Khz away. Perhaps several in
> parallel to narrow it up a bit.
>
> Would a simple LC resonant circuit with perhaps 20-30Khz of BW work?
>
> Any thing else I should be considering?
>
>
> Thanks You!

Dear No Spam,

A simple resonant circuit centered on 14.05MHz with a 3dB bandwidth of 20KHz is a circuit of Q = 705 which is tough to make and even then will not provide enough attenuation at 14.15MHz to be of much value.

I have done exactly what you want to do and you will not accomplish it with LC filters and stubs alone. Assuming you wish to run 2 stations on 40m or 20m simultaneously and demand a minimum separation of 80KHz which is only about a 0.5% spread (on 20m) you will need to be more creative. Transmitter phase noise and receiver blocking dynamic range are the 2 issues and both are about the same magnitude problems. Your friends in the solution of this problem are the allowed 1000' diameter circle for FD, the different antenna polarizations, and the antenna patterns. Expect to need about 60dB isolation between 2 antennas on the same band if you are using current mid range transceivers such as the IC756PRO3 and maybe about 45 to 50dB isolation between the antennas if using transceivers such as the K3. With less isolation you will still make contacts but the noise floor will rise and you may hear receiver artifacts. If you wish to discuss this further please contact me directly.

73,
Larry, W0QE

4731. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-07 23:03:59 UTC
From: artie <artie.m@gNOSPAMmail.com>
Message-ID: <070520081603591909%artie.m@gNOSPAMmail.com>
Source record: 25553

In article <huidnXcf346j0bzVnZ2dnUVZ_o_inZ2d@comcast.com>, No Spam <no@spam.com> wrote:

> I'm trying to come up with some ideas for multi-op field day station
> isolation. Main problem will be front end desens between Voice and CW
> portion of the same band. Main concern is on 20M
>
> I'm thinking simple stub filters. Though they are wide, I would think
> that there would be a few DB of isolation 100Khz away. Perhaps several in
> parallel to narrow it up a bit.
>
> Would a simple LC resonant circuit with perhaps 20-30Khz of BW work?
>
> Any thing else I should be considering?
>
>
> Thanks You!

I'd love to be able to find designs for single-band filters for FD use -- this year we'll have 2 or 3 IC-7000 stations, at least one yagi, a vertical, and an nvis.

Something like a low-pass for 80, high pass for 10, and bandpass for 40, 20, and 15, that can take 100W, including 100W for at least a few seconds on the wrong band... That kind of thing happens after you've been up for too many hours!

...signing 3 bravo sierra juliet victor

--
Namaste--

4732. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-07 23:24:44 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <f0574ff9-e357-4f30-a2f1-716e6a96b20f@y21g2000hsf.googlegroups.com>
Source record: 25554

On May 7, 3:05 pm, Larry Benko <xxw...@comcast.net> wrote:
> No Spam wrote:
> > I'm trying to come up with some ideas for multi-op field day station
> > isolation. Main problem will be front end desens between Voice and CW
> > portion of the same band. Main concern is on 20M
>
> > I'm thinking simple stub filters. Though they are wide, I would think
> > that there would be a few DB of isolation 100Khz away. Perhaps several in
> > parallel to narrow it up a bit.
>
> > Would a simple LC resonant circuit with perhaps 20-30Khz of BW work?
>
> > Any thing else I should be considering?
>
> > Thanks You!
>
> Dear No Spam,
>
> A simple resonant circuit centered on 14.05MHz with a 3dB bandwidth of
> 20KHz is a circuit of Q = 705 which is tough to make and even then will
> not provide enough attenuation at 14.15MHz to be of much value.
>
> I have done exactly what you want to do and you will not accomplish it
> with LC filters and stubs alone. Assuming you wish to run 2 stations on
> 40m or 20m simultaneously and demand a minimum separation of 80KHz which
> is only about a 0.5% spread (on 20m) you will need to be more creative.
> Transmitter phase noise and receiver blocking dynamic range are the 2
> issues and both are about the same magnitude problems. Your friends in
> the solution of this problem are the allowed 1000' diameter circle for
> FD, the different antenna polarizations, and the antenna patterns.
> Expect to need about 60dB isolation between 2 antennas on the same band
> if you are using current mid range transceivers such as the IC756PRO3
> and maybe about 45 to 50dB isolation between the antennas if using
> transceivers such as the K3. With less isolation you will still make
> contacts but the noise floor will rise and you may hear receiver
> artifacts. If you wish to discuss this further please contact me directly.
>
> 73,
> Larry, W0QE

Of course Larry's right: any transmitter phase noise will be a
problem. Especially with the density of signals typical on FD, 3dB
loss in a receive filter won't be much of a problem most of the time,
but in a transmit filter it's another issue. 3dB passband attenuation

was about what I got in the filter design I was playing with this morning, assuming coils with a Q around 400, which should be fairly easy on 14MHz. That gave better than 25dB attenuation 100kHz away, which should be a huge help. If you can get the coil Q up enough, then the filter can be used on both transmit and receive, and you'll get the same improvement in phase noise output performance that you get on receive in rejecting the adjacent band. 100 watts will be incentive to use large enough coils that the Q will indeed be pretty high--assuming you don't do anything too stupid in the construction. There are significant advantages at a multi-transmitter FD site in having a receiver that tolerates strong signals well, and also in having a transmitter that has low phase noise.

Cheers,
Tom

4733. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 05:13:05 UTC
From: No Spam <no@spam.com>
Message-ID: <SeydnTScaKl8Fr_VnZ2dnUVZ_qPinZ2d@comcast.com>
Source record: 25555

On Wed, 07 May 2008 09:59:33 -0700, K7ITM wrote:

> On May 6, 11:29 pm, No Spam <n...@spam.com> wrote:
>> I'm trying to come up with some ideas for multi-op field day station
snip

These are some great things to think about.

Perhaps I may have been hasting into concluding we needed the filters in the first place when some more easily implemented practices should be tried first.

I think the best thing will be to only use the "good" radios on the same bands and better utilize spacing and polarization to see what best we can achieve. One of the other ideas I think we will be considering will be to limit power for CW and digital modes as well. I am also having high hopes of separation as I think there may have been some coupling induced by the common ground and shared power supplies. Perhaps having two compounds with separate infrastructures and space would reduce problems to a more tolerable level.

Thank you all for you response!

4734. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 06:05:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <H72dnaIW8_msBb_VnZ2dnUVZ_iydnZ2d@posted.easystreetonline>
Source record: 25556

No Spam wrote:
> On Wed, 07 May 2008 09:59:33 -0700, K7ITM wrote:
>
>> On May 6, 11:29 pm, No Spam <n...@spam.com> wrote:
>>> I'm trying to come up with some ideas for multi-op field day station
> snip
>
> These are some great things to think about.
>
> Perhaps I may have been hasting into concluding we needed the filters in
> the first place when some more easily implemented practices should be
> tried first.
>
> I think the best thing will be to only use the "good" radios on the same
> bands and better utilize spacing and polarization to see what best we can
> achieve. One of the other ideas I think we will be considering will be to
> limit power for CW and digital modes as well. I am also having high hopes
> of separation as I think there may have been some coupling induced by the
> common ground and shared power supplies. Perhaps having two compounds
> with separate infrastructures and space would reduce problems to a more
> tolerable level.
>
> Thank you all for you response!

Don't neglect common mode feedline current as a potential source of unwanted coupling. All your efforts to control polarization and physically separate antennas can be largely wasted if your feedlines are radiating.

Roy Lewallen, W7EL

4735. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 08:00:18 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <7qyUj.32172$815.18080@newsfe16.ams2>
Source record: 25557

Excellent advise on how to power the Analyser.

Has anyone used one or both of these analysers, Palstar ZM30 or the
Kuranishi BR-210?

Apart from the build quality, are they any better than the MFJ-259B?

Andy

@w5dxp.com> wrote in message
news:Mv5Uj.1721$7k7.1234@flpi150.ffdc.sbc.com...
> Andy wrote:
>> If I used the 12 volt external socket to supply power to the unit from a
>> external gel battery, would it damage the unit if there were no Ni-Cads
>> in the unit?
>
> No, no problems whatsoever. After trying internal
> batteries, everyone I know has gone to an external
> gell cell.
> --
> 73, Cecil http://www.w5dxp.com

4736. How to calculate power handling capability of a gamma match capacitor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 13:38:55 UTC
From: Scott M <mcclements@gmail.com>
Message-ID: <d2452059-4aae-4282-b4e0-5479315bd6b8@y38g2000hsy.googlegroups.com>
Source record: 25558

Hi,

I am going to build a variable capacitor for a gamma match in the
usual fashion where there is a rod inside a tube by an insulating
tube. I need it to handle legal limit, so how would I go about
safely calculating/estimating the power handling capability of what
I have built?

Thanks,
Scott, WU2X

4737. RG 174

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 14:17:42 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <aYDUj.20146$Fv.12385@trnddc03>
Source record: 25559

I have alot of Belden RG 174 and will send a length to anyone in this group
who want some new coax and is willing to pay the USPS Flat Rate postage.
Contact me and tell me where to send it. I'll send it anywhere the USPS
will allow.
There is no charge for the coax, nor for the "handling".
I'm not selling this stuff. I'd like to see someone use it.

Jerry KD6JDJ

4738. Re: How to calculate power handling capability of a gamma match capacitor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 15:28:09 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <fvv66ardk1@news.jpl.nasa.gov>
Source record: 25560

Scott M wrote:
> Hi,
>
> I am going to build a variable capacitor for a gamma match in the
> usual fashion where there is a rod inside a tube by an insulating
> tube. I need it to handle legal limit, so how would I go about
> *safely* calculating/estimating the power handling capability of what
> I have built?
>
> Thanks,
> Scott, WU2X
>
Being safe while you do the calculations, or calculating the safe power handling limit? For the former, which you asked, I suggest sitting in a chair with proper ergonomic design..<grin>

But, I suspect what you're really asking is how to go about calculating the power handling limits of the coaxial structure...
Consider two factors:

1) High voltage breakdown. What's the breakdown strength of your insulator? If the two tubes are fairly large in diameter, you can probably approximate the field as the voltage divided by the difference in radii. Air breakdown is 30kV/cm in a uniform field. If the ratio of outer to inner diameters is large (so it looks more like coaxial cable), you might want to use a different formula for fields.

Don't neglect breakdown along the surface of the insulator. If the "creepage distance" is less than 3 times the free air breakdown distance, then you've got something to worry about.

2) Thermal limits. How much current is being carried by the inner conductor? What's the path to somewhere the heat can be dissipated?

For both of these you'll need to model the circuit so you know the current and voltage across your capacitor.

4739. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 16:22:26 UTC
From: hasan <schiers@netins.net>
Message-ID: <482328C2.5000706@netins.net>
Source record: 25561

Andy wrote:
> Excellent advise on how to power the Analyser.
>
> Has anyone used one or both of these analysers, Palstar ZM30 or the
> Kuranishi BR-210?
>
> Apart from the build quality, are they any better than the MFJ-259B?
>
> Andy
>
>
> @w5dxp.com> wrote in message
> news:Mv5Uj.1721$7k7.1234@flpi150.ffdc.sbc.com...
>> Andy wrote:
>>> If I used the 12 volt external socket to supply power to the unit from a
>>> external gel battery, would it damage the unit if there were no Ni-Cads
>>> in the unit?
>> No, no problems whatsoever. After trying internal
>> batteries, everyone I know has gone to an external
>> gell cell.
>> --
>> 73, Cecil http://www.w5dxp.com
>
>

I guess I don't run my 259B long enough to experience battery life problems. I think the longest I've ever used it continuously is about 45 minutes. I put a full bank of 2500 maH camera batteries in it (NIMH), and have left it connected to the charger (that came with the 259B) for months on end. The batteries seem to show a full charge when I pull the unit out for use, and don't appear to be compromised by sitting on the charger for literally months at a time between uses.

I'm sure the gel cells work better, but I, for one, have had no reason to upgrade from the NIMH internal cells that I've been using for two years. Then again, I don't use it for hours on end, either.

4740. Re: RG 174

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 21:01:53 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <5TJUj.31938$zw.31059@trnddc04>
Source record: 25562

"Jerry" <j.jmartes@verizon.net> wrote in message
news:aYDUj.20146$Fv.12385@trnddc03...
>I have alot of Belden RG 174 and will send a length to anyone in this group
>who want some new coax and is willing to pay the USPS Flat Rate postage.
>Contact me and tell me where to send it. I'll send it anywhere the USPS
>will allow.
> There is no charge for the coax, nor for the "handling".
> I'm not selling this stuff. I'd like to see someone use it.
>
> Jerry KD6JDJ

On closer inspection, the Belden coax is RG 142 B/U, not RG 174.

Jerry KD6JDJ

4741. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 22:03:56 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <68hbmlF2sr7prU1@mid.individual.net>
Source record: 25563

K7ITM wrote:
> ...(I've built several somewhat similar filters using
> copper clad for the shielding, and they work quite well.)
> Would a suggested design be helpful?..

I would like to hear of your designs, please.
Particularly how you physically work the
copper fabrication/solder etc.

Thanks -

Craig 'Lumpy' Lemke

www.n0eq.com

4742. Re: How to calculate power handling capability of a gamma match capacitor

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 22:27:34 UTC
From: Dave <noone@nowhere.com>
Message-ID: <q7LUj.2274$Kf.1964@trndny07>
Source record: 25564

"Scott M" <mcclements@gmail.com> wrote in message
news:d2452059-4aae-4282-b4e0-5479315bd6b8@y38g2000hsy.googlegroups.com...
> Hi,
>
> I am going to build a variable capacitor for a gamma match in the
> usual fashion where there is a rod inside a tube by an insulating
> tube. I need it to handle legal limit, so how would I go about
> *safely* calculating/estimating the power handling capability of what
> I have built?
>
> Thanks,
> Scott, WU2X
>

do what i do, copy a known design.... the center conductor and insulation
from rg-8 (not foam type) works well and takes full power. cushcraft uses
3/16" aluminum rod inside 1/2" aluminum tubing with something that looks a
lot like rg-8 poly insulation to make a slip fit.

4743. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 23:06:28 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <df8fcb6b-19b0-4f35-bde2-d9c429b33f84@e53g2000hsa.googlegroups.com>
Source record: 25565

On May 8, 3:03 pm, "Lumpy" <lu...@digitalcartography.com> wrote:
> K7ITM wrote:
> > ...(I've built several somewhat similar filters using
> > copper clad for the shielding, and they work quite well.)
> > Would a suggested design be helpful?..
>
> I would like to hear of your designs, please.
> Particularly how you physically work the
> copper fabrication/solder etc.
>
> Thanks -
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

Hi Lumpy,

I'm fortunate to have access to a shear that cuts fiberglass/epoxy board stock reasonably cleanly. I use all double-sided stock, copper-clad on both sides. I typically set up the stop for, say, 2 inches, and make a bunch of square pieces. They'll become end pieces and partitions between "cells". Then I cut a couple 2 inch wide strips using the same setup; these will be the sides, and they are whatever length I need. The base piece is typically a quarter inch wider (or a bit more) and the same length as the sides. I plan out where I need holes, and punch them in the partitions and end pieces (or sides, if that's what I want). Then I tack one of the square pieces just short of the end of the base, so I can solder it to the base on both sides. Same on the other end. Then side pieces go in, tack-soldered to the base and the two end pieces. Avoid tacking where partitions will go. Put in partitions where you want, and tack them. Then run a bead of solder along each place where two pieces of copper-clad come together. Occasionally I'll also put in something to support coils or wires, too. Then I built the filter...soldering some parts to the copper clad for ground.

Some filters I can get by with a minimum of partitions. I would expect for a sharp cutoff filter like the "FD adjacent band" filter that I'd need to use a partition to separate any two adjacent resonators.

When I first started making filters this way, I was expecting to have to seal off the open end of each cavity. The description above only puts copper-clad on five of the six sides of each cell. I was amazed

to find that it's practically never necessary to do that. For example, I have a 1MHz bandpass filter that has stops specifically at 2MHz and 3MHz. I used it to clean up the output of a signal generator so I can test for harmonic distortion. That filter shows about 120dB attenuation at 2 and 3 MHz, in spite of the open-topped cells.

If a picture would help, I'd be happy to send one via email.

Cheers,
Tom

4744. Re: RG 174

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-08 23:18:22 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <48238a2f$0$29591$4fafbaef@reader1.news.tin.it>
Source record: 25566

> On closer inspection, the Belden coax is RG 142 B/U, not RG 174.
>
> Jerry KD6JDJ

Jerry, US hams must be grateful to you. That is a teflon cable that costs $2.40 per foot.

I cannot profit of your generous offer as postage to Italy would be too expensive.

73

Tony I0JX

4745. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-09 02:37:32 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <jrydnbDjUqxtJb7VnZ2dnUVZ_hudnZ2d@easystreetonline>
Source record: 25567

K7ITM wrote:
>
> I'm fortunate to have access to a shear that cuts fiberglass/epoxy
> board stock reasonably cleanly. . .

For those of us who don't, I've found that tin snips do a good job and without the irritating dust you get if you saw it.

Roy Lewallen, W7EL

4746. Re: RG 174

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-09 03:01:23 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <YvWdnTNcuMwEI77VnZ2dnUVZ_jqdnZ2d@giganews.com>
Source record: 25568

"Jerry" <j.jmartes@verizon.net> wrote in message
news:5TJUj.31938$zw.31059@trnddc04...
>
> "Jerry" <j.jmartes@verizon.net> wrote in message
> news:aYDUj.20146$Fv.12385@trnddc03...
> >I have alot of Belden RG 174 and will send a length to anyone in this
group
> >who want some new coax and is willing to pay the USPS Flat Rate postage.
> >Contact me and tell me where to send it. I'll send it anywhere the USPS
> >will allow.
> > There is no charge for the coax, nor for the "handling".
> > I'm not selling this stuff. I'd like to see someone use it.
> >
> > Jerry KD6JDJ
>
> On closer inspection, the Belden coax is RG 142 B/U, not RG 174.
>
> Jerry KD6JDJ

Hi Jerry,

From
http://www.belden.com/pdfs/03Belden_Master_Catalog/06Coaxial_Cables/06.76_81.pdf
(page 2), RG-142B/U is Belden's #83242...
Center Conductor: #18 solid, silver-coated copper-covered steel
Dielectric: TFE Teflon® Insulation
Shield: Double Silver-coated Copper Braid Shield (96% Coverage)
Jacket: Tinted Brown FEP
OD: 0.195"

Are you *sure* you want to give it away? Mouser wants $460/100ft for it!

73,
Bryan WA7PRC

4747. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-09 03:09:49 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <jPCdnaArY6AfXb7VnZ2dnUVZ_tPinZ2d@giganews.com>
Source record: 25569

```
Roy Lewallen wrote:
> K7ITM wrote:
> >
> > I'm fortunate to have access to a shear that cuts fiberglass/epoxy
> > board stock reasonably cleanly. . .
>
> For those of us who don't, I've found that tin snips do a good job and
> without the irritating dust you get if you saw it.
>
> Roy Lewallen, W7EL
```

I've also used a table saw with a VERY fine-pitch blade, set just above the table. It makes nice 90° corners. A Shop-Vac keeps the dust from getting out of hand.

```
73,
Bryan WA7PRC
```

4748. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-09 03:24:00 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <qcSdncUFsddIXr7VnZ2dnUVZ_r-vnZ2d@giganews.com>
Source record: 25570

No Spam wrote:
> I'm trying to come up with some ideas for multi-op field day station
> isolation. Main problem will be front end desens between Voice and CW
> portion of the same band. Main concern is on 20M
>
> I'm thinking simple stub filters. Though they are wide, I would think
> that there would be a few DB of isolation 100Khz away. Perhaps several in
> parallel to narrow it up a bit.
>
> Would a simple LC resonant circuit with perhaps 20-30Khz of BW work?
>
> Any thing else I should be considering?
>
>
> Thanks You!

I considered stubs and lumped-element filters but last year with the Machias Radio Group, we ran two stations w/o any filters... an FT1000MP on CW and TS430 on fone (http://www.geocities.com/bswadener/fd2007/). The tents were separated by about 1000'. We had almost nonexistent issues with interference.

If you want to work through design of lumped-element filters, Jim Tonne WB6BLD (http://tonnesoftware.com/) has some nifty software available. Stubs are covered in a book written by George Cutsogeorge W2VJN, "Managing Interstation Interference - Coaxial Stubs and Filters", available here: http://www.qth.com/inrad/book.htm.

73 es gl,
Bryan WA7PRC

4749. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-09 04:56:11 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <68i3rkF2solvjU1@mid.individual.net>
Source record: 25571

K7ITM wrote:
> > > ...(I've built several somewhat similar filters using
> > > copper clad for the shielding, and they work quite well.)
> > > Would a suggested design be helpful?..

> If a picture would help, I'd be happy to send one via email.

I'd like to see pics please.
My return is valid.

Thanks mucho

Craig 'Lumpy' Lemke

www.n0eq.com

4750. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-09 08:55:44 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <jkUUj.31497$_k2.4403@newsfe11.ams2>
Source record: 25572

Hasan,

Did you have to convert or modify your MFJ-259B to be able to charge the
NiMH batteries in the unit?

73 Andy

"hasan" <schiers@netins.net> wrote in message
news:482328C2.5000706@netins.net...
> Andy wrote:
>> Excellent advise on how to power the Analyser.
>>
>> Has anyone used one or both of these analysers, Palstar ZM30 or the
>> Kuranishi BR-210?
>>
>> Apart from the build quality, are they any better than the MFJ-259B?
>>
>> Andy
>>
>>
>> @w5dxp.com> wrote in message
>> news:Mv5Uj.1721$7k7.1234@flpi150.ffdc.sbc.com...
>>> Andy wrote:
>>>> If I used the 12 volt external socket to supply power to the unit from
>>>> a external gel battery, would it damage the unit if there were no
>>>> Ni-Cads in the unit?
>>> No, no problems whatsoever. After trying internal
>>> batteries, everyone I know has gone to an external
>>> gell cell.
>>> --
>>> 73, Cecil http://www.w5dxp.com
>>
>>
>
> I guess I don't run my 259B long enough to experience battery life
> problems. I think the longest I've ever used it continuously is about 45
> minutes. I put a full bank of 2500 maH camera batteries in it (NIMH), and
> have left it connected to the charger (that came with the 259B) for months
> on end. The batteries seem to show a full charge when I pull the unit out
> for use, and don't appear to be compromised by sitting on the charger for
> literally months at a time between uses.
>
> I'm sure the gel cells work better, but I, for one, have had no reason to
> upgrade from the NIMH internal cells that I've been using for two years.
> Then again, I don't use it for hours on end, either.

>

4751. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-09 13:28:20 UTC
From: hasan <schiers@netins.net>
Message-ID: <48245174.2050500@netins.net>
Source record: 25573

Andy wrote:
> Hasan,
>
> Did you have to convert or modify your MFJ-259B to be able to charge the
> NiMH batteries in the unit?
>
> 73 Andy
>
>
> "hasan" <schiers@netins.net> wrote in message
> news:482328C2.5000706@netins.net...
>> Andy wrote:
>>> Excellent advise on how to power the Analyser.
>>>
>>> Has anyone used one or both of these analysers, Palstar ZM30 or the
>>> Kuranishi BR-210?
>>>
>>> Apart from the build quality, are they any better than the MFJ-259B?
>>>
>>> Andy
>>>
>>>
>>> @w5dxp.com> wrote in message
>>> news:Mv5Uj.1721$7k7.1234@flpi150.ffdc.sbc.com...
>>>> Andy wrote:
>>>>> If I used the 12 volt external socket to supply power to the unit from
>>>>> a external gel battery, would it damage the unit if there were no
>>>>> Ni-Cads in the unit?
>>>> No, no problems whatsoever. After trying internal
>>>> batteries, everyone I know has gone to an external
>>>> gell cell.
>>>> --
>>>> 73, Cecil http://www.w5dxp.com
>>>
>> I guess I don't run my 259B long enough to experience battery life
>> problems. I think the longest I've ever used it continuously is about 45
>> minutes. I put a full bank of 2500 maH camera batteries in it (NIMH), and
>> have left it connected to the charger (that came with the 259B) for months
>> on end. The batteries seem to show a full charge when I pull the unit out
>> for use, and don't appear to be compromised by sitting on the charger for
>> literally months at a time between uses.
>>
>> I'm sure the gel cells work better, but I, for one, have had no reason to
>> upgrade from the NIMH internal cells that I've been using for two years.

>> Then again, I don't use it for hours on end, either.
>>
>
>

No, Andy, I've been using it right out of the box since day one. I put the high capacity NIMH batteries in it the first day, plugged it in, played a while, then left it plugged in and periodically checked to see what the voltage was when I turned it on. It was obvious that it was charging and that it wouldn't cook the batteries, so I let it run....permanently. The only time the charger has been taken off the batteries is with power failures (two or three lasting a few hours) over the last few years, as well as for use periods less than 45 minutes outdoors.

I understand how people might not be able to get hours and hours of use with any internal pack, but for my uses, not exceeding half an hour at a time, I was left completely unaware that there was a battery life problem. I'll go check to see what the batteries register on startup right now...hang on...

14.1 volts with power supply (charging wall wart) disconnected.
14.4 volts with power supply connected. (batteries in place), read the screen on startup, what do you get?

10 cells at 1.4 v nominal for a full charge. It sure looks to me like the charger is working properly, and I have a full charge on the batteries. I'm sorry...I just don't see the problem. After months and months of continuous charging of the batteries (more like a couple years!) I don't see the batteries as cooked, nor do I have a problem running the unit for 45 mins at a time. The batteries seem to have a full charge right now, and show no evidence of overcharging.

I'm not sure what more I'm supposed to get ...the batteries charge to what appears to be full capacity, and the charger doesn't seem to cook them when left on for many months. I have no idea what the "on time" capacity of the 2500 maH batteries should be with my 259b. I can only say that for my requirements (less than an hour total use each time), mine works fine. I have no use for an external battery pack.

73,

...hasan, N0AN

4752. A highly devoted shoe-repair guy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-09 22:35:03 UTC
From: Anonymous Sender <anonymous@remailer.metacolo.com>
Message-ID: <a3074b7e34a766da29a32464a1c6dd8d@remailer.metacolo.com>
Source record: 25574

A highly devoted shoe-repair guy

http://www.hipcow.com/p/0028/jimmys_shoe_repair/

4753. Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-10 13:01:32 UTC
From: "D. Huizinga" <nospam@chello.nl>
Message-ID: <48259c15$0$21506$6d4158fb@reader.xsnews.nl>
Source record: 25575

Hi there.

My 40 mtr doublet is fed with a balanced line of 300 Ohms. Nicely tunable to 1:1 . But after twenty minutes or so the coil gets rather hot! It is a quality coil of 3 mm and shiny silvered or chromed on a ceramic body of 1 inch.

How are your experiences with a 100 W tx ? I calculate just 0.3 Amps thru it. The mind boggles on this..! Where does that heat come from ?

4754. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-10 14:08:51 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <iZadnXjBf6T5MbjVnZ2dnUVZ8t7inZ2d@pipex.net>
Source record: 25576

D. Huizinga wrote:
> Hi there.
>
> My 40 mtr doublet is fed with a balanced line of 300 Ohms. Nicely tunable
> to 1:1 . But after twenty minutes or so the coil gets rather hot! It is a quality
> coil of 3 mm and shiny silvered or chromed on a ceramic body of 1 inch.
>
> How are your experiences with a 100 W tx ? I calculate just 0.3 Amps thru it.
> The mind boggles on this..! Where does that heat come from ?
-================================
What is the configuration of your antenna matching unit , if with more
than 2 inductors , which one gets hot ?

Frank GM0CSZ / KN6WH

4755. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-10 14:11:39 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <UfGdnaEyfMGNMLjVnZ2dnUVZ8vqdnZ2d@pipex.net>
Source record: 25577

Highland Ham wrote:
> D. Huizinga wrote:
>> Hi there.
>>
>> My 40 mtr doublet is fed with a balanced line of 300 Ohms. Nicely
>> tunable
>> to 1:1 . But after twenty minutes or so the coil gets rather hot! It
>> is a quality
>> coil of 3 mm and shiny silvered or chromed on a ceramic body of 1 inch.
>>
>> How are your experiences with a 100 W tx ? I calculate just 0.3 Amps
>> thru it.
>> The mind boggles on this..! Where does that heat come from ?
> -================================
> What is the configuration of your antenna matching unit , if with more
> than 2 inductors , which one gets hot ?
>============================
Sorry , I meant : if more than 1 inductor.
>
> Frank GM0CSZ / KN6WH

4756. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-10 14:46:25 UTC
From: Rick <ricknj10@hotmail.com>
Message-ID: <4825b566$0$15183$607ed4bc@cv.net>
Source record: 25578

Where does that heat come from ?
>
It comes from losses. Can you try different combinations of coil/capacitor settings to still get a low SWR?
Only 1 db of loss is still about 20 watts. And 20 watts is quite a bit of heat.

4757. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-10 14:58:32 UTC
From: ltdoc@yahoo.com
Message-ID: <704f691b-1a0e-4ffb-a892-62401dff905c@t54g2000hsg.googlegroups.com>
Source record: 25579

There will always be some degree of heating. In the best of cases,
it won't be noticeable, but that heat is from losses, and there's
always 'some'. In general, it sounds as if the tuner isn't tuned
correctly. The least amount of inductance necessary is a very good
idea! You might also check things in general, connections are good,
component 'size' is sort of at least in the 'ball-park', that sort of
thing. Keeping that feed line away from things is another idea.
Nothing 'extreme', just 'good sense'.
Not much help, but...
- 'Doc

4758. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-10 15:58:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qCjVj.3340$nl7.910@flpi146.ffdc.sbc.com>
Source record: 25580

D. Huizinga wrote:
> My 40 mtr doublet is fed with a balanced line of 300 Ohms. Nicely tunable
> to 1:1 . But after twenty minutes or so the coil gets rather hot! It is a quality
> coil of 3 mm and shiny silvered or chromed on a ceramic body of 1 inch.

I once had a similar problem using a 130 foot dipole
fed with 450 ohm ladder-line on 40m. The SWR on the
ladder-line was about 15:1 and the 4:1 balun was
looking into 30 ohms. The balun presented 7.5 ohms
to the tuner and the coil got hot. That's when I
decided to come up with my no-tuner approach at:

http://www.w5dxp.com/notuner.htm

Is your 40m dipole 66 feet long fed with 60 feet
of 300 ohm twinlead through a 6:1 balun? If so,
your tuner is installed in a lossy configuration
and heating is to be expected. The simulator at:

http://fermi.la.asu.edu/w9cf/tuner/tuner.html

says that 16% of the power is lost in the tuner.
16 watts is enough to heat up a coil. Ever touch
a 15w appliance bulb when it is on?
--
73, Cecil http://www.w5dxp.com

4759. have u seen this

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-11 17:55:45 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <vLudnUKTYappr7rVnZ2dnUVZ_jGdnZ2d@comcast.com>
Source record: 25581

NASA is inviting everyone to send their name to the moon on board the Lunar Reconnaissance Orbiter.

Right now you can log onto a special NASA Web site that is collecting names, which will be put on a microchip that will be integrated into the LRO.

The LRO mission is the first step in NASA's plans to return humans to the moon by 2020.

The deadline to add your name to the microchip is June 27.

http://lro.jhuapl.edu/NameToMoon/index.php

4760. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-11 18:00:07 UTC
From: dplatt@radagast.org
Message-ID: <7qojf5-l76.ln1@radagast.org>
Source record: 25582

In article <48259c15$0$21506$6d4158fb@reader.xsnews.nl>,
D. Huizinga <nospam@chello.nl> wrote:

>Hi there.
>
>My 40 mtr doublet is fed with a balanced line of 300 Ohms. Nicely tunable
>to 1:1 . But after twenty minutes or so the coil gets rather hot! It is
>a quality
>coil of 3 mm and shiny silvered or chromed on a ceramic body of 1 inch.

Not at all unusual.

An antenna tuner (or "transmatch" as some prefer) is a tuned circuit,
which can develop some very high circulating currents which flow
between the inductive components (e.g. the coil) and the capacitive
components (the internal capacitors, or the capacitive reactance of
the load). These high currents can result in a substantial amount of
loss in the tuner components (mostly in the coils).

>How are your experiences with a 100 W tx ? I calculate just 0.3 Amps thru it.
>The mind boggles on this..!

If I recall correctly, 100 watts is developed into a 50-ohm load via
70.7 volts at 1.4 amperes.

Those are the voltages and currents at the transmitter output. The
voltage and current relationships will be different at other points in
the circuit... at the antenna itself, and at various points inside the
tuner... because the impedances will be different.

In the case of extreme impedance transformations (e.g. transforming 50
ohms down to match a 5-ohm load, or up to a 1000-ohm load), an
antenna tuner can have to handle either very high currents (leading to
high I^2*R losses) or high voltages (leading to arcing).

The popular "T" antenna tuner configuration can be a bit tricky...
it's notorious for being able to "tune" some very difficult loads,
even down to a short circuit in some cases. In this latter situation,
the tuner is actually "tuning" its own internal losses (e.g. in the
coil). There are plenty of tales around about peoples' antenna tuners
"burning up" when this occurred - all of the transmitter power went
into heating up the coil, and melted the coil form!

> Where does that heat come from ?

From the transmitter! You may actually have several amperes of RF
flowing through the coil. The coil's series resistance at RF is

higher than it is at DC, due to skin and proximity effects.

You might be able to reduce the losses and heating by changing the length of the 300-wire line you are using, so that the antenna's feedpoint impedance is transformed into an impedance at the tuner that doesn't require extreme impedance transformation, and requires the use of lower amounts of reactance during tuning.

If I recall correctly, the ARRL Handbook has some tables (and software?) which can let you calculate a tuner's efficiency and losses, based on the impedance of the load and some reasonable assumptions about the Q of the inductor. Lower efficiency == more loss == more heating.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

4761. 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-11 18:51:27 UTC
From: ml <m@di.net>
Message-ID: <m-5B9386.14512711052008@news.optonline.net>
Source record: 25583

hi

i was just reading about airforce plans that had a trailing wire which
when fully extended was 6miles long

i was just wondering given that environment and assuming a few
varied yet unknown frequencies...

how well does such a antenna work, when assuming it is multiple
waves long?? i mean does anyone know from first hand experience how
they worked?? good bad?? just talking signal wise

i can extrapolate technically how it 'ought' to work but wonder

thanks

4762. Re: Palstar ZM30 or Kuranishi BR-210

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-11 19:03:50 UTC
From: ml <m@di.net>
Message-ID: <m-88DF3B.15035011052008@news.optonline.net>
Source record: 25584

In article <UAqTj.23359$%n2.8015@newsfe12.ams2>,
"Andy" <dx90@blueyounder.co.uk> wrote:

> I want to buy an antenna analyzer and have narrowed it down to two.
>
>
>
> What is the best one to buy from these two, Palstar ZM30 or Kuranishi BR-210
> and why?
>
>
>
> What are the pro's and con's between these two, if any?
>
>
>
> Thanks

hi

there are a few good analizers out there assuming you are looking at
hf frequencies,

timewave makes anice unit, as does autek

mfj as mentioned here does some nice stuff

it was a tough choice for me not to many units but they are mostly
simular features depending on the type of work you need to do one
feature vs another might make a buying point with you

however i ended up w/the aea hf analysist, i got it mostly because
it could be run on batteries or adapter could be connected to a
computer after measurements to analyze data OR be connected to pc
for simutenious readouts

it was very rugged case lookes like it was ment to be dropped and
live membrane keypad so a little water mist /dust/dirt won't
gum it up

was very easy to use had both digital and graphical readouts and
the readouts were real time so i can just watch the meater and prune
/adjust antenna

aea gave me good support

thats just my 2cents i really like the timewave i just couldn't
afford it at the time but would consider one , one day never ever

saw one used.

i think the mfj are prob the lowest cost units i forgot which
but arrl recently did a shootout of the analyzers goto the arrl web
site and search the ast article their comparisons fo all the units
were really nice

if you don't need a portable unit visit arraysolutions.com they
mike a nice vector analyer that is great youll need a pc laptop to
use portabloe

good luck

4763. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-11 19:20:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3GHVj.3427$3O7.1012@newssvr19.news.prodigy.net>
Source record: 25585

ml wrote:
> how well does such a antenna work, when assuming it is multiple
> waves long??

It works similar to a rhombic.
--
73, Cecil http://www.w5dxp.com

4764. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-11 19:37:49 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <XICdneBsq7OQ1rrVnZ2dnUVZ_gmdnZ2d@comcast.com>
Source record: 25586

On Wed, 07 May 2008 01:29:18 -0500, No Spam wrote:

> I'm trying to come up with some ideas for multi-op field day station
> isolation. Main problem will be front end desens between Voice and CW
> portion of the same band. Main concern is on 20M
>
> I'm thinking simple stub filters. Though they are wide, I would think
> that there would be a few DB of isolation 100Khz away. Perhaps several
> in parallel to narrow it up a bit.
>
> Would a simple LC resonant circuit with perhaps 20-30Khz of BW work?
>
> Any thing else I should be considering?

I've used stubs to clear things up. I've been surprised how well they
work. Just remember what band you're on.

Another possibility is a beverage antenna. Get that as far from the
transmitting antennas as you can - though keep in mind the real estate
limitations in Field day

--
-73 de Mike N3LI -

4765. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-11 20:44:58 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <XICdneNsq7NXx7rVnZ2dnUVZ_gmdnZ2d@comcast.com>
Source record: 25587

On Wed, 07 May 2008 21:35:21 +0000, Dave wrote:

> "No Spam" <no@spam.com> wrote in message
> news:huidnXcf346j0bzVnZ2dnUVZ_o_inZ2d@comcast.com...
>> I'm trying to come up with some ideas for multi-op field day station
>> isolation. Main problem will be front end desens between Voice and CW
>> portion of the same band. Main concern is on 20M
>>
>> I'm thinking simple stub filters. Though they are wide, I would think
>> that there would be a few DB of isolation 100Khz away. Perhaps several
>> in parallel to narrow it up a bit.
>>
>> Would a simple LC resonant circuit with perhaps 20-30Khz of BW work?
>>
>> Any thing else I should be considering?
>>
>>
>> Thanks You!
>
> coax stubs are too broad...

I thought so too, until I tried one. I was working 20 meters on a
tribander ans a KW, teh guy beside me was on a 40/30 meter fan dipole
running legal limit. Antennas were less than 50 feet apart. Without th
stub, I couldn't work period, with it, it knocked the 40 meter signal
completely out, FAPP.

-73 de Mike N3LI -

4766. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-11 20:54:11 UTC
From: Mike Coslo <mcoslo@comcast.net>
Message-ID: <XICdneJsq7NuwbrVnZ2dnUVZ_gmdnZ2d@comcast.com>
Source record: 25588

On Wed, 07 May 2008 16:05:47 -0600, Larry Benko wrote:

> I have done exactly what you want to do and you will not accomplish it
> with LC filters and stubs alone.

I would suggest that No Spam might try an experiment, making a stub as a first try. It's simple enough that if it doesn't work, there isn't much effort wasted.

Can't say for sure why some say a stub won't work, while the one I made worked gangbusters, and cured the exact problem No Spam was looking at.

-73 de Mike N3LI -

4767. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-11 21:40:14 UTC
From: Dave <noone@nowhere.com>
Message-ID: <2JJVj.121$Pr1.106@trndny03>
Source record: 25589

multiple wavelengths?? why would you assume that??

"ml" <m@di.net> wrote in message
news:m-5B9386.14512711052008@news.optonline.net...
> hi
>
> i was just reading about airforce plans that had a trailing wire which
> when fully extended was 6miles long
>
>
> i was just wondering given that environment and assuming a few
> varied yet unknown frequencies...
>
>
> how well does such a antenna work, when assuming it is multiple
> waves long?? i mean does anyone know from first hand experience how
> they worked?? good bad?? just talking signal wise
>
>
> i can extrapolate technically how it 'ought' to work but wonder
>
>
>
>
> thanks

4768. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 00:57:51 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <2BMVj.3106$C8.219@bignews2.bellsouth.net>
Source record: 25590

This may be - to communicate with submarines (VLF).
So your assumption that its multiple wavelengths long may be unwarranted.
It may be a quarter-wave, half-wave or any portion (or multiple) of a
wavelength.
.

"ml" <m@di.net> wrote in message
news:m-5B9386.14512711052008@news.optonline.net...
> hi
>
> i was just reading about airforce plans that had a trailing wire which
> when fully extended was 6miles long
>
>
> i was just wondering given that environment and assuming a few
> varied yet unknown frequencies...
>
>
> how well does such a antenna work, when assuming it is multiple
> waves long?? i mean does anyone know from first hand experience how
> they worked?? good bad?? just talking signal wise
>
>
> i can extrapolate technically how it 'ought' to work but wonder
>

This may be - to communicate with submarines (VLF).

4769. Re: have u seen this

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 01:01:05 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <4EMVj.3110$C8.969@bignews2.bellsouth.net>
Source record: 25591

I would like the lunar lander to scratch my callsign in the lunar dust -
CQET, CQET de w4pmj dididididahdidah

"Howard W3CQH" <hsgorden@comcast.net> wrote in message
news:vLudnUKTYappr7rVnZ2dnUVZ_jGdnZ2d@comcast.com...
> NASA is inviting everyone to send their name to the moon on board the
> Lunar Reconnaissance Orbiter.
>
> Right now you can log onto a special NASA Web site that is collecting
> names, which will be put on a microchip that will be integrated into
> the LRO.
>
> The LRO mission is the first step in NASA's plans to return humans to
> the moon by 2020.
>
> The deadline to add your name to the microchip is June 27.
>
> http://lro.jhuapl.edu/NameToMoon/index.php
>

4770. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 01:33:17 UTC
From: ml <m@di.net>
Message-ID: <m-D42AF2.21331711052008@news.optonline.net>
Source record: 25592

In article <2JJVj.121$Pr1.106@trndny03>, "Dave" <noone@nowhere.com>
wrote:

> multiple wavelengths?? why would you assume that??
>
> "ml" <m@di.net> wrote in message
> news:m-5B9386.14512711052008@news.optonline.net...
> > hi
> >
> > i was just reading about airforce plans that had a trailing wire which
> > when fully extended was 6miles long
> >
> >
> > i was just wondering given that environment and assuming a few
> > varied yet unknown frequencies...
> >
> >
> > how well does such a antenna work, when assuming it is multiple
> > waves long?? i mean does anyone know from first hand experience how
> > they worked?? good bad?? just talking signal wise
> >
> >
> > i can extrapolate technically how it 'ought' to work but wonder
> >
> >
> >
> >
> > thanks

i didn't assume anything, it was clearly stated in certain articles
about that, that the antenna was realled out to different lengths
dependind on things some of which were frequency

thanks Cecil

4771. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 02:05:23 UTC
From: Dan Richardson <k6mhe@k6mhe.com>
Message-ID: <719f241jrvjp7cs17k8pb5fdvv8j6mqstt@4ax.com>
Source record: 25593

On Wed, 30 Apr 2008 23:53:38 GMT, "HRBE" <hrbe@bigpond.net.au> wrote:

>Hello to all,
>I have just bought a Ground plane adaptor off Ebay (yeah I know!) (China!
>Yeah I know!) it was advertised as a PL259/SO239 male/female thread to
>enable a groundplane to be fitted to a mobile antenna.
>
>I assumed wrongly that there was an International standard with regard to
>the PL259/SO239.
>
>Naturally when a known part number is advertised, one would expect that the
>normal 5/8" x 24 threads per inch standard (UNEF) would be followed.
>
>Not so! What was sent was a 16 x 1mm adaptor.
>
>Naturally the language difference is making it hard for me to convince the
>seller that he MUST advertise the adaptor on Ebay having a metric thread.
>
>Can anyone tell me if there is a move towards the metrification of the
>PL259/SO239 connectors?
>
>If this happens all hell will break loose, imagine trying to connect antenna
>to coax at say a field day or even worse in an emergency situation?
>
>John
>VK2KCE
>

I ran into that problem many years ago when they first starting
importing some off-shore VHF antennas. I ended up purchasing a 5/8-24
NF die-nut and that took care of the problem. Its very easy to use
requiring very little pressure to "chase" the threads so that a
standard PL-259 screws on without any problem.

Over the years having that die-nut has paid for itself many times for
myself and friends who ended up trying to use metric connectors with
American standard connectors.

Danny, K6MHE

4772. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 03:15:07 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <m7mdnUYOW_y3NbrVnZ2dnUVZ_sTinZ2d@earthlink.com>
Source record: 25594

"Hal Rosser" <hmrosser@bellsouth.net> wrote in message
news:2BMVj.3106$C8.219@bignews2.bellsouth.net...
> This may be - to communicate with submarines (VLF).
> So your assumption that its multiple wavelengths long may be unwarranted.
> It may be a quarter-wave, half-wave or any portion (or multiple) of a
> wavelength.
> .
>
> "ml" <m@di.net> wrote in message
> news:m-5B9386.14512711052008@news.optonline.net...
>> hi
>>
>> i was just reading about airforce plans that had a trailing wire which
>> when fully extended was 6miles long
>>
>>
From:

http://jproc.ca/radiostor/vlfelf.html

In the United States military, the primary means of communicating with submerged submarines is the TACAMO (Take Charge and Move Out) system which uses a fleet of aircraft. Two aircraft are always airborne - one over the Atlantic and one over the Pacific. Other aircraft are stationed on the ground and they are on a 15 minute alert. The aircraft fly 10.5 hour missions, starting at one airfield and ending at another. Random patterns are flown to mislead any unauthorized observers. The TACAMO aircraft can receive and relay signals from a number of different ground command posts. Each aircraft is equipped with a 6.2 mile long trailing wire antenna (wound on a reel) and a 100 kw transmitter operating in the VLF region. When the aircraft has to transmit a message, it banks and proceeds to fly a very tight circle. The causes the trailing wire antenna to hang vertically below. Once the message is transmitted over the VLF downlink the aircraft resumes normal flight.
The TACAMO fleet was initially comprised of the Lockheed Hercules EC130 aircraft, but these are being gradually phased out and replaced with the Boeing 747 AWACS type aircraft. These aircraft have the capability to transmit a 200 kw signal using a 2.5 mile trailing antenna. The systems described above were documented in a book printed in 1985. Due to unavailability of information, I do not know if the same system is still in use in the 1990's, but the techniques, nonetheless are quite intriguing.

.

4773. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 08:11:56 UTC
From: John VK2KCE <hrbe@bigpond.net.au>
Message-ID: <gZSVj.401$IK1.104@news-server.bigpond.net.au>
Source record: 25595

Thanks Dan,
I have ordered a die nut to correct the problem, I suspect that the thread
will not have the full strength after using it though!

Thanks, John
"Dan Richardson" <k6mhe@k6mhe.com> wrote in message
news:719f241jrvjp7cs17k8pb5fdvv8j6mqstt@4ax.com...
> On Wed, 30 Apr 2008 23:53:38 GMT, "HRBE" <hrbe@bigpond.net.au> wrote:
>
>>Hello to all,
>>I have just bought a Ground plane adaptor off Ebay (yeah I know!) (China!
>>Yeah I know!) it was advertised as a PL259/SO239 male/female thread to
>>enable a groundplane to be fitted to a mobile antenna.
>>
>>I assumed wrongly that there was an International standard with regard to
>>the PL259/SO239.
>>
>>Naturally when a known part number is advertised, one would expect that
>>the
>>normal 5/8" x 24 threads per inch standard (UNEF) would be followed.
>>
>>Not so! What was sent was a 16 x 1mm adaptor.
>>
>>Naturally the language difference is making it hard for me to convince the
>>seller that he MUST advertise the adaptor on Ebay having a metric thread.
>>
>>Can anyone tell me if there is a move towards the metrification of the
>>PL259/SO239 connectors?
>>
>>If this happens all hell will break loose, imagine trying to connect
>>antenna
>>to coax at say a field day or even worse in an emergency situation?
>>
>>John
>>VK2KCE
>>
>
> I ran into that problem many years ago when they first starting
> importing some off-shore VHF antennas. I ended up purchasing a 5/8-24
> NF die-nut and that took care of the problem. Its very easy to use
> requiring very little pressure to "chase" the threads so that a
> standard PL-259 screws on without any problem.
>
> Over the years having that die-nut has paid for itself many times for

> myself and friends who ended up trying to use metric connectors with
> American standard connectors.
>
> Danny, K6MHE
>
>

4774. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 11:44:23 UTC
From: Jeff <jeff@local.host>
Message-ID: <48282dec$0$11117$834e42db@reader.greatnowhere.com>
Source record: 25597

"John VK2KCE" <hrbe@bigpond.net.au> wrote in message
news:gZSVj.401$IK1.104@news-server.bigpond.net.au...
> Thanks Dan,
> I have ordered a die nut to correct the problem, I suspect that the thread
> will not have the full strength after using it though!

Whist running a die over the thread will allow a 'normal' 259 the be screwed onto the socket it does reduce some of the thread to almost nothing, so I would not recommend that method where there is any mechanical strength required such as an antenna base.

73
Jeff

4775. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 11:44:57 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <6uudnQpbL9A9sLXVnZ2dneKdnZydnZ2d@pipex.net>
Source record: 25596

Mike Coslo wrote:
> I would suggest that No Spam might try an experiment, making a stub as a
> first try. It's simple enough that if it doesn't work, there isn't much
> effort wasted.
=====
Mike , Was that a single or treble stub (Pi shape) ?

Frank GM0CSZ / KN6WH

4776. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 11:53:37 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <JaOdncSmXdM1srXVnZ2dnUVZ8s7inZ2d@pipex.net>
Source record: 25598

Dave Platt wrote:
>snip
> You might be able to reduce the losses and heating by changing the
> length of the 300-wire line you are using, so that the antenna's
> feedpoint impedance is transformed into an impedance at the tuner that
> doesn't require extreme impedance transformation, and requires the use
> of lower amounts of reactance during tuning.
==========
With the velocity factor of 300 Ohms ribbon being 0.99 (take it as 1)
and using a symmetrical dipole (hence not a Windom type of antenna), to
get a low impedance at the matching unit (tuner if you like) the length
of half the dipole + the length of the feeder should be about an odd
number of quarter wavelengths.

Frank GM0CSZ / KN6WH

4777. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 13:25:28 UTC
From: Dan Richardson <k6mhe@k6mhe.com>
Message-ID: <m0hg24p5fk02lnj3n9j0alsltuclgefnmg@4ax.com>
Source record: 25599

On Mon, 12 May 2008 12:44:23 +0100, "Jeff" <jeff@local.host> wrote:

>
>"John VK2KCE" <hrbe@bigpond.net.au> wrote in message
>news:gZSVj.401$IK1.104@news-server.bigpond.net.au...
>> Thanks Dan,
>> I have ordered a die nut to correct the problem, I suspect that the thread
>> will not have the full strength after using it though!
>
>
>Whist running a die over the thread will allow a 'normal' 259 the be screwed
>onto the socket it does reduce some of the thread to almost nothing, so I
>would not recommend that method where there is any mechanical strength
>required such as an antenna base.
>
>73
>Jeff
>
In over 20+ years of use I have never experienced anything like that.
If you think about it, the difference between the metric and american
threads - in the case is - is slight (Look just how far you can screw
a PL-59 on the meteric socket) and a very small amout of material is
removed.

Have you really ever tried this method?

73,
Danny, K6MHE

4778. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 13:31:39 UTC
From: Dan Richardson <k6mhe@k6mhe.com>
Message-ID: <mahg24pbgkqggpc3nkqn4c33q7afssfofj@4ax.com>
Source record: 25600

On Mon, 12 May 2008 08:11:56 GMT, "John VK2KCE" <hrbe@bigpond.net.au>
wrote:

>Thanks Dan,
>I have ordered a die nut to correct the problem, I suspect that the thread
>will not have the full strength after using it though!

Once you try this method you see that you really have nothing to be
concerned about. (Unless you use a wrench and really apply heavy
pressure on a PL-259.) For hand tightening you'll have no problems.

73, Danny.
>

4779. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 14:21:49 UTC
From: Jeff <jeff@local.host>
Message-ID: <48285302$0$11117$834e42db@reader.greatnowhere.com>
Source record: 25501

>>Whist running a die over the thread will allow a 'normal' 259 the be
>>screwed
>>onto the socket it does reduce some of the thread to almost nothing, so I
>>would not recommend that method where there is any mechanical strength
>>required such as an antenna base.
>>
>>73
>>Jeff
>>
> In over 20+ years of use I have never experienced anything like that.
> If you think about it, the difference between the metric and american
> threads - in the case is - is slight (Look just how far you can screw
> a PL-59 on the meteric socket) and a very small amout of material is
> removed.

What you will see if you actually try this method is that the threads will be reduced in thickness over about half the length. The reduction getting worse as you progress. The threads will have reduced to such an extent towards the end as to render then no more than bumps. Have a look at one you have done this to under a magnifying glass and you will see.

73
Jeff

4780. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 15:54:25 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RKZVj.3179$17.2137@newssvr22.news.prodigy.net>
Source record: 25502

Highland Ham wrote:
> ... to
> get a low impedance at the matching unit (tuner if you like) the length
> of half the dipole + the length of the feeder should be about an odd
> number of quarter wavelengths.

That rule-of-thumb is a linear approximation but the
actual function is not linear. Here is a graph (generated
using EZNEC) that is more accurate than the-rule-of thumb.
Using this graph, quite often one doesn't even need a tuner.

Of course, half-wavelengths of feedline are added to
the matching section length to achieve a reasonable
total feedline length.

http://www.w5dxp.com/majic.gif
--
73, Cecil http://www.w5dxp.com

4781. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 17:16:58 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <Uqadncav_7AW5rXVnZ2dnUVZ_ojinZ2d@posted.easystreetonline>
Source record: 25503

Highland Ham wrote:
> With the velocity factor of 300 Ohms ribbon being 0.99 (take it as 1)
> and using a symmetrical dipole (hence not a Windom type of antenna), to
> get a low impedance at the matching unit (tuner if you like) the length
> of half the dipole + the length of the feeder should be about an odd
> number of quarter wavelengths.

The velocity factor of 300 ohm ribbon twinlead is approximately 0.80,
but it varies from brand to brand and lot to lot.

Roy Lewallen, W7EL

4782. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 17:33:46 UTC
From: Danny Richardson <>
Message-ID: <s7ug24plagrjrcbeo8i83j6a6nk8q22n31@4ax.com>
Source record: 25504

On Mon, 12 May 2008 15:21:49 +0100, "Jeff" <jeff@local.host> wrote:

>
>>>Whist running a die over the thread will allow a 'normal' 259 the be
>>>screwed
>>>onto the socket it does reduce some of the thread to almost nothing, so I
>>>would not recommend that method where there is any mechanical strength
>>>required such as an antenna base.
>>>
>>>73
>>>Jeff
>>>
>> In over 20+ years of use I have never experienced anything like that.
>> If you think about it, the difference between the metric and american
>> threads - in the case is - is slight (Look just how far you can screw
>> a PL-59 on the meteric socket) and a very small amout of material is
>> removed.
>
>What you will see if you actually try this method is that the threads will
>be reduced in thickness over about half the length. The reduction getting
>worse as you progress. The threads will have reduced to such an extent
>towards the end as to render then no more than bumps. Have a look at one you
>have done this to under a magnifying glass and you will see.
>
>73
>Jeff
>

Jeff,

The TPI between the two standards (American and metric) - in this
case - are very close resulting in very little thread stock being
removed. In the short thread length involved here (about 1/2-inch) and
the threads are not rendered to nothing more than bumps.However, at
longer thread lengths it well could be a problem, but not at the
1/2-inch distance we are talking about here.

Again I ask, have you actually tried this?

I have used this method numerous times for myself and friends and I
have never experienced any kind of failures or problems in doing so.

That said I'm going QRT on this subject.

73,
Danny, K6MHE

4783. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 19:11:55 UTC
From: Jeff <jeff@local.host>
Message-ID: <482896c0$0$11121$834e42db@reader.greatnowhere.com>
Source record: 25505

>
> The TPI between the two standards (American and metric) - in this
> case - are very close resulting in very little thread stock being
> removed. In the short thread length involved here (about 1/2-inch) and
> the threads are not rendered to nothing more than bumps.However, at
> longer thread lengths it well could be a problem, but not at the
> 1/2-inch distance we are talking about here.
>
> Again I ask, have you actually tried this?
>
> I have used this method numerous times for myself and friends and I
> have never experienced any kind of failures or problems in doing so.
>

Yes. and I would not trust the end result to any kind of load, it is fine
for a cable connection but certainly not as a method of retaining a mobile
antenna at speed!

Perhaps the difference is in the die, and the length of thread in the die.
The thicker the die the truer the thread will be and the more pronounced the
removal of the metric thread.

The OP was suggesting a 'die nut' which will be quite thick and I suspect
would produce results similar to those I have found.

Jeff

4784. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 19:27:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <NS0Wj.1076$hJ5.145@nlpi068.nbdc.sbc.com>
Source record: 25506

Roy Lewallen wrote:
> The velocity factor of 300 ohm ribbon twinlead is approximately 0.80,
> but it varies from brand to brand and lot to lot.

I measured the VF of 300 ohm and 450 ohm window-line from
The Wireman. The 300 ohm stuff was very close to 0.8 while
the 450 ohm was closer to 0.9
--
73, Cecil http://www.w5dxp.com

4785. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 19:40:02 UTC
From: Jeff <jeff@local.host>
Message-ID: <48289d66$0$11115$834e42db@reader.greatnowhere.com>
Source record: 25507

> The TPI between the two standards (American and metric) - in this
> case - are very close resulting in very little thread stock being
> removed.

In fact the TPI's are not that close 24tpi for American (1.06mm pitch) and
1.5mm pitch for Metric fine.

Jeff

4786. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 20:25:03 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <17957e4e-c640-4a2f-9d5e-300cc5be0720@z24g2000prf.googlegroups.com>
Source record: 25508

On May 8, 9:56 pm, "Lumpy" <lu...@digitalcartography.com> wrote:
> K7ITM wrote:
> > > > ...(I've built several somewhat similar filters using
> > > > copper clad for the shielding, and they work quite well.)
> > > > Would a suggested design be helpful?..
> > If a picture would help, I'd be happy to send one via email.
>
> I'd like to see pics please.
> My return is valid.
>
> Thanks mucho
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

I've posted some pix at http://mysite.verizon.net/bruhnstv/. They'll
be there for a short time.

Cheers,
Tom

4787. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 22:22:29 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <uqSdnW2DA8GRXrXVnZ2dneKdnZydnZ2d@pipex.net>
Source record: 25509

Roy Lewallen wrote:
> Highland Ham wrote:
>> With the velocity factor of 300 Ohms ribbon being 0.99 (take it as 1)
>> and using a symmetrical dipole (hence not a Windom type of antenna),
>> to get a low impedance at the matching unit (tuner if you like) the
>> length of half the dipole + the length of the feeder should be about
>> an odd number of quarter wavelengths.
>
> The velocity factor of 300 ohm ribbon twinlead is approximately 0.80,
> but it varies from brand to brand and lot to lot.
>
> Roy Lewallen, W7EL
==========
Tnx Roy , I thought is was about the same as for 450 ohms twin feeder.
That's what I use. The 'thumb rule' of the length of half the dipole +
length of feeder being about an odd number of quarter wavelengths for a
low impedance at the matching box (mine is an E-zee match unit) works
well for me. With 450 Ohms twin feeder you can sense the current in 1
wire with a clip-on relative RF current sensor/indicator to find a low
impedance point ,because of the large open slots. If right for a lower
freq band , the matching box takes care of the higher freq bands (also
non-harmonic bands) ,without getting 'warm'.
However with the current feeder ,for 1.8 MHz I would have to increase
the feeder length (coiled-up inside shack and kept away from metal)

Frank GM0CSZ / KN6WH

4788. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-12 23:25:17 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <_k4Wj.5477$Xv3.2765@bignews4.bellsouth.net>
Source record: 25510

> The TACAMO fleet was initially comprised of the Lockheed Hercules EC130
> aircraft, but these are being gradually phased out and replaced with the
> Boeing 747 AWACS type aircraft. These aircraft have the capability to
> transmit a 200 kw signal using a 2.5 mile trailing antenna. The systems
> described above were documented in a book printed in 1985. Due to
> unavailability of information, I do not know if the same system is still
> in use in the 1990's, but the techniques, nonetheless are quite
> intriguing.
>

Very interesting indeed.
We know that uhf and vhf are for the most part, line-of-sight communication,
with exceptions like ducting, etc...
But it would be interesting to experiment with vlf, to see what it
penetrates.

Speaking of the trailing wire - I wonder if you could trail a loop - and use
it to generate electricity from cutting earth's magnetic lines of force -
(perhaps to power the aircraft after its up to speed. I think they
experimented with the idea on one of the shuttle's orbital missions, but
didn't hear much about the results.

4789. Re: PL259 Thread standard

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 01:17:50 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <2%5Wj.325916$cQ1.20466@bgtnsc04-news.ops.worldnet.att.net>
Source record: 25511

Jeff wrote:
>> The TPI between the two standards (American and metric) - in this
>> case - are very close resulting in very little thread stock being
>> removed.
>
> In fact the TPI's are not that close 24tpi for American (1.06mm pitch) and
> 1.5mm pitch for Metric fine.
>
> Jeff
>
>

The metric PL259 has a pitch of 1.0 mm. It is not an ordinary metric
fine thread. (5/8 - 24 is not an ordinary fine thread either.)

73,
Gene
W4SZ

4790. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 04:19:50 UTC
From: Jimmie D <GFENDER@carolina.rr.com>
Message-ID: <482916e2$0$3374$4c368faf@roadrunner.com>
Source record: 25512

>
> Speaking of the trailing wire - I wonder if you could trail a loop - and
> use it to generate electricity from cutting earth's magnetic lines of
> force - (perhaps to power the aircraft after its up to speed. I think they
> experimented with the idea on one of the shuttle's orbital missions, but
> didn't hear much about the results.
>
>
>

I think I remember hearing the experiment worked too well and they had a lot
of uncontrolled arcing.
I wonder how much drag this would put on the shuttle.

Jimmie

4791. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 04:44:47 UTC
From: "Bruce W. Ellis" <ellis@means.net>
Message-ID: <18mdnRTC5tYggbTVnZ2dnUVZ_ofinZ2d@onvoy.com>
Source record: 25513

On Tue, 13 May 2008 00:19:50 -0400, "Jimmie D"
<GFENDER@carolina.rr.com> wrote:

>
>>
>> Speaking of the trailing wire - I wonder if you could trail a loop - and
>> use it to generate electricity from cutting earth's magnetic lines of
>> force - (perhaps to power the aircraft after its up to speed. I think they
>> experimented with the idea on one of the shuttle's orbital missions, but
>> didn't hear much about the results.
>>
>>
>>
>
>I think I remember hearing the experiment worked too well and they had a lot
>of uncontrolled arcing.
>I wonder how much drag this would put on the shuttle.
>
>Jimmie
>
The wire cutting through the magentic field will generate an EMF - a
potential difference between one end of the wire and the far end but
there is no complete circuit to tap it. If a return wire were
connected to the far end of the wire, it would generate the same value
and polarity giving no net emf (voltage) around the path. If one
could create a loop and rotate it in the field that would be a
different matter. The same concept applies to the voltage developed
between the wing tips of a (metal) aircraft.

4792. Dayton

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 18:05:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <W8Kdnee9b6fNRbTVnZ2dnUVZ_uOdnZ2d@posted.easystreetonline>
Source record: 25514

I'll be at my usual spot at Dayton this year, booth 514. Stop by and say hello if you're going.

Roy Lewallen, W7EL

4793. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 18:43:04 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g0cnfo$1caq$1@f04n12.cac.psu.edu>
Source record: 25515

Highland Ham wrote:
> Mike Coslo wrote:
>> I would suggest that No Spam might try an experiment, making a stub
>> as a first try. It's simple enough that if it doesn't work, there
>> isn't much effort wasted.
> =====
> Mike , Was that a single or treble stub (Pi shape) ?

It was a single stub. The situation was during a contest, so I had to come up with something quick. I can only imagine something like a Pi stub would have been all that much better.

- 73 de Mike N3LI -

4794. Quake

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 19:45:48 UTC
From: Howard W3CQH <hsgorden@comcast.net>
Message-ID: <bs2dnbpX7NdhcrTVnZ2dnUVZ_gCdnZ2d@comcast.com>
Source record: 25516

Just received this through a ARES reflector
==========

""Strong earthquake hits China, all ham radio operators stand by PLEASE HELP TO SPREAD THE FOLLOWING MESSAGE

Strong earthquake hits China, all ham radio operators stand by A Magnitude 7.8 earthquake hits Sichuan, China on Monday, May 12, 2008 at 06:28:04 UTC. Casualties and loss unknown up to now. According to Chinese Radio Sports Association, 14.270Mhz, 7.050 and 7.060 Mhz are preserved for amateur radio emergency service in the rescue. Please spread this message as far as you can and keep the frequencies clean for emergency use. Thank you.

Yesterday, 05:57 PM
BG8AAS from Chengdu, Sichuan reported that local UHF repeater survived in the disaster. It keeps functioning from the 1st minute and more than 200 local radio hams are now on that repeater. A group of hams from Chengdu has headed for Wenchuan, the center of the quake, trying to setup emergency communication services there.

BA8AB, also from Chengdu, Sichuan, is active on the 40m emergency frequency. Up to now, no further information available from the center zone of the quake. There are a few radio amateurs there, but all of the communications have been cut out, including amateur radio.

Yesterday, 06:58 PM
Update

According to BG8AAS, local UHF repeater in Chengdu keeps busy running after the quake. It helps to direct social vehicles to transport the wounded from Dujiangyan, Beichuan, and other regions. Another UHF repeater also starts its working in Mianyan, supported by generators.
However, they are going to face a shortage of gas.

Damage in Chengdu remains in the lowest level, but the situation is very very bad in the counties around. A few towns are said to be destroyed completely. More than 7000 died in the town of Beichuan. Casualties in several other towns are still unknown and not counted in the published numbers.

It is a long and sad day.

Today, 08:31 AM
Your attention please! 14.270Mhz is now reserved for ARES in 5.12 earth quake in Sichuan, China. Please help to keep this frequency clear.

A group of radio amateurs is now transmitting from Wenchuan, the center of quake. Its signal is reported to be very weak. They tried to keep communication with BY8AA in Chengdu, seeking for all resources needed. During a contact finished a few minutes ago, they were asking for raincoats, water, tents, and outdoor living facilities.

PLEASE HELP TO FORWARD THIS MESSAGE TO ALL RELEVANT FORUMS, MAILING LISTS, AND NEWS RESOURCES. MEANWHILE, KEEP THE ABOVE FREQUENCY CLEAN FOR EMERGENCY COMMUNICATION.

Michael Chen, BD5RV/4""

4795. will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 21:55:23 UTC
From: rb <rbig@bellsouth.net>
Message-ID: <_4oWj.2867$Kk3.532@bignews9.bellsouth.net>
Source record: 25517

Thinking of putting a vertical up. I'd go from 2" pvc, to 1", to 1/2" , in twenty foot lengths. Will this thing support itself OK? Seems like it might physically work OK.

4796. Re: will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 22:10:44 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <EloWj.1255$lj.179@trnddc01>
Source record: 25518

"rb" <rbig@bellsouth.net> wrote in message
news:_4oWj.2867$Kk3.532@bignews9.bellsouth.net...
> Thinking of putting a vertical up. I'd go from 2" pvc, to 1", to 1/2" ,
> in twenty foot lengths. Will this thing support itself OK? Seems like it
> might physically work OK.

Hi rb

It reads as though you are contimplating errecting a 45 or 50 foot self supporting vertical using PVC pipe to support the conductor. Dont spend much money on PVC till you try some. It bends easily. I cant imagine a 20 foot length of 1/2 inch PVC (0.850OD) supporting itself even in a mild brease, (if you could get it vertical).

Jerry KD6JDJ

4797. Re: Field day station isolation

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 22:16:48 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <79911d9d-ba3a-45ee-8351-68e167e00155@d19g2000prm.googlegroups.com>
Source record: 25519

On May 13, 11:43 am, Michael Coslo <m...@psu.edu> wrote:
> Highland Ham wrote:
> > Mike Coslo wrote:
> >> I would suggest that No Spam might try an experiment, making a stub
> >> as a first try. It's simple enough that if it doesn't work, there
> >> isn't much effort wasted.
> > =====
> > Mike , Was that a single or treble stub (Pi shape) ?
>
> It was a single stub. The situation was during a contest, so I had to
> come up with something quick. I can only imagine something like a Pi
> stub would have been all that much better.
>
> - 73 de Mike N3LI -

But as I understand it, Mike, it was to kill something at least 4MHz away from 14MHz. That doesn't take a very high Q. The OP was asking about killing something 100kHz away, at 14MHz, and that's entirely different.

I assume yours was a 1/4 wave stub on the freq you wanted to kill, open on the free end (or else a 1/2 wave stub, shorted on the free end). If it was RG-213-size coax, I'd expect the Q at 14MHz to be about 100. I can do that at 14MHz in a coil about 1/3 inch in diameter and 1/3 inch long.

Cheers,
Tom

4798. Re: will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 22:37:35 UTC
From: Rick <ricknj10@hotmail.com>
Message-ID: <482a1831$0$11631$607ed4bc@cv.net>
Source record: 25520

"rb" <rbig@bellsouth.net> wrote in message
news:_4oWj.2867$Kk3.532@bignews9.bellsouth.net...
> Thinking of putting a vertical up. I'd go from 2" pvc, to 1", to 1/2" ,
> in twenty foot lengths. Will this thing support itself OK? Seems like it
> might physically work OK.
It will NOT work unless you guy it like crazy. It will fail at those
joints.
Even then, it is hard to pull it up vertical without it breaking. Even if
you get it vertical it will not stay that way.
One day you will look out and it will be leaning over at a 10 degree angle.
Then next day
it breaks. You will speak bad words. The neighbors will hear you.
I speak from experience from the summer of 2006.

K2XT

4799. FS: MFJ-902 tiny Travel Tuner (eBay)

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-13 23:31:57 UTC
From: Jason Hsu <jason_hsu@my-deja.com>
Message-ID: <cd932845-b60e-4942-baad-fca3d09f3473@m45g2000hsb.googlegroups.com>
Source record: 25521
Cross-posted to:
rec.radio.amateur.dx,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc,alt.ham-radio.marketplace

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&ssPageName=STRK:MESELX:IT&item=330236169416

4800. Re: will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-14 00:53:38 UTC
From: Bob Miller <NOSPAM@neosoft.com>
Message-ID: <2sdk249lur0nl4t9fmrenron81erv9na3v@4ax.com>
Source record: 25522

On Tue, 13 May 2008 16:55:23 -0500, "rb" <rbig@bellsouth.net> wrote:

>Thinking of putting a vertical up. I'd go from 2" pvc, to 1", to 1/2" , in
>twenty foot lengths. Will this thing support itself OK? Seems like it
>might physically work OK.
>

On of the 30 or 40-foot fiberglas "fishing poles" from mfj or whomever
might work better... if there's little or no sideways force...

bob
k5qwg

4801. Re: will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-14 02:47:48 UTC
From: rb <rbig@bellsouth.net>
Message-ID: <aosWj.7561$Xv3.7179@bignews4.bellsouth.net>
Source record: 25523

OK. Thanks. That eliminates one idea.

4802. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-14 02:56:19 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <XvsWj.65417$%15.58450@bignews7.bellsouth.net>
Source record: 25524

>>Jimmie
>>
> The wire cutting through the magentic field will generate an EMF - a
> potential difference between one end of the wire and the far end but
> there is no complete circuit to tap it. If a return wire were
> connected to the far end of the wire, it would generate the same value
> and polarity giving no net emf (voltage) around the path. If one
> could create a loop and rotate it in the field that would be a
> different matter. The same concept applies to the voltage developed
> between the wing tips of a (metal) aircraft.
>

My post was about a possible trailing loop. (Both ends accessable to the ham
on board.)
You don't have to rotate the loop - just to move it.
The aircraft is moving - thus the magnetic lines get 'cut' so to speak, so
emf gets generated.
I also heard it worked 'too well' on the shuttle - that the current was so
great that the wire burned into.

4803. Re: will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-14 03:00:48 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <8AsWj.65421$%15.19775@bignews7.bellsouth.net>
Source record: 25525

"rb" <rbig@bellsouth.net> wrote in message
news:_4oWj.2867$Kk3.532@bignews9.bellsouth.net...
> Thinking of putting a vertical up. I'd go from 2" pvc, to 1", to 1/2" ,
> in twenty foot lengths. Will this thing support itself OK? Seems like it
> might physically work OK.

Been there tried that-
It won't work.
I tried sched 40 plumbing PVC and the gray PVC sched 40 (electrical).
Pvc is ok for a 2-meter quad - but use alum or steel mast,
you may try the top-post they use for chain-link fences - I think you can
get it in 20-ft lengths.

4804. Re: Coils getting hot in antennatuner. Is this normal ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-14 11:57:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <7tAWj.3389$17.1238@newssvr22.news.prodigy.net>
Source record: 25526

Cecil Moore wrote:
> Roy Lewallen wrote:
>> The velocity factor of 300 ohm ribbon twinlead is approximately 0.80,
>> but it varies from brand to brand and lot to lot.
>
> I measured the VF of 300 ohm and 450 ohm window-line from
> The Wireman. The 300 ohm stuff was very close to 0.8 while
> the 450 ohm was closer to 0.9

Incidentally, the Z0 of the "300 ohm" window-line
was considerably lower than 300 ohms and the Z0 of
the "440 ohm" window-line was about 388 ohms.
--
73, Cecil http://www.w5dxp.com

4805. FA: MFJ 259B antenna analyzer counter

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-14 13:50:49 UTC
From: Ted <nobody@pseudo.borked.net>
Message-ID: <b7503735c53c47821b8e80b9c5e97eb7@pseudo.borked.net>
Source record: 25527

http://xrl.us/MFJ259B

4806. Re: will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-14 14:26:32 UTC
From: John KD5YI <groups1_dot_jocjo@xoxy.net>
Message-ID: <sECWj.3663$lj.2181@trnddc01>
Source record: 25528

"Hal Rosser" <hmrosser@bellsouth.net> wrote in message
news:8AsWj.65421$%15.19775@bignews7.bellsouth.net...
>
> "rb" <rbig@bellsouth.net> wrote in message
> news:_4oWj.2867$Kk3.532@bignews9.bellsouth.net...
>> Thinking of putting a vertical up. I'd go from 2" pvc, to 1", to 1/2" ,
>> in twenty foot lengths. Will this thing support itself OK? Seems like
>> it might physically work OK.
>
> Been there tried that-
> It won't work.
> I tried sched 40 plumbing PVC and the gray PVC sched 40 (electrical).
> Pvc is ok for a 2-meter quad - but use alum or steel mast,
> you may try the top-post they use for chain-link fences - I think you can
> get it in 20-ft lengths.

I don't recommend that, either. It is heavy and bends easily. The radio
shack TV antenna mast works better.

Sorry to be the bearer of bad news.

73,
John

4807. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-14 20:07:15 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g0fgpjejt1@news.jpl.nasa.gov>
Source record: 25529

Hal Rosser wrote:
>>>Jimmie
>>>
>>
>>The wire cutting through the magentic field will generate an EMF - a
>>potential difference between one end of the wire and the far end but
>>there is no complete circuit to tap it. If a return wire were
>>connected to the far end of the wire, it would generate the same value
>>and polarity giving no net emf (voltage) around the path. If one
>>could create a loop and rotate it in the field that would be a
>>different matter. The same concept applies to the voltage developed
>>between the wing tips of a (metal) aircraft.
>>
>
>
> My post was about a possible trailing loop. (Both ends accessable to the ham
> on board.)
> You don't have to rotate the loop - just to move it.
> The aircraft is moving - thus the magnetic lines get 'cut' so to speak, so
> emf gets generated.
> I also heard it worked 'too well' on the shuttle - that the current was so
> great that the wire burned into.
>
>
you can get charging and arcing in orbit from lots of other sources
(impact with charged particles, for instance). It's a pretty big issue
with large things like ISS that can build up substantial charge if
things aren't bonded together. More than one spacecraft has been lost
due to this kind of thing (Japan's Midori-2 is one case I know of).
http://www.space.com/spacenews/archive03/adeosarch_111103.html

Jim

4808. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-14 23:42:59 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <3e896c77-8255-4f50-ade0-1b034c6d35de@q24g2000prf.googlegroups.com>
Source record: 25530

Ralph Mowery wrote:
> "Hal Rosser" <hmrosser@bellsouth.net> wrote in message
> news:2BMVj.3106$C8.219@bignews2.bellsouth.net...
> > This may be - to communicate with submarines (VLF).
> > So your assumption that its multiple wavelengths long may be unwarranted.
> > It may be a quarter-wave, half-wave or any portion (or multiple) of a
> > wavelength.
> > .
> >
> > "ml" <m@di.net> wrote in message
> > news:m-5B9386.14512711052008@news.optonline.net...
> >> hi
> >>
> >> i was just reading about airforce plans that had a trailing wire which
> >> when fully extended was 6miles long
> >>
> >>
> From:
>
> http://jproc.ca/radiostor/vlfelf.html
>
> In the United States military, the primary means of communicating with
> submerged submarines is the TACAMO (Take Charge and Move Out) system which
> uses a fleet of aircraft. Two aircraft are always airborne - one over the
> Atlantic and one over the Pacific. Other aircraft are stationed on the
> ground and they are on a 15 minute alert. The aircraft fly 10.5 hour
> missions, starting at one airfield and ending at another. Random patterns
> are flown to mislead any unauthorized observers. The TACAMO aircraft can
> receive and relay signals from a number of different ground command posts.
> Each aircraft is equipped with a 6.2 mile long trailing wire antenna (wound
> on a reel) and a 100 kw transmitter operating in the VLF region. When the
> aircraft has to transmit a message, it banks and proceeds to fly a very
> tight circle. The causes the trailing wire antenna to hang vertically below.
> Once the message is transmitted over the VLF downlink the aircraft resumes
> normal flight.
> The TACAMO fleet was initially comprised of the Lockheed Hercules EC130
> aircraft, but these are being gradually phased out and replaced with the
> Boeing 747 AWACS type aircraft. These aircraft have the capability to
> transmit a 200 kw signal using a 2.5 mile trailing antenna. The systems
> described above were documented in a book printed in 1985. Due to
> unavailability of information, I do not know if the same system is still in
> use in the 1990's, but the techniques, nonetheless are quite intriguing.
>
>

I know they were doing this as early as '79 at least as a test. I had a little to do with AWACS data communications back then. Apparently this is no longer a security issue.

Jimmie

4809. Re: will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 00:41:01 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <VDLWj.134898$Er2.129495@bignews6.bellsouth.net>
Source record: 25531

"John KD5YI" <groups1_dot_jocjo@xoxy.net> wrote in message
news:sECWj.3663$lj.2181@trnddc01...
>
> "Hal Rosser" <hmrosser@bellsouth.net> wrote in message
> news:8AsWj.65421$%15.19775@bignews7.bellsouth.net...
>>
>> "rb" <rbig@bellsouth.net> wrote in message
>> news:_4oWj.2867$Kk3.532@bignews9.bellsouth.net...
>>> Thinking of putting a vertical up. I'd go from 2" pvc, to 1", to 1/2" ,
>>> in twenty foot lengths. Will this thing support itself OK? Seems like
>>> it might physically work OK.
>>
>> Been there tried that-
>> It won't work.
>> I tried sched 40 plumbing PVC and the gray PVC sched 40 (electrical).
>> Pvc is ok for a 2-meter quad - but use alum or steel mast,
>> you may try the top-post they use for chain-link fences - I think you can
>> get it in 20-ft lengths.
>
>
> I don't recommend that, either. It is heavy and bends easily. The radio
> shack TV antenna mast works better.
>
> Sorry to be the bearer of bad news.
>

I have used the chain-link-fence-Top-Post and it worked fine. It was
available in 20-ft sections when I tried it.
Its made of Galvanized steel - thinner than sched 40 but stiff enough for a
mast for small antenna.

4810. Re: 6mile longwire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 02:12:28 UTC
From: Wayne <mygarbagecan@verizon.net>
Message-ID: <g_MWj.11281$lj.8759@trnddc01>
Source record: 25532

"JIMMIE" <JIMMIEDEE123@yahoo.com> wrote in message
news:3e896c77-8255-4f50-ade0-1b034c6d35de@q24g2000prf.googlegroups.com...
>
>
> Ralph Mowery wrote:
>> "Hal Rosser" <hmrosser@bellsouth.net> wrote in message
>> news:2BMVj.3106$C8.219@bignews2.bellsouth.net...
>> > This may be - to communicate with submarines (VLF).
>> > So your assumption that its multiple wavelengths long may be
>> > unwarranted.
>> > It may be a quarter-wave, half-wave or any portion (or multiple) of a
>> > wavelength.
>> > .
>> >
>> > "ml" <m@di.net> wrote in message
>> > news:m-5B9386.14512711052008@news.optonline.net...
>> >> hi
>> >>
>> >> i was just reading about airforce plans that had a trailing wire
>> >> which
>> >> when fully extended was 6miles long
>> >>
>> >>
>> From:
>>
>> http://jproc.ca/radiostor/vlfelf.html
>>
>> In the United States military, the primary means of communicating with
>> submerged submarines is the TACAMO (Take Charge and Move Out) system
>> which
>> uses a fleet of aircraft. Two aircraft are always airborne - one over the
>> Atlantic and one over the Pacific. Other aircraft are stationed on the
>> ground and they are on a 15 minute alert. The aircraft fly 10.5 hour
>> missions, starting at one airfield and ending at another. Random patterns
>> are flown to mislead any unauthorized observers. The TACAMO aircraft can
>> receive and relay signals from a number of different ground command
>> posts.
>> Each aircraft is equipped with a 6.2 mile long trailing wire antenna
>> (wound
>> on a reel) and a 100 kw transmitter operating in the VLF region. When the
>> aircraft has to transmit a message, it banks and proceeds to fly a very
>> tight circle. The causes the trailing wire antenna to hang vertically
>> below.
>> Once the message is transmitted over the VLF downlink the aircraft

>> resumes
>> normal flight.
>> The TACAMO fleet was initially comprised of the Lockheed Hercules EC130
>> aircraft, but these are being gradually phased out and replaced with the
>> Boeing 747 AWACS type aircraft. These aircraft have the capability to
>> transmit a 200 kw signal using a 2.5 mile trailing antenna. The systems
>> described above were documented in a book printed in 1985. Due to
>> unavailability of information, I do not know if the same system is still
>> in
>> use in the 1990's, but the techniques, nonetheless are quite intriguing.
>>
>>
> I know they were doing this as early as '79 at least as a test. I had
> a little to do with AWACS data communications back then. Apparently
> this is no longer a security issue.
>
My first awareness of the trailing wire antennas was in about 1972. Other engineers in the group where I worked, had been working on the design and development. Considerable design effort was put into the "drog" on the end of the wire, and predicting the shape the antenna took during flight. (Computing power was not the same back then.)

Even more troubling was occasional malfunctions of the hardware that cuts loose the antenna during emergencies. When the big wire accidentally fell into the gulf, there were some unhappy fishermen!

4811. Scanner VR-500

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 14:50:42 UTC
From: IZ0IRH <daniele_mdg@nospamyahoo.it>
Message-ID: <g0hik4$8co$2@news.al.sw.ericsson.se>
Source record: 25533

non mi intendo di scanner, e per puro sfizio vorrei comprarne uno che copra almeno fino a 1 GHz (oltre non mi interessa). Secondo voi lo Yaesu VR-500 va bene? Mi hanno proposto uno usato per 150 Euri. Troppo, poco, boh? Grazie a quanti vorranno darmi un consiglio.

4812. Re: Scanner VR-500

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 14:52:21 UTC
From: IZ0IRH <daniele_mdg@nospamyahoo.it>
Message-ID: <g0hin7$8d3$2@news.al.sw.ericsson.se>
Source record: 25534

Sorry, I posted in the "wrong" ;-) language newsgroup.
Sorry again
de IZ0IRH

"IZ0IRH" <daniele_mdg@nospamyahoo.it> wrote in message
news:g0hik4$8co$2@news.al.sw.ericsson.se...
> non mi intendo di scanner, e per puro sfizio vorrei comprarne uno che
copra
> almeno fino a 1 GHz (oltre non mi interessa). Secondo voi lo Yaesu VR-500
va
>>
>

4813. Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 16:46:18 UTC
From: "R.Scott" <w7psk@yahoo.com>
Message-ID: <ce180392-b5dd-45bd-8988-64b58f2cc7f1@l64g2000hse.googlegroups.com>
Source record: 25535

I'm trying to restring my Dipole up in a Pine (the tree has grown about 10 ft, and the rope needs replacing) so I got out my trusty Surgical tubing wrist rocket and a 1oz egg weight tied to my 15# test fishing rod/reel (only using the bottom eye).

No matter how far I pulled back I got about 2/3s of the way up. Im estimating that is about the 35 ft level.

Shouldn't a wrister go farther ???? need bigger weight ?

Suggestions.

4814. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 18:13:09 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <693cqrF305o86U1@mid.individual.net>
Source record: 25536

R.Scott wrote:

> No matter how far I pulled back I got about 2/3s of the way up. Im
> estimating that is about the 35 ft level.
>
>
> Shouldn't a wrister go farther ???? need bigger weight ?
>
> Suggestions.

Stand on a ladder when you shoot?

New monofilament (more slippery than worn)?

New rubbers?

Skip the bottom eye on the pole and
feed direct from the reel?

Be sure you have a very solid wrist/arm
on the holding arm. If your hand/arm
gives while shooting, some of the
energy will be used in that wasted
hand movement.

I saw a "wrist rifle" that a guy built.
Normal WR attached to a wooden "stock"
with bazooka-like hand holds. The pouch
of the slingshot was held by a steel rod
in the "cocked" position. Just like rubber
band machine guns that kids might build.

Craig 'Lumpy' Lemke

www.n0eq.com

4815. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 18:59:47 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <uN%Wj.1952$r82.1310@nlpi069.nbdc.sbc.com>
Source record: 25537

Lumpy wrote:
> R.Scott wrote:
>
>> No matter how far I pulled back I got about 2/3s of the way up. Im
>> estimating that is about the 35 ft level.
>>
>>
>> Shouldn't a wrister go farther ???? need bigger weight ?
>>
>> Suggestions.
>
> Stand on a ladder when you shoot?
>
> New monofilament (more slippery than worn)?
>
> New rubbers?
>
> Skip the bottom eye on the pole and
> feed direct from the reel?
>
> Be sure you have a very solid wrist/arm
> on the holding arm. If your hand/arm
> gives while shooting, some of the
> energy will be used in that wasted
> hand movement.
>
> I saw a "wrist rifle" that a guy built.
> Normal WR attached to a wooden "stock"
> with bazooka-like hand holds. The pouch
> of the slingshot was held by a steel rod
> in the "cocked" position. Just like rubber
> band machine guns that kids might build.
>
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com
>
>
If legal use a potato gun....

Dave WD9BDZ

4816. Mounting a 1.25" mast to a wooden fence ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 19:46:49 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9A9F965DE5527VeebleFetzer@127.0.0.1>
Source record: 25538

I should be embarrassed to ask this question. Heck, I ->am embarrassed to ask this question, but my handyman skills are non-existent, so here I am.

I have a couple of sections of 1.25" steel antenna mast, and I'd like to mount the bottom section to a wooden fence using the fence's three horizontal 2x4 braces as the mount points.

I thought I'd just go to the hardware store and pick up a few pipe clamps and I'd be done. However, it seems that no standard pipe or tube actually has an OD of 1.25", so nothing in either the electrical or plumbing sections will actually work.

As I said, my handyman skills are nil, so unless I can buy something readymade to do the trick, it's going to turn into a real hack job.

What do I look for in the hardware store to pull this off?

--
Bert Hyman W0RSB | St. Paul, MN | bert@iphouse.com

4817. Re: Mounting a 1.25" mast to a wooden fence ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 21:21:39 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <HsOdnfV6uszBNLHVnZ2dnUVZ_hjinZ2d@comcast.com>
Source record: 25539

"Bert Hyman" <bert@iphouse.com> wrote in message
news:Xns9A9F965DE5527VeebleFetzer@127.0.0.1...
>I should be embarrassed to ask this question. Heck, I ->am embarrassed
> to ask this question, but my handyman skills are non-existent, so here
> I am.
>
> I have a couple of sections of 1.25" steel antenna mast, and I'd like
> to mount the bottom section to a wooden fence using the fence's three
> horizontal 2x4 braces as the mount points.
>
> I thought I'd just go to the hardware store and pick up a few pipe
> clamps and I'd be done. However, it seems that no standard pipe or
> tube actually has an OD of 1.25", so nothing in either the electrical
> or plumbing sections will actually work.
>
> As I said, my handyman skills are nil, so unless I can buy something
> readymade to do the trick, it's going to turn into a real hack job.
>
> What do I look for in the hardware store to pull this off?
>
> --
> Bert Hyman W0RSB | St. Paul, MN | bert@iphouse.com

If you have good posts, I would get a vent pipe mount from RS and connect it to a post. The mount should not have any vertical load on it. You could also get some 5 - 6 inch 1/4 inch screws and fasten the pipe that way after drilling holes in the pipe. If the post won't support the pipe, it won't support it fastened to rails either.

Tam/WB2TT

4818. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 21:34:26 UTC
From: nm5k@wt.net
Message-ID: <c8db0303-6a29-451f-8d39-2a069e15adb4@s33g2000pri.googlegroups.com>
Source record: 25540

On May 15, 11:46 am, "R.Scott" <w7...@yahoo.com> wrote:
> I'm trying to restring my Dipole up in a Pine (the tree has grown
> about 10 ft, and the rope needs replacing) so I got out my trusty
> Surgical tubing wrist rocket and a 1oz egg weight tied to my 15# test
> fishing rod/reel (only using the bottom eye).
>
> No matter how far I pulled back I got about 2/3s of the way up. Im
> estimating that is about the 35 ft level.
>
> Shouldn't a wrister go farther ???? need bigger weight ?
>
> Suggestions.

Sounds like a bigger weight would help.

4819. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 22:21:23 UTC
From: Dave <noone@nowhere.com>
Message-ID: <DH2Xj.16301$6D1.11945@trndny02>
Source record: 25541

<nm5k@wt.net> wrote in message
news:c8db0303-6a29-451f-8d39-2a069e15adb4@s33g2000pri.googlegroups.com...
> On May 15, 11:46 am, "R.Scott" <w7...@yahoo.com> wrote:
>> I'm trying to restring my Dipole up in a Pine (the tree has grown
>> about 10 ft, and the rope needs replacing) so I got out my trusty
>> Surgical tubing wrist rocket and a 1oz egg weight tied to my 15# test
>> fishing rod/reel (only using the bottom eye).
>>
>> No matter how far I pulled back I got about 2/3s of the way up. Im
>> estimating that is about the 35 ft level.
>>
>> Shouldn't a wrister go farther ???? need bigger weight ?
>>
>> Suggestions.
>
> Sounds like a bigger weight would help.

depends... shoot the weight without the fish line and see how far it goes, that is the max you can get... if that's not enough try new tubes, those things do age and lose stretch... or longer tubes. for more height without the line try less weight and see if that gets where you need.

then add the fishing line and see if that drags it down too much... if it does you need less drag or lighter line. either take the line out of the reel and let it spool free or unroll it on a smooth surface so it doesn't have to spin the roll.

4820. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-15 23:23:22 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g0iglacmq1@news.jpl.nasa.gov>
Source record: 25542

nm5k@wt.net wrote:
> On May 15, 11:46 am, "R.Scott" <w7...@yahoo.com> wrote:
>
>>I'm trying to restring my Dipole up in a Pine (the tree has grown
>>about 10 ft, and the rope needs replacing) so I got out my trusty
>>Surgical tubing wrist rocket and a 1oz egg weight tied to my 15# test
>>fishing rod/reel (only using the bottom eye).
>>
>>No matter how far I pulled back I got about 2/3s of the way up. Im
>>estimating that is about the 35 ft level.
>>
>>Shouldn't a wrister go farther ???? need bigger weight ?
>>
>>Suggestions.
>
>
> Sounds like a bigger weight would help.

An interesting question, and a fairly good answer within limits. I used to do a lot of this sort of thing in the special effects industry (why yes, you CAN launch a refrigerator with bungee cords).

Here are the physics things to think about.

The amount of energy you can put into the projectile is determined by:
a) How far you pull back
b) How hard you had to pull (i.e. spring constant of the tubes)

To a first order, Q = 1/2 * Peak Force * distance pulled back

That energy gets transferred to the projectile as kinetic energy.

To a first order, Q = 1/2 * Mass * V^2

Then, the energy gets converted back to potential energy (height) and lost through air drag and pulling the line out. For slow speeds and small things, the line drag is probably dominant.

By the way, if the pull is about 10 lbs and you pulled back 18", with no air or line drag, a one ounce projectile will go to about 36 meters (120 ft)

A little bit of line drag makes a huge difference. a one ounce drag, essentially doubles the weight of your projectile. For the example, that would change your max height to about 19m (60ft)

If you had a 2 ounce projectile, on the other hand...with no drag, you get to 19m, but the 1 ounce drag only brings you back to 12.4 m (40ft)

Air drag is a smaller order effect.

force in lbs = area in square feet * v(mi/hr)^2/391.. Your one ounce weight is moving about 60 mi/hr at launch (9 lb/sf), but is less than a square inch, so it's about an ounce of drag, but it drops off as the square, so as the projectile slows, the drag drops off..

A heavier projectile goes slower, so that helps on the airdrag too.

Going back to 1 oz, no line drag, but counting air drag for 1" diameter, 27m or so height (about 2 seconds after launch, as a cross check)
1 oz, 1 oz line drag, air drag, 15.5 m
2 oz, no line, air drag, 1" diam, 18.8 m
2 oz, 1 oz line, air drag, 11.6 m

So this should give you a feel for the relative effects of line drag and air drag and projectile mass. I did the calculations with a simple spreadsheet in Excel that numerically integrates the physics equations with very short time steps.

4821. Re: Mounting a 1.25" mast to a wooden fence ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 02:18:08 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <z96Xj.2271$hJ5.1696@nlpi068.nbdc.sbc.com>
Source record: 25543

Bert Hyman wrote:
> What do I look for in the hardware store to pull this off?

I believe what you need are U-Bolts which come in
assorted sizes.
--
73, Cecil http://www.w5dxp.com

4822. Re: Mounting a 1.25" mast to a wooden fence ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 04:32:01 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9A9FDB1017372Huckleberrybigvalley@198.186.192.196>
Source record: 25544

> I thought I'd just go to the hardware store and pick up a few pipe
> clamps and I'd be done. However, it seems that no standard pipe or
> tube actually has an OD of 1.25", so nothing in either the electrical
> or plumbing sections will actually work.

I am puzzled that you could not find a clamp that would fit your mast. The electrical dept. should have U clamps, and single screw conduit clamps, some at least which should provide a reasonable fit over your mast. If you must, get the size which may seem too small and either use spacers between the clamp base and wood, or simply screw the screws in tight even if the clamp base doesn't press fully against the wood as you might prefer.

Also, you might want to screw a bit of 2x4 to the fence cross piece in such a manner as to provide a base on which the mast can set.... otherwise it might be possible for it to slide down in the mounting clamps you use.

Good luck.

Ed K7AAT

4823. W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 11:04:44 UTC
From: box73@gmx.net
Message-ID: <2958f970-726f-4fda-91d5-0eddd749ddd2@m73g2000hsh.googlegroups.com>
Source record: 25545

and what's even more valuable: no registration needed !!

http://wy6k.com/cebik%5Fmirror/

4824. Re: Scanner VR-500

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 12:48:04 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <482D8284.2050104@nosspam.activ8.net.au>
Source record: 25454

IZ0IRH wrote:
> Sorry, I posted in the "wrong" ;-) language newsgroup.
> Sorry again
> de IZ0IRH
Non ti preoccupare!!
VK2ADB

4825. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 15:27:44 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <9f95bd35-9fd7-4095-b856-86cf0265955b@a1g2000hsb.googlegroups.com>
Source record: 25546

On May 15, 12:46 pm, "R.Scott" <w7...@yahoo.com> wrote:
> I'm trying to restring my Dipole up in a Pine (the tree has grown
> about 10 ft, and the rope needs replacing) so I got out my trusty
> Surgical tubing wrist rocket and a 1oz egg weight tied to my 15# test
> fishing rod/reel (only using the bottom eye).
>
> No matter how far I pulled back I got about 2/3s of the way up. Im
> estimating that is about the 35 ft level.
>
> Shouldn't a wrister go farther ????   need bigger weight ?

How high are you trying to go? With everything in my favor (wind, etc.) I could get over about a 50 foot branch with a wrist-slingshot and a 1oz weight. And I think I was standing on a 12 foot ladder to do it, and this was a "best ever" shot.

Having the line catch on anything - grass, leaves, etc., is a major downer. If there's no brush on the ground you might get a little more height by spooling some line out in front of you.

Others here regularly claim being able to get 100+ feet with a slingshot. I never said out loud that they're exaggerating, but I know I could just barely do half that. To get to 100feet I went straight to a tennis ball cannon.

Tim.

4826. wholesale jordan 23 & af1 jordan 12 & af1 jordan 5 & air force one

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 15:42:36 UTC
From: ebayshoe7@yahoo.cn
Message-ID: <9f907c74-82a0-428a-bed2-0998021687d3@w8g2000prd.googlegroups.com>
Source record: 25547

welcome to visit www.e-bayshoe.com
air max 87 89 90 95 ltd timberland jeans ugg boots lacoste sandals
hoodies,
t-shirts, mauri shoes, dsquared , hogan shoes, dunks , red monkey,
polo t-shirts,
evisu jeans, bbc jeans , dior, lv, dg, versace, coach puma shoes, nfl
jerseys
shox r2 r3 r4 r5 r6 tn tl1 tl3, sandals, nhl jerseys, mlb jerseys, nba
jerseys
probowl jerseys,prada shoes,kobe james, hockey jerseys, nfl jerseys,
football
jerseys, baseball jerseys, jordan shoes, jordan fusion air force ones
25 years
basketball jerseys Men's women's shocks OZ NZ TL shoes Discount Coach
Sandals,
Dior Sandals, Prada Sandals, Chanel Sandals, Versace Sandals, Crocs
Sandals,
Women's Sandals Men's Slippers From China jordan shoes, jordan fusion
air force ones

4827. www.e-bayshoe.com wholesale puma prada air max 87 89 90 95 ltd timberland jeans

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 15:44:59 UTC
From: ebayshoe7@yahoo.cn
Message-ID: <580a7a43-63c5-41a1-969c-717e5cc8006e@k1g2000prb.googlegroups.com>
Source record: 25548

welcome to visit www.e-bayshoe.com
air max 87 89 90 95 ltd timberland jeans ugg boots lacoste sandals
hoodies,
t-shirts, mauri shoes, dsquared , hogan shoes, dunks , red monkey,
polo t-shirts,
evisu jeans, bbc jeans , dior, lv, dg, versace, coach puma shoes, nfl
jerseys
shox r2 r3 r4 r5 r6 tn tl1 tl3, sandals, nhl jerseys, mlb jerseys, nba
jerseys
probowl jerseys,prada shoes,kobe james, hockey jerseys, nfl jerseys,
football
jerseys, baseball jerseys, jordan shoes, jordan fusion air force ones
25 years
basketball jerseys Men's women's shocks OZ NZ TL shoes Discount Coach
Sandals,
Dior Sandals, Prada Sandals, Chanel Sandals, Versace Sandals, Crocs
Sandals,
Women's Sandals Men's Slippers From China jordan shoes, jordan fusion
air force ones

4828. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 16:01:14 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <6ibr249no93kp71hnnd6hriseh14d2rh11@4ax.com>
Source record: 25549

On Fri, 16 May 2008 08:27:44 -0700 (PDT), Tim Shoppa
<shoppa@trailing-edge.com> wrote:

>On May 15, 12:46ï¿½pm, "R.Scott" <w7...@yahoo.com> wrote:
SNIP
>> No matter how far I pulled back I got about 2/3s of the way up. ï¿½Im
>> estimating that is about the 35 ft level.
>>
>> Shouldn't a wrister go farther ???? ï¿½ need bigger weight ?
>
>How high are you trying to go? With everything in my favor (wind,
>etc.) I could get over about a 50 foot branch with a wrist-slingshot
>and a 1oz weight. And I think I was standing on a 12 foot ladder to do
>it, and this was a "best ever" shot.
>
SNIP
>Tim.

I couldn't get 50 feet with mine. I figured the line was too old, but
I realized the sling was way overrated. I can do much, much better
with a rod and reel. My favorite tool was a Bear 76er Bow and Arrow
with a short string. It had a 50 lb pull and I could place an arrow
with a screwdriver handle on the tip where ever I wanted it.

The best was a converted shotgun. I took a shotgun shell and took out
the shot, folded the plastic outer shell over the inner shell and
stuck a wood dowel into it. On the far end of the dowel was a
screwdriver with an eye hook onto which I tied a string. It cleared a
100 foot tree with room to spare, but I was afraid of the possibility
of damaging the gun itself so I only tried this once.

Buck
N4PGW

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4829. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 17:39:11 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <7de755d8-00e5-42aa-a711-046ab2e30afc@26g2000hsk.googlegroups.com>
Source record: 25550

On May 16, 12:01 pm, Buck <usene...@lumpuckeroo.com> wrote:
> The best was a converted shotgun. I took a shotgun shell and took out
> the shot, folded the plastic outer shell over the inner shell and
> stuck a wood dowel into it. On the far end of the dowel was a
> screwdriver with an eye hook onto which I tied a string. It cleared a
> 100 foot tree with room to spare, but I was afraid of the possibility
> of damaging the gun itself so I only tried this once.

Wow, a shotgun. I wouldn't be so much scared of damaging the gun, but
instead of the gun blowing up in my face!

The tennis ball cannon I use is very very similar to the CSV19 at
http://www.antennalaunchers.com/ and I am very very happy with it.
It's not so much a "point above a crotch in the tree and hope the ball
goes through" but "just shoot the ball and line over the tree".

Tim.

4830. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 19:38:34 UTC
From: News Features <news_features@newsfeatures.net>
Message-ID: <NolXj.1089$BL6.763@nlpi070.nbdc.sbc.com>
Source record: 25451

Jim's calculations have confirmed something I've consistently experienced: my homebrew EZ-Hang has never really lived up to my expectations, or should I say the expectations that others have set for the performance of the thing. (For the record, my homebrew device is an exact copy of the famous EZ-Hang.)

For the past three Field Days, which is when I've used the thing, the maximum height I've seemed to attain is around 50 feet-- right in the ballpark for a 1 oz. weight with line and air drags. No matter what I've tried, that's the limit of height for the parameters of my situation.

Thanks, Jim.

Al W6LX

"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:g0iglacmq1@news.jpl.nasa.gov...
> nm5k@wt.net wrote:
>> On May 15, 11:46 am, "R.Scott" <w7...@yahoo.com> wrote:
>>
>>>I'm trying to restring my Dipole up in a Pine (the tree has grown
>>>about 10 ft, and the rope needs replacing) so I got out my trusty
>>>Surgical tubing wrist rocket and a 1oz egg weight tied to my 15# test
>>>fishing rod/reel (only using the bottom eye).
>>>
>>>No matter how far I pulled back I got about 2/3s of the way up. Im
>>>estimating that is about the 35 ft level.
>>>
>>>Shouldn't a wrister go farther ???? need bigger weight ?
>>>
>>>Suggestions.
>>
>>
>> Sounds like a bigger weight would help.
>
> An interesting question, and a fairly good answer within limits. I used
> to do a lot of this sort of thing in the special effects industry (why
> yes, you CAN launch a refrigerator with bungee cords).
>
> Here are the physics things to think about.
>
> The amount of energy you can put into the projectile is determined by:
> a) How far you pull back
> b) How hard you had to pull (i.e. spring constant of the tubes)
>

> To a first order, Q = 1/2 * Peak Force * distance pulled back
>
> That energy gets transferred to the projectile as kinetic energy.
>
> To a first order, Q = 1/2 * Mass * V^2
>
> Then, the energy gets converted back to potential energy (height) and lost
> through air drag and pulling the line out. For slow speeds and small
> things, the line drag is probably dominant.
>
> By the way, if the pull is about 10 lbs and you pulled back 18", with no
> air or line drag, a one ounce projectile will go to about 36 meters (120
> ft)
>
> A little bit of line drag makes a huge difference. a one ounce drag,
> essentially doubles the weight of your projectile. For the example, that
> would change your max height to about 19m (60ft)
>
> If you had a 2 ounce projectile, on the other hand...with no drag, you get
> to 19m, but the 1 ounce drag only brings you back to 12.4 m (40ft)
>
>
> Air drag is a smaller order effect.
>
> force in lbs = area in square feet * v(mi/hr)^2/391.. Your one ounce
> weight is moving about 60 mi/hr at launch (9 lb/sf), but is less than a
> square inch, so it's about an ounce of drag, but it drops off as the
> square, so as the projectile slows, the drag drops off..
>
> A heavier projectile goes slower, so that helps on the airdrag too.
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> Going back to 1 oz, no line drag, but counting air drag for 1" diameter,
> 27m or so height (about 2 seconds after launch, as a cross check)
> 1 oz, 1 oz line drag, air drag, 15.5 m
> 2 oz, no line, air drag, 1" diam, 18.8 m
> 2 oz, 1 oz line, air drag, 11.6 m
>
>
> So this should give you a feel for the relative effects of line drag and
> air drag and projectile mass. I did the calculations with a simple
> spreadsheet in Excel that numerically integrates the physics equations
> with very short time steps.
>

4831. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-16 20:54:55 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <696am9F31gibfU1@mid.individual.net>
Source record: 25452

Buck wrote:
> ...My favorite tool was a Bear 76er Bow and Arrow
> with a short string. It had a 50 lb pull and I
> could place an arrow with a screwdriver handle
> on the tip where ever I wanted it.

> The best was a converted shotgun. I took a
> shotgun shell and took out the shot, folded
> the plastic outer shell over the inner shell
> and stuck a wood dowel into it. On the far
> end of the dowel was a screwdriver with an
> eye hook onto which I tied a string...

I'm having trouble picturing the "screwdriver handle"
in both of those. Could you elaborate, please?

Lumpy

In Your Ears for 40 Years
www.LumpyMusic.com

4832. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-17 00:38:24 UTC
From: Jim-NN7K
Message-ID: <KNpXj.3959$7k7.3246@flpi150.ffdc.sbc.com>
Source record: 25453

Tim- from my High school Physics== the Formula is: F= MA
Force = Mass Times Acceleration. Perhaps a Bow and Arrow
will exceed the (Wrist Rocket) in this department? at 50# Pull for Acceleration? (Oz per Oz) Jim NN7K

Tim Shoppa wrote:
> On May 15, 12:46 pm, "R.Scott" <w7...@yahoo.com> wrote:
>> I'm trying to restring my Dipole up in a Pine (the tree has grown
>> about 10 ft, and the rope needs replacing) so I got out my trusty
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> etc.) I could get over about a 50 foot branch with a wrist-slingshot
> and a 1oz weight. And I think I was standing on a 12 foot ladder to do
> it, and this was a "best ever" shot.
>
> Having the line catch on anything - grass, leaves, etc., is a major
> downer. If there's no brush on the ground you might get a little more
> height by spooling some line out in front of you.
>
> Others here regularly claim being able to get 100+ feet with a
> slingshot. I never said out loud that they're exaggerating, but I know
> I could just barely do half that. To get to 100feet I went straight to
> a tennis ball cannon.
>
> Tim.

4833. Re: Scanner VR-500

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-17 08:27:47 UTC
From: Mats Peterson <matsp555@yahoo.com>
Message-ID: <7GwXj.7372$R_4.6047@newsb.telia.net>
Source record: 25455

Alan Peake <adpeake@nosspam.activ8.net.au> wrote:
>
>
> IZ0IRH wrote:
>> Sorry, I posted in the "wrong" ;-) language newsgroup.
>> Sorry again
>> de IZ0IRH
> Non ti preoccupare!!
> VK2ADB

Fetching the Italian-English dictionary...

--
Mats Peterson
http://www.geocities.com/matsp888/

4834. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-17 11:16:01 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <cjft24tchjlkcb2aptfl6lh6qeur758ip6@4ax.com>
Source record: 25456

On Fri, 16 May 2008 10:39:11 -0700 (PDT), Tim Shoppa
<shoppa@trailing-edge.com> wrote:

>On May 16, 12:01ï¿½pm, Buck <usene...@lumpuckeroo.com> wrote:
>> The best was a converted shotgun.
SNIP
>
>Wow, a shotgun. I wouldn't be so much scared of damaging the gun, but
>instead of the gun blowing up in my face!
>
Wouldn't that be damaging the gun?

The dowel I used in the barrel was a bit smaller so it wouldn't get
jammed. I imagine if it were a larger diameter, it would have
traveled further. Completely filling the barrel would make me expect
an uncontrolled explosion...

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4835. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-17 11:16:06 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <kjft2456uhf62ecraluk293ed4vubkaml7@4ax.com>
Source record: 25457

>I'm having trouble picturing the "screwdriver handle"
>in both of those. Could you elaborate, please?
>
>
>Lumpy

The arrow had a screwdriver that had the shaft trimmed and tapped for
the screw thread of the arrow head.

The stick had a hole drilled in it and the phillips screwdriver stuck
inside the dowel and glued.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4836. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-17 18:29:55 UTC
From: Darko_SWL <9a3li_makni_@hamradio.hr>
Message-ID: <g0n87v$kc0$1@news2.carnet.hr>
Source record: 25458

box73@gmx.net wrote:
> and what's even more valuable: no registration needed !!
>
> http://wy6k.com/cebik%5Fmirror/
>
>
Thanks !!

4837. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-18 14:55:15 UTC
From: commander john <crazytvjohn@yahoo.com>
Message-ID: <a07b9b54-ba21-41d0-a993-ed7eaaed8f6f@f36g2000hsa.googlegroups.com>
Source record: 25459

Suggest you try a fishing pole. I used a zebco casting rod I bought
new for my wife. Now my favorite antenna pole.
I put my L up over 50' this way. Use 6 pound test line. Heaver line
weights too much. even 4 is better. Get a large washer. 2" or so.
Tie it on. cast up . If you miss your spot let the washer fall to the
ground. Do not reel back thru the tree. Cut off washer. reel back and
tie on and try again. The washer weights enough so it doesn't get
caught easily in trees. It goes so far be careful you do not damage
others cars or homes. It never broke off. When you get your spot tie
on Thin nylon cord and reel it back. Then a larger rope. The washer
rolls as it falls preventing tangling. Try it in a shorter tree for
practice. fishing sinkers do not work well, they wrap around
branches.
john wzy

vvvvvvvvvvvvvvvvvvvvv w9zy

On May 15, 1:13 pm, "Lumpy" <lu...@digitalcartography.com> wrote:
> R.Scott wrote:
> > No matter how far I pulled back I got about 2/3s of the way up. Im
> > estimating that is about the 35 ft level.
>

4838. Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-18 18:21:57 UTC
From: John Poet <tcsshortwave@gmail.com>
Message-ID: <03d207cb-033f-4456-8990-9fe2f6719471@25g2000hsx.googlegroups.com>
Source record: 25460

I want to erect a full-wave horizontal loop antenna for use around 3.5 mHz (as an NVIS antenna). The problem is, I don't have quite the space to configure such an antenna, which would be somewhere around 280 feet long using normal wire. (Don't have my actual calculations in front of me, but they are roughly these dimensions).

I've gotten the idea that I could shorten the physical requirement, by using RG-58 coaxial cable instead of regular wire, and taking the .66 velocity factor into account--- turning an electrical length of about 280 feet into only around 180 physical feet of RG-58. (I have a 1000-ft reel of this stuff). It would be fed with 300 ohm parallel lines to an antenna tuner.

The questions, to those who may be more well-versed in the theory of antennas, are 1) is my reasoning on the V.F. sound? and 2) if I construct this, should I use the center conducter of the cable as the active element, or the shield, or connect them together? and 3) Would the shielding on the cable have any effect on the center conductor being used as the antenna element?

JP

4839. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-18 19:31:23 UTC
From: Dave <noone@nowhere.com>
Message-ID: <fu%Xj.891$kZ1.433@trndny02>
Source record: 25461

"John Poet" <tcsshortwave@gmail.com> wrote in message
news:03d207cb-033f-4456-8990-9fe2f6719471@25g2000hsx.googlegroups.com...
>I want to erect a full-wave horizontal loop antenna for use around 3.5
> mHz (as an NVIS antenna). The problem is, I don't have quite the
> space to configure such an antenna, which would be somewhere around
> 280 feet long using normal wire. (Don't have my actual calculations in
> front of me, but they are roughly these dimensions).
>
> I've gotten the idea that I could shorten the physical requirement, by
> using RG-58 coaxial cable instead of regular wire, and taking the .66
> velocity factor into account--- turning an electrical length of about
> 280 feet into only around 180 physical feet of RG-58. (I have a 1000-
> ft reel of this stuff). It would be fed with 300 ohm parallel lines
> to an antenna tuner.
>
> The questions, to those who may be more well-versed in the theory of
> antennas, are 1) is my reasoning on the V.F. sound? and 2) if I
> construct this, should I use the center conducter of the cable as the
> active element, or the shield, or connect them together? and 3) Would
> the shielding on the cable have any effect on the center conductor
> being used as the antenna element?
>
> JP
>
1. no
2. you could use the shield or connect them together.
3. yes, it would make it not work worth beans.

the velocity factor only applies inside the coax, you can't use that to
shorten the antenna.

4840. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-18 21:17:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <821Yj.4797$nW2.115@nlpi064.nbdc.sbc.com>
Source record: 25462

John Poet wrote:
> I've gotten the idea that I could shorten the physical requirement, by
> using RG-58 coaxial cable instead of regular wire, and taking the .66
> velocity factor into account---

The velocity factor applies to differential transmission
line currents, not to antenna currents which are common-
mode. Instead, it sounds like you need a loading coil
opposite the feedpoint.
--
73, Cecil http://www.w5dxp.com

4841. 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-18 21:39:17 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69bm1pF31gm1fU1@mid.individual.net>
Source record: 25463

Any guesses as to the origin of the mystery
noise bugging me this morning would be apprec.

I'm hearing an S9 "click" at just about
once per second, everywhere on 20meters
where there's not a powerful station's
signal. It clicks for maybe 3-5 seconds
then stops for a few seconds. Not always
symmetrical (3 sec noise ~ 10 sec no noise).

Click sounds like what I'd imagine a charging
and regularly discharging capacitor might do.

Freq independant, it's everywhere on the 20m phone segment.

S9+ stations seem to override the click.
S7 stations don't override, the click
comes right through and clobbers reception.

Station is "backyard remote", battery powered,
asymmetrical wire dipole.

I found some recordings of electric blanket
noise via k0bg's site. It sounds very much
like those recordings. Both of the elec blankets
in my home are off and unplugged. Neighbor elec
blankets? They would be probably 100' away from
the closest point to my antenna.

Noise just started this morning. No new elec
or mechanical devices running at my home.
Turned off the A/C, fans, elec fence, light
dimmers, pool filter etc. Three computers
run inside the house, as they have for
years.

Anyone have a guess at this 1 Hz click noise?
TIA -

Craig 'Lumpy' Lemke

www.n0eq.com

4842. Re: 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-18 22:04:51 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <0aa6d8ac-2b59-4e93-8fd0-ebcbd3c29117@l17g2000pri.googlegroups.com>
Source record: 25464

Lumpy wrote:
> Any guesses as to the origin of the mystery
> noise bugging me this morning would be apprec.
>
> I'm hearing an S9 "click" at just about
> once per second, everywhere on 20meters
> where there's not a powerful station's
> signal. It clicks for maybe 3-5 seconds
> then stops for a few seconds. Not always
> symmetrical (3 sec noise ~ 10 sec no noise).
>
> Click sounds like what I'd imagine a charging
> and regularly discharging capacitor might do.
>
> Freq independant, it's everywhere on the 20m phone segment.
>
> S9+ stations seem to override the click.
> S7 stations don't override, the click
> comes right through and clobbers reception.
>
> Station is "backyard remote", battery powered,
> asymmetrical wire dipole.
>
> I found some recordings of electric blanket
> noise via k0bg's site. It sounds very much
> like those recordings. Both of the elec blankets
> in my home are off and unplugged. Neighbor elec
> blankets? They would be probably 100' away from
> the closest point to my antenna.
>
> Noise just started this morning. No new elec
> or mechanical devices running at my home.
> Turned off the A/C, fans, elec fence, light
> dimmers, pool filter etc. Three computers
> run inside the house, as they have for
> years.
>
>
> Anyone have a guess at this 1 Hz click noise?
> TIA -
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

Hi Lumpy,
I had something very similar a couple of years ago. Noise was burst about a second apart but continuous unlike yours. I went throufg everything in the house that could cause it. This went on for a couple of months until I was riding down a road about a mile from the house and heard it on my cars AM radio. It was coming from the ranch I was riding by. I am pretty sure it was from an electric fence charger. About the time I figured out what was causing the interference they moved the horses to another pasture an turned off the fence. I shouldnt have any more problems, the farm was sold and they are buiilding houses there.

Jimmie

4843. Re: 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-18 22:31:15 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69bp37F320i1hU1@mid.individual.net>
Source record: 25465

Lump:
[asks for help with 1Hz click]

JIMMIE wrote:
> I had something very similar...

> ...I am pretty sure it was from an electric fence charger.

That certainly could be. We're a bunch of
mini-ranches with plenty of horses and
hot wires.

Thanks Jimmie.

I've just been out RF sniffing around the outside
of my house with the MFJ meter.

Seems my rain gutters give off some RF at
about 30MHz.

I've also got a metal shed that's not connected
to any power or anything else. It gives off
about 300-500 kHz from it's roof if I put the
meter on the roof. It's quiet on the sides
of the shed.

Sheesh. I'm drowning in incidental transmitters.

Craig 'Lumpy' Lemke

www.n0eq.com

4844. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 02:43:43 UTC
From: 998cc <hrd998cc@yahooo.com>
Message-ID: <aQ5Yj.4836$nW2.750@nlpi064.nbdc.sbc.com>
Source record: 25466

FWIW, I use 8lb monofiliament line and a 3oz fishing weight, and like others, cast it over the tree with a fishing pole. Wristrockets can't compare.

Also, in response to another poster, I have never had a fishing weight wrap around a tree branch as long as it is allowed to fall to the earth. In other words, allow the line to freely flow out until the weight has dropped to the ground.

Russ
W6OHM

"R.Scott" <w7psk@yahoo.com> wrote in message
news:ce180392-b5dd-45bd-8988-64b58f2cc7f1@l64g2000hse.googlegroups.com...
> I'm trying to restring my Dipole up in a Pine (the tree has grown
> about 10 ft, and the rope needs replacing) so I got out my trusty
> Surgical tubing wrist rocket and a 1oz egg weight tied to my 15# test
> fishing rod/reel (only using the bottom eye).
>
> No matter how far I pulled back I got about 2/3s of the way up. Im
> estimating that is about the 35 ft level.
>
>
> Shouldn't a wrister go farther ???? need bigger weight ?
>
> Suggestions.

4845. Re: Wrist Rocket Height - DILEMMA 2

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 04:08:29 UTC
From: "R.Scott" <w7psk@yahoo.com>
Message-ID: <9ce43eba-df6d-451a-bc5b-6a4f17cb9a11@b9g2000prh.googlegroups.com>
Source record: 25467

Well my Antenna Im trying to raise and replace the rope is STUCK.

It seems after all this time the tree has trapped the rope up there,
and the antenna is Too high for me to
reach the rope with my Tree Trimmer on a ladder (its 20ft long)

SOOO, how does one get the rope to break or what can i pull up with a
rope if I toss it over the old rope to cut the line

(Ive already pulled as hard as I dare, its STUCK)

Sheesh Simple antenna projects never seem to be simple

Scotty W7PSK

4846. Re: 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 06:42:01 UTC
From: "Helmut Wabnig"
Message-ID: <088234dfai0gr1ffsu1joob24iq3v056os@4ax.com>
Source record: 25468

On Sun, 18 May 2008 15:31:15 -0700, "Lumpy"
<lumpy@digitalcartography.com> wrote:

>
>
>Sheesh. I'm drowning in incidental transmitters.
>
>

Yep.
Shortwave amateur radio is a dead dog
when you happen to live in urban areas.

w.

4847. Re: 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 12:22:01 UTC
From: Jeff <jeff@local.host>
Message-ID: <48317261$0$30634$834e42db@reader.greatnowhere.com>
Source record: 25469

> I'm hearing an S9 "click" at just about
> once per second, everywhere on 20meters
> where there's not a powerful station's
> signal. It clicks for maybe 3-5 seconds
> then stops for a few seconds. Not always
> symmetrical (3 sec noise ~ 10 sec no noise).
>
> Click sounds like what I'd imagine a charging
> and regularly discharging capacitor might do.
>
> Freq independant, it's everywhere on the 20m phone segment.
>

Do you live on the country side? Could it be a farmer's electric fence? If not that how about the ignition system on a gas central heating system

73
Jeff

4848. Re: will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 12:41:08 UTC
From: Harry Lippitz <johnsmith@micro$oft.com>
Message-ID: <EzeYj.7431$R_4.6086@newsb.telia.net>
Source record: 25470

> Thinking of putting a vertical up. I'd go from 2" pvc, to 1", to 1/2" ,
> in twenty foot lengths. Will this thing support itself OK? Seems like it
> might physically work OK.

I made a vertical colinear antenna using 6m (18 foot) of 50mm Dia (4") PVC tube. When vertical it is Ok, BUT it has two drawbacks:

1 - It bends when the wind blows
2 - It bends when the sun shines, bends away from the sun.

The "cure" is to put a 12" across X piece at the midle of it, then thread 4 nylon fishing lines from end-to-end, so the line is fastened to each end and one leg of the X. This is the "ships mast principle" for stopping a flexible mast bending.

You said yo want to use 2" diameter, and 7 metre lengths (20 foot). Sounds like you will have a worse problem than me. There is no reason why you cannot have three of these Xs along the length of the tube so that they overlap. See the drawing at:

http://web.telia.com/~u85920178/antennas/7db-colinear_9-shipsmast.gif

Hope this helps. Regards H

4849. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 14:16:36 UTC
From: commander john <crazytvjohn@yahoo.com>
Message-ID: <ed73bf6b-23e9-4862-90ed-c77e23c30cdd@c65g2000hsa.googlegroups.com>
Source record: 25471

Forget about coax. too expensive, too heavy even if it would work.
With Loops you can zig zig in and out to get all the wire up it does
not need to be in a square etc. Just get it all up and it will work.
Why not a dipole which also can be bent. Try to avoil loading coils
if at all possible.
john w9zy

vvvvvvvvvvvvvvvvvvvvvvvvvv w9zy

4850. Re: will it work?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 15:23:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nXgYj.1805$BL6.1711@nlpi070.nbdc.sbc.com>
Source record: 25472

Harry Lippitz wrote:
>> Thinking of putting a vertical up. I'd go from 2" pvc, to 1", to 1/2" ,
>> in twenty foot lengths. Will this thing support itself OK? Seems like it
>> might physically work OK.
>
> I made a vertical colinear antenna using 6m (18 foot) of 50mm Dia (4") PVC
> tube. When vertical it is Ok, BUT it has two drawbacks:

A rule of thumb that I developed by trial and error is
that the height limit for a PVC support or vertical is
about 20 feet. After wasting a lot of time trying to
go higher, I switched to 2x4s.
--
73, Cecil http://www.w5dxp.com

4851. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 15:26:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <x_gYj.1806$BL6.1161@nlpi070.nbdc.sbc.com>
Source record: 25473

commander john wrote:
> With Loops you can zig zig in and out to get all the wire up it does
> not need to be in a square etc.

A series stub of ladder-line works well to shorten the
length of a loop.
--
73, Cecil http://www.w5dxp.com

4852. Re: 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 16:51:20 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69dphvF321ghfU1@mid.individual.net>
Source record: 25474

Jeff wrote:
> > I'm hearing an S9 "click" at just about
> > once per second, everywhere on 20meters
> > where there's not a powerful station's
> > signal. It clicks for maybe 3-5 seconds
> > then stops for a few seconds. Not always
> > symmetrical (3 sec noise ~ 10 sec no noise).
> >
> > Click sounds like what I'd imagine a charging
> > and regularly discharging capacitor might do.
> >
> > Freq independant, it's everywhere on the 20m phone segment.

Jeff:
> Do you live on the country side? Could it be a farmer's electric
> fence? If not that how about the ignition system on a gas central
> heating system

We live on a small suburban ranch. We have elec
fences as do some neighbors. Ours is off for testing.
I'm not sure what a furnace is. It's 100 degrees this week
(unseasonably low) in Phoenix..;-)

After sniffing around with the MFJ, and finding
my rain gutters seem to be resonating at about 30Mhz
I moved my dipole a bit so that the coax doesn't
cross the gutters. Now the coax goes from top of
mast to ground, and gets buried under about an
inch of sand on our beach. Previously all of
the coax was suspended above physical ground.

The click seems to be gone.

Perhaps the gutters were receiving neighborhood
clicks and rebroadcasting them into my coax.

Hmmm...30 MHz gutters...Maybe I'll work some
10 meters.

Craig 'Lumpy' Lemke

www.n0eq.com

4853. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 17:06:17 UTC
From: no@spam.net
Message-ID: <odc33491qh508qnbosgqabp04f0hf3puf4@4ax.com>
Source record: 25475

On Fri, 16 May 2008 10:39:11 -0700 (PDT), Tim Shoppa
<shoppa@trailing-edge.com> wrote:

snip...........
>
>The tennis ball cannon I use is very very similar to the CSV19 at
>http://www.antennalaunchers.com/ and I am very very happy with it.
>It's not so much a "point above a crotch in the tree and hope the ball
>goes through" but "just shoot the ball and line over the tree".
>
>Tim.

I built the QE-19 from the same site Tim mentioned. The "air valve"
for it is off-the-shelf so it's a plug-n-play project. It beats every
fishing rod, bow & arrow, sling shot..... anything I've ever tried
before. Beats them hands down. It'll easily clear a 100 foot height
and is accurate after you shoot it a couple times. It's a little
pricey but that could be spread out if it were to become a club
project.

Kingfish

4854. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 17:09:19 UTC
From: no@spam.net
Message-ID: <91d334dbdoqmte2h7eef4kdgeprd1kom6m@4ax.com>
Source record: 25476

On Sat, 17 May 2008 20:29:55 +0200, Darko_SWL
<9a3li_makni_@hamradio.hr> wrote:

>box73@gmx.net wrote:
>> and what's even more valuable: no registration needed !!
>>
>> http://wy6k.com/cebik%5Fmirror/
>>
>>
>Thanks !!

double thanks!

4855. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 17:25:04 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <01959b00-035b-48a5-99c7-41856a6cdc28@26g2000hsk.googlegroups.com>
Source record: 25477

On May 19, 1:06 pm, n...@spam.net wrote:
> On Fri, 16 May 2008 10:39:11 -0700 (PDT), TimShoppa
>
> <sho...@trailing-edge.com> wrote:
>
> snip..........
>
>
>
> >The tennis ball cannon I use is very very similar to the CSV19 at
> >http://www.antennalaunchers.com/and I am very very happy with it.
> >It's not so much a "point above a crotch in the tree and hope the ball
> >goes through" but "just shoot the ball and line over the tree".
>
> >Tim.
>
> I built the QE-19 from the same site Tim mentioned. The "air valve"
> for it is off-the-shelf so it's a plug-n-play project. It beats every
> fishing rod, bow & arrow, sling shot..... anything I've ever tried
> before. Beats them hands down. It'll easily clear a 100 foot height
> and is accurate after you shoot it a couple times. It's a little
> pricey but that could be spread out if it were to become a club
> project.

My impression is that the CSV19, with its modified sprinkler valve, has a higher muzzle velocity than the QE-19. But overall, I agree 100%, that for me the tennis ball launcher was far and away the best choice.

I have some friends who are very good with crossbows and they tell me that I'm wrong, that the crossbow will do the job more reliably and accurately than my tennis ball cannon, but I don't have a crossbow and don't really intend to learn how to use one. I don't really want to shoot arrows into my neighbor's property either. The tennis ball cannon just made the job so easy, and literally the only gotcha is that you'll not only send the ball over the target tree, but probably the trees behind it if you aren't careful. One trick I learned very quickly: When you see the ball go over the target tree, grab the fishing line and stop it, then let it go so the ball can just fall from there. My trees are at the very edges/corners of my property, and using this trick I was able to ensure that the support lines are also within the property.

Tim N3QE

4856. Re: Cobwebb Homebrew

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 18:37:31 UTC
From: Richard@rjbprojects.co.uk
Message-ID: <b910e18e-115f-43bd-84fd-f8558691be25@c58g2000hsc.googlegroups.com>
Source record: 25478

On Apr 17, 12:05 am, "Barrett" <barr...@blueyounder.co.uk> wrote:
> Hi Richard
>
> You might have the answer there. I will ask my friends tomorrow what Ariel's
> there using. The G5RV is a homebrew half size with 300ohm vertical feeder
> straight into 50ohm coax that has a coax Air Core Choke Ugly Balun in it.
>
> Thanks
>
> "Richard Clark" <kb7...@comcast.net> wrote in message
>
> news:r6rc04hvgfm2sftutpp29a15mbq0mmp775@4ax.com...
>
>
>
> > On Wed, 16 Apr 2008 21:37:56 +0100, "Barrett"
> > <barr...@blueyounder.co.uk> wrote:
>
> >>Hi Richard
>
> >>I have a manual tuner and two auto tuners that I have used and it makes no
> >>difference to improve the received signal. I have also used two different
> >>radios with the same outcome.
> >>I'm wondering if the G5RV is to close and is causing this or if the square
> >>10"x10" mounting plat that I have used in the centre of the Cobwebb might
> >>be
> >>causing the problem.
>
> >>The G5RV is at the same height as the homebrew Cobwebb and they are about
> >>15ft apart. All other bands do not sharply drop off like 28MHz does on
> >>receive signals.
>
> >>Thanks
>
> > Hi Barrett,
>
> > One other thing that comes to mind is you may be cross-polarized,
> > which for line of sight transmission (and this close proximity so
> > qualifies) can exhibit substantially depressed signals.
>
> > This would mean that your Cobwebb homebrew is very much horizontally
> > polarized, and that your G5RV has enough slope to it to be
> > sufficiently vertical to your buddie's vertical signals.
>

> > I will let you sort out the particulars - like the buddies are also
> > vertical (if not, well, there goes that theory).....
>
> > 73's
> > Richard Clark, KB7QHC- Hide quoted text -
>
> - Show quoted text -

Hi Gents,

Just to give you some heads up on the good old cobweb, I have manufactured a mobile cobweb which I can only say works fantastic, but I did assemble it to a very logical plan so not to cause any SWR issues.

The first think I undertook after manufacturing the general cross shape which is mounted on a 300mm x 12mm thick aluminium plate was to start with 20m and only with a SWR meter shorten the length to the SWR was 1:1 on 14.200; this gave about a 3” gap at the ends. Unlike other cobwebs I terminated with an inline yellow crimp and joint them with 4 mm diameter nylon air pipe.

Remove the 20m wires and repeat the same with each band as above once they are all good connect up all the wires in the junction box and go to the datum frequencies and check again, they should all be the same.

Reference changing SWR when I first assembled the cobweb and tested it I undertook this at my factory which happened to be of the metal clad construction, although I was in the yard and about 10m away this caused lots of changes to the SWR, once I was well away from the buildings it was spot on.

This antenna works will for me as I ma 100% mobile it sits about 5m from the ground and seems to excel when near the sea, so I seem to spend most of my DXing time at the local beach.

Cheers

Richard 2E0UOO

4857. Re: Wrist Rocket Height - DILEMMA 2

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 18:52:04 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <9001386c-e91d-4563-83be-4590af437a85@l64g2000hse.googlegroups.com>
Source record: 25479

On May 19, 12:08 am, "R.Scott" <w7...@yahoo.com> wrote:
> Well my Antenna Im trying to raise and replace the rope is STUCK.
>
> It seems after all this time the tree has trapped the rope up there,
> and the antenna is Too high for me to
> reach the rope with my Tree Trimmer on a ladder (its 20ft long)
>
> SOOO, how does one get the rope to break or what can i pull up with a
> rope if I toss it over the old rope to cut the line
>
> (Ive already pulled as hard as I dare, its STUCK)

Climb up a ladder, cut it as high as you can.

The tree-trimmer-on-a-pole doohinkeys don't work well at all for
cutting ropes.

Next time use black ropes, they stand out a lot less than those
fluorescent orange ones!

Tim.

4858. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 19:04:35 UTC
From: Darko_SWL <9a3li_makni_@hamradio.hr>
Message-ID: <g0sj10hsl1@news2.carnet.hr>
Source record: 25480

commander john wrote:
> Forget about coax. too expensive, too heavy even if it would work.
True !
Use simple wire for example horisontal quad or
make bi-quad for 80m like this one:
http://ham2.cc.fer.hr/9a3li/

/\/\
\/\/

4859. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 21:30:12 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <yrCdnYOPrZD7bKzVnZ2dnUVZ_uydnZ2d@posted.easystreetonline>
Source record: 25481

R.Scott wrote:
> I'm trying to restring my Dipole up in a Pine (the tree has grown
> about 10 ft, and the rope needs replacing) so I got out my trusty
> Surgical tubing wrist rocket and a 1oz egg weight tied to my 15# test
> fishing rod/reel (only using the bottom eye).
>
> No matter how far I pulled back I got about 2/3s of the way up. Im
> estimating that is about the 35 ft level.
>
>
> Shouldn't a wrister go farther ???? need bigger weight ?
>
> Suggestions.

I've shot over 100 feet high with a Wrist Rocket using a 2 oz weight and about 6 pound test fishing line.

Make sure your fishing reel is nearly full, to minimize the resistance as the line comes off.

Roy Lewallen, W7EL

4860. Re: 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 21:35:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <yrCdnYKPrZAob6zVnZ2dnUVZ_uydnZ2d@posted.easystreetonline>
Source record: 25482

Lumpy wrote:
> . . .
> Station is "backyard remote", battery powered,
> asymmetrical wire dipole.
>
> I found some recordings of electric blanket
> noise via k0bg's site. It sounds very much
> like those recordings. Both of the elec blankets
> in my home are off and unplugged. Neighbor elec
> blankets? They would be probably 100' away from
> the closest point to my antenna.
> . . .

If you're using an asymmetrical dipole, the feedline is very likely a part of the antenna. So the source of the noise or the conductor which is radiating it might be closer to the antenna than you think.

Roy Lewallen, W7EL

4861. Re: Wrist Rocket Height - DILEMMA 2

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-19 23:34:13 UTC
From: Bob Miller <NOSPAM@neosoft.com>
Message-ID: <eb34341l53nfoa7o4njd0mnsthdee7i2pe@4ax.com>
Source record: 25483

On Sun, 18 May 2008 21:08:29 -0700 (PDT), "R.Scott" <w7psk@yahoo.com>
wrote:

>Well my Antenna Im trying to raise and replace the rope is STUCK.
>
>It seems after all this time the tree has trapped the rope up there,
>and the antenna is Too high for me to
>reach the rope with my Tree Trimmer on a ladder (its 20ft long)
>
>SOOO, how does one get the rope to break or what can i pull up with a
>rope if I toss it over the old rope to cut the line
>
> (Ive already pulled as hard as I dare, its STUCK)
>
>
>Sheesh Simple antenna projects never seem to be simple
>
>Scotty W7PSK

If the rope is stationery, but the tree is growing, it will engulf the
rope. Not much you can do. I have a rope, a wire fence and some
twinlead standoffs that have all been swallowed up by various trees.
Best to leave a little slack.

bob
k5qwg

4862. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 00:35:17 UTC
From: no@spam.net
Message-ID: <nq6434tef0vpojjtl0elh8048u7npgghrg@4ax.com>
Source record: 25484

On Mon, 19 May 2008 10:25:04 -0700 (PDT), Tim Shoppa
<shoppa@trailing-edge.com> wrote:

>On May 19, 1:06ï¿½pm, n...@spam.net wrote:
>> On Fri, 16 May 2008 10:39:11 -0700 (PDT), TimShoppa
>>
>> <sho...@trailing-edge.com> wrote:
>>
>> snip...........
>>
>>
>>
>> >The tennis ball cannon I use is very very similar to the CSV19 at
>> >http://www.antennalaunchers.com/and I am very very happy with it.
>> >It's not so much a "point above a crotch in the tree and hope the ball
>> >goes through" but "just shoot the ball and line over the tree".
>>
>> >Tim.
>>
>> I built the QE-19 from the same site Tim mentioned. ï¿½The "air valve"
>> for it is off-the-shelf so it's a plug-n-play project. ï¿½It beats every
>> fishing rod, bow & arrow, sling shot..... anything I've ever tried
>> before. ï¿½Beats them hands down. ï¿½It'll easily clear a 100 foot height
>> and is accurate after you shoot it a couple times. ï¿½It's a little
>> pricey but that could be spread out if it were to become a club
>> project.
>
>My impression is that the CSV19, with its modified sprinkler valve,
>has a higher muzzle velocity than the QE-19. But overall, I agree
>100%, that for me the tennis ball launcher was far and away the best
>choice.
>
>I have some friends who are very good with crossbows and they tell me
>that I'm wrong, that the crossbow will do the job more reliably and
>accurately than my tennis ball cannon, but I don't have a crossbow and
>don't really intend to learn how to use one. I don't really want to
>shoot arrows into my neighbor's property either. The tennis ball
>cannon just made the job so easy, and literally the only gotcha is
>that you'll not only send the ball over the target tree, but probably
>the trees behind it if you aren't careful. One trick I learned very
>quickly: When you see the ball go over the target tree, grab the
>fishing line and stop it, then let it go so the ball can just fall
>from there. My trees are at the very edges/corners of my property, and
>using this trick I was able to ensure that the support lines are also

>within the property.
>
>Tim N3QE

A lead weight from a slingshot or an arrow from a bow will clear most anything if the string is set up correctly. But both are fairly dangerous coming down if the string breaks. That's the good thing about the tennis ball cannons, I think they're safer.

I chose the QE-19 because the components were off-the-shelf and required no modification.

Kingfish

4863. Re: Wrist Rocket Height - DILEMMA 2

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 00:37:14 UTC
From: "R. Scott" <lintardspamtrap@scotts-home.net>
Message-ID: <0OOdnaBtRrangK_VnZ2dnUVZ_hudnZ2d@comcast.com>
Source record: 25485

Tim Shoppa wrote:
> On May 19, 12:08 am, "R.Scott" <w7...@yahoo.com> wrote:
>> Well my Antenna Im trying to raise and replace the rope is STUCK.
>>
>> It seems after all this time the tree has trapped the rope up there,
>> and the antenna is Too high for me to
>> reach the rope with my Tree Trimmer on a ladder (its 20ft long)
>>
>> SOOO, how does one get the rope to break or what can i pull up with a
>> rope if I toss it over the old rope to cut the line
>>
>> (Ive already pulled as hard as I dare, its STUCK)
>
> Climb up a ladder, cut it as high as you can.
>
> The tree-trimmer-on-a-pole doohinkeys don't work well at all for
> cutting ropes.

I cant get to the rope, I can reach about 1/3 of my antenna .. dont want
to leave that up there :)

I figure out something.

4864. Re: 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 01:51:29 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69ep6pF328q52U1@mid.individual.net>
Source record: 25486

Roy Lewallen wrote:
> If you're using an asymmetrical dipole,
> the feedline is very likely a
> part of the antenna. So the source
> of the noise or the conductor which
> is radiating it might be closer
> to the antenna than you think.

I use a balun to hopefully decouple.
I got a little reduced click when I
brought the coax to physical ground
at the base of the mast, instead of
letting it run across the roof.

Today I experimented more. Seems the
click wants to appear when I get one
leg of the dipole within about 15 ft
of my phone/cable digital box on the
side of the house.

Craig 'Lumpy' Lemke

www.n0eq.com

4865. Re: "V" Dipole Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 07:14:38 UTC
From: Harry <harryharms@hotmail.com>
Message-ID: <yTuYj.2742$IK1.2523@news-server.bigpond.net.au>
Source record: 25487

Joe Carr had an article on a "W" dipole, with the centre low.
HH

"WB8YKH" <lguyot2@gmail.com> wrote in message
news:90e29335-7c89-4f45-b9df-cd7ee8a4bbf8@n77g2000hse.googlegroups.com...
> There is much literature on the inverted "V" antenna but I've found
> nothing on a "V" Dipole Antenna. Can someone help me with resources
> or information on installation and effects of a "V" Dipole? In my
> current location I am unable to raise my center point much more than
> 15 feet off ground. However I can raise the endpoints 30+ feet.
> Before I go through much effort on the install I'd like to know what
> kind of performance I can expect. Thank you for your insights!
>
> 73
> WB8YKH
>

4866. Entertainment value

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 09:20:49 UTC
From: Mike Lucas <w5chr@bellsouth.net>
Message-ID: <9LwYj.162048$Er2.61291@bignews6.bellsouth.net>
Source record: 25488

The recent threads don't have much to offer in ROTF
entertainment. So, where are you,Art??I've listened
extensively on 160, but I can't seem to pull in ur sig!

Mike W5CHR

4867. 1Hz click external noise? - HF Radar ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 13:30:28 UTC
From: John Livingston <null@nospam.com>
Message-ID: <Dd-dnZSaJKHpT6_VRVnyhwA@bt.com>
Source record: 25489

Lumpy wrote:
> Any guesses as to the origin of the mystery
> noise bugging me this morning would be apprec.
>
> I'm hearing an S9 "click" at just about
> once per second, everywhere on 20meters
> where there's not a powerful station's
> signal. It clicks for maybe 3-5 seconds
> then stops for a few seconds. Not always
> symmetrical (3 sec noise ~ 10 sec no noise).
>
> Click sounds like what I'd imagine a charging
> and regularly discharging capacitor might do.
>
> Freq independant, it's everywhere on the 20m phone segment.
>
> S9+ stations seem to override the click.
> S7 stations don't override, the click
> comes right through and clobbers reception.
>
> Station is "backyard remote", battery powered,
> asymmetrical wire dipole.
>
> I found some recordings of electric blanket
> noise via k0bg's site. It sounds very much
> like those recordings. Both of the elec blankets
> in my home are off and unplugged. Neighbor elec
> blankets? They would be probably 100' away from
> the closest point to my antenna.
>
> Noise just started this morning. No new elec
> or mechanical devices running at my home.
> Turned off the A/C, fans, elec fence, light
> dimmers, pool filter etc. Three computers
> run inside the house, as they have for
> years.
>
>
> Anyone have a guess at this 1 Hz click noise?
> TIA -
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

Everyone seems to assume this is local RFI - but I've heard something very like this recently - in the UK (I guess you're in US?). It's not electric fences or heating igniters - I am pretty familiar with what they sound like ....

I can't remember the exact time or frequency, but 20m is probable. I clearly remember that it wasn't on other bands, and it was in groups of 1Hz pulses, with quiet spells.

My guess is it could be some sort of OTH radar. I often hear OTHR pulses in the UK, but at a higher PRF. These are usually assumed to originate from the Cyprus or Middle East area.

John

4868. Re: 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 15:30:15 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <900fc5dc-f142-45c9-a68c-8940fb267136@u36g2000prf.googlegroups.com>
Source record: 25490

Lumpy wrote:
> Jeff wrote:
> > > I'm hearing an S9 "click" at just about
> > > once per second, everywhere on 20meters
> > > where there's not a powerful station's
> > > signal. It clicks for maybe 3-5 seconds
> > > then stops for a few seconds. Not always
> > > symmetrical (3 sec noise ~ 10 sec no noise).
> > >
> > > Click sounds like what I'd imagine a charging
> > > and regularly discharging capacitor might do.
> > >
> > > Freq independant, it's everywhere on the 20m phone segment.
>
> Jeff:
> > Do you live on the country side? Could it be a farmer's electric
> > fence? If not that how about the ignition system on a gas central
> > heating system
>
> We live on a small suburban ranch. We have elec
> fences as do some neighbors. Ours is off for testing.
> I'm not sure what a furnace is. It's 100 degrees this week
> (unseasonably low) in Phoenix..;-)
>
> After sniffing around with the MFJ, and finding
> my rain gutters seem to be resonating at about 30Mhz
> I moved my dipole a bit so that the coax doesn't
> cross the gutters. Now the coax goes from top of
> mast to ground, and gets buried under about an
> inch of sand on our beach. Previously all of
> the coax was suspended above physical ground.
>
> The click seems to be gone.
>
> Perhaps the gutters were receiving neighborhood
> clicks and rebroadcasting them into my coax.
>
> Hmmm...30 MHz gutters...Maybe I'll work some
> 10 meters.
>
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

Sometimes two pieces of metal tapping together in the wind can cause it.
I had put up a slopper for 20 meter coming of the top of my 50ft tower. When I put up the antenna I used a short piece of wire from the top of the tower to an insulator then connected the end of the antenna to the insulator leaving about a foot or so of the antenna sticking out of the insulator for prunning.
Well, thats as far as I ever got with the sloper, as a matter of fact I put ham radio aside for quiet a while but I still enjoyed listening for BCB dx once in a while. I begin to notice that sometimes I would start hearing clicks while listening to AM and it turned out the noise was caused by the tail I left on the 20M antenna that was hitting the tower.

Jimmie

4869. Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 17:51:26 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69gheqF329ik5U1@mid.individual.net>
Source record: 25491

I'm a little stumped.
I'm sure I'm missing something obvious
but I just can't see it.

Built a 40m wire dipole, 33ft per side, symmetrical.
Center mounted on an 18' pole. Ends of the
legs drop about 2 ft to 16' above ground.
Slack/dip in the wire legs is pretty minimal.
The mechanical connections of my antenna allow
me to get it pretty tight.

Without any balun, running coax to the center
feed point of the dipole, I get an impedance
of around 6-7 ohms.

Different lengths of coax, different pieces of coax,
make no difference. All the coax pieces I've
tried test ok for shorts and continuity. Two
of the test coax pieces are brand new.

Dipole legs aren't touching anything, including
each other. Nearest piece of metal is at least
a half wave away from the end of one leg.

Mast is an aluminum tubing tripod in sections.
The sections aren't particularly bonded, the
section connectors are plastic/nylon. The
telescopic sections of the tripod/mast are
4' long each. The mast has rubber feet on
it's tripod legs, it is not bonded to earth.

Same 6-7 ohms shows up on the MFJ meter whether
the mast is at 10 ft or 18 ft.

Same 6-7 ohms shows up whether I stand at
the base of the mast with a 17' piece of
coax attached, or if I add a 50 or 100 ft
length of coax and stand virtually anywhere.

Why isn't my dipole showing a more expectable
impedance? Any guesses?

Craig 'Lumpy' Lemke

www.n0eq.com

4870. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 18:16:38 UTC
From: ltdoc@yahoo.com
Message-ID: <938e1a60-132f-4086-8fe5-2a0d5ebb6a69@x35g2000hsb.googlegroups.com>
Source record: 25492

Craig,
I wonder what you are using to measure that 6 - 7 ohms?
- 'Doc

4871. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 18:20:45 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <th5634t8aklhu25vbelk4ep830qtcg00u1@4ax.com>
Source record: 25494

Do you have fresh batteries? MFJ goes crazy when they are barely low.

Buck
N4PGW

On Tue, 20 May 2008 10:51:26 -0700, "Lumpy"
<lumpy@digitalcartography.com> wrote:

>I'm a little stumped.
>I'm sure I'm missing something obvious
>but I just can't see it.
>
>Built a 40m wire dipole, 33ft per side, symmetrical.
>Center mounted on an 18' pole. Ends of the
>legs drop about 2 ft to 16' above ground.
>Slack/dip in the wire legs is pretty minimal.
>The mechanical connections of my antenna allow
>me to get it pretty tight.
>
>Without any balun, running coax to the center
>feed point of the dipole, I get an impedance
>of around 6-7 ohms.
>
>Different lengths of coax, different pieces of coax,
>make no difference. All the coax pieces I've
>tried test ok for shorts and continuity. Two
>of the test coax pieces are brand new.
>
>Dipole legs aren't touching anything, including
>each other. Nearest piece of metal is at least
>a half wave away from the end of one leg.
>
>Mast is an aluminum tubing tripod in sections.
>The sections aren't particularly bonded, the
>section connectors are plastic/nylon. The
>telescopic sections of the tripod/mast are
>4' long each. The mast has rubber feet on
>it's tripod legs, it is not bonded to earth.
>
>Same 6-7 ohms shows up on the MFJ meter whether
>the mast is at 10 ft or 18 ft.
>
>Same 6-7 ohms shows up whether I stand at
>the base of the mast with a 17' piece of
>coax attached, or if I add a 50 or 100 ft

>length of coax and stand virtually anywhere.
>
>Why isn't my dipole showing a more expectable
>impedance? Any guesses?
>
>Craig 'Lumpy' Lemke
>
>www.n0eq.com
>

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4872. Re: 1Hz click external noise?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 18:20:53 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <8EEYj.2341$l97.469@flpi144.ffdc.sbc.com>
Source record: 25493

JIMMIE wrote:
> Sometimes two pieces of metal tapping together in the wind can cause
> it.

When I lived in AZ, my neighbor had an electric fence
that was no bother except when it was windy. It was
a fabric fence woven with embedded conductors. There
was a piece about 10 inches long at the knot at the
end that shorted out to the pole when the wind blew.
Snipping it off cured the problem.
--
73, Cecil http://www.w5dxp.com

4873. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 18:44:51 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69gkiuF31f0frU1@mid.individual.net>
Source record: 25495

ltdoc@yahoo.com wrote:
> Craig,
> I wonder what you are using to measure that 6 - 7 ohms?

MFJ Analyzer.

Craig 'Lumpy' Lemke

www.n0eq.com

4874. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 18:46:01 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <jJednUyBp-T2ga7VnZ2dnUVZ_vudnZ2d@posted.easystreetonline>
Source record: 25496

What do you read when you connect a 47 - 75 ohm resistor across the terminals of your measuring device?

Roy Lewallen, W7EL

4875. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 18:46:06 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69gklaF32s5i9U1@mid.individual.net>
Source record: 25497

Buck wrote:

[MFJ Analyzer]
> Do you have fresh batteries?
> MFJ goes crazy when they are barely low.

13.something. Opening readout says
"voltage ok".

Craig 'Lumpy' Lemke

www.n0eq.com

4876. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 19:04:29 UTC
From: dplatt@radagast.org
Message-ID: <tujbg5-8sv.ln1@radagast.org>
Source record: 25498

In article <69gheqF329ik5U1@mid.individual.net>,
Lumpy <lumpy@digitalcartography.com> wrote:

>I'm a little stumped.
>I'm sure I'm missing something obvious
>but I just can't see it.

Silly question - have you calibrated your MFJ meter against a known-good load recently?

The fact that you get the same impedance reading when you add 50 feet of coax (which is pretty close to a quarter-wavelength) is a red flag. Since the added cable is roughly 1/4 wavelength, you'd expect to see a *big* impedance transformation - a load of 6 ohms at one end, would be transformed up to around 450 ohms at the other end.

Since you're getting the same reading with, and without the quarter-wavelength cable extension, I'd be very prone to suspect that your measurement tool (the MFJ meter) is frotzed.

The MFJ-259 and -269 meters use "zero bias" Schottky diodes as part of their power-measurement circuitry. These diodes are relatively delicate, and can be damaged if the meter inputs are exposed to more than a relatively small amount of RF. Even keying up a transmitter on one antenna, while having the meter hooked to another (nearby) antenna at the same time, can hit the diodes with a high enough voltage to pop 'em. Reportedly, the -269 meter can also be damaged if you turn the UHF feature on or off at the wrong time or with the controls in the wrong settings.

Check your meter with several loads - a 50-ohm dummy load, 25- and 100-ohm test loads, open circuit, and short circuit. See whether it reads close to the correct value or not.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

4877. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 20:10:56 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69gpkdF32gaskU1@mid.individual.net>
Source record: 25499

Roy Lewallen wrote:
> What do you read when you connect a
> 47 - 75 ohm resistor across the
> terminals of your measuring device?

Plain resistors read appropriately.
27ohms, 56 ohms etc.

I don't have a good dummy load. I have a 50 ohm
50w resistor but it's wire wound. It varies all
over the range when I sweep the MFJ.

Known good piece of coax, end shorted or open,
reads 50 ohms when the MFJ is tuned to the quarter
wave of the coax.

MFJ seems to read a vertical hamstick
appropriately -

http://digitalcartography.com/n0eq/MFJswitchDetail-600x400.jpg

I just made a contact on 5W QRP from Phoenix (here)
to St Louis. So I have to guess the antenna isn't
open or shorted or something else catastrophic.
That's through an LDG tuner.

But -

Running the dipole into my Yaesu 857 with external
tuner bypassed, shows an SWR high enough to cause
the transciever to self protect shut down.

Engage the tuner, SWR comes down to 1.5:1, and
I'm putting out (at least to the back of the radio)
very close to the selected 5 watts.

Craig 'Lumpy' Lemke

www.n0eq.com

4878. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 20:47:15 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <RNmdncEzQeRLpa7VnZ2dnUVZ_r6rnZ2d@easystreetonline>
Source record: 25500

Lumpy wrote:
> Roy Lewallen wrote:
>> What do you read when you connect a
>> 47 - 75 ohm resistor across the
>> terminals of your measuring device?
>
> Plain resistors read appropriately.
> 27ohms, 56 ohms etc.
>
> I don't have a good dummy load. I have a 50 ohm
> 50w resistor but it's wire wound. It varies all
> over the range when I sweep the MFJ.
>
> Known good piece of coax, end shorted or open,
> reads 50 ohms when the MFJ is tuned to the quarter
> wave of the coax.
> . . .

Something's seriously wrong there. A shorted quarter wavelength of coax should read very high impedance when the far end is shorted and very low when the far end is open. The only time it should read 50 ohms with the far end shorted or open is if it has many dB of loss. And no even half decent coax should have anywhere near that much loss in a quarter wavelength.

So it appears that either your coax is extremely lossy for some reason (and I can't think of any mechanism which would cause that much loss unless the coax is specifically designed to be very lossy for some special reason) or the meter is oscillating or otherwise misbehaving when connected to coax.

Roy Lewallen, W7EL

4879. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 20:50:46 UTC
From: Harry Lippitz <johnsmith@micro$oft.com>
Message-ID: <GQGYj.7478$R_4.6024@newsb.telia.net>
Source record: 25401

> I'm a little stumped.
> I'm sure I'm missing something obvious
> but I just can't see it.

Stupid questions:

1 - Are you using a short test jumper cable or adapter connector between the test instrument and the end of the coax? Could the test lead or connector be at fault?

2 - Is there any possibility of a STRONG signal coming back down the cable to stuff up your test instrument readings? Do you live near a source of RF, such as local broadcast radio?

3 - Is there any possibility both feeder cables are defective? Perhaps you are using coaxial cable not meant for this purpose? TV coax, or LAN cable?

4 - Have you wiped out your neighbours TV viewing or something? Checked the cables for sabotage (pins or nails)?

5 - Have you climbed the mast and checked the antenna directly at the feed point, without a feeder cable?

You have probably thought of all these, but I had to ask. Regards Harry

4880. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 21:04:59 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <%1HYj.11108$IK5.3187@trnddc04>
Source record: 25402

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:69gheqF329ik5U1@mid.individual.net...
> I'm a little stumped.
> I'm sure I'm missing something obvious
> but I just can't see it.
>
At this point, I think I'd set aside the MFJ and resort to a VSWR meter.
Once you verify the antenna, you can get to checking out the MFJ. The front
end bridge is very sensitive to overload and damages easily.
Dale W4OP

4881. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 21:30:17 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69gu95F32hqmbU1@mid.individual.net>
Source record: 25403

Roy Lewallen wrote:
> Something's seriously wrong there. A shorted quarter wavelength of
> coax should read very high impedance when the far end is shorted and
> very low when the far end is open. The only time it should read 50
> ohms with the far end shorted or open is if it has many dB of loss.
> And no even half decent coax should have anywhere near that much loss
> in a quarter wavelength.

Maybe I'm not testing correctly.
100' length of new coax. Tests ok for no shorts or open.

MFJ set to 2.4MHz gives me a Z (on the advanced
menu) of 50 ohms with distal end of the coax
either open or shorted. Actually shorting the
end with a screwdriver shaft drops the Z from
50 to 49. I assume 1 ohm is within normal limits.

Same settings gives me an R (on the main menu)
of zero ohms either open or shorted.

I get exactly the same results on several
pieces of coax, old/new, RG8 or 58. Resistance
is zero, impedance is 50, shorted or open at
the resonant quarter freq.

Craig 'Lumpy' Lemke

www.n0eq.com

4882. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 21:40:16 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69gurtF33b2i0U1@mid.individual.net>
Source record: 25404

Harry Lippitz wrote:

> 1 - Are you using a short test jumper cable or adapter connector
> between the test instrument and the end of the coax? Could the test
> lead or connector be at fault?

Nothing seems to make a difference. 12" coax
to the antenna, 50' RG8, 100' RG8, 50' RG58.

> 2 - Is there any possibility of a STRONG signal coming back down the
> cable to stuff up your test instrument readings? Do you live near a
> source of RF, such as local broadcast radio?

I don't think so. I'm receiving (I'm transmitting!)
just fine. No local signals clobber me.

> 3 - Is there any possibility both feeder cables are defective?
> Perhaps you are using coaxial cable not meant for this purpose? TV
> coax, or LAN cable?

Nope. Several 50 ohm 8/58 coax. Some from cablexperts.com.

> 4 - Have you wiped out your neighbours TV viewing or something?
> Checked the cables for sabotage (pins or nails)?

No, nothing like that.

> 5 - Have you climbed the mast and checked the antenna directly at the
> feed point, without a feeder cable?

I can't climb this mast but if I bring it down to 10' and
get up there with a ladder, same results.

> You have probably thought of all these, but I had to ask.

Feel free to ask, no matter how seemingly stupid
the Q might be.

Craig 'Lumpy' Lemke

www.n0eq.com

4883. 75m/30m, 40m/17m Dual Banders

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 21:51:31 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <DJHYj.86$ui2.72@nlpi069.nbdc.sbc.com>
Source record: 25405

There was a discussion the other day about stub loaded dipoles. A 30m dipole loaded at each end with a 30m/4 shorted stub is resonant on both 30m and 75m. A 17m dipole loaded at each end with a 17m/4 shorted stub is resonant on both 17m and 40m. The stubs provide inductive loading on the lower bands resulting in "shorty" dipoles, shrunk by about 20%.

I've summarized two such antennas on my web site at:

http://www.w5dxp.com/dualband.gif
--
73, Cecil http://www.w5dxp.com

4884. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-20 23:46:27 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69h68gF32f1o0U1@mid.individual.net>
Source record: 25406

Thanks for everyone's comments
and questions. Based on what
several suggest, I think the MFJ
analyzer is B/O. I'm still making
contacts like crazy, even if the
meter says I shouldn't be.

I think I'll get the 259 back to
MFJ while it's still under warranty.

Thanks again -

Craig 'Lumpy' Lemke

www.n0eq.com

4885. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 00:55:19 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <XpKYj.16578$4K5.10952@trnddc03>
Source record: 25407

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:69gurtF33b2i0U1@mid.individual.net...
> Harry Lippitz wrote:
>
>> 1 - Are you using a short test jumper cable or adapter connector
>> between the test instrument and the end of the coax? Could the test
>> lead or connector be at fault?
>
> Nothing seems to make a difference. 12" coax
> to the antenna, 50' RG8, 100' RG8, 50' RG58.
>
>
>> 2 - Is there any possibility of a STRONG signal coming back down the
>> cable to stuff up your test instrument readings? Do you live near a
>> source of RF, such as local broadcast radio?
>
> I don't think so. I'm receiving (I'm transmitting!)
> just fine. No local signals clobber me.
>
>
>> 3 - Is there any possibility both feeder cables are defective?
>> Perhaps you are using coaxial cable not meant for this purpose? TV
>> coax, or LAN cable?
>
> Nope. Several 50 ohm 8/58 coax. Some from cablexperts.com.
>
>
>> 4 - Have you wiped out your neighbours TV viewing or something?
>> Checked the cables for sabotage (pins or nails)?
>
> No, nothing like that.
>
>
>> 5 - Have you climbed the mast and checked the antenna directly at the
>> feed point, without a feeder cable?
>
> I can't climb this mast but if I bring it down to 10' and
> get up there with a ladder, same results.
>
>
>> You have probably thought of all these, but I had to ask.
>
> Feel free to ask, no matter how seemingly stupid
> the Q might be.

>
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

Hi Lumpy

I really like your music. You do a terriffic job with that guitar.
I'd suggest that you'd do yourself a favor if you recognize that the input impedance of your antenna is not being measured properly by your meter. Instead, try to think of something that is causing the meter to read improperly.
Could the error be introduced by a stray (off frequency) signal effecting the meter movement? You know, the antenna picks up the signal and introduces an error.
Remember how the impedance looking into a length of coax, that is either opened or shorted, varies all over the place when the length is uncontrolled.. The only time it's impedance is equal to it's Zo is when it's length is 1/8th wave (or odd multiples). And, then, the impedance is very nearly purely reactancive.

Jerry KD6JDJ

4886. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 05:11:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <_JidnecWXdiTMq7VnZ2dnUVZ_jOdnZ2d@posted.easystreetonline>
Source record: 25408

Lumpy wrote:
> Roy Lewallen wrote:
>> Something's seriously wrong there. A shorted quarter wavelength of
>> coax should read very high impedance when the far end is shorted and
>> very low when the far end is open. The only time it should read 50
>> ohms with the far end shorted or open is if it has many dB of loss.
>> And no even half decent coax should have anywhere near that much loss
>> in a quarter wavelength.
>
> Maybe I'm not testing correctly.
> 100' length of new coax. Tests ok for no shorts or open.
>
> MFJ set to 2.4MHz gives me a Z (on the advanced
> menu) of 50 ohms with distal end of the coax
> either open or shorted. Actually shorting the
> end with a screwdriver shaft drops the Z from
> 50 to 49. I assume 1 ohm is within normal limits.
>
> Same settings gives me an R (on the main menu)
> of zero ohms either open or shorted.
>
> I get exactly the same results on several
> pieces of coax, old/new, RG8 or 58. Resistance
> is zero, impedance is 50, shorted or open at
> the resonant quarter freq.
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

At 2.4 MHz, the line is pretty close to 3/8 wavelength, not 1/4 -- assuming it has solid and not foamed dielectric. At that length with the other end shorted or open, the impedance would be very nearly 50 ohms, all reactive, which means the resistance would be zero as you're seeing. So those measurements are correct. Your meter is showing the correct values when measuring resistors (purely resistive) and the shorted/open coax (purely reactive), so there's nothing obviously wrong with the meter.

The remaining possibility for your problem with the antenna is external RF, as someone else mentioned earlier. I find it nearly impossible to use my 259B for antenna measurements at my QTH because of strong AM, FM, and TV signals -- ironically, the "antenna analyzer" is great for a lot of other chores, but not for actually analyzing antennas. It's pretty likely that's what your problem is too. When measuring antennas, I have to use filters which introduce minimal impedance disturbances at the

measurement frequency while providing attenuation of the offending signals.

Roy Lewallen, W7EL

4887. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 10:59:23 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <g30834t9usm77l4dqg0bt0oa394151776j@4ax.com>
Source record: 25409

On Tue, 20 May 2008 10:51:26 -0700, "Lumpy"
<lumpy@digitalcartography.com> wrote:

>I'm a little stumped.
>I'm sure I'm missing something obvious
>but I just can't see it.
>
>Built a 40m wire dipole, 33ft per side, symmetrical.
>Center mounted on an 18' pole. Ends of the
>legs drop about 2 ft to 16' above ground.
>Slack/dip in the wire legs is pretty minimal.
>The mechanical connections of my antenna allow
>me to get it pretty tight.
>
>Without any balun, running coax to the center
>feed point of the dipole, I get an impedance
>of around 6-7 ohms.
>
>Different lengths of coax, different pieces of coax,
>make no difference. All the coax pieces I've
>tried test ok for shorts and continuity. Two
>of the test coax pieces are brand new.
>
>Dipole legs aren't touching anything, including
>each other. Nearest piece of metal is at least
>a half wave away from the end of one leg.
>
>Mast is an aluminum tubing tripod in sections.
>The sections aren't particularly bonded, the
>section connectors are plastic/nylon. The
>telescopic sections of the tripod/mast are
>4' long each. The mast has rubber feet on
>it's tripod legs, it is not bonded to earth.
>
>Same 6-7 ohms shows up on the MFJ meter whether
>the mast is at 10 ft or 18 ft.
>
>Same 6-7 ohms shows up whether I stand at
>the base of the mast with a 17' piece of
>coax attached, or if I add a 50 or 100 ft
>length of coax and stand virtually anywhere.
>
>Why isn't my dipole showing a more expectable
>impedance? Any guesses?

>
>Craig 'Lumpy' Lemke
>
>www.n0eq.com
>

Have you measured it with an SWR meter from your radio?

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4888. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 13:22:31 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <47a3bc16-c6d9-4b8b-b972-e9c7faaf1332@x1g2000prh.googlegroups.com>
Source record: 25410

Lumpy wrote:
> I'm a little stumped.
> I'm sure I'm missing something obvious
> but I just can't see it.
>
> Built a 40m wire dipole, 33ft per side, symmetrical.
> Center mounted on an 18' pole. Ends of the
> legs drop about 2 ft to 16' above ground.
> Slack/dip in the wire legs is pretty minimal.
> The mechanical connections of my antenna allow
> me to get it pretty tight.
>
> Without any balun, running coax to the center
> feed point of the dipole, I get an impedance
> of around 6-7 ohms.
>
> Different lengths of coax, different pieces of coax,
> make no difference. All the coax pieces I've
> tried test ok for shorts and continuity. Two
> of the test coax pieces are brand new.
>
> Dipole legs aren't touching anything, including
> each other. Nearest piece of metal is at least
> a half wave away from the end of one leg.
>
> Mast is an aluminum tubing tripod in sections.
> The sections aren't particularly bonded, the
> section connectors are plastic/nylon. The
> telescopic sections of the tripod/mast are
> 4' long each. The mast has rubber feet on
> it's tripod legs, it is not bonded to earth.
>
> Same 6-7 ohms shows up on the MFJ meter whether
> the mast is at 10 ft or 18 ft.
>
> Same 6-7 ohms shows up whether I stand at
> the base of the mast with a 17' piece of
> coax attached, or if I add a 50 or 100 ft
> length of coax and stand virtually anywhere.
>
> Why isn't my dipole showing a more expectable
> impedance? Any guesses?
>
> Craig 'Lumpy' Lemke

>
> www.n0eq.com

If I look in the antenna books, the feedpoint impedance of a half-wave dipole less than 0.1 wavelengths above a perfect ground can be less than 10 ohms.

You are, say, 17 feet above ground. That's more like 0.14 wavelengths, and the charts in the antenna handbooks show that as you get up to 0.2 or 0.3 wavelengths that you'd expect to be way above ten ohms. And your ground I'm assuming is not "perfect", with a zero-area call it might be better than average, but it's probably not salt-water.

So maybe the numbers don't add up perfectly to match the charts in the books, but I think the lesson is that a very low dipole (you're just "pretty low") dipole over perfect ground (maybe you're "very good") can have a very low feedpoint impedance, less than 10 ohms in some circumstances.

If your ground really is that good, you're a prime candidate for verticals or an array of verticals. I used to live in the midwest next to the Mississippi, and the ground conductivity was really very very good (if not as good as saltwater) and I was very happy with my 4BTV's performance.

Tim.

4889. Re: Why is my dipole low impedance?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 13:26:00 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <WnVYj.8740$Kk3.517@bignews9.bellsouth.net>
Source record: 25411

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:69gkiuF31f0frU1@mid.individual.net...
> ltdoc@yahoo.com wrote:
>> Craig,
>> I wonder what you are using to measure that 6 - 7 ohms?
>
> MFJ Analyzer.
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

Check for a short in the connector to the antenna analyzer.

Ed, NM2K

4890. Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 14:04:11 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <hZVYj.65161$4B6.20245@newsfe14.ams2>
Source record: 25412

Anyone using or have used a Rigexpert AA-200 Antenna Analyser?
I am interested to know good they are.

73 Andy

4891. Re: Wrist Rocket Height - DILEMMA 2

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 14:51:33 UTC
From: ltdoc@yahoo.com
Message-ID: <21f9234d-a14a-49a0-b3f3-d5a4e0f03849@k13g2000hse.googlegroups.com>
Source record: 25413

How do you get the rope down? How about attaching to the bumper of your car and slowly driving away from the tree? Pad the 'edges' of the bumper, they like to 'eat' rope. Hope the rope is weaker than the tree.
Was on the receiving end of a piece of 30-40 foot nylon cord I was trying to get off of a lamp post. You might be surprised at what that stuff will feel like when it snaps and hits you. Took a few days, but the welts finally disappeared. The memory will last forever!
- 'Doc

PS - Having a hardware store hanging from a tree is a sure sign of a dedicated ham! Sort of a huge wind-chime, right?

4892. Re: Wrist Rocket Height - DILEMMA 2

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 18:47:19 UTC
From: David Harmon <source@netcom.com>
Message-ID: <2bSdneEK0q3386nVnZ2dnUVZ_vadnZ2d@earthlink.com>
Source record: 25414

On Wed, 21 May 2008 07:51:33 -0700 (PDT) in
rec.radio.amateur.antenna, ltdoc@yahoo.com wrote,
> How do you get the rope down? How about attaching to the bumper of
>your car and slowly driving away from the tree? Pad the 'edges' of
>the bumper, they like to 'eat' rope. Hope the rope is weaker than the
>tree.

Be sure to get it on video when you pull the tree down onto your car!

4893. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 20:05:55 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g11vb3$7ur$1@news.jpl.nasa.gov>
Source record: 25416

Jim-NN7K wrote:
> Tim- from my High school Physics== the Formula is: F= MA
> Force = Mass Times Acceleration. Perhaps a Bow and Arrow
> will exceed the (Wrist Rocket) in this department? at 50#
> Pull for Acceleration? (Oz per Oz) Jim NN7K

more relevant is the 2ad=v^2 equation... height goes as the square of the launch velocity, neglecting air drag and line drag.

but, where the bow and arrow really excel is in the overall larger mass of the projectile and higher launch energy (mostly the latter. the arrow is a couple or three ounces.. same as the wrist rocket.. but the bow will easily have a 50 lb draw and longer distance.

See, e.g., http://www.stortford-archers.org.uk/medieval.htm for some discussion of bow and arrow physics

>
>
>
> Tim Shoppa wrote:
>
>> On May 15,

4894. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 20:08:58 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g11vgq$7vl$1@news.jpl.nasa.gov>
Source record: 25415

Tim Shoppa wrote:
> On May 19, 1:06 pm, n...@spam.net wrote:
>
>>On Fri, 16 May 2008 10:39:11 -0700 (PDT), TimShoppa
>>
>><sho...@trailing-edge.com> wrote:
>>
>>snip...........
>>
>>
>>
>>
>>>The tennis ball cannon I use is very very similar to the CSV19 at
>>>http://www.antennalaunchers.com/and I am very very happy with it.
>>>It's not so much a "point above a crotch in the tree and hope the ball
>>>goes through" but "just shoot the ball and line over the tree".
>>
>>>Tim.
>>
>>I built the QE-19 from the same site Tim mentioned. The "air valve"
>>for it is off-the-shelf so it's a plug-n-play project. It beats every
>>fishing rod, bow & arrow, sling shot..... anything I've ever tried
>>before. Beats them hands down. It'll easily clear a 100 foot height
>>and is accurate after you shoot it a couple times. It's a little
>>pricey but that could be spread out if it were to become a club
>>project.
>
>
> My impression is that the CSV19, with its modified sprinkler valve,
> has a higher muzzle velocity than the QE-19. But overall, I agree
> 100%, that for me the tennis ball launcher was far and away the best
> choice.
>
> I have some friends who are very good with crossbows and they tell me
> that I'm wrong, that the crossbow will do the job more reliably and
> accurately than my tennis ball cannon, but I don't have a crossbow and
> don't really intend to learn how to use one. I don't really want to
> shoot arrows into my neighbor's property either.

A very important point. In many areas, firing a crossbow (which is
generally perceived as a lethal weapon) at anything other than a
designated target would set you up for a lot of hassles with the local
constabulary, or worse. The tennis ball launcher (avoid the "cannon"
term..) looks less "weapon-y"

4895. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 23:00:17 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69jnu3F3357r0U1@mid.individual.net>
Source record: 25417

Jim Lux wrote:
> ... The tennis ball launcher (avoid the "cannon"
> term..) looks less "weapon-y"

Not that shoulder fired one that everyone's
been looking at..:-)
http://www.antennalaunchers.com/antlaunching.html

It looks like an RPG. Wander around aiming that
thing at the top of your trees while the
gendarmerie rides past and I'll bet you'll
be asked to "DO IT NOW".

Craig 'Lumpy' Lemke

www.n0eq.com

4896. Re: 75m/30m, 40m/17m Dual Banders

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 23:09:07 UTC
From: jgboyles@aol.com
Message-ID: <9bf58011-36d4-4219-9619-f261cc68e68f@e39g2000hsf.googlegroups.com>
Source record: 25418

On May 20, 4:51 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> There was a discussion the other day about stub loaded
> dipoles. A 30m dipole loaded at each end with a 30m/4
> shorted stub is resonant on both 30m and 75m. A 17m
> dipole loaded at each end with a 17m/4 shorted stub
> is resonant on both 17m and 40m. The stubs provide
> inductive loading on the lower bands resulting in
> "shorty" dipoles, shrunk by about 20%.
>
> I've summarized two such antennas on my web site at:
>
> http://www.w5dxp.com/dualband.gif
> --
> 73, Cecil http://www.w5dxp.com

Hi Cecil, How do you model the 1/4wl 3" stubs on the ends of the dipole? I have EZNEC 4.0.
Gary N4AST

4897. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-21 23:41:10 UTC
From: SWLer <DoNotSendTo@comcast.net>
Message-ID: <qq2Zj.24509$_g.8844@trnddc07>
Source record: 25419

Hi Al W6LX, et. al. --

I bought a 'real' EZ HANG from Dennis (KG4ETM) at Dayton,
(<http://ezhang.com>) and after taking a few trial shots
I had *no* problem shooting the one ounce weight over a
135+ foot Tulip Poplar tree in my back yard in northern
Virginia.

The tree was so tall that I used -all- 300 feet of the
monofilament line and the weight ended up about three feet
off the ground.

My point is that if you use an "EZ Hang" (or a counterfeit)
properly, that thing really works!

Wish you were closer so I could show you. It's a great
gadget!

News Features wrote:
> Jim's calculations have confirmed something I've consistently experienced:
> my homebrew EZ-Hang has never really lived up to my expectations, or should
> I say the expectations that others have set for the performance of the
> thing. (For the record, my homebrew device is an exact copy of the famous
> EZ-Hang.)
>
> For the past three Field Days, which is when I've used the thing, the
> maximum height I've seemed to attain is around 50 feet-- right in the
> ballpark for a 1 oz. weight with line and air drags. No matter what I've
> tried, that's the limit of height for the parameters of my situation.
>
> Thanks, Jim.
>
> Al W6LX
>

4898. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 00:13:54 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g12ds2opg1@news.jpl.nasa.gov>
Source record: 25420

SWLer wrote:
> Hi Al W6LX, et. al. --
>
> I bought a 'real' EZ HANG from Dennis (KG4ETM) at Dayton,
> (<http://ezhang.com>) and after taking a few trial shots
> I had *no* problem shooting the one ounce weight over a
> 135+ foot Tulip Poplar tree in my back yard in northern
> Virginia.
>
> The tree was so tall that I used -all- 300 feet of the
> monofilament line and the weight ended up about three feet
> off the ground.

How far back do you pull, and how hard?

4899. Re: 75m/30m, 40m/17m Dual Banders

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 02:23:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <RO4Zj.98$d15.87@flpi144.ffdc.sbc.com>
Source record: 25421

jgboyles@aol.com wrote:
> Hi Cecil, How do you model the 1/4wl 3" stubs on the ends of the
> dipole? I have EZNEC 4.0.

It's actually 0.3 ft, i.e. 3.6 inches. The EZNEC file is at:

http://www.w5dxp.com/40_17.EZ
--
73, Cecil http://www.w5dxp.com

4900. Re: 75m/30m, 40m/17m Dual Banders

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 03:07:39 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69k6dtF32gl10U1@mid.individual.net>
Source record: 25422

Cecil Moore wrote:

> It's actually 0.3 ft, i.e. 3.6 inches. The EZNEC file is at:
>
> http://www.w5dxp.com/40_17.EZ

Dead link?

Craig 'Lumpy' Lemke

www.n0eq.com

4901. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 03:39:53 UTC
From: nsk <nsk.27ade58@radiobanter.com>
Message-ID: <nsk.27ade58@radiobanter.com>
Source record: 25425

O-K-.-.--*-w---w---w---.---9---n---s---k---.---c---n---.---*-'-n-t-n-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-S-K-F-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-F-A-G-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-N-S-K-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-t-i-m-k-e-n-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)-[-i-m-a-g-e-:-
-h-t-t-p-:-/-/-w-w-w-.-t-j-n-r-z-c-.-c-n-/-i-m-a-g-e-s-/-h-t-t-p-_-i-m-g-l-o-a-d-.-g-i-f-]
-

--
nsk

4902. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 05:08:55 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <Hd7Zj.7680$HJ5.4705@trnddc01>
Source record: 25423

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:hZVYj.65161$4B6.20245@newsfe14.ams2...
> Anyone using or have used a Rigexpert AA-200 Antenna Analyser?
> I am interested to know good they are.
>
> 73 Andy
Hi Andy,
I just ordered one- should be here early next week.

Dale W4OP

4903. Re: Dayton

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 07:51:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <ONOdnRVzyIaHu6jVnZ2dnUVZ_judnZ2d@posted.easystreetonline>
Source record: 25424

Thanks to all the folks who stopped by my booth at Dayton to say hello.
It was a pleasure to meet you.

Roy Lewallen, W7EL

4904. Re: 75m/30m, 40m/17m Dual Banders

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 12:03:49 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ZidZj.5122$nW2.297@nlpi064.nbdc.sbc.com>
Source record: 25426

Lumpy wrote:
> Cecil Moore wrote:
>
>> It's actually 0.3 ft, i.e. 3.6 inches. The EZNEC file is at:
>>
>> http://www.w5dxp.com/40_17.EZ
>
> Dead link?

Seems to be OK this morning - and the spacing is
0.25 ft, i.e. 3 inches.
--
73, Cecil http://www.w5dxp.com

4905. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 12:15:18 UTC
From: nospam@online.de
Message-ID: <1ihch73.1ywft5619qpc9dN%nospam@online.de>
Source record: 25427

Cecil Moore <nospam@w5dxp.com> wrote:

> > With Loops you can zig zig in and out to get all the wire up it does
> > not need to be in a square etc.
>
> A series stub of ladder-line works well to shorten the
> length of a loop.

Another way of getting a loop antenna for 80m for reduced place is
switching two 40m delta loops in serie.

This website is in German language shows some drawings with a 41 feet
mast in the middle and four 10 feet supports in square.
It was published in a standard antenna book in Germany from Karl
Rothammel, DM2ABK.

http://www.technik.ba-ravensburg.de/~lau/drahtpyramide.htm

"The WBï¿½AOF 80 meter pyramid antenna" may be known in the USA.

http://f6arc.free.fr/pages/12_1.html

4906. Serious Skin Care Tips For Women Who Take Their Skin Care Seriously!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 14:01:59 UTC
From: the.acne.skin.care@gmail.com
Message-ID: <021c9eba-2d2c-49c1-894f-45105e87d674@u12g2000prd.googlegroups.com>
Source record: 25428

http://www.syubrawi.com/skin-care-supplies ,Serious skin care starts with a serious regimen that you follow morning, noon and night. If you don't want to have a leathery and wrinkly face by the time you're thirty, I suggest that you use a good facial moisturizer every morning with at least a sun protection factor (SPF) of 15. Since the majority of skin damage is a direct result of unprotected sun exposure, make sure you're always covered with enough SPF to remain wrinkle free. Surprisingly enough, most of the sun you get isn't on days when you're outside enjoying a BBQ or playing frisbee. Instead, most of it is caused by incidental exposure. This means you get sun spots from the rays you catch taking the groceries to your car, checking the mail and walking the dog.

Besides a good moisturizer with an SPF of 15 or more, serious skin care also includes a good cleanser. Make sure you wash the old make up and oil accumulated throughout the day off each night, then again in the morning. This will cut down on clogged and enlarged pores. There's nothing more unattractive than a person whose pores are bigger than my studio apartment. A huge reason to avoid enlarged pores is the fact that once they're enlarged, there's nothing you can do to shrink them down. If your pores are big now, the only thing you can do is try to keep them from getting bigger.

Another thing you should do is exfoliate. Serious skin care means sloughing off dead skin cells that make your face look dull and flaky. This also helps remove the cells that can clog your pores and lead to pimples. If you have other questions about serious skin care, hop online and check out some message boards for tips and tricks. If you can't find anything there, you can always rely on the beauty magazines on newsstands.

Want more great serious skin care tips? Visit at
http://www.syubrawi.com/skin-care-supplies
or http://www.syubrawi.com/acne-skin-care today.

4907. Re: 75m/30m, 40m/17m Dual Banders

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 14:24:24 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69le2sF32isq8U1@mid.individual.net>
Source record: 25429

Cecil Moore wrote:
> > > ... The EZNEC file is at:
> > >
> > > http://www.w5dxp.com/40_17.EZ

Lump:
> > Dead link?

Cecil:
> Seems to be OK this morning - and the spacing is
> 0.25 ft, i.e. 3 inches.

Got it now. Thanks.

Craig 'Lumpy' Lemke

www.n0eq.com

4908. Re: Serious Skin Care Tips For Women Who Take Their Skin Care Seriously!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 15:02:24 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <g4CdnfjqPM-UFqjVnZ2dnUVZ_srinZ2d@comcast.com>
Source record: 25430

<the.acne.skin.care@gmail.com> wrote in message
news:021c9eba-2d2c-49c1-894f-45105e87d674@u12g2000prd.googlegroups.com...
> http://www.syubrawi.com/skin-care-supplies ,Serious skin care starts
> with a serious regimen that you follow morning, noon and night. If you
> don't want to have a leathery and wrinkly face by the time you're
> thirty, I suggest that you use a good facial moisturizer every morning
> with at least a sun protection factor (SPF) of 15. Since the majority
> of skin damage is a direct result of unprotected sun exposure, make
> sure you're always covered with enough SPF to remain wrinkle free.
> Surprisingly enough, most of the sun you get isn't on days when you're
> outside enjoying a BBQ or playing frisbee. Instead, most of it is
> caused by incidental exposure. This means you get sun spots from the
> rays you catch taking the groceries to your car, checking the mail and
> walking the dog.
>
> Besides a good moisturizer with an SPF of 15 or more, serious skin
> care also includes a good cleanser. Make sure you wash the old make up
> and oil accumulated throughout the day off each night, then again in
> the morning. This will cut down on clogged and enlarged pores. There's
> nothing more unattractive than a person whose pores are bigger than my
> studio apartment. A huge reason to avoid enlarged pores is the fact
> that once they're enlarged, there's nothing you can do to shrink them
> down. If your pores are big now, the only thing you can do is try to
> keep them from getting bigger.
>
> Another thing you should do is exfoliate. Serious skin care means
> sloughing off dead skin cells that make your face look dull and flaky.
> This also helps remove the cells that can clog your pores and lead to
> pimples. If you have other questions about serious skin care, hop
> online and check out some message boards for tips and tricks. If you
> can't find anything there, you can always rely on the beauty magazines
> on newsstands.
>
> Want more great serious skin care tips? Visit at
> http://www.syubrawi.com/skin-care-supplies
> or http://www.syubrawi.com/acne-skin-care today.

I guess you can put this crap on the jackets of the wire antennas to keep
them from being exposed to UV!!

4909. antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 15:32:26 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <_s6dnZtVn5WOD6jVnZ2dnUVZ_szinZ2d@comcast.com>
Source record: 25431

I have the following represents my roof and the tree in my backyard.

The length of the roof is 90ft, it is 15ft from the center line to each edge, (roughly 30ft),
height of roof is approx 22ft at the peak and 10ft at the gutter edge..

The tree is approximately 35ft high.

```
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
x
O x
x
x
x ----------------------------------------------------x
x
x
xxxxxxxxxx x
O x
x x
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
x O x
x x
xxxxxxxxxx
TREE
```

My question is: do you think it would be better to run a configuration as say a Windom from the tree to the points on the roof (the points can be moved) or just a simple inverted "V" and the angle of the "V" in any case is going to be very narrow. I would be feeding either one via some Rg8x approximately 65ft.

I would like to be able to use the ant from 160m - 6m if possible, I will be feeding it via a tuner, and the wire is going to be #26 enameled as it can't be seen.

Comments please.

73's Howard W3CQH

4910. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 15:37:55 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <nYadncjCTN7BDqjVnZ2dnUVZ_rvinZ2d@comcast.com>
Source record: 25432

Sorry for the repost - I was trying to get the visual dimensions correct!

The following represents my roof and the tree in my backyard.

The length of the roof is 90ft,
it is 15ft from the center line to
each edge, (roughly 30ft),
height of roof is approx 22ft at the
peak and 10ft at the gutter edge..

The tree is approximately 35ft high.

```
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
x
O x
x
x
x ----------------------------------------------------x
x
x
xxxxxxxxxx x
O x
x x xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
x O x
x x
xxxxxxxxxx
TREE
```

My question is: do you think it would be better to run a configuration as
say a Windom from the tree to the points on the roof (the points can be
moved) or just a simple inverted "V" and the angle of the "V" in any case is
going to be very narrow. I would be feeding either one via some Rg8x
approximately 65ft.

I would like to be able to use the ant from 160m - 6m if possible, I will be
feeding it via a tuner, and the wire is going to be #26 enameled as it can't
be seen.

Comments please.

73's Howard W3CQH

4911. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 15:45:02 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <VPmdnRTup8eaCKjVnZ2dnUVZ_gednZ2d@comcast.com>
Source record: 25433

Sorry for the repost - I was trying to get the visual dimensions correct!

The following represents my roof and the tree in my backyard.

The length of the roof is 90ft,
it is 15ft from the center line to
each edge, (roughly 30ft),
height of roof is approx 22ft at the
peak and 10ft at the gutter edge..

The tree is approximately 35ft high.

```
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
x
O x
x
x
x ------------------------------------------------x
x
x
xxxxx x
O x
x O x xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxx
TREE
```

My question is: do you think it would be better to run a configuration as
say a Windom from the tree to the points on the roof (the points can be
moved) or just a simple inverted "V" and the angle of the "V" in any case is
going to be very narrow. I would be feeding either one via some Rg8x
approximately 65ft.

I would like to be able to use the ant from 160m - 6m if possible, I will
be
feeding it via a tuner, and the wire is going to be #26 enameled as it can't
be seen.

Comments please.

73's Howard W3CQH

4912. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 15:47:40 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <4oKdnbLmM6U4CKjVnZ2dnUVZ_tninZ2d@comcast.com>
Source record: 25434

"W3CQH" <hsgorden@comcast.net> wrote in message
news:VPmdnRTup8eaCKjVnZ2dnUVZ_gednZ2d@comcast.com...
>
> Sorry for the repost - I was trying to get the visual dimensions correct!
>
> The following represents my roof and the tree in my backyard.
>
> The length of the roof is 90ft,
> it is 15ft from the center line to
> each edge, (roughly 30ft),
> height of roof is approx 22ft at the
> peak and 10ft at the gutter edge..
>
> The tree is approximately 35ft high.
>
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
x
O x
> x
> x
> x --x
> x
> x
> xxxxx x O x
> x O x xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxx
> TREE
>
> My question is: do you think it would be better to run a configuration as
> say a Windom from the tree to the points on the roof (the points can be
> moved) or just a simple inverted "V" and the angle of the "V" in any case
> is
> going to be very narrow. I would be feeding either one via some Rg8x
> approximately 65ft.
>
> I would like to be able to use the ant from 160m - 6m if possible, I will
> be
> feeding it via a tuner, and the wire is going to be #26 enameled as it
> can't
> be seen.
>
> Comments please.
>
> 73's Howard W3CQH

>
>
>
>

4913. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 17:56:45 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g14c4u$1b08$1@f04n12.cac.psu.edu>
Source record: 25435

W3CQH wrote:
> "W3CQH" <hsgorden@comcast.net> wrote in message
> news:VPmdnRTup8eaCKjVnZ2dnUVZ_gednZ2d@comcast.com...
>> Sorry for the repost - I was trying to get the visual dimensions correct!
>>
>> The following represents my roof and the tree in my backyard.
>>
>> The length of the roof is 90ft,
>> it is 15ft from the center line to
>> each edge, (roughly 30ft),
>> height of roof is approx 22ft at the
>> peak and 10ft at the gutter edge..
>>
>> The tree is approximately 35ft high.
>>
>> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> x
> O x
>> x
>> x
>> x --x
>> x
>> x
>> xxxxx x O x
>> x O x xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
>> xxxxx
>> TREE
>>
>> My question is: do you think it would be better to run a configuration as
>> say a Windom from the tree to the points on the roof (the points can be
>> moved) or just a simple inverted "V" and the angle of the "V" in any case
>> is
>> going to be very narrow. I would be feeding either one via some Rg8x
>> approximately 65ft.
>>
>> I would like to be able to use the ant from 160m - 6m if possible, I will
>> be
>> feeding it via a tuner, and the wire is going to be #26 enameled as it
>> can't
>> be seen.
>>
>> Comments please.

Guess I'll reply to this one! ;^)

How much total length will you have? A Windom for 160 needs > 260 feet. I used a windom for a while because it was convenient, the short leg dropped the coax directly down to my shack window. The antenna performed okay. Depending on your lot size, you might not be able to run a full 160 meter version. would 80 meters be an okay bottom limit? Even if you had to let the ends drop a bit, though tuning (short vs long leg) will be a little different.

Inverted v might also be a little difficult. You might want to go for a plain dipole.

I'm pretty dense today - getting over a nasty head cold, so I'm going to ask a few questions.

You just have the one tree?

If so, where are you planning to hang the other end of the dipole. Certainly an inverted V is going to need something in the middle.

With the tree at 35 feet, what is the maximum height you can hang a wire at?

It doesn't sound like a real optimum site, but don't worry, we can get you something that will work okay.

- 73 de Mike N3LI -

4914. Re: 75m/30m, 40m/17m Dual Banders

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 18:52:45 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <46ednVh2zudlXajVnZ2dnUVZ_rHinZ2d@comcast.com>
Source record: 25436

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:DJHYj.86$ui2.72@nlpi069.nbdc.sbc.com...
> There was a discussion the other day about stub loaded
> dipoles. A 30m dipole loaded at each end with a 30m/4
> shorted stub is resonant on both 30m and 75m. A 17m
> dipole loaded at each end with a 17m/4 shorted stub
> is resonant on both 17m and 40m. The stubs provide
> inductive loading on the lower bands resulting in
> "shorty" dipoles, shrunk by about 20%.
>
> I've summarized two such antennas on my web site at:
>
> http://www.w5dxp.com/dualband.gif
> --
> 73, Cecil http://www.w5dxp.com
It might be easier to do what I did. I have 17 and 40 meter dipoles
connected to a common feedpoint. The 17 m dipole is the supporting element,
hung between two trees at about 50 feet. The 40 m dipole is arranged as an
inverted V. The trees are not far enough apart to have the 40 m dipole on
top. Either way, the 40 m has to be resonated first.

Tam/WB2TT

4915. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 19:25:49 UTC
From: K <K@spam.net>
Message-ID: <4835c8be$0$12883$4c368faf@roadrunner.com>
Source record: 25437

What happened to the link. It no longer works?

K

<box73@gmx.net> wrote in message
news:2958f970-726f-4fda-91d5-0eddd749ddd2@m73g2000hsh.googlegroups.com...
> and what's even more valuable: no registration needed !!
>
> http://wy6k.com/cebik%5Fmirror/
>
>

4916. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-22 22:04:35 UTC
From: Dave <noone@nowhere.com>
Message-ID: <T5mZj.5842$Zy1.5253@trndny05>
Source record: 25438

do they really think someone is going to take the time to un-mung the
addresses below just to get to a site that is probably full of viruses???

"nsk" <nsk.27ade58@radiobanter.com> wrote in message
news:nsk.27ade58@radiobanter.com...
>
> *O-K-.-.-*-*-w---w---w---.---9---n---s---k---.---c---n---.---*-'-n-t-n-'-
> -(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-S-K-F-'-
> -(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-F-A-G-'-
> -(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-N-S-K-'-
> -(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-t-i-m-k-e-n-'-
> -(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)-[-i-m-a-g-e-:-
> -h-t-t-p-:-/-/-w-w-w-.-t-j-n-r-z-c-.-c-n-/-i-m-a-g-e-s-/-h-t-t-p-_-i-m-g-l-o-a-d-.-g-i-f
-]-
>
>
>
>
> --
> nsk

4917. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 02:34:49 UTC
From: no@spam.net
Message-ID: <u8bc345kmpb43da0o0jqse17deul323eg9@4ax.com>
Source record: 25439

Want me to email it (the html's) to you?

On Thu, 22 May 2008 12:25:49 -0700, "K" <K@spam.net> wrote:

>What happened to the link. It no longer works?
>
>K
>
><box73@gmx.net> wrote in message
>news:2958f970-726f-4fda-91d5-0eddd749ddd2@m73g2000hsh.googlegroups.com...
>> and what's even more valuable: no registration needed !!
>>
>> http://wy6k.com/cebik%5Fmirror/
>>
>>
>

4918. Re: 75m/30m, 40m/17m Dual Banders

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 03:03:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3uqZj.189$ZE5.89@nlpi061.nbdc.sbc.com>
Source record: 25440

Tam wrote:
> It might be easier to do what I did. I have 17 and 40 meter dipoles
> connected to a common feedpoint.

Now your challenge is to turn it into a 40m
rotatable beam. Have a look at:

http://www.w5dxp.com/4017beam.EZ
--
73, Cecil http://www.w5dxp.com

4919. Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 06:07:06 UTC
From: Roger <RogertheDodger@RP.gov>
Message-ID: <4dCdnSnMYv6XwqvVnZ2dnUVZ_uSdnZ2d@hawaiiantel.net>
Source record: 25441

Sunspot cycle more dud than radiation flood

By Dan Sorenson
ARIZONA DAILY STAR

Many solar scientists expected the new sunspot cycle to be a whopper, a prolonged solar tantrum that could fry satellites and raise hell with earthly communications, the power grid and modern electronics.
But there's scant proof Sunspot Cycle 24 is even here, let alone the debut of big trouble.
So far there have been just a couple minor zits on the face of the sun to suggest the old cycle is over and the new one is coming.
The roughly 11-year cycle of sunspot activity should have bottomed out last year, the end of Cycle 23 and the beginning of Cycle 24. That would have put the peak in new sunspot activity around 2012.
But a dud sunspot cycle would not necessarily make it a boring period, especially for two solar scientists with the Tucson-based National Solar Observatory.
Two years ago, William Livingston and Matt Penn wrote a paper for the journal Science predicting that this could not only be a dud sunspot cycle, but the start of another extended down period in solar activity. It was based on their analysis of weakening sunspot intensity and said sunspots might vanish by 2015.
And here's the punch line: That last long-term down period, 1645-1715, coincided with the Little Ice Age, a period of bitter cold winters.
That kind of talk could ruffle some feathers in this time of climate change and global warming, starring man-made carbon dioxide as the devil.
The paper, rejected in peer review, was never published by Science.
Livingston said he's OK with the rejection.
"I accept what the reviewers said," Livingston said. "'If you are going to make such statement, you had better have strong evidence.' "
Livingston said their projections were based on observations of a trend in decreasingly powerful sunspots but reviewers felt it was merely a statistical argument.
He is aware that some opponents of the prevailing position that climate change and global warming are the result of manmade activity — greenhouse gas, specifically carbon dioxide, buildup — are very much interested in the idea that changes might be related to solar activity.
"But it has not been proven yet," cautioned Livingston, an astronomer emeritus who still works out of an office at the National Optical Astronomy Observatory headquarters building on the University of Arizona campus.
"We may have to wait. We may be wrong. (But) the sun is going to entertain us one way or another," he said.
It's not just a scientific curiosity. There's a lot at stake in predicting

whether sunspot cycles are going to be tame or wild, said Matt Penn of the National Solar Observatory.
The powerful blasts of radiation that come from solar activity can fry electronic equipment on Earth; particularly vulnerable are satellites.
The high-energy radiation produced by solar flares travels at near the speed of light, getting to Earth in just minutes.
But the magnetic effects of a solar flare can take between two and three days to reach Earth, said Penn, a solar scientist.
In the 1800s, magnetic blasts from intense solar activity induced currents in telegraph lines in the U.S. and Italy, starting fires and damaging equipment. Later, it was learned that solar activity affected radio transmission.
It can also affect the electrical-power grid. A solar tantrum in 1989 blew transformers and caused a blackout in Canada. And a number of satellites are thought to have failed from exposure to high-energy blasts from solar activity.
Satellite operators can turn them away or shut down vulnerable equipment aboard, and astronauts can use shielding to avoid those blasts.
If Cycle 24 is the big cycle predicted, Penn said, "it's likely we'll have geomagnetic storms with a lot of sunspots, a lot of flares on the sun."
Penn said even so-called "quiet sun" periods are far from boring because the sun's "surface consists of Texas-sized hot gas bubbles, which rise upward at a speed of about a mile per second. The gas cools and falls downward in narrower channels at about the same speed. That's what we call the 'quiet sun.'"
"As we get more into the space environment with satellites, GPS and communication satellites, it means money. People who are about to launch new communication satellites really want to know how much shielding to put on their satellites.
"But shielding amounts to weight, which is money. If they want them to last through (an intense cycle), they're going to want to protect them more, and that will cost them more."
Penn is the telescope scientist on the McMath-Pierce solar telescope, the strange angular white thing amid all the white and silver-domed things atop Kitt Peak. Specifically, Penn works with an instrument that "sees" in the infrared range to provide information about magnetic activity.
Sometimes, sunspot activity is more than theory or data to him.
Several years ago, he was making an early-morning run from Tucson up to Kitt Peak to do some solar observing. He noticed his gas gauge was dangerously low and decided to stop for gas at the convenience store in Three Points.
It was about 5 a.m., and no one was there to take cash, so he tried to use his credit card to gas up. But the pay-at-the-pump system was down.
Crossing his fingers and driving up the mountain, Penn said he hoped he'd have enough gas after work to make it back to the station on the way home.
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Though Aimee Norton appreciates the practical benefits of being able to predict the sun's activity, solving some of the star's mysteries that

relate to the big picture are more compelling. Norton is a program scientist on the solar observatory's SOLIS (Synoptic Optical Long-term Investigations of the Sun) facility at Kitt Peak.

"Part of what we're trying to understand is how the magnetic field regulates or moderates the energy that is transported in the atmosphere," Norton said. "Because one of the mysteries of the sun is, it's hotter in the upper atmosphere than (at the surface). So there is energy being transported. Some people think the magnetic field is somehow magically getting that energy out there."

Norton said she's hoping for a powerful cycle, noting, "It would give us more things to do research with — either that or no cycle at all, which would be similar to the Maunder Minimum."

She said she figures there's little chance of a completely dead cycle but added, "Wouldn't that be fascinating if the solar system managed to offset our contribution?"

Because you can't go

• Visit Solar Cycle 24: www.solarcycle24.com/

• Mr. Sunspot's Answer Book: http://eo.nso.edu/MrSunspot/answerbook/polarity.html

• NASA's Solar Physics: http://solarscience.msfc.nasa.gov/whysolar.shtml

• Solar storms: www.solarstorms.org

• National Solar Observatory's Solis solar telescope (Synoptic Optical Long-term Investigations of the Sun): http://solis.nso.edu

• For more information on sunspots: http://spaceweather.com or http://science.nasa.gov

• For a list of sometimes spectacular sunspot-induced problems: http://sw.astron.kharkov.ua/swimpacts.html

• Contact reporter Dan Sorenson at 573-4185 or at dsorenson@azstarnet.com.

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"We are also brainwashing our children on the warming topic. We have no better example than Al Gore's alarmists and inaccurate movie which is being shown in our schools and being hawked by warming activists with little or no meteorological-climate background," Gray wrote.

http://www.theaustralian.news.com.au/story/0,25197,23411799-7583,00.html

http://www.firesociety.com/article/24204/

4920. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 13:02:04 UTC
From: ltdoc@yahoo.com
Message-ID: <b52259f4-d2aa-4275-84ff-5f79dcf2b1a7@a70g2000hsh.googlegroups.com>
Source record: 25442

Just some thoughts...

That #26 wire is going to be a problem no matter what type antenna you end up with. For the longer antennas, HF, etc, it's strength is going to be sort of limiting. It is sort of difficult to see, but it's far from being invisible. So, if you are in one of 'those' neighborhoods that don't like 'visible' antennas there is another choice instead of an invisible antenna. That's using something that is very visible, but not normally associated with antennas. The first thing that comes to mind is a flag pole. Certainly 'do-able', and certainly not going to be 'simple' if it covers more than one 'chunk' of HF. The 'simple' way of 'curing' that sort of thingy is to throw money at it, to some ridiculous point. (Wonder how 'they'ed feel about a 'commemorative' Atlas missile monument in your yard?)

I think you might do some thinking about what's the longest, sort of straight, 'run' you can manage using the roof ridge and tree. A few 'bends' in that 'straight' run are allowable, sort of. And then consider various ways of 'loading' that run. One option might be a 'short' but 'long' inverted 'L', a "lazy-L"? Not exactly the best, has it's own set of 'problems', but if it works, who cares...much. Having 'been there, done that' at at one time or another, I really wish you luck.
- 'Doc

4921. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 13:28:52 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <nEzZj.264$xZ.29@nlpi070.nbdc.sbc.com>
Source record: 25443

ltdoc@yahoo.com wrote:
> The first thing that comes to mind is a flag pole.

A 22' flagpole (with buried radials) can be base-fed
with an SG-230 (for instance) to achieve reasonable
performance on 40m-10m.
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73, Cecil http://www.w5dxp.com

4922. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 14:57:58 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <_WAZj.69254$3v1.34294@bignews3.bellsouth.net>
Source record: 25444

Good grief, the new sunspot cycle has barely begun. Give it a little time.
It is way too soon to expect any fireworks, even in an exceptional solar
cycle.

Ed, NM2K

"Roger" <RogertheDodger@RP.gov> wrote in message
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> . Solar storms: www.solarstorms.org
> . National Solar Observatory's Solis solar telescope (Synoptic Optical
> Long-term Investigations of the Sun): http://solis.nso.edu
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> http://www.firesociety.com/article/24204/
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>

4923. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 15:02:28 UTC
From: Wayne <mygarbagecan@verizon.net>
Message-ID: <80BZj.3307$ED6.3240@trnddc02>
Source record: 25445

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:nEzZj.264$xZ.29@nlpi070.nbdc.sbc.com...
> ltdoc@yahoo.com wrote:
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> with an SG-230 (for instance) to achieve reasonable
> performance on 40m-10m.
> --
> 73, Cecil http://www.w5dxp.com

I used one of those for several years in a "restricted" neighborhood.
Performance was not bad. I used a manually switched coil/capacitor
combination mounted at the base in a wooden box obtained from the local
beekeeper supply house. While the box was a little large, it was
inexpensive, and held up well in weather with a new paint job every 2-3
years.

4924. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:34:26 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <POWdnQz_6cSEb6vVnZ2dnUVZ_oninZ2d@comcast.com>
Source record: 25446

<ltdoc@yahoo.com> wrote in message
news:b52259f4-d2aa-4275-84ff-5f79dcf2b1a7@a70g2000hsh.googlegroups.com...
> Just some thoughts...
>
> That #26 wire is going to be a problem no matter what type antenna you
> end up with. For the longer antennas, HF, etc, it's strength is going
> to be sort of limiting. It is sort of difficult to see, but it's far
> from being invisible. So, if you are in one of 'those' neighborhoods
> that don't like 'visible' antennas there is another choice instead of
> an invisible antenna. That's using something that is very visible,
> but not normally associated with antennas. The first thing that comes
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> way of 'curing' that sort of thingy is to throw money at it, to some
> ridiculous point. (Wonder how 'they'd feel about a 'commemorative'
> Atlas missile monument in your yard?)
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> I think you might do some thinking about what's the longest, sort of
> straight, 'run' you can manage using the roof ridge and tree. A few
> 'bends' in that 'straight' run are allowable, sort of. And then
> consider various ways of 'loading' that run. One option might be a
> 'short' but 'long' inverted 'L', a "lazy-L"? Not exactly the best,
> has it's own set of 'problems', but if it works, who cares...much.
> Having 'been there, done that' at one time or another, I really
> wish you luck.
> - 'Doc

Thanks for your thoughts - I am NOT allowed either of the 2 items that you suggested (flag pole or missile - although I would like to have a Gatling Gun mounted and take pot shots at the senior citizens that use my street as a tune up for drag racing).

1] In my current configuration I have a #13ga jacketed wire coming out of a Icom A4 auto- tuner (which is in the attic next to the vent window). From the tuner, it goes up about 3 feet to the roof peak, makes a 90 degree turn and then traverses down the edge (15ft) to make a 90 degree turn down to the end of the roof (90ft) running along each of the gutters sides (but actual on the roof). Then it makes another 90 degree turn and goes up and over the peak to the other side of the roof, about (30ft) and makes another 90 degree turn and comes back (90ft) turns back up to the peak (15ft) and back down to the ground side of the tuner.

I am hearing a lot of sigs, but I am having probs being heard! 100w!

2] Before I had this configuration, it was basically the same, except the auto-tuner wasn't in line, instead I was using a manual tuner. I had the same configuration on the roof, and an additional 2 runs (LOOPS) of the same size wire inside of the attic, total length of approximately 540ft. It was working (80-10), but I couldn't get it to tune to 160m. On the VHF/UHF frequencies, 6m thru 70cm it was working as a multi-wavelength RHOMBIC. I was able to work a bunch more stations, but still I thought I wanted more.

But the problem is that the outside portion - the signals being transmitted - that the roof was probably absorbing most of them.

3] Whether I use a manual or auto tuner, I am trying to get the best configuration other laying the wire on the roof or stringing it along the rafters in the attic.

The distance is approximately 20 feet from the tree to the house. I can bury a piece of coax from the house to the tree, and then run it up the tree to a center connection for a dipole, but the arms of the dipole are going to have to be bent into a "V" and terminate at some point along the longest sides of the roof just above the gutters.

4] As you suggested, I could run a dipole (using more of the #13ga wire, the ends facing N/S) along the ridge line and center or off-center feed it with coax, but then again, it will be laying on the roof. (90ft straight ridge line).

73's

4925. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:35:53 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <7MGdnYDoCvPtb6vVnZ2dnUVZ_v7inZ2d@comcast.com>
Source record: 25447

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:nEzZj.264$xZ.29@nlpi070.nbdc.sbc.com...
> ltdoc@yahoo.com wrote:
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> with an SG-230 (for instance) to achieve reasonable
> performance on 40m-10m.
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> 73, Cecil http://www.w5dxp.com

Thanks Cecil, but I can't have any flag poles. 73's

4926. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:38:41 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <c_-dnVfLTfRNb6vVnZ2dnUVZ8qydnZ2d@pipex.net>
Source record: 25448

ltdoc@yahoo.com wrote:
> Just some thoughts...
>
> That #26 wire is going to be a problem no matter what type antenna you
> end up with. For the longer antennas, HF, etc, it's strength is going
> to be sort of limiting. It is sort of difficult to see, but it's far
> from being invisible. So, if you are in one of 'those' neighborhoods
> that don't like 'visible' antennas there is another choice instead of
> an invisible antenna. That's using something that is very visible,
> but not normally associated with antennas. The first thing that comes
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> ridiculous point. (Wonder how 'they'ed feel about a 'commemorative'
> Atlas missile monument in your yard?)
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> I think you might do some thinking about what's the longest, sort of
> straight, 'run' you can manage using the roof ridge and tree. A few
> 'bends' in that 'straight' run are allowable, sort of. And then
> consider various ways of 'loading' that run. One option might be a
> 'short' but 'long' inverted 'L', a "lazy-L"? Not exactly the best,
> has it's own set of 'problems', but if it works, who cares...much.
> Having 'been there, done that' at at one time or another, I really
> wish you luck.
> - 'Doc
==========
A not 'too' visible antenna ,which might not be recognised as an antenna
is a loop around the house (provided you live in a detached house).
At gutter level at the corners you could fit say 1 foot long 1 inch
plastic pipe pointing sidewards or under a suitable angle.
Each pipe end has a saw cut to accept the antenna wire which can be
sealed with epoxy glue or a piece of tape.
Use a twin wire feeder and a suitable matching unit (tuner ,if you
prefer that word). The loop should work well for all wave lengths
equal or smaller the the loop circumference .

While on a 2 months' visit to the LA area (Torrance) I managed to put
up such a loop ,extended to the end of the garden making it a full wave
length for 75 metres. In spite of being only 10 ft off the ground
(probably making it a NVIS antenna) I comfortably worked the Sacramento
area.
Such a loop is definetely worth a try.

Frank GM0CSZ / KN6WH

4927. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:42:16 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <aKydnUW_XrNybqvVnZ2dnUVZ_uqdnZ2d@comcast.com>
Source record: 25449

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:c_-dnVfLTfRNb6vVnZ2dnUVZ8qydnZ2d@pipex.net...
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> Use a twin wire feeder and a suitable matching unit (tuner ,if you prefer
> that word). The loop should work well for all wave lengths equal or
> smaller the the loop circumference .
>
> While on a 2 months' visit to the LA area (Torrance) I managed to put up
> such a loop ,extended to the end of the garden making it a full wave
> length for 75 metres. In spite of being only 10 ft off the ground
> (probably making it a NVIS antenna) I comfortably worked the Sacramento
> area.
> Such a loop is definetely worth a try.

>
> Frank GM0CSZ / KN6WH
>
>
Hi Frank,

No - I have metal siding on the sides of the house and I tried to load up
the siding and the rain gutters, but alas - they are grounded!

I am stuck with something in the air.

73's

4928. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:45:55 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g16sc4$186a$1@f04n12.cac.psu.edu>
Source record: 25450

W3CQH wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:nEzZj.264$xZ.29@nlpi070.nbdc.sbc.com...
>> ltdoc@yahoo.com wrote:
>>> The first thing that comes to mind is a flag pole.
>> A 22' flagpole (with buried radials) can be base-fed
>> with an SG-230 (for instance) to achieve reasonable
>> performance on 40m-10m.
>> --
>> 73, Cecil http://www.w5dxp.com
>
> Thanks Cecil, but I can't have any flag poles. 73's

Good lord, what kind of neighborhood won't allow a flagpole?
Unpatriotic creeps? Sounds like you need to get PRB-1 in your corner.
Essentially, they cannot stop you from erecting *something*, you have
the right to an antenna. You might not get something really great, but
they will need to accomodate to some extent. A flagpole antenna is one
of those compromises.

- 73 de Mike N3LI -

4929. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:53:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <aDCZj.192$iM3.7@flpi150.ffdc.sbc.com>
Source record: 25352

W3CQH wrote:
> Thanks Cecil, but I can't have any flag poles. 73's

Put your satellite TV antenna on a 22 foot pole? :-)
--
73, Cecil http://www.w5dxp.com

4930. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:53:36 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g16sqg$186c$1@f04n12.cac.psu.edu>
Source record: 25351

Ed Cregger wrote:
> Good grief, the new sunspot cycle has barely begun. Give it a little time.
> It is way too soon to expect any fireworks, even in an exceptional solar
> cycle.

Hi Ed,

That whole "report" is more of an attempt to discredit global warming
than it is anything else.

- 73 de Mike N3LI -

...still waiting for a scientific refutation of the heat retaining
effect of increasing percentages of CO2 in gaseous media......

4931. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:54:14 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <eECZj.188758$Er2.66211@bignews6.bellsouth.net>
Source record: 25353

"W3CQH" <hsgorden@comcast.net> wrote
>
>
> Thanks for your thoughts - I am NOT allowed either of the 2 items that you
> suggested (flag pole or missile - although I would like to have a Gatling
> Gun mounted and take pot shots at the senior citizens that use my street
> as a tune up for drag racing).

Record their license plate numbers and file an official complaint with the police. There is no excuse for behavior like that, and I'm a senior citizen.

Ed, NM2K

4932. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:56:10 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69obbjF333bmvU1@mid.individual.net>
Source record: 25354

W3CQH wrote:
> I am hearing a lot of sigs, but I
> am having probs being heard! 100w!

I routinely work anywhere CONUS from Phoenix
on 5w into either a screwdriver vertical,
a hamstick vertical or a pair of hamsticks
horizontal dipole. With those same antennas
and 100w I can work Australia and Latin America.

Mount a hamstick or screwdriver on your car
and run a length of RG58 inside to your transciever.

I think you describe having 90' of roofline.
That's enough for a good sized wire dipole.

Bird feeders, security cameras and windsocks
for some reason seem to work best at 16.6' off the ground.

Craig 'Lumpy' Lemke
--
Camouflage Operations
www.n0eq.com

4933. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:59:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AJCZj.1630$co7.1136@nlpi066.nbdc.sbc.com>
Source record: 25356

Michael Coslo wrote:
> Good lord, what kind of neighborhood won't allow a flagpole?
> Unpatriotic creeps? Sounds like you need to get PRB-1 in your corner.

Here's what one ham did about his neighborhood
antenna restrictions. :-)

http://www.youtube.com/watch?v=aC_EeWSKJII
--
73, Cecil http://www.w5dxp.com

4934. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 16:59:23 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <3JCZj.188762$Er2.49205@bignews6.bellsouth.net>
Source record: 25355

"Michael Coslo" <mjc5@psu.edu> wrote in message
news:g16sqg$186c$1@f04n12.cac.psu.edu...
> Ed Cregger wrote:
>> Good grief, the new sunspot cycle has barely begun. Give it a little
>> time. It is way too soon to expect any fireworks, even in an exceptional
>> solar cycle.
>
>
> Hi Ed,
>
> That whole "report" is more of an attempt to discredit global warming than
> it is anything else.
>
>
>
> - 73 de Mike N3LI -

Well, I'm not ready to give up my internal combustion engines just yet.
Neither side has convincing arguments as far as I'm concerned. And I do not
trust the global warming folks at all, since most of their claims are
unprovable and I suspect their leaders' political motives.

The real answer to global warming, assuming it exists and assuming that we
are causing it, is a severe population reduction. Any volunteers?

I didn't think so...<G>

Ed, NM2K

4935. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 17:05:17 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <Vt2dnfYMu9vJZKvVnZ2dnUVZ_uCdnZ2d@comcast.com>
Source record: 25357

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:aDCZj.192$iM3.7@flpi150.ffdc.sbc.com...
> W3CQH wrote:
>> Thanks Cecil, but I can't have any flag poles. 73's
>
> Put your satellite TV antenna on a 22 foot pole? :-)
> --
> 73, Cecil http://www.w5dxp.com

Thanks again, but satellite TV antenna must be mounted to the roof, and if I
did want to install a TV antenna, the highest point is only 12 feet above
the roof line. - 73

4936. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 17:08:19 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <LpudncAZNbeXZ6vVnZ2dnUVZ_o_inZ2d@comcast.com>
Source record: 25358

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:69obbjF333bmvU1@mid.individual.net...
> W3CQH wrote:
>> I am hearing a lot of sigs, but I
>> am having probs being heard! 100w!
>
> I routinely work anywhere CONUS from Phoenix
> on 5w into either a screwdriver vertical,
> a hamstick vertical or a pair of hamsticks
> horizontal dipole. With those same antennas
> and 100w I can work Australia and Latin America.
>
> Mount a hamstick or screwdriver on your car
> and run a length of RG58 inside to your transciever.
>
> I think you describe having 90' of roofline.
> That's enough for a good sized wire dipole.
>
> Bird feeders, security cameras and windsocks
> for some reason seem to work best at 16.6' off the ground.
>
>
> Craig 'Lumpy' Lemke
> --
> Camouflage Operations
> www.n0eq.com
>
>
Thanks Lumpy - I have a screwdriver mounted on my truck, but the HOA says
that I can't run a cable to it.. In the cover of darkness I did run a
cable - and someone complained!

4937. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 17:17:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <g_CZj.200$iM3.49@flpi150.ffdc.sbc.com>
Source record: 25359

Michael Coslo wrote:
> ...still waiting for a scientific refutation of the heat retaining
> effect of increasing percentages of CO2 in gaseous media......

Every time it has happened in the past, an ice age
followed. One might argue that a certain level of CO2
actually triggers an ice age.

http://en.wikipedia.org/wiki/Image:Vostok-ice-core-petit.png

http://en.wikipedia.org/wiki/Image:Ice_Age_Temperature.png
--
73, Cecil http://www.w5dxp.com

4938. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 17:34:29 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69odjeF31lh8oU1@mid.individual.net>
Source record: 25360

W3CQH wrote:
> ...I have a screwdriver mounted on my truck, but the HOA
> says that I can't run a cable to it...

Man, you must live in a tiny place if people
can spot a piece of RG58 lying on the ground
at night.

Craig 'Lumpy' Lemke

www.n0eq.com

4939. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 18:02:19 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <hDDZj.47426$7a.655@bignews1.bellsouth.net>
Source record: 25361

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:g_CZj.200$iM3.49@flpi150.ffdc.sbc.com...
> Michael Coslo wrote:
>> ...still waiting for a scientific refutation of the heat retaining effect
>> of increasing percentages of CO2 in gaseous media......
>
> Every time it has happened in the past, an ice age
> followed. One might argue that a certain level of CO2
> actually triggers an ice age.
>
> http://en.wikipedia.org/wiki/Image:Vostok-ice-core-petit.png
>
> http://en.wikipedia.org/wiki/Image:Ice_Age_Temperature.png
> --
> 73, Cecil http://www.w5dxp.com

Yup. Kind of hard to refute the geological data on that one.

Ed, NM2K

4940. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 18:34:15 UTC
From: dplatt@radagast.org
Message-ID: <7afjg5-kgf.ln1@radagast.org>
Source record: 25363

In article <g16sc4$186a$1@f04n12.cac.psu.edu>,
Michael Coslo <mjc5@psu.edu> wrote:

>> Thanks Cecil, but I can't have any flag poles. 73's

> Good lord, what kind of neighborhood won't allow a flagpole?
>Unpatriotic creeps?

A "planned" community, with a strict set of CC&Rs, enforced by a homeowner's association whose board has an extremely anal attitude towards any variation at all in the community's planned appearance scheme?

> Sounds like you need to get PRB-1 in your corner.
>Essentially, they cannot stop you from erecting *something*, you have
>the right to an antenna.

PRB-1 applies only to governmental restrictions (e.g. city and county zoning rules).

Unfortunately, it does not apply to CC&Rs (codes, covenants, and restrictions) which are written into the title of a home or other piece of property. Legally, these are part of the contract of sale of the property - they're a private agreement between seller and buyer, and are not implemented or enforced by the local government.

Hams have asked the FCC to rule that PRB-1 overrides such CC&Rs. The FCC has declined to do so, on the grounds that it doesn't have the legal authority - Congress *could* have written/extended PRB-1 to override such CC&Rs, but chose not to do so.

See http://www.eham.net/articles/16368 for one story on this aspect of the problem.

Unfortunately for hams, antenna-restrictive CC&Rs are quite common in newer communities and are becoming even more so. I've heard that in some areas, they're almost (but not quite) a legal fact-of-life, in that lenders won't provide financing for the construction of the community in the first place unless the builder includes a fairly stiff set of CC&Rs in the plans (to "preserve the aesthetics and value of the community" I suppose).

I believe I read an article a few months ago about legislation which specifically overrides CC&Rs to the extent of allowing the flying of a United States flag, but I can't recall the details... and I don't think it would necessarily have allowed a long vertical flagpole.

There *is* one possible "out" with regard to antennas and CC&Rs, although it does not involve PRB-1. Instead, it uses the OTARD (Over-The-Air Reception Devices) rule (47 C.F.R. Section 1.4000), which specifically allows the installation of television, direct-broadcast-satellite, and "fixed wireless" antennas. This rule *does* override CC&R restrictions, as well as local zoning restrictions.

It's not unlimited - mast height is limited to 12 feet, dish size is limited to 1 metre, the override applies only to antennas installed in an "exclusive use" part of the property (i.e. not in shared areas), and there can be *some* restrictions on placement in limited cases. In general, though, you're allowed to put up a TV antenna, and cannot be hit with restrictions which materially increase your costs in doing so or make the job significantly more difficult.

The rule doesn't apply to ham antennas. However, there's at least one company (Force 12, I believe), which makes an antenna that can serve a dual purpose - it's a shortened, center-fed-and-loaded (I think) HF vertical, and also can serve as a TV reception antenna.

Another possible option would be to put up an *insulated* 12-foot mast pipe with a standard TV log-periodic antenna at the top, run a set of radials along the roof, and feed it at the base with an antenna tuner. You might add some switchable base-loading coils, or even figure out some way to relay-jumper the log-periodic at the top to the mast so that it acts as a capacity hat.

As long as you *do* use the antenna for TV reception, I believe it'd be covered by the OTARD preemption, even if you also use it occasionally for ham-band use. [Just remember to disconnect the TV feed system before keying up!!!]

See http://www.fcc.gov/mb/facts/otard.html for details.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

4941. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 18:38:11 UTC
From: K <K@spam.net>
Message-ID: <48370f11$0$5732$4c368faf@roadrunner.com>
Source record: 25362

Yes, ttyman at gmail dot com

K

<no@spam.net> wrote in message
news:u8bc345kmpb43da0o0jqse17deul323eg9@4ax.com...
> Want me to email it (the html's) to you?
>
>
>
> On Thu, 22 May 2008 12:25:49 -0700, "K" <K@spam.net> wrote:
>
>>What happened to the link. It no longer works?
>>
>>K
>>
>><box73@gmx.net> wrote in message
>>news:2958f970-726f-4fda-91d5-0eddd749ddd2@m73g2000hsh.googlegroups.com...
>>> and what's even more valuable: no registration needed !!
>>>
>>> http://wy6k.com/cebik%5Fmirror/
>>>
>>>
>>

4942. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 19:49:03 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g1773fopa1@f04n12.cac.psu.edu>
Source record: 25364

Dave Platt wrote:
> In article <g16sc4$186a$1@f04n12.cac.psu.edu>,
> Michael Coslo <mjc5@psu.edu> wrote:
>
>>> Thanks Cecil, but I can't have any flag poles. 73's
>
>> Good lord, what kind of neighborhood won't allow a flagpole?
>> Unpatriotic creeps?
>
> A "planned" community, with a strict set of CC&Rs, enforced by a
> homeowner's association whose board has an extremely anal attitude
> towards any variation at all in the community's planned appearance
> scheme?

Time to find a different place to live in. I live in a modern
development in which the only restrictions are that you keep the house
presentable, and the lawn mowed. There are some restrictions on tower
height and fall radius, but I could put one up.

Homeowners association = evil, bad, ptui!

Right there is the first clue that people shouldn't even consider living
in a neighborhood.

Really, there are other options.

- 73 de Mike N3LI -

4943. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 19:53:32 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g177bs$13b4$1@f04n12.cac.psu.edu>
Source record: 25365

Cecil Moore wrote:
> Michael Coslo wrote:
>> ...still waiting for a scientific refutation of the heat retaining
>> effect of increasing percentages of CO2 in gaseous media......
>
> Every time it has happened in the past, an ice age
> followed. One might argue that a certain level of CO2
> actually triggers an ice age.
>
> http://en.wikipedia.org/wiki/Image:Vostok-ice-core-petit.png
>
> http://en.wikipedia.org/wiki/Image:Ice_Age_Temperature.png

You are quite possibly correct, Cecil, Interrupting/changing the flow of ocean currents could indeed have an effect on certain things such as the Gulf stream. There are plausable scenarios that even in a warming environment, interruption of the gulf stream could cause the British Isles to become a lot colder, as much of their temperate climate depends on that Gulf stream moderating their high latitude temps.

So in any event, hot or cold, we could ber causing the problem! ;^)

- 73 de Mike N3LI -

4944. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 20:03:35 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g177un$13b6$1@f04n12.cac.psu.edu>
Source record: 25366

Ed Cregger wrote:
> "Michael Coslo" <mjc5@psu.edu> wrote in message
> news:g16sqg$186c$1@f04n12.cac.psu.edu...
>> Ed Cregger wrote:
>>> Good grief, the new sunspot cycle has barely begun. Give it a little
>>> time. It is way too soon to expect any fireworks, even in an exceptional
>>> solar cycle.
>>
>> Hi Ed,
>>
>> That whole "report" is more of an attempt to discredit global warming than
>> it is anything else.
>>
>>
>>
>> - 73 de Mike N3LI -
>
>
> -------------
>
> Well, I'm not ready to give up my internal combustion engines just yet.
> Neither side has convincing arguments as far as I'm concerned. And I do not
> trust the global warming folks at all, since most of their claims are
> unprovable and I suspect their leaders' political motives.

Smart man, Ed. Listen to the science, not the politicians. When I see
people lining up by party, I tend to discount the politics.

But there is some science here that is fact. The rest is pretty
compelling. What is needed is the disbelievers to come up with equally
valid science to show why the fist fact is being negated.

That is all I ask - No Algore insults or whatever the leeburuls do to
make fun of the other side. Kind of like Moore's law, first person that
brings politics into it loses.

hmmm Coslo's law?? My chance at netnews immortality.... 8^)

> The real answer to global warming, assuming it exists and assuming that we
> are causing it, is a severe population reduction. Any volunteers?

If I may be so gloomy, Ed, I think Mother Nature is very close to a
self correcting move in that direction. I suspect a global famine in the
not too distant future. In some parts of the world, rice is now costing
more that we pay for beef.

Buy Febreeze stock........

- 73 d eMike N3LI -

4945. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 20:22:29 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vIFZj.5255$nW2.3466@nlpi064.nbdc.sbc.com>
Source record: 25367

Michael Coslo wrote:
> So in any event, hot or cold, we could be causing the problem! ;^)

Whatever it is that we are doing, the Martians are
doing the same thing. The melting of the polar
ice cap on Mars is very closely correlated to
the melting of the polar ice cap on Earth.

Seriously, one can see from the temperature graph
history that the temperature was almost 5 degrees F
hotter 130,000 and 325,000 years ago than it is today.
In fact, close examination of the temperature graph
shows that the *average* temperature peaked 8000
years ago and has been falling ever since.

Did you know that Al Gore used computer generated
graphics from "The Day After Tomorrow" for his movie?
Did he think no one would notice? Do you reckon that
is indeed an inconvenient truth?
--
73, Cecil http://www.w5dxp.com

4946. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 20:34:16 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g179o8vqc1@f04n12.cac.psu.edu>
Source record: 25368

Ed Cregger wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:g_CZj.200$iM3.49@flpi150.ffdc.sbc.com...
>> Michael Coslo wrote:
>>> ...still waiting for a scientific refutation of the heat retaining effect
>>> of increasing percentages of CO2 in gaseous media......
>> Every time it has happened in the past, an ice age
>> followed. One might argue that a certain level of CO2
>> actually triggers an ice age.
>>
>> http://en.wikipedia.org/wiki/Image:Vostok-ice-core-petit.png
>>
>> http://en.wikipedia.org/wiki/Image:Ice_Age_Temperature.png
>> --
>> 73, Cecil http://www.w5dxp.com
>
> ----------
>
> Yup. Kind of hard to refute the geological data on that one.

Only it isn't the CO2 level triggering the ice age, it is one of the
effects of that warming brought about by the increased CO2.

We have to be careful of going into a pick and choose mode. It is
disingenuous at best to say that CO2 warming doesn't exist. But it
causes global cooling.

Heck if it does, that will be one whole awful lot worse than global
warming. Glaciers don't support a whole lot of life..

Now onto that data.

The present interglacial is a tad cooler than some of the others (note
they say "at this site". That is important because it's a big world.
It's been a miserable cold spring here in Pennsylvania. That doesn't
mean it's been miserable and cold everywhere else.

So here we have an apparent cycle.

Is there a reason to attach more credence to benthic foraminfera than to
CO@ heat retention? (I believe it is fairly compelling, but I'm not
arguing against the point.

Isn't that 5 Million year plot interesting?

Which all brings up one of the most frustrating parts of the GW debate.
The uncertainty. There is so much data coming in. We humans love to look

for patterns, so we tend to find them. Some of the things in those patterns may be involved, some may not. Certainly in that one plot, the temperatures have had an upward trend. Coupled with all that is the random factor. Suppose that a modern day version of the Deccan traps occurs. At that time, our contribution to atmospheric CO2 and other greenhouse gases will be moot.

http://en.wikipedia.org/wiki/Deccan_Traps

then we are really boinked.

- 73 de Mike N3LI -

4947. Motorola antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 21:06:19 UTC
From: hampy <hampy@nospam.be>
Message-ID: <7mGZj.9342$AN7.4494@newsfe23.ams2>
Source record: 25369

I have here a second hand Motorola PD 1150 UHF antenna.
It is dump from the industry or goverment(450-460MHz) but the swr is also
very well in some parts of the70cm ham band?
This antenna is like new because it never used outsite.
It is a big white stick with 3 litle radials and on top a lighting security.
Have anyone the manual,specs or a link for this antenna?

Thanks SD.

4948. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 21:10:36 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <g17c9i$5hr$1@news.service.uci.edu>
Source record: 25370

Michael Coslo wrote:
>
> Buy Febreeze stock........

Proctor and Gamble closed at $65.27 today. It paid $0.40 a share last quarter.

Hi Mike, speaking of things that are possible, it's possible that the hot air Al Gore produces has contributed more to global warming than anything else. Personally, I don't believe that. I think it's caused by the Sun.

ac6xg

4949. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 23:21:34 UTC
From: SWLer <DoNotSendTo@comcast.net>
Message-ID: <2kIZj.130$3j.104@trnddc05>
Source record: 25371

Jim Lux wrote:
> SWLer wrote:
>> Hi Al W6LX, et. al. --
>>
>> I bought a 'real' EZ HANG from Dennis (KG4ETM) at Dayton,
>> (<http://ezhang.com>) and after taking a few trial shots
>> I had *no* problem shooting the one ounce weight over a
>> 135+ foot Tulip Poplar tree in my back yard in northern
>> Virginia.
>>
>> The tree was so tall that I used -all- 300 feet of the
>> monofilament line and the weight ended up about three feet
>> off the ground.
>
> How far back do you pull, and how hard?

With elbow locked and arm fully extended, I pulled the
rubbers back to my ear. *!Remember to always wear eye
protection!*

4950. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-23 23:37:33 UTC
From: Alan WA4SCA <ALANBIDDLE70@YAHOO.COM>
Message-ID: <trke34tcr2rhssgfq5pjpdds2jtsmdd34v@4ax.com>
Source record: 25372

Indeed! And the "Hockey Stick" has been shown to be bad data, and worse statistics. The "increasing frequency and intensity of hurricanes" has now been disproved by none other that the sources he quotes, as has his the claim concerning changes to the Mt. Kilimanjaro snow pack. All in nicely refereed papers in reputable journals.

I await the release of "An Inconvenient Truth II: Oops!" Not holding my breath, though.

--
Alan
WA4SCA

4951. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 00:04:58 UTC
From: jimlux@earthlink.net
Message-ID: <19b3aefc-642b-40e7-bc98-4d7043bfb12b@s33g2000pri.googlegroups.com>
Source record: 25373

On May 23, 4:21 pm, SWLer <DoNotSen...@comcast.net> wrote:
> Jim Lux wrote:
> > SWLer wrote:
> >> Hi Al W6LX, et. al. --
>
> >> I bought a 'real' EZ HANG from Dennis (KG4ETM) at Dayton,
> >> (<http://ezhang.com>) and after taking a few trial shots
> >> I had *no* problem shooting the one ounce weight over a
> >> 135+ foot Tulip Poplar tree in my back yard in northern
> >> Virginia.
>
> >> The tree was so tall that I used -all- 300 feet of the
> >> monofilament line and the weight ended up about three feet
> >> off the ground.
>
> > How far back do you pull, and how hard?
>
> With elbow locked and arm fully extended, I pulled the
> rubbers back to my ear. *!Remember to always wear eye
> protection!*

So.. about 30 inches (based on the wrist rocket I have).. care to
guestimate how hard you're pulling? (maybe I can make some
measurements on my old wrist rocket..)

4952. Re: Motorola antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 00:17:59 UTC
From: Bruce <xxx@yyy.zzz>
Message-ID: <Xns9AA7CEA3350Fxxxyyyzzz@216.77.188.18>
Source record: 25374

"hampy" <hampy@nospam.be> wrote in
news:7mGZj.9342$AN7.4494@newsfe23.ams2:

> I have here a second hand Motorola PD 1150 UHF antenna.
> It is dump from the industry or goverment(450-460MHz) but the swr is
> also very well in some parts of the70cm ham band?
> This antenna is like new because it never used outsite.
> It is a big white stick with 3 litle radials and on top a lighting
> security. Have anyone the manual,specs or a link for this antenna?
>
> Thanks SD.
>
>
>

First off, it is an old Phelps Dodge Antenna (Then Celwave, now Andrew).
"PD"

Look here:

http://www.wiscointl.com/celwave/antennas/uhf/pd1150/pd1150spec.htm

4953. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 02:31:39 UTC
From: SWLer <DoNotSendTo@comcast.net>
Message-ID: <f6LZj.3444$ED6.2614@trnddc02>
Source record: 25375

jimlux@earthlink.net wrote:
> On May 23, 4:21 pm, SWLer <DoNotSen...@comcast.net> wrote:
>> Jim Lux wrote:
>>> SWLer wrote:
>>>> Hi Al W6LX, et. al. --
>>>> I bought a 'real' EZ HANG from Dennis (KG4ETM) at Dayton,
>>>> (<http://ezhang.com>) and after taking a few trial shots
>>>> I had *no* problem shooting the one ounce weight over a
>>>> 135+ foot Tulip Poplar tree in my back yard in northern
>>>> Virginia.
>>>> The tree was so tall that I used -all- 300 feet of the
>>>> monofilament line and the weight ended up about three feet
>>>> off the ground.
>>> How far back do you pull, and how hard?
>> With elbow locked and arm fully extended, I pulled the
>> rubbers back to my ear. *!Remember to always wear eye
>> protection!*
>
> So.. about 30 inches (based on the wrist rocket I have).. care to
> guestimate how hard you're pulling? (maybe I can make some
> measurements on my old wrist rocket..)
>

Again, *Remember I used safety glasses* in case a rubber
snapped. You need to do that.

I didn't measure anything. But, 30 inches sounds about right.
All I did was pull *really* hard on the rubbers and (using a
one-ounce weight as I described) the darned thing went up
like a rocket, up and over the tree.

It amazed me.

So, don't be afraid to pull the rubber bands 30+ inches.
Unless they're old, they won't snap.

73, Fred

4954. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 03:25:54 UTC
From: jawod <jawod@fuse.net>
Message-ID: <48378AC2.5020303@fuse.net>
Source record: 25376

Good article, in general

Your signature lines are political and inaccurate. Why confuse the
solar cycle with global warming?

4955. Re: Motorola antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 06:53:48 UTC
From: hampy <hampy@nospam.be>
Message-ID: <TYOZj.4289$Ht.3910@newsfe05.ams2>
Source record: 25377

Thanks Bruce for this usefull information and link.
My Google resuls were negative because I used the name Motorola.
73' SD
"Bruce" <xxx@yyy.zzz> schreef in bericht
news:Xns9AA7CEA3350Fxxxyyyzzz@216.77.188.18...
> "hampy" <hampy@nospam.be> wrote in
> news:7mGZj.9342$AN7.4494@newsfe23.ams2:
>
>> I have here a second hand Motorola PD 1150 UHF antenna.
>> It is dump from the industry or goverment(450-460MHz) but the swr is
>> also very well in some parts of the70cm ham band?
>> This antenna is like new because it never used outsite.
>> It is a big white stick with 3 litle radials and on top a lighting
>> security. Have anyone the manual,specs or a link for this antenna?
>>
>> Thanks SD.
>>
>>
>>
>
> First off, it is an old Phelps Dodge Antenna (Then Celwave, now Andrew).
> "PD"
>
> Look here:
>
> http://www.wiscointl.com/celwave/antennas/uhf/pd1150/pd1150spec.htm

4956. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 08:53:07 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <OHQZj.4977$Ht.1447@newsfe05.ams2>
Source record: 25378

Hi Dale,

I found a review from Radcom on the net and it sounds good.
http://www.mixw.co.uk/product/reviewAA200.htm
I sent an e-mail to the designer of the Analyser and he says it does not require re-calibration. After hearing that I was sold. I ordered mine last night.
He also sent me this link http://www.rigexpert.com/index?s=aa200&f=inside if you haven't seen it.

73 Andy

"Dale Parfitt" <parinc1@verizon.net> wrote in message
news:Hd7Zj.7680$HJ5.4705@trnddc01...
>
> "Andy" <dx90@blueyounder.co.uk> wrote in message
> news:hZVYj.65161$4B6.20245@newsfe14.ams2...
>> Anyone using or have used a Rigexpert AA-200 Antenna Analyser?
>> I am interested to know good they are.
>>
>> 73 Andy
> Hi Andy,
> I just ordered one- should be here early next week.
>
> Dale W4OP
>
>

4957. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 10:13:17 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <JeUs3jO9o+NIFAiP@ifwtech.co.uk>
Source record: 25379

Andy wrote:
>
>I found a review from Radcom on the net and it sounds good.
>http://www.mixw.co.uk/product/reviewAA200.htm I sent an e-mail to the
>designer of the Analyser and he says it does not require re-calibration.

That feature is a two-edged sword. On the one hand, it means the analyser is immediately ready for routine measurements. That of course is a good feature for most of the users, most of the time.

On the other hand, if it doesn't have the *capability* to be recalibrated when different kinds of test fixtures are attached, it means that some useful kinds of measurements will not be possible... or worse, will appear to be possible but may give wrong answers. Measurements of the resonant frequencies of coaxial chokes are an example where analysers that cannot be recalibrated will give large errors - see the last few paragraphs of:
http://audiosystemsgroup.com/RFI-Ham.pdf

There's a place for both the simple handheld analysers and the ones that have more features but live on a bench. It's the buyer's choice... but whichever one you buy (or build) first, you may eventually find uses for both.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

4958. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 11:09:52 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <AYqdnV4UTrKhaqrVnZ2dnUVZ8v3inZ2d@pipex.net>
Source record: 25380

>> ==========
>> A not 'too' visible antenna ,which might not be recognised as an antenna
>> is a loop around the house (provided you live in a detached house).
>> At gutter level at the corners you could fit say 1 foot long 1 inch
>> plastic pipe pointing sidewards or under a suitable angle.
>> Each pipe end has a saw cut to accept the antenna wire which can be sealed
>> with epoxy glue or a piece of tape.
>> Use a twin wire feeder and a suitable matching unit (tuner ,if you prefer
>> that word). The loop should work well for all wave lengths equal or
>> smaller the the loop circumference .
>>
>> While on a 2 months' visit to the LA area (Torrance) I managed to put up
>> such a loop ,extended to the end of the garden making it a full wave
>> length for 75 metres. In spite of being only 10 ft off the ground
>> (probably making it a NVIS antenna) I comfortably worked the Sacramento
>> area.
>> Such a loop is definetely worth a try.
>>
>> Frank GM0CSZ / KN6WH
>>
>>
> Hi Frank,
>
> No - I have metal siding on the sides of the house and I tried to load up
> the siding and the rain gutters, but alas - they are grounded!
>
> I am stuck with something in the air.
==========
In my situation as described above , I also had to deal with (earthed?)
metal gutters , but thanks to the 1 inch diam. plastic pipes at the
corners of the house ,keeping the antenna away from the gutter ,the
loop worked quite well (as an NVIS antenna).

Frank GM0CSZ / KN6WH

4959. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 11:52:35 UTC
From: Dave <noone@nowhere.com>
Message-ID: <7kTZj.82$RG.66@trndny07>
Source record: 25381

"jawod" <jawod@fuse.net> wrote in message news:48378AC2.5020303@fuse.net...
> Good article, in general
>
> Your signature lines are political and inaccurate. Why confuse the solar
> cycle with global warming?

not 'confuse' it, correlate it... there have been several studies that have correlated solar activity with global temperature changes. if we are indeed in a relatively active part of a long term solar fluctuation (hundreds of years not dozens) then does it not make sense that the solar activity may be warming us up?? Even other planets are being affected, read to the last line of the explanation of this pretty picture:
http://antwrp.gsfc.nasa.gov/apod/ap080523.html
Surely you can't blame human activity on global warming on Jupiter... even though we have dumped a bit of left over space debris in there recently.

4960. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 13:01:38 UTC
From: ltdoc@yahoo.com
Message-ID: <5c344657-2f09-439e-90fd-0b1777a32124@l64g2000hse.googlegroups.com>
Source record: 25382

Howard,
There is one other possible solution, not exactly cheap, or simple,
but a solution. How about a 'wire-less' connection between house and
car radios? Nasty solution, in my opinion, but...
- 'Doc

(Good excuse for new equipment??)

4961. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 13:07:31 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <34GdnUpyvfOHjqXVnZ2dnUVZ_h_inZ2d@comcast.com>
Source record: 25383

<ltdoc@yahoo.com> wrote in message
news:5c344657-2f09-439e-90fd-0b1777a32124@l64g2000hse.googlegroups.com...
> Howard,
> There is one other possible solution, not exactly cheap, or simple,
> but a solution. How about a 'wire-less' connection between house and
> car radios? Nasty solution, in my opinion, but...
> - 'Doc
>
> (Good excuse for new equipment??)

Thanks once again - I will take it under consideration....

4962. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 15:28:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <guWZj.4061$mh5.1699@nlpi067.nbdc.sbc.com>
Source record: 25384

ltdoc@yahoo.com wrote:
> There is one other possible solution, not exactly cheap, or simple,
> but a solution. How about a 'wire-less' connection between house and
> car radios? Nasty solution, in my opinion, but...

Not nasty at all. I've done it using my UHF mobile
and my UHF handheld.
--
73, Cecil http://www.w5dxp.com

4963. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 16:18:24 UTC
From: JC <menardjc@orange.fr>
Message-ID: <48383fdb$0$876$ba4acef3@news.orange.fr>
Source record: 25385

Posted on behalf of WA2OQM whose newsgroups connection is interrupted. F8ND

The comments by the Hams in this group don't point out the fallacy for the Carbon target of the environmental commissars. Some have alluded to the enrichment of the elite of a Marxist State i.e. the political class. I for one would like to expose these charlatans by showing the errors in which they pick their data .

1 - C14 dating in the XX century to prove the anthropogenic cause of increased Carbon and not accounting for the proportional increase in C14 to nuclear explosions in the atmosphere ending up in the recent Ice cores of glaciers. Using the fixed proportion of C14 to non- isotopic carbon askew the Carbon concentrations.

2 - The disregard for the modulating and moderating effects of the Carbonic acid cycle and the Photosynthesis cycle on atmosphere CO2.

3- The disregard of the Methane sink in the upper atmosphere that is influenced on the catalytic action of U.V. and the geomagnetic activity of the Earth. methane is far more of a "greenhouse" gas than CO2. Geomagnetic changes bend shorter wavelength in varying ways and create changes in paths of shorter wave length solar radiation just as they do to radio frequency electromagnetic radiation we hams employ.

4 - Then there are the vagaries of Solar radiation and Sunspots and the 11 year Solar cycles which are poorly understood an have a know relationship to climatic variations.

The U.N. science consensus cleverly declares that all these factors are of little consequence to the "Anthropogenic" factor. Its hard for any rational person to accept this unless they are politically motivated. Please post this with my call on the News group.

WA2OQM

"Dave" <noone@nowhere.com> a crit dans le message de news:
7kTZj.82$RG.66@trndny07...
>
> "jawod" <jawod@fuse.net> wrote in message
> news:48378AC2.5020303@fuse.net...
>> Good article, in general
>>
>> Your signature lines are political and inaccurate. Why confuse the solar
>> cycle with global warming?
>
> not 'confuse' it, correlate it... there have been several studies that

> have correlated solar activity with global temperature changes. if we are
> indeed in a relatively active part of a long term solar fluctuation
> (hundreds of years not dozens) then does it not make sense that the solar
> activity may be warming us up?? Even other planets are being affected,
> read to the last line of the explanation of this pretty picture:
> http://antwrp.gsfc.nasa.gov/apod/ap080523.html
> Surely you can't blame human activity on global warming on Jupiter... even
> though we have dumped a bit of left over space debris in there recently.
>
>

4964. Re: 1Hz click external noise? - HF Radar ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 18:01:19 UTC
From: richardharrison@webtv.net
Message-ID: <2555-483857EF-494@storefull-3251.bay.webtv.net>
Source record: 25386

John wrote:
"I often hear OTHR pulses in the UK, but at a higher PRF."

Yes and I`ve often heard a regular pulse in the USA every time a radar antenna swept in my direction within line of sight range. Radar was in the gigahertz band but the disturbed receiver was at a much lower frequency and of good quality.

Best regards, Richard Harrison, KB5WZI

4965. Re: 1Hz click external noise? - HF Radar ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 18:59:27 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69r6shF33dtncU1@mid.individual.net>
Source record: 25387

Richard Harrison wrote:

> Yes and I`ve often heard a regular pulse in the USA every time a radar
> antenna swept in my direction within line of sight range. Radar was in
> the gigahertz band but the disturbed receiver was at a much lower
> frequency and of good quality.

There's a municipal airport, KSDL, about 2 miles
from me. Except for a very occasional tree, it's
line of sight.

Would a radar induced noise tend to attenuate
if my receiving antenna (dipole) were off axis
to the radar? Seems to me that it was indeed
stronger when the lobes pointed toward the
airport.

Craig 'Lumpy' Lemke

www.n0eq.com

4966. Re: 1Hz click external noise? - HF Radar ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 19:18:18 UTC
From: No Spam <no@spam.com>
Message-ID: <KJydnQxBRPVn9KXVnZ2dnUVZ_vKdnZ2d@comcast.com>
Source record: 25388

On Sat, 24 May 2008 13:01:19 -0500, Richard Harrison wrote:

> John wrote:
> "I often hear OTHR pulses in the UK, but at a higher PRF."
>
> Yes and I`ve often heard a regular pulse in the USA every time a radar
> antenna swept in my direction within line of sight range. Radar was in
> the gigahertz band but the disturbed receiver was at a much lower
> frequency and of good quality.
>
> Best regards, Richard Harrison, KB5WZI

I have one electronic clock (locked to WWV) that makes a QRM click every second when the second hand moves. Looking inside the clock, I've found a small coil of wire that was the mechanical actuator for the second hand. Placing a 100pf cap across the coil greatly reduced the noise.

4967. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 19:31:46 UTC
From: Bernard Peters <sis@boom.bang>
Message-ID: <KJydnQ9BRPW_8KXVnZ2dnUVZ_vKdnZ2d@comcast.com>
Source record: 25389

On Thu, 22 May 2008 20:07:06 -1000, Roger wrote:

> Sunspot cycle more dud than radiation flood
>--
>"We are also brainwashing our children on the warming topic. We have no
>better example than Al Gore's alarmists and inaccurate movie which is
>being
>shown in our schools and being hawked by warming activists with little or
>no meteorological-climate background," Gray wrote.
>http://www.theaustralian.news.com.au/story/0,25197,23411799-7583,00.html
>http://www.firesociety.com/article/24204/

Leave it to the lower-half of the IQ range to argue that dumping OVER 22
million tons of crap into the atmosphere a day would not have a long term
effect on our planet. Lucky for most of us that we'll be dead shortly
(20-40 years) and not have to worry about it.

Oh, your worried about brain-washing your kinds? Your a good parent!

4968. Re: Entertainment value

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 20:05:39 UTC
From: gprunescaper <gprunescaper.27e7e79@radiobanter.com>
Message-ID: <gprunescaper.27e7e79@radiobanter.com>
Source record: 25400

::This method is more for fun than for money. You will get
chance to win fantastic cash prizes completely free by playing free
game online::::, ('maplestory'
(http://www.maplestorymesos.us/),'runescap'
(http://www.gprunescape.com/)e etc.)and win the scores. You will get
some entries to enter the lucky draw based on how many scores you have
made. If you lucky enough, you can get some rewards::::, such as cash
or gifts. Some web sites even hold the campaign and award the top play
with the prize or gift. Since you have no need to spend a dime during
it, it's totally safe for you. Below are some very good sites where can
win for prizes. ::::gprunescape have been a professional, loyal and
reliable RS2 gold store online, and also 'powerleveling'
(http://www.runescape-power-leveling.us/) seller for many years. You
will find it is the best way to buy RS2 gold or leveling; you will
really get what you want. This is your chance for you to buy RS2 gold
and leveling up. And also provide 'making money guide'
(http://www.runescape365.com/),We are ready now, how about you?
::::::

--
gprunescaper

4969. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-24 22:25:03 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <k2hmg5-m75.ln1@mail.specsol.com>
Source record: 25390

Bernard Peters <sis@boom.bang> wrote:

> Leave it to the lower-half of the IQ range to argue that dumping OVER 22
> million tons of crap into the atmosphere a day would not have a long term
> effect on our planet. Lucky for most of us that we'll be dead shortly
> (20-40 years) and not have to worry about it.

The Earth's atmosphere is roughly 2.7X10^16 tons.

22 million tons is .000000039% of that, so at that rate it
would take a million years to get to .039% assuming it all stuck.

--
Jim Pennino

Remove .spam.sux to reply.

4970. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 00:02:48 UTC
From: Bernard Peters <sis@boom.bang>
Message-ID: <joudncLOLpI1MaXVnZ2dnUVZ_umdnZ2d@comcast.com>
Source record: 25391

On Sat, 24 May 2008 22:25:03 +0000, jimp wrote:

> Bernard Peters <sis@boom.bang> wrote:
>
>> Leave it to the lower-half of the IQ range to argue that dumping OVER
>> 22 million tons of crap into the atmosphere a day would not have a long
>> term effect on our planet. Lucky for most of us that we'll be dead
>> shortly (20-40 years) and not have to worry about it.
>
> The Earth's atmosphere is roughly 2.7X10^16 tons.
>
> 22 million tons is .000000039% of that, so at that rate it would take a
> million years to get to .039% assuming it all stuck.

You can use the same logic when someone pisses in your town's water tank

4971. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 00:24:43 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <683c5e31-cd71-492e-a200-8d5bdee4991d@w5g2000prd.googlegroups.com>
Source record: 25392

Lumpy wrote:
> Jim Lux wrote:
> > ... The tennis ball launcher (avoid the "cannon"
> > term..) looks less "weapon-y"
>
> Not that shoulder fired one that everyone's
> been looking at..:-)
> http://www.antennalaunchers.com/antlaunching.html
>
> It looks like an RPG. Wander around aiming that
> thing at the top of your trees while the
> gendarmerie rides past and I'll bet you'll
> be asked to "DO IT NOW".

Just for added effect, when I made my tennis ball launcher I spray-painted it yellow and then added black stencils with BIOHAZARD and FALLOUT SHELTER symbology on. And then I stenciled BUTTERCUP on for the opposite impression :-).

I'm sure that some people are comfortable with lead weights flying through the air, or with crossbows. Me, I just happen (perhaps through lack of ability with the other two - I tried, but failed with slingshot and crossbow, but the tennis ball cannon worked the first time!) to be pefectly comfortable with the tennis ball cannon. And it worked, man it worked. I am so so so happy with the resulting antenna, 100 feet up between two trees.

Tim N3QE

4972. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 00:25:03 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <s7omg5-njq.ln1@mail.specsol.com>
Source record: 25393

Bernard Peters <sis@boom.bang> wrote:
> On Sat, 24 May 2008 22:25:03 +0000, jimp wrote:

> > Bernard Peters <sis@boom.bang> wrote:
> >
> >> Leave it to the lower-half of the IQ range to argue that dumping OVER
> >> 22 million tons of crap into the atmosphere a day would not have a long
> >> term effect on our planet. Lucky for most of us that we'll be dead
> >> shortly (20-40 years) and not have to worry about it.
> >
> > The Earth's atmosphere is roughly 2.7X10^16 tons.
> >
> > 22 million tons is .000000039% of that, so at that rate it would take a
> > million years to get to .039% assuming it all stuck.

> You can use the same logic when someone pisses in your town's water tank

A lot of the municipal water around here comes from man made lakes
with people and fish pissing in them all the time.

--
Jim Pennino

Remove .spam.sux to reply.

4973. Saw new magazine "Antenna" at the bookstore, but it's not about radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 00:55:57 UTC
From: Robert Casey <wa2ise@ix.netcom.com>
Message-ID: <48389fae$0$4636$88260bb3@unlimited.teranews.com>
Source record: 25399

It was a magazine that looks a lot like "GQ" (not "CQ"). Mens fashion
and other such sillyness.

4974. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 01:26:28 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <xf3_j.6064$nW2.5134@nlpi064.nbdc.sbc.com>
Source record: 25394

```
jimp@specsol.spam.sux.com wrote:
> Bernard Peters <sis@boom.bang> wrote:
>> On Sat, 24 May 2008 22:25:03 +0000, jimp wrote:
>
>>> Bernard Peters <sis@boom.bang> wrote:
>>>
>>>> Leave it to the lower-half of the IQ range to argue that dumping OVER
>>>> 22 million tons of crap into the atmosphere a day would not have a long
>>>> term effect on our planet. Lucky for most of us that we'll be dead
>>>> shortly (20-40 years) and not have to worry about it.
>>> The Earth's atmosphere is roughly 2.7X10^16 tons.
>>>
>>> 22 million tons is .000000039% of that, so at that rate it would take a
>>> million years to get to .039% assuming it all stuck.
>
>> You can use the same logic when someone pisses in your town's water tank
>
> A lot of the municipal water around here comes from man made lakes
> with people and fish pissing in them all the time.
>
>

If I were you, I'd move.
73,
Tom Donaly, KA6RUH
```

4975. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 01:33:38 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69rtvmF2ski7eU1@mid.individual.net>
Source record: 25395

jimp wrote:
> > A lot of the municipal water around
> > here comes from man made lakes
> > with people and fish pissing in them all the time.

Tom Donaly wrote:
> If I were you, I'd move.

Or buy a water filter.

Does fish urine increase the conductivity of water?
Might be worth factoring in when doing antenna calculations
for shoreline installations.

Lumpy N&#65533;EQ

You played on "The Love Boat"?
Yes. White tux, huge sideburns.

www.LumpyGuitar.com

4976. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 01:46:00 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qx3_j.1567$N87.217@nlpi068.nbdc.sbc.com>
Source record: 25396

Bernard Peters wrote:
> Leave it to the lower-half of the IQ range to argue that dumping OVER 22
> million tons of crap into the atmosphere a day would not have a long term
> effect on our planet.

Yes, it is well known scientific fact that the "more than
25 cubic kilometres of rock, ash, and pumice" ejected by
Krakatoa destroyed all life on this planet in 1883. (Compared
to Mother Nature, man is such a piker.)
--
73, Cecil http://www.w5dxp.com

4977. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 01:47:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_y3_j.1568$N87.56@nlpi068.nbdc.sbc.com>
Source record: 25397

Bernard Peters wrote:
> You can use the same logic when someone pisses in your town's water tank

You are absolutely correct. There would be no
measurable effect.
--
73, Cecil http://www.w5dxp.com

4978. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 01:53:38 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69rv56F32s18iU1@mid.individual.net>
Source record: 25398

Bernard Peters wrote:
> > You can use the same logic when
> > someone pisses in your town's water
> > tank

Cecil Moore wrote:
> You are absolutely correct. There would be no
> measurable effect.

You could probably survive by eating cigarette
butts if you had to. And drink from an aquarium.
For that matter, you would survive if you didn't
have any arms or legs.

Maybe we could just pollute the earth till
we need glasses.

Lumpy

You were the "OPERATION" game voice?
Yes. Take out wrenched ankle.

www.LumpyVoice.com

4979. Re: Entertainment value

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 02:09:11 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69s02bF33q2pkU1@mid.individual.net>
Source record: 25301

gprunescaper wrote:
> This method is more for fun than for money.
> You will get chance to win fantastic cash
> prizes completely free by playing free
> game online...

> ...You will get some entries to enter the
> lucky draw based on how many scores you have
> made...

Will I get a multiplier for being QRP?

Craig 'Lumpy' Lemke

www.n0eq.com

4980. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 02:31:49 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9AA8E5C22BF9mcoslocomcastnet@216.196.97.136>
Source record: 25302

Cecil Moore <nospam@w5dxp.com> wrote in news:vIFZj.5255$nW2.3466
@nlpi064.nbdc.sbc.com:
>
> Seriously, one can see from the temperature graph
> history that the temperature was almost 5 degrees F
> hotter 130,000 and 325,000 years ago than it is today.
> In fact, close examination of the temperature graph
> shows that the *average* temperature peaked 8000
> years ago and has been falling ever since.

I think you make the pattern mistake, Cecil. Does the temperature at those times indicate the present temperature or the future temperatures?

Are there any different conditions between now and then?

How about a little thought experiment.

Assume that we build a CO2 generator
Likewise say a methane generator.

Let us flood the earth's atmosphere with as much of the two gases as earth life will stand.

What will be the effect?

- 73 d eMike N3LI -

4981. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 02:38:10 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9AA8E6D581191mcoslocomcastnet@216.196.97.136>
Source record: 25303

Bernard Peters <sis@boom.bang> wrote in
news:KJydnQ9BRPW_8KXVnZ2dnUVZ_vKdnZ2d@comcast.com:
eur.antenna:297129
>
> On Thu, 22 May 2008 20:07:06 -1000, Roger wrote:
>
>> Sunspot cycle more dud than radiation flood
>>--
>>"We are also brainwashing our children on the warming topic. We have
>>no better example than Al Gore's alarmists and inaccurate movie which
>>is being
>>shown in our schools and being hawked by warming activists with little
>>or no meteorological-climate background," Gray wrote.
>>http://www.theaustralian.news.com.au/story/0,25197,23411799-
7583,00.htm
>>l http://www.firesociety.com/article/24204/
>
> Leave it to the lower-half of the IQ range to argue that dumping OVER
> 22 million tons of crap into the atmosphere a day would not have a
> long term effect on our planet. Lucky for most of us that we'll be
> dead shortly (20-40 years) and not have to worry about it.
>
> Oh, your worried about brain-washing your kinds? Your a good parent!

No doubt home schooled to keep that nasty evolutionist crap out of
the little tykes heads too.

Note that the October 23, 4004 BC crowd uses the same tactics to
discredit evolution as they do the heat retentive effects of the so
called Greenhous gases.

I asked for non political reasons, and one of those folk just posted
here that GW believers are Marxists!

- 73 de Mike N3LI -

4982. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 03:25:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <y_4_j.1262$uE5.825@flpi144.ffdc.sbc.com>
Source record: 25304

Mike Coslo wrote:
> I think you make the pattern mistake, Cecil. Does the temperature at those
> times indicate the present temperature or the future temperatures?

Without exception, every time in the past that the
CO2 levels have reached 280 ppmv, an ice age ensued.
The CO2 levels are higher than that today. It would
take a miracle to fend off the next ice age cycle.
I don't believe in miracles.

If man can indeed cause global warming, it will result
in a delay in glaciers covering most of North America
for the Nth time. That is a good thing. The scientists
who feared global cooling in the '70's were right.
--
73, Cecil http://www.w5dxp.com

4983. Re: 1Hz click external noise? - HF Radar ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 09:27:45 UTC
From: Jeff <jeff@local.host>
Message-ID: <4839377e$0$30636$834e42db@reader.greatnowhere.com>
Source record: 25306

>> Yes and I`ve often heard a regular pulse in the USA every time a radar
>> antenna swept in my direction within line of sight range. Radar was in
>> the gigahertz band but the disturbed receiver was at a much lower
>> frequency and of good quality.
>
> There's a municipal airport, KSDL, about 2 miles
> from me. Except for a very occasional tree, it's
> line of sight.
>

However, 1Hz would require a very fast rotating radar antenna!!! Most radar antennas rotate much slower than that, normally in the region of 5 to 7 seconds, although a few ground surveillance radars to rotate a bit quicker. Also 1Hz is a bit slow for the prf of an OHR, they normally sound like a buzzing sound.

73
Jeff

4984. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 09:39:03 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <8rci349s88lausnsap43kk6botrfii6ctu@4ax.com>
Source record: 25305

On Thu, 22 May 2008 22:34:49 -0400, no@spam.net wrote:

>Want me to email it (the html's) to you?
>
>
please, nospam1 at lumpuckeroo period com
>
>On Thu, 22 May 2008 12:25:49 -0700, "K" <K@spam.net> wrote:
>
>>What happened to the link. It no longer works?
>>
>>K
>>
>><box73@gmx.net> wrote in message
>>news:2958f970-726f-4fda-91d5-0eddd749ddd2@m73g2000hsh.googlegroups.com...
>>> and what's even more valuable: no registration needed !!
>>>
>>> http://wy6k.com/cebik%5Fmirror/
>>>
>>>
>>

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

4985. Re: 1Hz click external noise? - HF Radar ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 10:11:04 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <8Nh59lP4sTOIFwc5@g3ohx.demon.co.uk>
Source record: 25307

In message <4839377e$0$30636$834e42db@reader.greatnowhere.com>, Jeff
<jeff@local.host> writes
>>> Yes and I`ve often heard a regular pulse in the USA every time a radar
>>> antenna swept in my direction within line of sight range. Radar was in
>>> the gigahertz band but the disturbed receiver was at a much lower
>>> frequency and of good quality.
>>
>> There's a municipal airport, KSDL, about 2 miles
>> from me. Except for a very occasional tree, it's
>> line of sight.
>>
>
>However, 1Hz would require a very fast rotating radar antenna!!! Most radar
>antennas rotate much slower than that, normally in the region of 5 to 7
>seconds, although a few ground surveillance radars to rotate a bit quicker.
>Also 1Hz is a bit slow for the prf of an OHR, they normally sound like a
>buzzing sound.
>
>73
>Jeff
>
>
It couldn't be something trickle-charging a battery, could it? A local
amateur had trouble with his neighbour's electric shaver. This was left
more-or-less permanently on charge, and produced regular clicks when the
battery was full. And then there are things like cordless phones (often
on-charge when not in use).
--
Ian

4986. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 10:48:56 UTC
From: Dave <noone@nowhere.com>
Message-ID: <sub_j.3648$jA.1614@trndny09>
Source record: 25308

"Mike Coslo" <mcoslo@youknow.comcast.net> wrote in message
news:Xns9AA8E6D581191mcoslocomcastnet@216.196.97.136...
> Bernard Peters <sis@boom.bang> wrote in
> news:KJydnQ9BRPW_8KXVnZ2dnUVZ_vKdnZ2d@comcast.com:
> eur.antenna:297129
>>
>> On Thu, 22 May 2008 20:07:06 -1000, Roger wrote:
>>
>>> Sunspot cycle more dud than radiation flood
>>>--
>>>"We are also brainwashing our children on the warming topic. We have
>>>no better example than Al Gore's alarmists and inaccurate movie which
>>>is being
>>>shown in our schools and being hawked by warming activists with little
>>>or no meteorological-climate background," Gray wrote.
>>>http://www.theaustralian.news.com.au/story/0,25197,23411799-
> 7583,00.htm
>>>l http://www.firesociety.com/article/24204/
>>
>> Leave it to the lower-half of the IQ range to argue that dumping OVER
>> 22 million tons of crap into the atmosphere a day would not have a
>> long term effect on our planet. Lucky for most of us that we'll be
>> dead shortly (20-40 years) and not have to worry about it.
>>
>> Oh, your worried about brain-washing your kinds? Your a good parent!
>
> No doubt home schooled to keep that nasty evolutionist crap out of
> the little tykes heads too.
>
> Note that the October 23, 4004 BC crowd uses the same tactics to
> discredit evolution as they do the heat retentive effects of the so
> called Greenhous gases.
>
> I asked for non political reasons, and one of those folk just posted
> here that GW believers are Marxists!

if it weren't for politicians who are beholden to extreme environmentalists
who want to destroy the capitalist economic system and throw us back to
feudalism there would be no 'global warming crisis'. Its the damn hippy
culture of the 60's grown up and with money who have bought off enough votes
to keep this topic in the news who are to fault. and by using short term
data that isn't correlated with long term trends they can make the natural
short term fluctuations in temperatures look like catastrophes in
progress... my first statistics course professor said it best... "You can

prove anything with statistics." Just pick your data source, throw out the outliers, apply the analysis that gives you the answer you want, and voila, global warming, huge storms, and Florida sinks into the ocean. Where in the bigger picture the temperature has gone down the last couple years, ocean levels are falling and predicted to fall further, and one good volcano could throw us into another ice age, then we'll all be begging for more greenhouse gasses!

4987. Re: Dayton

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 11:22:05 UTC
From: heybabylover <heybabylover.27f2738@radiobanter.com>
Message-ID: <heybabylover.27f2738@radiobanter.com>
Source record: 25310

hey, man. May i have a question? May i post a message to you?

--
heybabylover

4988. Re: Saw new magazine "Antenna" at the bookstore, but it's not about radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 12:58:56 UTC
From: "cybrinjn@gmail.com" <cybrinjn@gmail.com>
Message-ID: <31934b0c-e2c2-48c3-89f1-903ddf86a445@k13g2000hse.googlegroups.com>
Source record: 25309

```
On May 24, 8:55 pm, Robert Casey <wa2...@ix.netcom.com> wrote:
> It was a magazine that looks a lot like "GQ" (not "CQ"). Mens fashion
> and other such sillyness.

Probably about 'gaydar.' ;^)
```

4989. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 16:23:00 UTC
From: Wayne <mygarbagecan@verizon.net>
Message-ID: <Eng_j.13004$2C.12464@trndny08>
Source record: 25311

```
"Wayne" <mygarbagecan@verizon.net> wrote in message news:...
>
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
> news:nEzZj.264$xZ.29@nlpi070.nbdc.sbc.com...
>> ltdoc@yahoo.com wrote:
>>> The first thing that comes to mind is a flag pole.
>>
>> A 22' flagpole (with buried radials) can be base-fed
>> with an SG-230 (for instance) to achieve reasonable
>> performance on 40m-10m.
>> --
>> 73, Cecil http://www.w5dxp.com
>
> I used one of those for several years in a "restricted" neighborhood.
> Performance was not bad. I used a manually switched coil/capacitor
> combination mounted at the base in a wooden box obtained from the local
> beekeeper supply house. While the box was a little large, it was
> inexpensive, and held up well in weather with a new paint job every 2-3
> years.
>

Hmmmm...no flagpoles allowed. Is there any problem with birdhouses? As I
recall, some birds like to have their house on top of a 16-22 foot pole :)
```

4990. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 18:17:45 UTC
From: no@spam.net
Message-ID: <kraj34delm0gp566gjqrjvvr6qm3ft3vib@4ax.com>
Source record: 25312

```
also at
https://secure.filesanywhere.com/index.html
name: Dufus9920
password: 12349920

On Thu, 22 May 2008 12:25:49 -0700, "K" <K@spam.net> wrote:

>What happened to the link. It no longer works?
>
>K
>
><box73@gmx.net> wrote in message
>news:2958f970-726f-4fda-91d5-0eddd749ddd2@m73g2000hsh.googlegroups.com...
>> and what's even more valuable: no registration needed !!
>>
>> http://wy6k.com/cebik%5Fmirror/
>>
>>
>
```

4991. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 20:25:18 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g1chvq$pp8$1@news.albasani.net>
Source record: 25313

Cecil Moore wrote:
> Michael Coslo wrote:
>> Good lord, what kind of neighborhood won't allow a flagpole?
>> Unpatriotic creeps? Sounds like you need to get PRB-1 in your corner.
>
> Here's what one ham did about his neighborhood
> antenna restrictions. :-)
>
> http://www.youtube.com/watch?v=aC_EeWSKJII

Cecil:

After viewing that video, I was offered this for consideration of my viewing pleasure:

http://www.youtube.com/watch?v=XJpALdxzFzA&NR=1

And, I enjoyed it also ... <GRIN>

P.S. Isn't there a mental health program for old complaining cows, such as those featured in the antenna clip? <wink>

Warm regards,
JS

4992. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-25 23:07:04 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <sim_j.2412$u7.535@trnddc07>
Source record: 25314

"Ian White GM3SEK" <gm3sek@ifwtech.co.uk> wrote in message
news:JeUs3jO9o+NIFAiP@ifwtech.co.uk...
> Andy wrote:
>>
>>I found a review from Radcom on the net and it sounds good.
>>http://www.mixw.co.uk/product/reviewAA200.htm I sent an e-mail to the
>>designer of the Analyser and he says it does not require re-calibration.
>
> That feature is a two-edged sword. On the one hand, it means the analyser
> is immediately ready for routine measurements. That of course is a good
> feature for most of the users, most of the time.
>
> On the other hand, if it doesn't have the *capability* to be recalibrated
> when different kinds of test fixtures are attached, it means that some
> useful kinds of measurements will not be possible... or worse, will appear
> to be possible but may give wrong answers. Measurements of the resonant
> frequencies of coaxial chokes are an example where analysers that cannot
> be recalibrated will give large errors - see the last few paragraphs of:
> http://audiosystemsgroup.com/RFI-Ham.pdf
>
> There's a place for both the simple handheld analysers and the ones that
> have more features but live on a bench. It's the buyer's choice... but
> whichever one you buy (or build) first, you may eventually find uses for
> both.
>
Thsnk you for the Radcom link Andy- I had missed that.
I agree with Ian on the recal- however I think for portable use this is
ideal. I have an HP8711B for bench measurements.

Dale W4OP

4993. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 03:03:40 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9AA9EB28C8D9Emcoslocomcastnet@216.196.97.136>
Source record: 25315

Cecil Moore <nospam@w5dxp.com> wrote in
news:y_4_j.1262$uE5.825@flpi144.ffdc.sbc.com:

> If man can indeed cause global warming, it will result
> in a delay in glaciers covering most of North America
> for the Nth time. That is a good thing. The scientists
> who feared global cooling in the '70's were right.

Okay, just so I'm sure, you say that the pattern always repeats? And will
always repeat?

- 73 de Mike N3LI -

4994. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 03:22:30 UTC
From: Bob Miller <NOSPAM@neosoft.com>
Message-ID: <suak34t67kgqbk80qf4lck1p81lhcp7g9g@4ax.com>
Source record: 25316

On Fri, 23 May 2008 12:35:53 -0400, "W3CQH" <hsgorden@comcast.net>
wrote:

>
>"Cecil Moore" <nospam@w5dxp.com> wrote in message
>news:nEzZj.264$xZ.29@nlpi070.nbdc.sbc.com...
>> ltdoc@yahoo.com wrote:
>>> The first thing that comes to mind is a flag pole.
>>
>> A 22' flagpole (with buried radials) can be base-fed
>> with an SG-230 (for instance) to achieve reasonable
>> performance on 40m-10m.
>> --
>> 73, Cecil http://www.w5dxp.com
>
>Thanks Cecil, but I can't have any flag poles. 73's
>

Hang a 22' vertical wire from your tree, small guage, with a few
buried radials and a base fed tuner at ground level, and buried coax
to the house? Would be nearly invisible.

bob
k5qwg

4995. Re: Saw new magazine "Antenna" at the bookstore, but it's not about radio

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 05:06:12 UTC
From: Robert Casey <wa2ise@ix.netcom.com>
Message-ID: <483a2bc9$0$4650$88260bb3@unlimited.teranews.com>
Source record: 25318

>
>
> Probably about 'gaydar.' ;^)

Probably. Didn't spend much time looking at it, 20 seconds at most.
Mostly answering for myself "What the hell is this?"...

4996. Re: antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 05:30:10 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <69v07bF35g7sfU1@mid.individual.net>
Source record: 25317

Bob Miller wrote:

> Hang a 22' vertical wire from your tree...

"That darn tree limb swayed in the wind
so much I thought it was going to fall
off and come crashing down on my car.
So I put that 22' piece of wire up
to guy the branch. Now it looks nice
and steady."

"That other tree over there had the
same problem. It only required a
16.5' guy wire."

Nozy HOA spies? A red LED, a 1.2v
watch battery and a magnet, taped
together, looks a lot like a surveillence
camera from a few yards away. The magnet
allows you to toss it up to stick to the
side of your A/C unit or any other metal
thingie on the roof.

"I had some gang member spraypaint taggers
try and paint their graffiti on my cadillac.
So I had that security camera installed. It
records everything that happens on my lot."

Substitute "kids try to steal my handicapped plates"
instead of "gang member spraypaint taggers" for variety.

Craig 'Lumpy' Lemke

www.n0eq.com

4997. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 09:19:33 UTC
From: M0WYM <charlie@nospamwymsey.co.uk>
Message-ID: <AuidnWE_euA7HafVnZ2dnUVZ8sXinZ2d@pipex.net>
Source record: 25319

Dave wrote:
>> I asked for non political reasons, and one of those folk just
>> posted here that GW believers are Marxists!
>
> if it weren't for politicians who are beholden to extreme
> environmentalists who want to destroy the capitalist economic
> system and throw us back to feudalism there would be no 'global
> warming crisis'. Its the damn hippy culture of the 60's grown up
> and with money who have bought off enough votes to keep this
> topic in the news who are to fault.
>
That would be really funny if it were not so scary. Let's hope that
you have no influence outside of your backyard!

<SNIP>
>
So you can't trust statistics - wow that's news. Better then to go
in for inane political mud slinging. You can always tell a dead
argument by the level on insults flying around. Insults over
evidence and an informed mind every time!

--
M0WYM
www.radiowymsey.org

Wymsey - Ten years Old!
www.wymsey.co.uk

4998. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 10:03:41 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <VVv_j.61658$UP6.16313@newsfe14.ams2>
Source record: 25320

If I was to look out for an Antenna Analyser that would do the other measurements that the AA-200 can't do. What would be the price rang that I could expect to pay and what would you recommend?

73 Andy

"Dale Parfitt" <parinc1@verizon.net> wrote in message news:sim_j.2412$u7.535@trnddc07...
>
> "Ian White GM3SEK" <gm3sek@ifwtech.co.uk> wrote in message
> news:JeUs3jO9o+NIFAiP@ifwtech.co.uk...
>> Andy wrote:
>>>
>>>I found a review from Radcom on the net and it sounds good.
>>>http://www.mixw.co.uk/product/reviewAA200.htm I sent an e-mail to the
>>>designer of the Analyser and he says it does not require re-calibration.
>>
>> That feature is a two-edged sword. On the one hand, it means the analyser
>> is immediately ready for routine measurements. That of course is a good
>> feature for most of the users, most of the time.
>>
>> On the other hand, if it doesn't have the *capability* to be recalibrated
>> when different kinds of test fixtures are attached, it means that some
>> useful kinds of measurements will not be possible... or worse, will
>> appear to be possible but may give wrong answers. Measurements of the
>> resonant frequencies of coaxial chokes are an example where analysers
>> that cannot be recalibrated will give large errors - see the last few
>> paragraphs of:
>> http://audiosystemsgroup.com/RFI-Ham.pdf
>>
>> There's a place for both the simple handheld analysers and the ones that
>> have more features but live on a bench. It's the buyer's choice... but
>> whichever one you buy (or build) first, you may eventually find uses for
>> both.
>>
> Thsnk you for the Radcom link Andy- I had missed that.
> I agree with Ian on the recal- however I think for portable use this is
> ideal. I have an HP8711B for bench measurements.
>
> Dale W4OP
>
>

4999. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 10:24:24 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g1e353$q2c$1@news.albasani.net>
Source record: 25321

M0WYM wrote:
>> ...
> So you can't trust statistics - wow that's news. Better then to go
> in for inane political mud slinging. You can always tell a dead
> argument by the level on insults flying around. Insults over
> evidence and an informed mind every time!
>

I don't know enough to make any absolute and highly accurate statements on global warming or many of the environmental issues of today.

However, I do know this, lock yourself in your garage with your car idling for a while and you may not leave that garage. And, I do believe some sort of balance existed before man began taxing the natural systems which support life on the planet.

I know the Salmon fishing industry is bust this year. I know there are vast dead zones appearing in the oceans; some Coral reefs are disappearing ...

I have a buddy who is a "camera freak" and he has taken me on freeway overpasses with infrared cameras and shown me the "rivers of warm exhaust" which the cars are passing through--left by the many cars which have preceded them--each preceding vehicle spewing unknown quantities of cubic feet of deadly gases ... I have seen traffic jams with most cars idling--occupants behind rolled up windows--and, most likely, breathing huge quantities of the noxious/odorless fumes. I don't even want to consider power generation plants and businesses' contributions to all this ... the megatons of spent nuclear materials in storage for thousands of years, etc.

I know pollution from China has reached the west coast in increasing-detectable levels and only adds to pollution levels which then travel across America towards the east coast.

I wonder if and for how long we can just go about our tasks and ignore all this? And, is this enough, or should this be enough, to begin worrying prudent men and women?

I do know I can make one truthful statement; "I feel I would like to keep my eyes open and my awareness level high."

I would like to think all this is still incapable of affecting the atmosphere in such force and means as to affect communications! But then, I have come to realize the saying, "truth is stranger than fiction" can contain truth ...

I do think the aluminum/copper/zinc components of my antenna(s) seem to show accelerated oxidation/damage--perhaps this is only imagined ... or, silly fears fed by rumors of acid rain eating away at statues, masonry, limestone, etc?

And yanno, I don't know who I would trust to believe on these subjects. Trust the govt? Naaa. Trust big business who profit from generating these pollutants? Naaa. I just may have lost my ability to trust anyone ... not to mention "statistics manipulations" in general!

Perhaps I am just paranoid in general? Let's all hope ... that would be quite nice, wouldn't it? Sometimes I just love being in error and having only worried about nothing. Perhaps the future will make the truth apparent.

Regards,
JS

5000. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 12:54:49 UTC
From: Dan Richardson <k6mhe@k6mhe.com>
Message-ID: <incl341ik5jmhe5eusm6gcuom74q88ak5v@4ax.com>
Source record: 25322

On Mon, 26 May 2008 11:03:41 +0100, "Andy" <dx90@blueyounder.co.uk>
wrote:

>If I was to look out for an Antenna Analyser that would do the other
>measurements that the AA-200 can't do. What would be the price rang that I
>could expect to pay and what would you recommend?
>
>73 Andy
>
>
Try this:

http://w5big.com/

73,
Danny, K6MHE

5001. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 12:59:07 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uuy_j.1427$uE5.1068@flpi144.ffdc.sbc.com>
Source record: 25323

Mike Coslo wrote:
> Okay, just so I'm sure, you say that the pattern always repeats? And will
> always repeat?

No, I'm saying the pattern has repeated itself for at
least the last million years and will most probably
repeat itself for the next million years.
--
73, Cecil http://www.w5dxp.com

5002. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 13:04:48 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Pzy_j.1428$uE5.167@flpi144.ffdc.sbc.com>
Source record: 25324

M0WYM wrote:
> So you can't trust statistics - wow that's news.

Can we trust the statistic that says the global-warming/ice-age
cycle has repeated itself at 90K-150k year intervals for the
last half million years?
--
73, Cecil http://www.w5dxp.com

5003. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 15:13:15 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <483AD38B.6080706@nosspam.activ8.net.au>
Source record: 25325

Cecil Moore wrote:
> M0WYM wrote:
>
>> So you can't trust statistics - wow that's news.
>
>
> Can we trust the statistic that says the global-warming/ice-age
> cycle has repeated itself at 90K-150k year intervals for the
> last half million years?

No. There are indications are that the cycles which correlate with ice ages, may not produce the conditions for another ice age for the next 60,000 years.
Alan

5004. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 15:27:59 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <483AD6FF.2000003@nosspam.activ8.net.au>
Source record: 25326

Cecil Moore wrote:
> M0WYM wrote:
>
>> So you can't trust statistics - wow that's news.
>
>
> Can we trust the statistic that says the global-warming/ice-age
> cycle has repeated itself at 90K-150k year intervals for the
> last half million years?

Further to my reply, look at
http://www.answers.com/topic/milankovitch-cycles?cat=technology

Alan

5005. RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 16:25:16 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g1eo9n$589$1@news.albasani.net>
Source record: 25327

For once, COMPLETELY good news, and it continues ...

http://www.goerie.com/apps/pbcs.dll/article?AID=/20080515/LIFESTYLES07/805150423/-1/LIFESTYLES

I dreamed of seeing a day when the evil of cancer would be dispelled! I await now with crossed fingers and true hope. When you consider 16+% (or more than 1-in-6) of all deaths worldwide are caused by cancer, no one and his/her family is without a stake in this machines success.

Regards,
JS

5006. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 18:42:00 UTC
From: Darko_SWL <9a3li_makni_@hamradio.hr>
Message-ID: <g1f0ak$b7a$1@news1.carnet.hr>
Source record: 25328

Dave wrote:
> do they really think someone is going to take the time to un-mung the
> addresses below just to get to a site that is probably full of viruses???
>
>
SKF, FAG and NSK are well known Ball Bearing manufacturer, so there must
be some chinese copy products !
:)

5007. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 19:00:48 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6a0fnbF354enaU1@mid.individual.net>
Source record: 25329

Darko_SWL wrote:

> SKF, FAG and NSK are well known Ball Bearing manufacturer...

FAG makes ball bearings?
Are they permanantly lubricated?
Or do you need a tube of FAG lube
to re-pack them from time to time?

Lumpy

How come you didn't star on Star Trek?
Because Clint Howard beat me for the part of Balok.

www.LumpyVoice.org

5008. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 20:00:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uFE_j.2511$xZ.92@nlpi070.nbdc.sbc.com>
Source record: 25330

Alan Peake wrote:
> There are indications are that the cycles which correlate with ice
> ages, may not produce the conditions for another ice age for the next
> 60,000 years.

The last global warming peak was 130,000 years ago
and the longest previous cycle on record is 110,000
years. Seems that would indicate that we are already
thousands of years into the next ice age.
--
73, Cecil http://www.w5dxp.com

5009. Re: Full-wave coaxial loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-26 22:54:30 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <SfH_j.1460$ZE5.1090@nlpi061.nbdc.sbc.com>
Source record: 25331

Lumpy wrote:
> Darko_SWL wrote:
>
>> SKF, FAG and NSK are well known Ball Bearing manufacturer...
>
> FAG makes ball bearings?
> Are they permanantly lubricated?
> Or do you need a tube of FAG lube
> to re-pack them from time to time?
>
>
> Lumpy
>
> How come you didn't star on Star Trek?
> Because Clint Howard beat me for the part of Balok.
>
> www.LumpyVoice.org
>
>
>
Lumpy;

To answer your questions. Yes, Yes/No, no comment....

Dave

5010. Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-27 02:34:53 UTC
From: Gary Smith <vkthree@gmail.com>
Message-ID: <g1fs10$29h$1@news-01.bur.connect.com.au>
Source record: 25332

Hi all, i am installing a mobile radio into my car soon. I need an antenna that will cover 2 metres, 70cm and uhfcb as the rig only has one antenna socket. I would appreciate any information on how to make one antenna to suite these 3 bands or maybe there is one available. I would prefer to build one. Yes, i know I'm not supposed to be using a ham radio on UHFCB so don't bother mentioning it.

Thanks.

Gary
VK3LCD

5011. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-27 03:11:20 UTC
From: Mike Coslo <mcoslo@youknow.comcast.net>
Message-ID: <Xns9AAAEC75AE01Cmcoslocomcastnet@216.196.97.136>
Source record: 25333

Cecil Moore <nospam@w5dxp.com> wrote in news:Pzy_j.1428$uE5.167
@flpi144.ffdc.sbc.com:

> M0WYM wrote:
>> So you can't trust statistics - wow that's news.
>
> Can we trust the statistic that says the global-warming/ice-age
> cycle has repeated itself at 90K-150k year intervals for the
> last half million years?

How many of those cycles have been influenced by the release of green house gases by humans?

It becomes almost a non-sequitar to bring that out.

But in search of an answer to your questions:

yes, there appears to be cyclic warming/cooling going on.

This warming/cooling has many possible sources. We're finding outh what they are at this time. Some seem pretty likely, and some are not known as of yet. CO@ levels look pretty convincing, and things like th eMaunder minimum are almost just speculation.

Does the past allow us to predict what is going to happen tomorrow? Not even close. All the cycles we have can only be applied after the fact.

That one is very important, because each and every cycle has individuality. I've just seen something about a meteoric impact possibly affecting the Clovis culture, and possible the glacier flow pattern into the arctic and Atlantic Ocean. That is an individual event, not likely to be repeated.

Neither is the release of large amounts of sequestered carbon. This can happen in more than one fashion. It might come about through large scal volcanic activity. It also might come about through the combustion of those carbon bearing minerals. The source of the release is inconsequential, the effects are not.

- 73 de Mike N3LI -

5012. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-27 12:40:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <6jT_j.2672$xZ.1826@nlpi070.nbdc.sbc.com>
Source record: 25334

Mike Coslo wrote:
> Does the past allow us to predict what is going to happen tomorrow?

The sun may not rise tomorrow, but I am willing to
bet my 401K that it will.
--
73, Cecil http://www.w5dxp.com

5013. WANTED: 75/80 Meter Coil for Spider Mobile Assy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-27 14:19:19 UTC
From: Norm VE3CZI <ve3czi@arrl.net>
Message-ID: <LLU_j.11879$79.7107@read1.cgocable.net>
Source record: 25335
Cross-posted to: rec.radio.amateur.antenna,rec.radio.swap

Looking for a 75/80 Meter Coil that fits onto the Spider Mobile Assy.
Please advise price with picture.
Tnx & 73...Norm VE3CZI
visit: www DOT rodemi DOT com for surplus items

5014. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-27 14:52:31 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g1h77f$v9s$1@f04n12.cac.psu.edu>
Source record: 25336

Cecil Moore wrote:
> Mike Coslo wrote:
>> Does the past allow us to predict what is going to happen tomorrow?
>
> The sun may not rise tomorrow, but I am willing to
> bet my 401K that it will.

Of course, even if it were to blink out tonight, it'll still do the sunrise thing. That's pretty certain.

The issue is those long term cycles. The can predict trends, but can't do a very good job of predicting if it will be rainy today, or if it will even be a cold year or a warm year.

One of my favorite moments is on a cold day, some wag will spout "So much for global warming!" Just a public expression of ignorance, whether GW exists or not.

Let's make no mistake, we are making this experiment whether we want to or not. There is no way that we are ever going to get the new industrial powers to cut down on CO2 emissions. All of this discussion is academic. We aren't going to cut down our emissions.

One of the delicious ironies in all this is that the same people who declare anyone who believes in GW as some sort of leftist have staunch allies who are commies in fact. Go figure.

My guess is that now that we have reached the geometric population growth phase, we will deplete our oil, then our coal reserves. At that point, greenhouse emissions will naturally drop.

As we tap into the "final reserves" of fossil fuel, likely anything that is in the way will fall. Endangered animals, land preserves, pollution controls. It will be pretty quick. Wars will break out over the remaining fossil fuels.

Only so much can be done to conserve. Even if each person uses less energy, there will be plenty of new folks coming along to negate that conservation.

I've seen the future, and it isn't too pretty.

Although there is an alternative:

LOTS more nuc power. Give up on the antiquated and dangerous supply paradigm, in which we just have a few plants running their equipment at about as much power as they can handle, in which any failure makes for big problems. Many smaller and safer plants are in order.

Unless there is some sort of breakthrough, we're going to need to run electric cars. We need a new infrastructure built to handle them.

Wind power is cool, as is solar, but we jest aren't ready to get the huge amount of power needed from those sources.

- 73 de Mike N3LI -

5015. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-27 15:47:18 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6a2oolF3599n6U1@mid.individual.net>
Source record: 25337

Michael Coslo wrote:
> Although there is an alternative:
>
> LOTS more nuc power...

And quit makin' babies.

Instead of the Fed Gov rewarding and encouraging
uteral exercise by tax cuts, welfare etc...Spend
the money on making adults smarter.

Give the Iraq vets tuition and rent. That would
make them smarter and better productive citizens.
That seems like a fabulous way to boost economy
and raise the quality of life of the population.
While we're at it, give them all a hybrid car.

Screw the welfare moms that keep reproducing at
my expense. That does nothing but waste money
and produce more mouths to feed, who will grow
up in a family that teaches/preaches poverty
and how to conduct a life that doesn't require
responsibility because "someone else will always
pay for your right to be here".

I'm enthusiastic about paying for the former.
I'm sick of paying for the latter.

Lumpy

You Played on Lawrence Welk?
Yes but no blue notes. Just blue hairs.

www.LumpyGuitar.net

5016. Re: Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-27 17:46:49 UTC
From: ltdoc@yahoo.com
Message-ID: <22022680-474c-4aab-9d3b-b761563b5079@8g2000hse.googlegroups.com>
Source record: 25338

Gary,
I'm not familiar with UHFCB at all, what frequency range is it in?
- 'Doc

5017. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-27 19:08:50 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <g1hmua$496$1@news.service.uci.edu>
Source record: 25339

Alan Peake wrote:
>
>
> Cecil Moore wrote:
>
>> M0WYM wrote:
>>
>>> So you can't trust statistics - wow that's news.
>>
>>
>>
>> Can we trust the statistic that says the global-warming/ice-age
>> cycle has repeated itself at 90K-150k year intervals for the
>> last half million years?
>
>
> No. There are indications are that the cycles which correlate with ice
> ages, may not produce the conditions for another ice age for the next
> 60,000 years.
> Alan

There are also indications that global temperature correlates inversely with the total number of pirates. The only actual correlation is of course that the respective numbers are plotted on a graph; one versus the other. A cause and effect relationship has not been demonstrated, but the "indications" might lead someone to assume there was one.

ac6xg

5018. Re: Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-27 22:24:43 UTC
From: Gary Smith <vkthree@gmail.com>
Message-ID: <g1i1o3pdn1@news-01.bur.connect.com.au>
Source record: 25340

UHF Cb in Australia is in the range of 476.425 - 477.400 MHz.
Sorry, i was thinking i was posting in an Australin ng.

So i need an antenna to cover 144-148, 430-440 and 476.425-477.400MHz

Thanks.

Gary

<ltdoc@yahoo.com> wrote in message
news:22022680-474c-4aab-9d3b-b761563b5079@8g2000hse.googlegroups.com...
> Gary,
> I'm not familiar with UHFCB at all, what frequency range is it in?
> - 'Doc
>

5019. Re: Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 02:40:07 UTC
From: ltdoc@yahoo.com
Message-ID: <2b22d1d2-4e9b-488e-8757-aaacd6eecd13@59g2000hsb.googlegroups.com>
Source record: 25341

Gary,
For what it's worth, take a look at some of the "Comet" mobile 'dual band' antennas. They advertise as being broadbanded and are to some extent (how much, I don't know). I've had no reason to try the 'UHFCB' frequencies, but I do know that at least one of 'Comet's dual-band antennas is fairly broadbanded on 2 meters/150 Mhz. Can't measure on the UHF portions so can't say one way or the other.
- 'Doc

And also keep in mind that "FWIW" thingy! As in, don't take my word for it.

5020. Re: Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 11:58:03 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <k-ydnQSeouTw1aDVnZ2dneKdnZzinZ2d@pipex.net>
Source record: 25342

Gary Smith wrote:
> UHF Cb in Australia is in the range of 476.425 - 477.400 MHz.
> Sorry, i was thinking i was posting in an Australin ng.
>
> So i need an antenna to cover 144-148, 430-440 and 476.425-477.400MHz
>
> Thanks.
>
> Gary
>
==========

UHFcb in Oz-land is highly likely similar to PMR446 in Europe and FRS in the USA.

PMR446 are 8 RF channels with 12.5 kHz spacing starting at 446.0025 MHz . That means using a Ham radio it must have the capability to be set at 2.5 kHz channel spacing and few if any ham transceivers have that. Also, the deviation is set at a low 1.5 KHz.

So I wonder how UHFcb is operated in Australia ....would a Ham radio with extended range be usable ?

Frank GM0CSZ / KN6WH

5021. Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 12:09:20 UTC
From: DRA <damacker@tx.rr.com>
Message-ID: <483d4b79$0$7066$4c368faf@roadrunner.com>
Source record: 25343

Does anyone have the formula to calculate the acreage needed for a guyed tower? We have a 500' guyed tower, with guy wire at 50% guying radius . Wires would be 250' to outer anchor.

Thanks -

Don

5022. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 13:42:18 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lid%j.5491$Ri.4333@flpi146.ffdc.sbc.com>
Source record: 25344

DRA wrote:
> Does anyone have the formula to calculate the acreage needed for a guyed
> tower? We have a 500' guyed tower, with guy wire at 50% guying radius .
> Wires would be 250' to outer anchor.

What is a "50% guying radius"? Does that mean 125' from
the tower base to the anchor? Does that mean 250' between
anchors? Are there 3 or 4 anchors?
--
73, Cecil http://www.w5dxp.com

5023. Re: Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 13:48:56 UTC
From: Gary Smith <vkthree@gmail.com>
Message-ID: <g1jnt4$6dm$1@news-01.bur.connect.com.au>
Source record: 25345

They certainly are, i'm using a couple at the moment. Our 2 Mtr and 70cm and UHF CB are all 25KHz spacings.
There is talk of changing the UHFcb to 12.5 Kc to get 80 channels instead of 40 but i don't see how this will work as there will still be thousands of 40 channel radios out there with standard deviation splattering all over the newer narrower radios.

As for the pmr446 band, you need a radio that will do 12.5kHz not 2.5 which are available here and i would guess many other countries. From what i read the band starts at 446.0 and goes to 446.1, thus 446.012.5 - ch1, 446.025 - ch2, 446.037.5 - ch3 446.050 - ch4 etc. The deviation for that would be around 8kHz and for 25KHz would be around 12. i think, not 100% but i'm sure it's something like that over here.

Anyhow, i still need an antenna lol.

Gary

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message news:k-ydnQSeouTw1aDVnZ2dneKdnZzinZ2d@pipex.net...
> Gary Smith wrote:
>> UHF Cb in Australia is in the range of 476.425 - 477.400 MHz.
>> Sorry, i was thinking i was posting in an Australin ng.
>>
>> So i need an antenna to cover 144-148, 430-440 and 476.425-477.400MHz
>>
>> Thanks.
>>
>> Gary
>>
> ======================================
> UHFcb in Oz-land is highly likely similar to PMR446 in Europe and FRS in
> the USA.
>
> PMR446 are 8 RF channels with 12.5 kHz spacing starting at 446.0025
> MHz . That means using a Ham radio it must have the capability to be set
> at 2.5 kHz channel spacing and few if any ham transceivers have that.
> Also, the deviation is set at a low 1.5 KHz.
>
> So I wonder how UHFcb is operated in Australia ....would a Ham radio
> with extended range be usable ?
>
> Frank GM0CSZ / KN6WH

5024. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 14:06:56 UTC
From: DRA <damacker@tx.rr.com>
Message-ID: <483d6701$0$30480$4c368faf@roadrunner.com>
Source record: 25346

Guy radius is the percentage length of longest (top) wire to outer anchor.
Three wires at 120 deg spacing. Normally guyed towers are at 80% guy
radius; but due to buying this tower with wires, it was originally at 50%.

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:lid%j.5491$Ri.4333@flpi146.ffdc.sbc.com...
> DRA wrote:
>> Does anyone have the formula to calculate the acreage needed for a guyed
>> tower? We have a 500' guyed tower, with guy wire at 50% guying radius .
>> Wires would be 250' to outer anchor.
>
> What is a "50% guying radius"? Does that mean 125' from
> the tower base to the anchor? Does that mean 250' between
> anchors? Are there 3 or 4 anchors?
> --
> 73, Cecil http://www.w5dxp.com

5025. Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 14:16:45 UTC
From: Sonny Hood <wrhood@cox.net>
Message-ID: <r6qq34tire06i75gms47ol8qjha8lvd2lb@4ax.com>
Source record: 25347

I have an efficiency question concerning feed lines. My present system is RG-8X to my 75 meter inverted vee which is about 85 feet away from the shack. I propose to replace some 88 feet of coax with 300 ohm window ladder line that is inserted into the coax run with 4:1 baluns to match the coax on each end. Also at the feed point of the antenna switch from a voltage balun to a current balun (ferrite chock type). By my calculations with a 98 watt generator I will increase the power to the load by about 11-20 watts and with a 985 watt generator, 117-210 more watts will reach the load. Figuring theoretical total system (A) against total System (B) or by just the difference in the 88 feet of ladder line versus coax. What do you think the increase will be?

5026. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 14:19:01 UTC
From: ltdoc@yahoo.com
Message-ID: <b0093ab6-8beb-4fdc-93df-1538b3223c5f@z66g2000hsc.googlegroups.com>
Source record: 25348

An acre is roughly 209 feet per side, or 43560 square feet. So, if
I'm guessing that "50% guying radius" correctly, you'll need about 4.5
acres. Call it 5 acres.
The actual 'size' of an acre depends on who'z doing the measuring,
where, and why. It varies.
- 'Doc

5027. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 14:21:10 UTC
From: Jeff <jeff@local.host>
Message-ID: <483d6ab0$0$30636$834e42db@reader.greatnowhere.com>
Source record: 25349

"DRA" <damacker@tx.rr.com> wrote in message
news:483d4b79$0$7066$4c368faf@roadrunner.com...
> Does anyone have the formula to calculate the acreage needed for a guyed
> tower? We have a 500' guyed tower, with guy wire at 50% guying radius .
> Wires would be 250' to outer anchor.
>
> Thanks -
>
> Don

If I understand you correctly, it is merely the formula for the area of a
circle; pi , r squared.

So 250*250*p i = 196349.54 square feet

73
Jeff

5028. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 14:23:25 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6a587gF35u705U1@mid.individual.net>
Source record: 25350

DRA wrote:
> Does anyone have the formula to calculate the acreage needed for a
> guyed tower? We have a 500' guyed tower, with guy wire at 50%
> guying radius . Wires would be 250' to outer anchor.

An acre is 43,560 sq ft. Although acres in the US
tend to be typically subdivided sections (640 acres)
and therefore fall into squares that are about
209ft x 209ft, it doesn't have to be square or
even rectangular. Technically an acre could be
1 ft x 43,560 ft.

So it's not simple to say that XX acres will hold
a 500' diameter circle.

Given all that, ONE acre, 500' in one dimension
would be 87.12' the other dimension. You'd need
about six acres in that case to give you a rectangle
500' x 522.72', large enough to hold a 250' radius
circle of guy wires.

A square acre, 209' per side, has a diagonal
measurement of 295'. So if you had 4 sq acres,
you'd have a lot 418' x 418' with a diagonal
measurement of ~591'.

If you used 4 guy wires, and the tower was dead
center in that 4 acres, it appears the 250'
radius would fit.

If you used the more traditional 3 guys, it
would not.

Bottom line is "Acreage" in itself doesn't indicate
the linear measurement of any side of a rectangular
(or any other shaped) lot. You'd have to know the
actual measurements of the lot. But generally
you're looking at at least 5-6 acres.

Think of an acre as ~90 yards of a 100 yard
American football field.

And obviously, none of that accounts for
easements or restrictions on how close to
the edge of the lot you may be allowed to
place your guys due to ordinance/zoning or
good engineering practice.

Hoping I got the math right...

Craig 'Lumpy' Lemke

www.n0eq.com

5029. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 14:25:53 UTC
From: ltdoc@yahoo.com
Message-ID: <e5b41baf-64a8-4987-b1d7-d4cfdaccaac5@i76g2000hsf.googlegroups.com>
Source record: 25251

... in practical terms... not worth the trouble. :)
- 'Doc

5030. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 14:31:08 UTC
From: gwatts <gwatts@frontiernet.net>
Message-ID: <M0e%j.570$PD1.394@fe107.usenetserver.com>
Source record: 25252

Lumpy wrote:
> DRA wrote:
>
>>Does anyone have the formula to calculate the acreage needed for a
>>guyed tower? We have a 500' guyed tower, with guy wire at 50%
>>guying radius . Wires would be 250' to outer anchor.
>
>
> ...generally
> you're looking at at least 5-6 acres.
>
...
> And obviously, none of that accounts for
> easements or restrictions on how close to
> the edge of the lot you may be allowed to
> place your guys due to ordinance/zoning or
> good engineering practice.

Do you have the requirement that if the tower falls it must all land on your (the tower) property? Some zoning boards require that.

5031. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 14:32:07 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6a58nrF35n0dmU1@mid.individual.net>
Source record: 25253

DRA wrote:
> Guy radius is the percentage length of longest (top) wire to outer
> anchor. Three wires at 120 deg spacing. Normally guyed towers are at
> 80% guy radius; but due to buying this tower with wires, it was
> originally at 50%.

Maybe I'm not reading your description correctly.

Are you saying:

Longest wire length
- divided by -
linear distance from base of tower to guy stake?

If so 80% would be impossible, I believe.
The guy wire would always be longer than
the distance from tower to guy at the ground.
Perhaps the formula needs to be inverted?
Ground measurement / wire length could equal
80% or 50%.

If you're buying this tower, would it be possible
to ask or measure to find out what it's original
guy anchor diameter is/was?

Craig 'Lumpy' Lemke

www.n0eq.com

5032. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 14:50:59 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <0Y6dnZrd5e1o7aDVRVnygQA@pipex.net>
Source record: 25254

Sonny Hood wrote:
> I have an efficiency question concerning feed lines. My present
> system is RG-8X to my 75 meter inverted vee which is about 85 feet
> away from the shack. I propose to replace some 88 feet of coax with
> 300 ohm window ladder line that is inserted into the coax run with 4:1
> baluns to match the coax on each end. Also at the feed point of the
> antenna switch from a voltage balun to a current balun (ferrite chock
> type). By my calculations with a 98 watt generator I will increase
> the power to the load by about 11-20 watts and with a 985 watt
> generator, 117-210 more watts will reach the load. Figuring
> theoretical total system (A) against total System (B) or by just the
> difference in the 88 feet of ladder line versus coax. What do you
> think the increase will be?
==========
Why not replace the complete coax feeder with twin lead feeder (if you
can keep it away from soil and/or metal) , and use a matching box
directly accepting the twin lead feeder (without ferrite type balun),
be it 300 or 450 Ohms or approx 600 Ohms ladder line ?
It will improve efficiency and above all make the antenna multi-band.

Frank GM0CSZ / KN6WH

5033. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 15:07:46 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <3ed494ac-d4fb-487d-9785-b8700612e625@t54g2000hsg.googlegroups.com>
Source record: 25255

On May 28, 10:16 am, Sonny Hood <wrh...@cox.net> wrote:
> I have an efficiency question concerning feed lines. My present
> system is RG-8X to my 75 meter inverted vee which is about 85 feet
> away from the shack. I propose to replace some 88 feet of coax with
> 300 ohm window ladder line that is inserted into the coax run with 4:1
> baluns to match the coax on each end. Also at the feed point of the
> antenna switch from a voltage balun to a current balun (ferrite chock
> type). By my calculations with a 98 watt generator I will increase
> the power to the load by about 11-20 watts and with a 985 watt
> generator, 117-210 more watts will reach the load. Figuring
> theoretical total system (A) against total System (B) or by just the
> difference in the 88 feet of ladder line versus coax. What do you
> think the increase will be?

I think you left out the losses in the balun. With a kilowatt even a large (by ham standards) balun will get very warm if you leave the key down... my guess is it's not quite as much as you're saving but comparable. It all amounts to 10%, and that's such a tiny fraction of a S-unit.

Now, if your antenna were an incredible mismatch to coax to begin with, then ladder line makes good sense. Say you want to use your same inv-V on 40M, then you'd run ladder line all the way to your tuner and be in fat city.

Tim N3QE

5034. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 15:23:33 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <INe%j.35555$Ht.18053@newsfe05.ams2>
Source record: 25256

My Rigexpert AA-200 has just arrived from
http://www.radioworld.co.uk/~radio/catalog/aa200-antenna-analyzer-p-5841.html?osCsid=7da1c42b40621b06dffec46917ed4fe4

So far I have only used the MFJ 259B. But this is a much better analyser. It is in a class of its own. I input the frequencies for all 5 bands and connected it to my Cobwebb antenna and got an instant SWR reading. It continuously monitors the SWR on all five bands at once. This is only one excellent feature of many. I have not had much experience with antenna analysers, but this one I am very impressed with, so far.

73 Andy

"Dan Richardson" <k6mhe@k6mhe.com> wrote in message
news:incl341ik5jmhe5eusm6gcuom74q88ak5v@4ax.com...
> On Mon, 26 May 2008 11:03:41 +0100, "Andy" <dx90@blueyounder.co.uk>
> wrote:
>
>>If I was to look out for an Antenna Analyser that would do the other
>>measurements that the AA-200 can't do. What would be the price rang that I
>>could expect to pay and what would you recommend?
>>
>>73 Andy
>>
>>
> Try this:
>
> http://w5big.com/
>
> 73,
> Danny, K6MHE

5035. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 15:25:09 UTC
From: John Passaneau <w3jxp@arrl.net>
Message-ID: <Xns9AAC742A14CDDjxp16psuedu@128.118.141.40>
Source record: 25257

Sonny Hood <wrhood@cox.net> wrote in
news:r6qq34tire06i75gms47ol8qjha8lvd2lb@4ax.com:

> I have an efficiency question concerning feed lines. My present
> system is RG-8X to my 75 meter inverted vee which is about 85 feet
> away from the shack. I propose to replace some 88 feet of coax with
> 300 ohm window ladder line that is inserted into the coax run with 4:1
> baluns to match the coax on each end. Also at the feed point of the
> antenna switch from a voltage balun to a current balun (ferrite chock
> type). By my calculations with a 98 watt generator I will increase
> the power to the load by about 11-20 watts and with a 985 watt
> generator, 117-210 more watts will reach the load. Figuring
> theoretical total system (A) against total System (B) or by just the
> difference in the 88 feet of ladder line versus coax. What do you
> think the increase will be?

One of the numbers that is hard to come up with is the loss through a
balun. The only number I could find for a voltage balun is a matched loss
of 0.075db, this would be times 2 in your setup. So there is loss, and it's
well known that the loss goes up with miss match. I think you are
neglecting the loss through the baluns and the miss match loss. Remember
your antenna will not be 50 ohms over a very wide frequency range.
Going open wire line all the way or changing to RG8 size coax will likely
work just as well and be simpler to do.

John W3JXP

5036. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 16:55:03 UTC
From: Jeff <jeff@local.host>
Message-ID: <483d8ebd$0$30639$834e42db@reader.greatnowhere.com>
Source record: 25258

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:6a58nrF35n0dmU1@mid.individual.net...
> DRA wrote:
>> Guy radius is the percentage length of longest (top) wire to outer
>> anchor. Three wires at 120 deg spacing. Normally guyed towers are at
>> 80% guy radius; but due to buying this tower with wires, it was
>> originally at 50%.
>
> Maybe I'm not reading your description correctly.
>
> Are you saying:
>
> Longest wire length
> - divided by -
> linear distance from base of tower to guy stake?
>
> If so 80% would be impossible, I believe.
> The guy wire would always be longer than
> the distance from tower to guy at the ground.
> Perhaps the formula needs to be inverted?
> Ground measurement / wire length could equal
> 80% or 50%.
>

For goodness sake, it is pretty obvious, he means that the guying radius is
50% or 80% of the mast height. So say 100' mast, then the guying radius
would be 50' and 80' respectively.

73
Jeff

5037. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 17:02:40 UTC
From: Jeff <jeff@local.host>
Message-ID: <483d9087$0$30636$834e42db@reader.greatnowhere.com>
Source record: 25259

"Jeff" <jeff@local.host> wrote in message
news:483d6ab0$0$30636$834e42db@reader.greatnowhere.com...
>
> "DRA" <damacker@tx.rr.com> wrote in message
> news:483d4b79$0$7066$4c368faf@roadrunner.com...
>> Does anyone have the formula to calculate the acreage needed for a guyed
>> tower? We have a 500' guyed tower, with guy wire at 50% guying radius .
>> Wires would be 250' to outer anchor.
>>
>> Thanks -
>>
>> Don
>
> If I understand you correctly, it is merely the formula for the area of a
> circle; pi , r squared.
>
> So 250*250*p i = 196349.54 square feet
>
> 73
> Jeff

If you mean the area enclosed in the triangle formed by the 3 guy stakes,
rather than a circle of radius 250', then you can work it out using trig:

h = sin (30)*250 b= cos(30)*250

a = h * (b/2)

total area = a *6

so h =125, b =216.5, a = 13531.25, total area = 81187.5 sq ft

73
Jeff

5038. Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 17:05:43 UTC
From: NeedAntennaSpace@gmail.com
Message-ID: <74cd1b72-0ee1-44db-9d2f-f140df5c801b@y21g2000hsf.googlegroups.com>
Source record: 25260

I am want to develop a network of AIS receivers with coverage of the US inland waterways(miss, Ohio, Illinois rivers and the gulf). Searching the web mostly results in sites targeted for cell phone carriers. Does anyone know of any sites that would be more appropriate for this type of need? How do locate sites/towers to be used for repeaters for example?

Ideally well located amateur towers would probably be best.

Thanks in Advance.

5039. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 17:22:30 UTC
From: nospam@online.de
Message-ID: <1ihnz3n.wxm0z7nvxaivN%nospam@online.de>
Source record: 25261

Tim Shoppa <shoppa@trailing-edge.com> wrote:

Hi,

> I think you left out the losses in the balun. With a kilowatt even a
> large (by ham standards) balun will get very warm if you leave the key
> down... my guess is it's not quite as much as you're saving but
> comparable. It all amounts to 10%, and that's such a tiny fraction of
> a S-unit.

The other side probably wouldn`notice the difference.

> Now, if your antenna were an incredible mismatch to coax to begin
> with, then ladder line makes good sense. Say you want to use your same
> inv-V on 40M, then you'd run ladder line all the way to your tuner and
> be in fat city.

I would not take TV ladderline if you have a high standing wave ratio,
and this will happen if you use the dipol for multiband purpose.
I`ve tested a dipol with about 20 m length (67 ft) for 80m.
At first I got almost the same s-meter report compared with a W3DZZ trap
dipol. But after a couple of month I noticed that the received signal
was up to 20 db down compared with the trap dipol. I only used 100 watts
but it broke the TV ladder line. Here I`ve learned what has happened:

http://www.w8ji.com/vswr_reactive_power.htm

I`m planning to build a new antenna with self built ladderline for
multiband purposes for one of the traps of my W3DZZ is broken. Iï¿½ve only
bought the spacers for the new ladder line.
--
73
DJ4PB

5040. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 17:38:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <BMg%j.4932$mh5.2145@nlpi067.nbdc.sbc.com>
Source record: 25262

Highland Ham wrote:
> Why not replace the complete coax feeder with twin lead feeder (if you
> can keep it away from soil and/or metal) , and use a matching box
> directly accepting the twin lead feeder (without ferrite type balun),
> be it 300 or 450 Ohms or approx 600 Ohms ladder line ?
> It will improve efficiency and above all make the antenna multi-band.

Let's see how much improvement. Assuming a 50 ohm antenna,
3.8 MHz, and using Owen's xmission line calculator at:

http://www.vk1od.net/tl/tllc.php

85 feet of RG8x has a loss of 0.478 dB.

85 feet of 300 ohm twinlead has a loss of 0.424 dB.

How much will that 0.054 dB improve efficiency? 1%?

The coax has a 1:1 SWR. The 300 ohm twinlead has a
6:1 SWR. That makes the losses almost equal. If we
were talking about RG-213, the losses would be
0.308 dB, 0.116 dB better than the 300 ohm twinlead.

The following is becoming a myth: "One can ignore
the losses in twinlead and ladder-line."

Also - maybe he doesn't want to use a "matching box".
--
73, Cecil http://www.w5dxp.com

5041. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 17:48:56 UTC
From: Tim Shoppa <shoppa@trailing-edge.com>
Message-ID: <78f67c46-c064-42aa-b5d8-0ed09594750f@m36g2000hse.googlegroups.com>
Source record: 25263

On May 28, 1:22 pm, nos...@online.de (Dieter Kiel) wrote:
> TimShoppa<sho...@trailing-edge.com> wrote:
>
> Hi,
>
> > I think you left out the losses in the balun. With a kilowatt even a
> > large (by ham standards) balun will get very warm if you leave the key
> > down... my guess is it's not quite as much as you're saving but
> > comparable. It all amounts to 10%, and that's such a tiny fraction of
> > a S-unit.
>
> The other side probably wouldn`notice the difference.
>
> > Now, if your antenna were an incredible mismatch to coax to begin
> > with, then ladder line makes good sense. Say you want to use your same
> > inv-V on 40M, then you'd run ladder line all the way to your tuner and
> > be in fat city.
>
> I would not take TV ladderline if you have a high standing wave ratio,
> and this will happen if you use the dipol for multiband purpose.
> I`ve tested a dipol with about 20 m length (67 ft) for 80m.
> At first I got almost the same s-meter report compared with a W3DZZ trap
> dipol. But after a couple of month I noticed that the received signal
> was up to 20 db down compared with the trap dipol. I only used 100 watts
> but it broke the TV ladder line. Here I`ve learned what has happened:
>
> http://www.w8ji.com/vswr_reactive_power.htm
>
> I`m planning to build a new antenna with self built ladderline for
> multiband purposes for one of the traps of my W3DZZ is broken. I´ve only
> bought the spacers for the new ladder line.

I have a 135-foot dipole fed with approx 100 feet of home-made ladder
line and am incredibly happy with its performance from 80M all the way
to 15M.

Much of the joy of the ladderline was not in buying the parts to make
it, but making it from stuff on hand. I had a sheet of 1/8"
polycarbonate that I cut into 4"x3/8" strips, then drilled and
notched, to put a spacer every foot using tie-wires. Others boil
wooden dowels in paraffin for the spacers (the method recommended by
the 1930's ARRL Handbook). Seeing the ladderline go up 85 feet to the
middle of the dipole is a pure joy!

Tim N3QE

5042. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 18:17:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <oO6dnflYp61FPKDVnZ2dnUVZ_oLinZ2d@posted.easystreetonline>
Source record: 25264

11 - 20 watts represents only 0.5 - 1 dB, which would virtually never be discernible by the other station. As others have noted, even this insignificant potential gain would be reduced by balun loss. But what no one else has mentioned is that the ladder line loss can increase significantly, possibly even dramatically, when it gets wet. Any improvement you'll see from the proposed change will be due entirely to placebo effect.

Roy Lewallen, W7EL

5043. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 19:46:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hEi%j.2083$uE5.1644@flpi144.ffdc.sbc.com>
Source record: 25265

Tim Shoppa wrote:
> I have a 135-foot dipole fed with approx 100 feet of home-made ladder
> line and am incredibly happy with its performance from 80M all the way
> to 15M.

Why those are good choices for lengths can be seen on
the following diagram:

http://www.w5dxp.com/pnts130.gif

You are relatively close to a low-impedance/current-
maximum point on all HF bands.
--
73, Cecil http://www.w5dxp.com

5044. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 20:19:44 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6a5t3lF34ci72U1@mid.individual.net>
Source record: 25266

Jeff wrote:
> For goodness sake, it is pretty obvious, he means that the guying
> radius is 50% or 80% of the mast height. So say 100' mast, then the
> guying radius would be 50' and 80' respectively.

Based on the number of replies suggesting
a clarification, I don't think it's that obvious.

Craig 'Lumpy' Lemke

www.n0eq.com

5045. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 21:50:39 UTC
From: nm5k@wt.net
Message-ID: <fa66199a-a89e-4e1f-a068-1b0b830548e3@t54g2000hsg.googlegroups.com>
Source record: 25267

On May 28, 9:16 am, Sonny Hood <wrh...@cox.net> wrote:
> I have an efficiency question concerning feed lines. My present
> system is RG-8X to my 75 meter inverted vee which is about 85 feet
> away from the shack. I propose to replace some 88 feet of coax with
> 300 ohm window ladder line that is inserted into the coax run with 4:1
> baluns to match the coax on each end. Also at the feed point of the
> antenna switch from a voltage balun to a current balun (ferrite chock
> type). By my calculations with a 98 watt generator I will increase
> the power to the load by about 11-20 watts and with a 985 watt
> generator, 117-210 more watts will reach the load. Figuring
> theoretical total system (A) against total System (B) or by just the
> difference in the 88 feet of ladder line versus coax. What do you
> think the increase will be?

If you switch from coax to ladder line and baluns or tuners, you are
going to lose a bit of efficiency I bet.
I always have when I've compared the two on that band.
You are converted from a pure and simple system which is a 50 ohm
radio, feeding 50 ohm line, which BTW at 75m is very low loss,
into an appx 50 ohm load. This "pure" system is probably 95%+
efficient on the 75m band as long as the coax is not junk.
In my opinion there is no better method of feeding a single band
dipole. Anything else is pretty much a step down as far as I'm
concerned. The *only* reason I would ever run that way is if I
wanted multi band use using ladder line and a tuner.
But in my case, I prefer multiple dipoles fed with a single coax.
The decrease in loss switching from coax to ladder line *on 75m*
is so small as to be nothing. But then you have baluns and tuners.
This is what is going to spoil the food. You will actually end up
with
a net loss at the end of the day. Maybe be a small loss, but I
bet it will be measurable on a meter if you used an A/B switch.
It was in my cases. Then you have the moisture issues, etc..
Do what you want, I prefer coax when feeding dipoles.
I usually use 213 on HF here at the house.
But at 3 mhz, even RG-58 is fairly low loss.
The mini 8 you are using should be a bit better than rg-58.
I think it's slightly larger and using foam if I remember right.

5046. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 22:27:20 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AAD5601BCD6Cnonenowhere@61.9.191.5>
Source record: 25268

nospam@online.de (Dieter Kiel) wrote in news:1ihnz3n.wxm0z7nvxaivN%
nospam@online.de:

> http://www.w8ji.com/vswr_reactive_power.htm
>
>

I assume Dieter that this is your recommendation of the article.

That article uses the term 'reactive power' in a non-conventional way,
though the term is a well known one (ie has a conventional meaning).

Conventional use is that the term 'apparent power' is applied to the
product of RMS voltage and current flowing into a two terminal load, and
the units are VoltAmps (VA), not Watts as used in the article.

Reactive power is the reactive component of apparent power, and expressed
in units of 'VoltAmpsReactive' (VAR).

'Real power' is the real component of apparent power and expressed in
units of Watts (W).

The relationship is that
apparentpower = (realpower^2 + reactive power^2)^0.5 .

This is all basic lumped component AC circuit theory, and holds at RF.

However, basic lumped component AC circuit theory is not a good way to
analyse antenna systems, expecially to determine transmission line losses
cause by highly reactive loads (which is what that article tries to do).

Owen

5047. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 22:37:12 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AAD57ADC9856nonenowhere@61.9.191.5>
Source record: 25269

Sonny Hood <wrhood@cox.net> wrote in
news:r6qq34tire06i75gms47ol8qjha8lvd2lb@4ax.com:

> I have an efficiency question concerning feed lines. My present
> system is RG-8X to my 75 meter inverted vee which is about 85 feet
> away from the shack. I propose to replace some 88 feet of coax with
> 300 ohm window ladder line that is inserted into the coax run with 4:1
> baluns to match the coax on each end. Also at the feed point of the
> antenna switch from a voltage balun to a current balun (ferrite chock
> type). By my calculations with a 98 watt generator I will increase
> the power to the load by about 11-20 watts and with a 985 watt
> generator, 117-210 more watts will reach the load. Figuring
> theoretical total system (A) against total System (B) or by just the
> difference in the 88 feet of ladder line versus coax. What do you
> think the increase will be?

Sonny,

I have resisted the temptation to tell you that the question is wrong rather than to answer the question... however...

You are trying to compare two configurations that are not optimal.

An optimal coax configuration would have a balun, usually at the antena feed point so your coax loss budget is short changed a balun.

I assume from the fact that you have proposed coax that this is a one band antenna. You haven't made it clear whether you can use an ATU to transform the load to suit the tx, I will assume you can.

Why do you need two 4:1 baluns / transformers? The dipole is already an approximately balanced load and loss on open wire line with a VSWR of 4:1 is still quite low. You could just attach the feedline directly to the antenna, and use a 1:1 balun at the ATU. Alternatively, you could lengthen the feedline a little so that it was an electrical half wave and dispense with the ATU (still need the balun).

In the case of the latter (an electrical half wave of open wire line, 1:1 balun at the tx) you will achieve the lowest loss, but it is just a few tenths of a db better than the balun/RG8X config if you work them through.

The open wire line might not be as easy to route into and around the shack, and depending on construction, more affected by water.

Owen

5048. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-28 23:29:58 UTC
From: Dave <noone@nowhere.com>
Message-ID: <WVI%j.7145$0R.6684@trndny05>
Source record: 25270

isn't the coast guard already doing this? why would an individual want
something like this????

<NeedAntennaSpace@gmail.com> wrote in message
news:74cd1b72-0ee1-44db-9d2f-f140df5c801b@y21g2000hsf.googlegroups.com...
>
> I am want to develop a network of AIS receivers with coverage of the
> US inland waterways(miss, Ohio, Illinois rivers and the gulf).
> Searching the web mostly results in sites targeted for cell phone
> carriers. Does anyone know of any sites that would be more appropriate
> for this type of need? How do locate sites/towers to be used for
> repeaters for example?
>
> Ideally well located amateur towers would probably be best.
>
> Thanks in Advance.

5049. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 01:12:56 UTC
From: Sonny Hood <wrhood@cox.net>
Message-ID: <tk0s34557ge9q9nun163avlrubhspsjjcs@4ax.com>
Source record: 25271

On Wed, 28 May 2008 10:16:45 -0400, Sonny Hood <wrhood@cox.net> wrote:

Thanks Guys, I got some good replies and it cause me to
reconsider the change. I find that the best and most simple change
will be to remove the RG-8X and it's high attenuation and install all
JT-2015 (RG-8 Type) from R&L Electronics. Also to put a good 1:1
balun at the feed point.
I have a 160M windom and a G5RV and will dedicate this
inverted vee antenna to 75M. This will be not used on 40M due to the
high resistance on the second harmonic with the current balun.
Yes the added baluns for the ladder line would increase the
insertion loss and yes the wet ladder line is a poor conductor. And
the cost will be spent for a more efficiency designed system.
K4WYS

5050. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 01:22:51 UTC
From: Lisa <iwtbaw@fuse.net>
Message-ID: <5cae4$483e04ff$453de6e2$14637@FUSE.NET>
Source record: 25272

Sonny Hood wrote:
> I have an efficiency question concerning feed lines. My present
> system is RG-8X to my 75 meter inverted vee which is about 85 feet
> away from the shack. I propose to replace some 88 feet of coax with
> 300 ohm window ladder line that is inserted into the coax run with 4:1
> baluns to match the coax on each end. Also at the feed point of the
> antenna switch from a voltage balun to a current balun (ferrite chock
> type). By my calculations with a 98 watt generator I will increase
> the power to the load by about 11-20 watts and with a 985 watt
> generator, 117-210 more watts will reach the load. Figuring
> theoretical total system (A) against total System (B) or by just the
> difference in the 88 feet of ladder line versus coax. What do you
> think the increase will be?
There is so little loss at 3.5 mHz for RG8X you would have a hard time
telling any difference.

5051. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 01:28:17 UTC
From: Dave Oldridge <doldridg@leavethisoutshaw.ca>
Message-ID: <Xns9AACBBE4BC89doldridgsprintca@64.59.135.159>
Source record: 25273

Sonny Hood <wrhood@cox.net> wrote in
news:r6qq34tire06i75gms47ol8qjha8lvd2lb@4ax.com:

> I have an efficiency question concerning feed lines. My present
> system is RG-8X to my 75 meter inverted vee which is about 85 feet
> away from the shack. I propose to replace some 88 feet of coax with
> 300 ohm window ladder line that is inserted into the coax run with 4:1
> baluns to match the coax on each end. Also at the feed point of the
> antenna switch from a voltage balun to a current balun (ferrite chock
> type). By my calculations with a 98 watt generator I will increase
> the power to the load by about 11-20 watts and with a 985 watt
> generator, 117-210 more watts will reach the load. Figuring
> theoretical total system (A) against total System (B) or by just the
> difference in the 88 feet of ladder line versus coax. What do you
> think the increase will be?

In one short word: imperceptible.

Using twinlead or ladder line is a good idea if you're feeding an antenna
that has a high SWR at the feedpoint on some of the frequencies you're
going to use it with, but at 75 meters, RG8X vs. ladder line will only
make a small difference if the SWR is at all close to 1. Less than half
a decibel, or a tenth of an S-unit!

Sure, it might make enough difference on very weak paths, but most of the
time nobody would be able to tell the difference on a direct on-air A-B
test!

And even that advantage almost disappears when the ladder line is wet.

Like I said, the picture is quite different at high SWR.

--
Dave Oldridge+
ICQ 1800667

5052. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 01:50:17 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AAD7869FF43Cnonenowhere@61.9.191.5>
Source record: 25275

Sonny Hood <wrhood@cox.net> wrote in
news:tk0s34557ge9q9nun163avlrubhspsjjcs@4ax.com:

> On Wed, 28 May 2008 10:16:45 -0400, Sonny Hood <wrhood@cox.net> wrote:
>
> Thanks Guys, I got some good replies and it cause me to
> reconsider the change. I find that the best and most simple change
> will be to remove the RG-8X and it's high attenuation and install all
> JT-2015 (RG-8 Type) from R&L Electronics.

Sonny, run the numbers at http://www.vk1od.net/tl/tllc.php before you spend the money.

BTW, it will make NO difference on receive since S/N ratio on 80m is almost entirely determined by band noise and small change in TL loss will make no significant difference. Change in TL loss will affect the strength of your transmitted signals.

> Also to put a good 1:1
> balun at the feed point.

Good move.

Owen

5053. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 02:50:04 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <W8-dnYA0Ec5elqPVnZ2dnUVZ_qLinZ2d@earthlink.com>
Source record: 25274

"Sonny Hood" <wrhood@cox.net> wrote in message
news:tk0s34557ge9q9nun163avlrubhspsjjcs@4ax.com...
> On Wed, 28 May 2008 10:16:45 -0400, Sonny Hood <wrhood@cox.net> wrote:
>
> Thanks Guys, I got some good replies and it cause me to
> reconsider the change. I find that the best and most simple change
> will be to remove the RG-8X and it's high attenuation and install all
> JT-2015 (RG-8 Type) from R&L Electronics. Also to put a good 1:1
> balun at the feed point.
> I have a 160M windom and a G5RV and will dedicate this
> inverted vee antenna to 75M. This will be not used on 40M due to the
> high resistance on the second harmonic with the current balun.
> Yes the added baluns for the ladder line would increase the
> insertion loss and yes the wet ladder line is a poor conductor. And
> the cost will be spent for a more efficiency designed system.
> K4WYS

YOu have had many answers to your question, but have drawn the wrong conclusion. If you replace the rg8x with some of the best low loss coax (lmr400 for my example) you go from about .7 db to .2 db of loss on 80 meters. That is .5 db less loss. You will almost need an electron microscope to see the s-meter move . Also 80 meters has so much noise on it most of the time, you will not be able to hear the difference. I think it was one db that was suppose to be the minimal detected difference in hearing when the db scale was first put into use.

It may seem that if you have a 100 watt output transmitter you will go from about 85 to 95 watts in a matched system. This may seem to be a lot , but on the receving end it will not be noticed.

On maybe 20 meters and higher, especially 2 meters and up it does make good use of the money to go to a higher grade of coax for weak signals.

Spend your money on something more productive.

5054. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 08:23:58 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <wjR$dVKegmPIFA2+@ifwtech.co.uk>
Source record: 25276

Owen Duffy wrote:
>nospam@online.de (Dieter Kiel) wrote in news:1ihnz3n.wxm0z7nvxaivN%
>nospam@online.de:
>
>> http://www.w8ji.com/vswr_reactive_power.htm
>>
>>
>
>I assume Dieter that this is your recommendation of the article.
>
>That article uses the term 'reactive power' in a non-conventional way,
>though the term is a well known one (ie has a conventional meaning).
>
>Conventional use is that the term 'apparent power' is applied to the
>product of RMS voltage and current flowing into a two terminal load, and
>the units are VoltAmps (VA), not Watts as used in the article.
>
>Reactive power is the reactive component of apparent power, and expressed
>in units of 'VoltAmpsReactive' (VAR).
>
>'Real power' is the real component of apparent power and expressed in
>units of Watts (W).
>
>The relationship is that
>apparentpower = (realpower^2 + reactive power^2)^0.5 .
>
>This is all basic lumped component AC circuit theory, and holds at RF.
>
True, but we still aren't there.

It's very misleading to quote "VAR powers" in the kilowatt range,
because the only power available to melt the feedline is 100W from the
transmitter. There is no magnification of real power.

The high value of "VAR power" is a theoretical result of the large RF
currents in the system. These result from an antenna feedpoint impedance
that has a very low resistive part and is almost entirely reactive. The
large RF currents are a genuine physical phenomenon, as also are the
high voltages a quarter-wavelength back along the feedline (if the
feedline is long enough, of course)... but if there were no losses in
the feedline, these would have no further effect. In spite of the wild
values of impedance, current, voltage, VSWR etc, if there were no losses
in the feedline then all of the RF power would still reach the antenna.

In a real feedline, the effect of the high currents is to divert almost all of the available RF power away from the antenna and into the feedline's own resistive losses - skin-effect losses in the copper conductor, and dielectric losses in the plastic. Both of these result in heating and softening of the plastic, which makes the dielectric loss even higher. This tends to divert even more of the available power into the weak spots, where the plastic finally melts.

But there is still only 100W available to do the damage.

No argument about the final conclusion - it ain't gonna work - but I don't care for the explanation. There's no problem with "VAR power" for anyone who already has a firm grip on the concepts, but it is not a good way to explain those concepts to a newcomer.

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

5055. Re: Dayton

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 11:20:53 UTC
From: loveumaryoo <loveumaryoo.2846d27@radiobanter.com>
Message-ID: <loveumaryoo.2846d27@radiobanter.com>
Source record: 25280

it is better to fight for good than to fail at the
ill.-------------------------Our 'wow power leveling'
(http://www.wowgoldcc.com) website offer Fast and Secure wow
powerleveling service. 'WoW Power Leveling' (http://www.sf10001.cn)
60-70, Cheap 'wow power leveling' (http://www.wow-power-leveling.org)
1-70. The Professional 'Cheap WoW Gold' (http://www.igsstar.com)!
Powerlevel 'wow gold' (http://www.comegames.com) now. WOrld of warcraft
Power Leveling bloom of true love associated with this time of year!

--
loveumaryoo

5056. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 11:47:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <UIw%j.2616$jI5.1418@flpi148.ffdc.sbc.com>
Source record: 25277

Ian White GM3SEK wrote:

... a very good posting with the exception (IMO)
of the choice of the word "magnification".

> There is no magnification of real power.

There is indeed no net increase in real average power.
However, "magnification" seems to be a poor choice of
words since its definition contains such words as
"apparent", "seems", "exaggerate", "overstate", ...

"magnify - to cause to *seem* greater" certainly describes
a feedline with 100W source power and 200W forward power.

> But there is still only 100W available to do the damage.

True, but a 100W laser can do a lot of damage. :-)
And a *magnifying* glass can start a fire.
--
73, Cecil http://www.w5dxp.com

5057. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 12:09:11 UTC
From: nospam@online.de
Message-ID: <1ihpe9j.bkb5ki1gu79d9N%nospam@online.de>
Source record: 25278

Ian White GM3SEK <gm3sek@ifwtech.co.uk> wrote:

> Owen Duffy wrote: >nospam@online.de (Dieter Kiel) wrote in
> news:1ihnz3n.wxm0z7nvxaivN% >nospam@online.de: > >>
> http://www.w8ji.com/vswr_reactive_power.htm >> >> > >I assume Dieter that
> this is your recommendation of the article. > >That article uses the term
> 'reactive power' in a non-conventional way, >though the term is a well
> known one (ie has a conventional meaning). > >Conventional use is that the
> term 'apparent power' is applied to the >product of RMS voltage and
> current flowing into a two terminal load, and >the units are VoltAmps
> (VA), not Watts as used in the article. > >Reactive power is the reactive
> component of apparent power, and expressed >in units of 'VoltAmpsReactive'
> (VAR). > >'Real power' is the real component of apparent power and
> expressed in >units of Watts (W). > >The relationship is that
> >apparentpower = (realpower^2 + reactive power^2)^0.5 . > >This is all
> basic lumped component AC circuit theory, and holds at RF. > True, but we
> still aren't there.
>
> It's very misleading to quote "VAR powers" in the kilowatt range, because
> the only power available to melt the feedline is 100W from the
> transmitter. There is no magnification of real power.
>
> The high value of "VAR power" is a theoretical result of the large RF
> currents in the system. These result from an antenna feedpoint impedance
> that has a very low resistive part and is almost entirely reactive. The
> large RF currents are a genuine physical phenomenon, as also are the high
> voltages a quarter-wavelength back along the feedline (if the feedline is
> long enough, of course)... but if there were no losses in the feedline,
> these would have no further effect. In spite of the wild values of
> impedance, current, voltage, VSWR etc, if there were no losses in the
> feedline then all of the RF power would still reach the antenna.
>
> In a real feedline, the effect of the high currents is to divert almost
> all of the available RF power away from the antenna and into the
> feedline's own resistive losses - skin-effect losses in the copper
> conductor, and dielectric losses in the plastic. Both of these result in
> heating and softening of the plastic, which makes the dielectric loss even
> higher. This tends to divert even more of the available power into the
> weak spots, where the plastic finally melts.
>
> But there is still only 100W available to do the damage.
>
> No argument about the final conclusion - it ain't gonna work - but I don't
> care for the explanation. There's no problem with "VAR power" for anyone

> who already has a firm grip on the concepts, but it is not a good way to
> explain those concepts to a newcomer.

I think you are right, the referenced link of W8JI mixed up the definitions. He used "kilowatts" instead of "1000 VAs". But for me the text was very helpful. It also will give newcomers some information about problems with short antennas. If you ask: What is responsible for the losses of an antenna construction ? The answer would be: The losses are proportional to the " Apparent Power VA" It`s "Scheinleistung" in German language. I didn`t even know the term before it was mentioned here.:(
I found this schematic in the wikipedia with the different terms Real Power, Reactive Power, and Apparent Power:

http://en.wikipedia.org/wiki/Image:Power_Triangle_01.png

So if we use a short antenna, e.g. 20m for the 80m band or even the G5RV we should use parts that can handle the "Apparent Power". I`ve seen Sonny has already made up his mind using koax for the 80m Band. This probably is a good idea, and I`m planning to build a monoband for my favorite band and multiband antenna fed with a low loss ladder line to cover all the bands. I`m not quite sure if a folded dipol as a monoband antenna fed with ladder line would give better results as a coax fed dipol. I have the equipment to match both kinds of feeding lines.

5058. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 12:25:24 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g1m7bkutc1@f04n12.cac.psu.edu>
Source record: 25279

Sonny Hood wrote:

> I have a 160M windom and a G5RV and will dedicate this
> inverted vee antenna to 75M.

There's your answer. And here's the readers digest version of it.

As a rule of thumb, if you are going to use an antenna cut for a specific band, cut it for that, and use coax, and a balun.

If you want to have multiple bands from one antenna without traps or tricks, use ladder line and a tuner.

The ladder line can handle the wildly varying VSWR, and the tuner will, well, allow the Xciever to see an impedence it likes.

- 73 de Mike N3LI -

5059. Re: Dayton

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 14:30:00 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6a7svvF329qj0U1@mid.individual.net>
Source record: 25281

loveumaryoo wrote:
> Our 'wow power leveling'
> (http://www.imaworthlessspammer.com) website
> offer Fast and Secure wow
> powerleveling service...

Finally! A power leveling service.

Could you come by Friday morning? I'd like
to get my lot leveled before I install my tower.

Craig 'Lumpy' Lemke

www.n0eq.com

5060. Re: Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 17:20:22 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <8bpt345jakh2ddo6gundnjuup4jgdbf897@4ax.com>
Source record: 25282

On Wed, 28 May 2008 12:58:03 +0100, Highland Ham
<abcgm0csz.kn6whxyz@dsl.pipex.com> wrote:

>Gary Smith wrote:
>> UHF Cb in Australia is in the range of 476.425 - 477.400 MHz.
>> Sorry, i was thinking i was posting in an Australin ng.
>>
>> So i need an antenna to cover 144-148, 430-440 and 476.425-477.400MHz
>>
>> Thanks.
>>
>> Gary
>>
>=======================================
>UHFcb in Oz-land is highly likely similar to PMR446 in Europe and FRS
>in the USA.
>
>PMR446 are 8 RF channels with 12.5 kHz spacing starting at 446.0025
>MHz . That means using a Ham radio it must have the capability to be
>set at 2.5 kHz channel spacing and few if any ham transceivers have
>that. Also, the deviation is set at a low 1.5 KHz.
>
>So I wonder how UHFcb is operated in Australia ....would a Ham radio
>with extended range be usable ?
>
>Frank GM0CSZ / KN6WH
That depends on the laws of your country. In the US it would have to
be type accepted by the FCC and ham radio would not qualify.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

5061. Bandwidth impact of a gamma match / NEC2 calculations

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 18:12:05 UTC
From: Scott M <mcclements@gmail.com>
Message-ID: <2b0d89cf-be9e-4eda-85d3-a15dd6a8cd4d@a1g2000hsb.googlegroups.com>
Source record: 25283

Hi,

I have been running many automated NEC2 runs to optimize a 5 band quad. My criteria included bandwidth and all my runs to date have been done assuming direct feed with 50 Ohm coax.

I'd like change the criteria and allow the feedpoint impedance to drop below 50 Ohms now, with the expectation that I would use a gamma match at the feedpoint. Using a gamma match at the feedpoint, for me, would be more advantageous because this means the driven elements of the inactive bands will truly be closed loops (eliminating the need to do other things to achieve this, relays, specific lengths of coax, etc.). I would place a choke at the gamma match feedpoint as well.

Since (2.5:1 SWR) bandwidth is still something that is important to me, I need a way to calculate it. Would it be a mistake to take the real impedance at the center design frequency, make this the line Zo and then take the reactance at the center frequency as well and offset the reactance at all frequencies this amount?

For instance, if the frequency was 25 - j10, If I make the line Zo = 25 Ohms and then add +10 to all the reactance values, can I use the resulting SWR value to judge bandwidth. I know this assumes that the gamma match is a perfectly linear circuit, which I am sure its not. Is there a better way to estimate the bandwidth and how off could I end up off? Is there any better way to do this?

-Scott, WU2X

5062. Re: Bandwidth impact of a gamma match / NEC2 calculations

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 19:58:44 UTC
From: Jerry <j.jmartes@verizon.net>
Message-ID: <UVD%j.10890$4c.5657@trnddc08>
Source record: 25284

"Scott M" <mcclements@gmail.com> wrote in message
news:2b0d89cf-be9e-4eda-85d3-a15dd6a8cd4d@a1g2000hsb.googlegroups.com...
> Hi,
>
> I have been running many automated NEC2 runs to optimize a 5 band
> quad. My criteria included bandwidth and all my runs to date have
> been done assuming direct feed with 50 Ohm coax.
>
> I'd like change the criteria and allow the feedpoint impedance to drop
> below 50 Ohms now, with the expectation that I would use a gamma match
> at the feedpoint. Using a gamma match at the feedpoint, for me, would
> be more advantageous because this means the driven elements of the
> inactive bands will truly be closed loops (eliminating the need to do
> other things to achieve this, relays, specific lengths of coax, etc.).
> I would place a choke at the gamma match feedpoint as well.
>
> Since (2.5:1 SWR) bandwidth is still something that is important to
> me, I need a way to calculate it. Would it be a mistake to take the
> real impedance at the center design frequency, make this the line Zo
> and then take the reactance at the center frequency as well and offset
> the reactance at all frequencies this amount?
>
> For instance, if the frequency was 25 - j10, If I make the line Zo =
> 25 Ohms and then add +10 to all the reactance values, can I use the
> resulting SWR value to judge bandwidth. I know this assumes that the
> gamma match is a perfectly linear circuit, which I am sure its not. Is
> there a better way to estimate the bandwidth and how off could I end
> up off? Is there any better way to do this?
>
> -Scott, WU2X

Hi Scott

Have you thought of recording the antenna's input impedance at several
frequencies in the band of interest, then plotting them on a Smith Chart?
The plot will be a smooth circular trace going clockwise with increase
frequency so it will be easy to know how many frequencies are needed to
plot. maybe 5 is sufficient.
When the antenna's impedance is displayed on the chart, it becomes easy to
estimate the effect of something like that + j10. Reactance added in
series will move the impedance along the lines of constant R. When added
in shunt, the impedance moves along the lines of constant 1/R (admittance).

Jerry KD6JDJ

5063. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-29 20:46:30 UTC
From: NeedAntennaSpace@gmail.com
Message-ID: <e9a3488e-920f-44cf-855a-92d236ea5b61@x35g2000hsb.googlegroups.com>
Source record: 25285

The short answer is no. There currently is no river system wide
network of receivers managed by any company or agency.

We currently have coverage in three areas, but in order to provide a
useful service for safety, monitoring and performance management, more
coverage will be needed. This could either be under the umbrella of
either a non-profit organization or as a standard business.

Now that we've covered the premise of the question.... any help?

On May 28, 7:29 pm, "Dave" <no...@nowhere.com> wrote:
> isn't the coast guard already doing this? why would an individual want
> something like this????
>
> <NeedAntennaSp...@gmail.com> wrote in message
>
> news:74cd1b72-0ee1-44db-9d2f-f140df5c801b@y21g2000hsf.googlegroups.com...
>
>
>
> > I am want to develop a network of AIS receivers with coverage of the
> > US inland waterways(miss, Ohio, Illinois rivers and the gulf).
> > Searching the web mostly results in sites targeted for cell phone
> > carriers. Does anyone know of any sites that would be more appropriate
> > for this type of need? How do locate sites/towers to be used for
> > repeaters for example?
>
> > Ideally well located amateur towers would probably be best.
>
> > Thanks in Advance.

5064. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 01:11:09 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <483f541f$0$7690$4c368faf@roadrunner.com>
Source record: 25286

Isn't it great when you ask a sensible question and then you get attacked by
someone questioning the motives for your original question ;-)

<NeedAntennaSpace@gmail.com> wrote in message
news:e9a3488e-920f-44cf-855a-92d236ea5b61@x35g2000hsb.googlegroups.com...
The short answer is no. There currently is no river system wide
network of receivers managed by any company or agency.

We currently have coverage in three areas, but in order to provide a
useful service for safety, monitoring and performance management, more
coverage will be needed. This could either be under the umbrella of
either a non-profit organization or as a standard business.

Now that we've covered the premise of the question.... any help?

On May 28, 7:29 pm, "Dave" <no...@nowhere.com> wrote:
> isn't the coast guard already doing this? why would an individual want
> something like this????
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> <NeedAntennaSp...@gmail.com> wrote in message
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> news:74cd1b72-0ee1-44db-9d2f-f140df5c801b@y21g2000hsf.googlegroups.com...
>
>
>
> > I am want to develop a network of AIS receivers with coverage of the
> > US inland waterways(miss, Ohio, Illinois rivers and the gulf).
> > Searching the web mostly results in sites targeted for cell phone
> > carriers. Does anyone know of any sites that would be more appropriate
> > for this type of need? How do locate sites/towers to be used for
> > repeaters for example?
>
> > Ideally well located amateur towers would probably be best.
>
> > Thanks in Advance.

5065. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 01:26:13 UTC
From: nsk <nsk.28515e4@radiobanter.com>
Message-ID: <nsk.28515e4@radiobanter.com>
Source record: 25289

O-K-.-.--*-w---w---w---.---9---n---s---k---.---c---n---.---*-'-n-t-n-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-S-K-F-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-F-A-G-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-N-S-K-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-t-i-m-k-e-n-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)-[-i-m-a-g-e-:-
-h-t-t-p-:-/-/-w-w-w-.-t-j-n-r-z-c-.-c-n-/-i-m-a-g-e-s-/-h-t-t-p-_-i-m-g-l-o-a-d-.-g-i-f-]
-

--
nsk

5066. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 01:35:10 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6a93v7F36p775U1@mid.individual.net>
Source record: 25287

AI4QJ wrote:
> Isn't it great when you ask a sensible question and then you get
> attacked by someone questioning the motives for your original
> question ;-)

I didn't see an "attack". I saw a sensible question
about a cloudy issue.

I don't know how you would feel about loaning
tower space to a navigational aid, but I wouldn't
do it. I'd do it for some hams doing APRS or
something like that. But not for a system that's
designed for safe navigation by commercial vessels.

The last thing I would want would be for something
to go wrong with the install, the tower, the feedline
etc and a barge crashes and loses a billion dollars
in cargo and kills a dozen people.

Now exactly what was that good reason for putting
those gizmos on somebody's ham tower?

Craig 'Lumpy' Lemke

www.n0eq.com

5067. Sunspots and Sporadic E

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 01:58:04 UTC
From: Siyazini <scoles@isomedia.com>
Message-ID: <2d3ec769-bd41-4830-a87d-f3ff27beb751@m44g2000hsc.googlegroups.com>
Source record: 25288

All,

I'm seeing posts like the following every couple days on “Six Club.”

“A few minutes ago, worked KG4HOT/mobile in FM07 while I was mobile in
EM57. He was a solid 5-9. FYI, my set up a yeasu FT-857d, 100 watts,
into a whip antenna. Band was crowded with 1's, 2's 3's, and 4's.

“N9LAG Rob
“Grid EM-57”

Any idea why we're seeing sporadic-E activity so early in the cycle?

SixClub mailing list
Home: http://mailman.qth.net/mailman/listinfo/sixclub

5068. Re: Bandwidth impact of a gamma match / NEC2 calculations

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 02:04:13 UTC
From: Scott M <mcclements@gmail.com>
Message-ID: <eb23fc40-edac-4fe8-a637-204dd86e324d@k13g2000hse.googlegroups.com>
Source record: 25290

Hi,

I need to be able to add this to my program that runs automatically .
Is there a publicly available formula available or is this some
proprietary formula unique to winSmith?

-Scott, WU2X

5069. Re: Sunspots and Sporadic E

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 02:47:37 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <483f6aba$0$7695$4c368faf@roadrunner.com>
Source record: 25291

Sporadic E is completely independent of the solar cycle.

de AI4QJ

"Siyazini" <scoles@isomedia.com> wrote in message
news:2d3ec769-bd41-4830-a87d-f3ff27beb751@m44g2000hsc.googlegroups.com...
All,

I'm seeing posts like the following every couple days on Six Club.

A few minutes ago, worked KG4HOT/mobile in FM07 while I was mobile in
EM57. He was a solid 5-9. FYI, my set up a yeasu FT-857d, 100 watts,
into a whip antenna. Band was crowded with 1's, 2's 3's, and 4's.

N9LAG Rob
Grid EM-57

Any idea why we're seeing sporadic-E activity so early in the cycle?

SixClub mailing list
Home: http://mailman.qth.net/mailman/listinfo/sixclub

5070. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 02:57:40 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <483f6d16$0$7683$4c368faf@roadrunner.com>
Source record: 25292

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:6a93v7F36p775U1@mid.individual.net...
> AI4QJ wrote:
>> Isn't it great when you ask a sensible question and then you get
>> attacked by someone questioning the motives for your original
>> question ;-)
>
> I didn't see an "attack". I saw a sensible question
> about a cloudy issue.

Oh. What I saw was a question answered by another question followed by 4 exclamation points. When the number of exclamation points exceeds 3 when 1 would suffice, then it is an attack. This is according to the AI4QJ internet handbook.

>
> I don't know how you would feel about loaning
> tower space to a navigational aid, but I wouldn't
> do it. I'd do it for some hams doing APRS or
> something like that. But not for a system that's
> designed for safe navigation by commercial vessels.
>
> The last thing I would want would be for something
> to go wrong with the install, the tower, the feedline
> etc and a barge crashes and loses a billion dollars
> in cargo and kills a dozen people.

So you have answered the antithesis of his question. Actually the question was "where are appropriate sites?" and your answer apparently is that your site would not be appropriate (if you had one). The question did not request information on sites that were not appropriate, however.

>
> Now exactly what was that good reason for putting
> those gizmos on somebody's ham tower?

A question presumably asked at a future court hearing in the event of a lawsuit. Of course one can sued be sued for almost anything and I would have to agree that if one never does anything, the chances of being sued are minimal.

>
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

>
>

5071. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 03:01:59 UTC
From: NeedAntennaSpace@gmail.com
Message-ID: <c1479341-cac6-414e-825a-28c8bbdfd810@m3g2000hsc.googlegroups.com>
Source record: 25293

I really do need to clarify here, the gizmo in question is an AIS receiver. An AIS receiver denied at its birth the ability to transmit or ever grow up into a transceiver. It is listen only.

As it stands you are in sum danger of interfering with the AIS system in that it operates on 161.975 and 162.025 so I imagine it could be some how possible for your VHF set to break in such a way that it broadcasts over the traffic on these channels. Not probable I would think.

As for causing collateral damage, AIS is an aid to navigation, not a replacement for navigation. Given that AIS is a digital communication even with a transceiver it would take effort to construct a message that might cause someone to make a decision leading to an accident.

On the other hand, by supporting an AIS receiver for us to use to archive data, you can help with the accident investigation after the fact. Or help prevent an accident by allowing real-time proactive monitoring of shipping behavior, for example by that captains company. This is already used in the trucking industry.

Thanks to everyone who responded. If you have a VHF line of sight to any of the inland waterways and would like to help please email me. Here are some AIS related links that you might find of interest.

http://www.navcen.uscg.gov/enav/ais/default.htm
http://www.panbo.com/archives/cat_ais.html
http://www.aislive.com/

On May 29, 9:35 pm, "Lumpy" <lu...@digitalcartography.com> wrote:
> AI4QJ wrote:
> > Isn't it great when you ask a sensible question and then you get
> > attacked by someone questioning the motives for your original
> > question ;-)
>
> I didn't see an "attack". I saw a sensible question
> about a cloudy issue.
>
> I don't know how you would feel about loaning
> tower space to a navigational aid, but I wouldn't
> do it. I'd do it for some hams doing APRS or
> something like that. But not for a system that's
> designed for safe navigation by commercial vessels.
>
> The last thing I would want would be for something
> to go wrong with the install, the tower, the feedline

> etc and a barge crashes and loses a billion dollars
> in cargo and kills a dozen people.
>
> Now exactly what was that good reason for putting
> those gizmos on somebody's ham tower?
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

5072. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 03:11:58 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6a99knF36chh7U1@mid.individual.net>
Source record: 25294

NeedAntennaSpace@gmail.com wrote:
> I really do need to clarify here,
> the gizmo in question is an AIS
> receiver...

Then for the benefit of me, at least, who doesn't
know a thing about the gizmo, what exactly does
it do to aid navigation? I was under the impression
it received position and course info from commercial
vessels. You mount it on your pleasure craft and
it helps you to know if you're in the vicinity
of potential traffic.

What exactly is the significance of having a
network of these receivers on land? ie who is it that
is receiving the data and what is the data?

Craig 'Lumpy' Lemke

www.n0eq.com

5073. OT Atmospheric Instruments

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 03:25:10 UTC
From: Siyazini <scoles@isomedia.com>
Message-ID: <64aee8e8-46da-4f18-af17-ec111836d1d9@x41g2000hsb.googlegroups.com>
Source record: 25295

Instrument Enthusiasts,

Here's a few of the links to descriptions of instruments that provided information cited in the global change discussion.

DOE Atmospheric Radiation Measurement (ARM) Program Instruments

http://www.arm.gov/instruments/

NASA Atmospheric Infrared Sounder (AIRS)

http://daac.gsfc.nasa.gov/AIRS/instruments.shtml

NASA Compact Reconnaissance Imaging Spectrometer for Mars

http://www.nasa.gov/mission_pages/MRO/multimedia/pia10137-caption121107.html

NASA Stratospheric Tracers of Atmospheric Transport (STRAT) instrument list

http://code916.gsfc.nasa.gov/Public/Analysis/aircraft/strat/strat.html

NOAA Airborne Aerosol Lidar (Light Detection and Ranging)

http://www.etl.noaa.gov/technology/abael/

NOAA Calibrations of CO2 Reference Gases

http://www.esrl.noaa.gov/gmd/ccgg/refgases/manometer.html

NOAA Chemical Sciences Division WP-3D Instrumentation

http://www.esrl.noaa.gov/csd/ARCPAC/p3instruments.html

NOAA Ground-Based and Airborne Microwave Radiometers

http://www.etl.noaa.gov/technology/radiometers/

NOAA Observing System Design, Simulation, and Demonstration

http://www.esrl.noaa.gov/research/themes/observing/

NOAA Unmanned Aircraft System Project

http://uas.noaa.gov/

Nondispersive infrared differential gas analyzer, NDIR definition

http://daac.ornl.gov/sensor_documents/ndir_gas_analyzer.html

Nondispersive infrared differential gas analyzer, NDIR for environmental health

http://cio.eldoc.ub.rug.nl/FILES/root/2005/IsotEnvHealthStJager/2005IsotEnvirHealthStudJager.pdf

Independence Citizens' Aerosol Monitor (Sun Photometer Atmospheric Network)

http://haze.concord.org/

73,

Steven, KD7YTE

5074. Re: Sunspots and Sporadic E

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 05:21:42 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AAE9C4273967nonenowhere@61.9.191.5>
Source record: 25296

Siyazini <scoles@isomedia.com> wrote in news:2d3ec769-bd41-4830-a87d-f3ff27beb751@m44g2000hsc.googlegroups.com:

> All,
>
> I'm seeing posts like the following every couple days on Six Club.
>
> A few minutes ago, worked KG4HOT/mobile in FM07 while I was mobile in
> EM57. He was a solid 5-9. FYI, my set up a yeasu FT-857d, 100 watts,
> into a whip antenna. Band was crowded with 1's, 2's 3's, and 4's.
>
> N9LAG Rob
> Grid EM-57
>
> Any idea why we're seeing sporadic-E activity so early in the cycle?
>
> SixClub mailing list
> Home: http://mailman.qth.net/mailman/listinfo/sixclub
>

Es is not all that well understood, but current thinking is that it is not tied in to the solar cycle in the way you intimate. Es peaks in summer and winter, the summer peak being better. You are experiencing the early days of your summer peak, just as downunder we are seeing the early days of the winter peak.

Look at some Ionograms for signs of Es, and treat what you hear about it with suspicion (yes, including this). I heard a theory propounded by a net controller to his flock on 40m a couple of days ago that HF sporadic E goes down when VHF sporadic E goes up. How is that?

Owen

Owen

5075. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 06:19:27 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <P%M%j.14200$ED6.8352@trnddc02>
Source record: 25297

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:INe%j.35555$Ht.18053@newsfe05.ams2...
> My Rigexpert AA-200 has just arrived from
> http://www.radioworld.co.uk/~radio/catalog/aa200-antenna-analyzer-p-5841.html?osCsid=7da
1c42b40621b06dffec46917ed4fe4
>
> So far I have only used the MFJ 259B. But this is a much better analyser.
> It is in a class of its own. I input the frequencies for all 5 bands and
> connected it to my Cobwebb antenna and got an instant SWR reading. It
> continuously monitors the SWR on all five bands at once. This is only one
> excellent feature of many. I have not had much experience with antenna
> analysers, but this one I am very impressed with, so far.
>
> 73 Andy
>

Hi Andy,
Have you been able to use the software? I don't see any documentation for it
or an explaination of the "PC" switch on the analyzer.

Dale W4OP

5076. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 07:06:08 UTC
From: Ian White GM3SEK <gm3sek@ifwtech.co.uk>
Message-ID: <N4TNiGFgd6PIFAQT@ifwtech.co.uk>
Source record: 25298

Cecil Moore wrote:
>Ian White GM3SEK wrote:
>
>... a very good posting with the exception (IMO)
>of the choice of the word "magnification".
>
>> There is no magnification of real power.
>
>There is indeed no net increase in real average power.
>However, "magnification" seems to be a poor choice of
>words since its definition contains such words as
>"apparent", "seems", "exaggerate", "overstate", ...
>
>"magnify - to cause to *seem* greater" certainly describes
>a feedline with 100W source power and 200W forward power.
>
>> But there is still only 100W available to do the damage.
>
>True, but a 100W laser can do a lot of damage. :-)
>And a *magnifying* glass can start a fire.

I have no intention of allowing *that* particular fire to start again!

--

73 from Ian GM3SEK 'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.co.uk/g3sek

5077. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 09:01:19 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <znP%j.31476$xJ7.21382@newsfe08.ams2>
Source record: 25299

Dale,
I haven't tried yet. I will give it ago this morning and I will let you know
ASAP, how I get on.

73 Andy

"Dale Parfitt" <parinc1@verizon.net> wrote in message
news:P%M%j.14200$ED6.8352@trnddc02...
>
> "Andy" <dx90@blueyounder.co.uk> wrote in message
> news:INe%j.35555$Ht.18053@newsfe05.ams2...
>> My Rigexpert AA-200 has just arrived from
>> http://www.radioworld.co.uk/~radio/catalog/aa200-antenna-analyzer-p-5841.html?osCsid=7d
a1c42b40621b06dffec46917ed4fe4
>>
>> So far I have only used the MFJ 259B. But this is a much better analyser.
>> It is in a class of its own. I input the frequencies for all 5 bands and
>> connected it to my Cobwebb antenna and got an instant SWR reading. It
>> continuously monitors the SWR on all five bands at once. This is only one
>> excellent feature of many. I have not had much experience with antenna
>> analysers, but this one I am very impressed with, so far.
>>
>> 73 Andy
>>
>
> Hi Andy,
> Have you been able to use the software? I don't see any documentation for
> it or an explaination of the "PC" switch on the analyzer.
>
> Dale W4OP
>
>

5078. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 10:20:42 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <YxQ%j.46815$_c7.25250@newsfe16.ams2>
Source record: 25300

Dale,
I have got my software working with the AA-200.
What did they supply in the box with your Analyser?
Once I know then I will be able to help.

73 Andy

"Dale Parfitt" <parinc1@verizon.net> wrote in message
news:P%M%j.14200$ED6.8352@trnddc02...
>
> "Andy" <dx90@blueyounder.co.uk> wrote in message
> news:INe%j.35555$Ht.18053@newsfe05.ams2...
>> My Rigexpert AA-200 has just arrived from
>> http://www.radioworld.co.uk/~radio/catalog/aa200-antenna-analyzer-p-5841.html?osCsid=7da1c42b40621b06dffec46917ed4fe4
>>
>> So far I have only used the MFJ 259B. But this is a much better analyser.
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>> excellent feature of many. I have not had much experience with antenna
>> analysers, but this one I am very impressed with, so far.
>>
>> 73 Andy
>>
>
> Hi Andy,
> Have you been able to use the software? I don't see any documentation for
> it or an explaination of the "PC" switch on the analyzer.
>
> Dale W4OP
>
>

5079. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 11:15:54 UTC
From: Dave <noone@nowhere.com>
Message-ID: <KIR%j.3753$RG.2071@trndny07>
Source record: 25201

the longer answer, found in a few short searches is, that its coming... see the presentation at http://www.gicaonline.com/media/tools/070827_cris.ppt#1

You state that this could be a 'non profit' or 'standard' business... and that it could be for safety purposes... in which cases i agree with others that have stated that there is a possible liability issue, whether you see it or not. once something like this is advertised as a method to improve safety there is a penalty to pay if it becomes unavailable. Also, renting space on a tower to a commercial operation can expose hams to loss of protection of their towers as amateur in some areas... in some places it is considered the same as changing the purpose of a building from residential to commercial/industrial which could endager protection under prb-1, or at least cause headaches for an unsuspecting amateur.

You also now state 'we have coverage'... is that you personally, or you as this hypothetical 'non profit' or 'standard' business?? if so, please state your entity rather than hiding behind a gmail account. and let us see what type of product you have produced in these 3 areas.

<NeedAntennaSpace@gmail.com> wrote in message news:e9a3488e-920f-44cf-855a-92d236ea5b61@x35g2000hsb.googlegroups.com...
The short answer is no. There currently is no river system wide network of receivers managed by any company or agency.

We currently have coverage in three areas, but in order to provide a useful service for safety, monitoring and performance management, more coverage will be needed. This could either be under the umbrella of either a non-profit organization or as a standard business.

Now that we've covered the premise of the question.... any help?

On May 28, 7:29 pm, "Dave" <no...@nowhere.com> wrote:
> isn't the coast guard already doing this? why would an individual want
> something like this????
>
> <NeedAntennaSp...@gmail.com> wrote in message
>
> news:74cd1b72-0ee1-44db-9d2f-f140df5c801b@y21g2000hsf.googlegroups.com...
>
>
>
> > I am want to develop a network of AIS receivers with coverage of the
> > US inland waterways(miss, Ohio, Illinois rivers and the gulf).
> > Searching the web mostly results in sites targeted for cell phone
> > carriers. Does anyone know of any sites that would be more appropriate
> > for this type of need? How do locate sites/towers to be used for

> > repeaters for example?
>
> > Ideally well located amateur towers would probably be best.
>
> > Thanks in Advance.

5080. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 12:53:27 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <bNS%j.43857$3j.42271@trnddc05>
Source record: 25202

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:YxQ%j.46815$_c7.25250@newsfe16.ams2...
> Dale,
> I have got my software working with the AA-200.
> What did they supply in the box with your Analyser?
> Once I know then I will be able to help.
>
> 73 Andy
>
Hi Andy,
My mail to dx90@blueyonder.co.uk bounces- is there a better address?

I have the CD and the USB cable. The software is installed on the computer-
but don't know about which com port etc.

Dale W4OP

5081. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 13:26:40 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6aadlbF359obtU1@mid.individual.net>
Source record: 25203

Dave wrote:
> You state that this could be a 'non profit' or 'standard' business...
> and that it could be for safety purposes... in which cases i agree
> with others that have stated that there is a possible liability
> issue, whether you see it or not...

Thank you for seeing it. Imagine some kind of incident
occurrs where this system failed. They examine all
the equipment on the ship, on land, wherever.
They find that the tower was used, 50 years old, purchased
from an SK ham estate sale, installed by some local
amateurs over Labor Day weekend, using the original
guy lines and hardware that were on the tower in
it's previous install, and in violation of someone's
CCR's because it now holds some kind of commercial
aid to navigation and the tower owner was away for
the weekend visiting the Hamfest in Dayton.

Even if nothing goes wrong, there's something very
wrong with that picture.

Not to mention, I still don't understand what all
these ground based RECEIVERS are supposed to do.
How does a receiver on shore assist navigation
for a vessel in the water?

Craig 'Lumpy' Lemke

www.n0eq.com

5082. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 13:59:42 UTC
From: Jeff <jeff@local.host>
Message-ID: <484008a6$0$30635$834e42db@reader.greatnowhere.com>
Source record: 25204

> Not to mention, I still don't understand what all
> these ground based RECEIVERS are supposed to do.
> How does a receiver on shore assist navigation
> for a vessel in the water?
>

AIS is not only an aid to navigation, it's just like APRS for ships, it allows those ashore at remote locations to monitor the position of vessels. On a river system I guess it could be used to monitor traffic flow, optimise lock usage, find out when your vessel is likely to arrive for unloading etc.

73
Jeff

5083. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 14:13:32 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6aagd7F30uatjU1@mid.individual.net>
Source record: 25205

Jeff wrote:

> AIS is not only an aid to navigation, it's just like APRS for ships,
> it allows those ashore at remote locations to monitor the position of
> vessels. On a river system I guess it could be used to monitor
> traffic flow, optimise lock usage, find out when your vessel is
> likely to arrive for unloading etc.

How does the intended client receive the data?
ie, if there's a tower in E Bumphuk Bay and my
dock/warehouse is up in N Fugawee, how does
that ship position data make it's way to me?

Craig 'Lumpy' Lemke

www.n0eq.com

5084. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 14:31:24 UTC
From: Mike <emce@iinet.net.au>
Message-ID: <48400fbf$0$21102$5a62ac22@per-qv1-newsreader-01.iinet.net.au>
Source record: 25206

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:6aadlbF359obtU1@mid.individual.net...
> Dave wrote:
>> You state that this could be a 'non profit' or 'standard' business...
>> and that it could be for safety purposes... in which cases i agree
>> with others that have stated that there is a possible liability
>> issue, whether you see it or not...
>
> Thank you for seeing it. Imagine some kind of incident
> occurrs where this system failed. They examine all
> the equipment on the ship, on land, wherever.
> They find that the tower was used, 50 years old, purchased
> from an SK ham estate sale, installed by some local
> amateurs over Labor Day weekend, using the original
> guy lines and hardware that were on the tower in
> it's previous install, and in violation of someone's
> CCR's because it now holds some kind of commercial
> aid to navigation and the tower owner was away for
> the weekend visiting the Hamfest in Dayton.
>
> Even if nothing goes wrong, there's something very
> wrong with that picture.
>
> Not to mention, I still don't understand what all
> these ground based RECEIVERS are supposed to do.
> How does a receiver on shore assist navigation
> for a vessel in the water?
>
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com
>
The information trasmitted by the ships gives heading, speed, callsign and
other data such as length, beam and draught.

Mike.

5085. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 14:35:37 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <4L2dnXx97psrjd3VnZ2dnUVZ_tninZ2d@bright.net>
Source record: 25207

Dear "DRA" (no call sign or identification):

It is highly likely that you will be required to own all of the area where the tower could fall. Assuming 10% extra length and a square "lot," that would be 1,210,000 square feet (about 28 acres). Not only will you be required to have enough area, but you will need to have a licensed engineer certify the design (not a simple task with a used tower) and you will need to negotiate with the FAA/FCC as the height is above 60 meters. (This assumes that you are in NA.)

500 feet is about optimum for a 3.5 MHz beam, but too high for the remaining HF bands. With insulated guys and lots of radials, a 500 foot tower could make a good vertical at 1.8 MHz.

Regards, Mac N8TT

--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"gwatts" <gwatts@frontiernet.net> wrote in message

> Lumpy wrote:
>> DRA wrote:
>>
>>>Does anyone have the formula to calculate the acreage needed for a
>>>guyed tower? We have a 500' guyed tower, with guy wire at 50%
>>>guying radius . Wires would be 250' to outer anchor.
>>
>>
>> ...generally
>> you're looking at at least 5-6 acres.
>>
> ...
>> And obviously, none of that accounts for
>> easements or restrictions on how close to
>> the edge of the lot you may be allowed to
>> place your guys due to ordinance/zoning or
>> good engineering practice.
>
>
> Do you have the requirement that if the tower falls it must all land on
> your (the tower) property? Some zoning boards require that.

5086. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 14:51:40 UTC
From: Jeff <jeff@local.host>
Message-ID: <484015e0$0$30637$834e42db@reader.greatnowhere.com>
Source record: 25208

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:6aagd7F30uatjU1@mid.individual.net...
> Jeff wrote:
>
>> AIS is not only an aid to navigation, it's just like APRS for ships,
>> it allows those ashore at remote locations to monitor the position of
>> vessels. On a river system I guess it could be used to monitor
>> traffic flow, optimise lock usage, find out when your vessel is
>> likely to arrive for unloading etc.
>
> How does the intended client receive the data?
> ie, if there's a tower in E Bumphuk Bay and my
> dock/warehouse is up in N Fugawee, how does
> that ship position data make it's way to me?
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com
>

via the internet, there is already extensive sharing of AIS data from ships
at sea over the internet.

Jeff

5087. Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 15:36:25 UTC
From: scooterspal <tfg1@mindspring.com>
Message-ID: <maV%j.2394$uE5.1377@flpi144.ffdc.sbc.com>
Source record: 25209

Hello and thanks for ahy help you can provide.

I have a small assisted hearing type transmitter that normally uses the shield of the mic cable for the antenna. I need to change to a fixed antenna for a particular application where there is no mic cable to extend out.

The manufacturer says the antenna wire for this 651.85Mhz unit should be 48" long.

Can anyone tell me what that would equal in a rubber ducky antenna?

Thanks.

5088. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 15:59:43 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <RcqdnWA4rZaPr93VnZ2dnUVZ8uqdnZ2d@pipex.net>
Source record: 25210

scooterspal wrote:
> The manufacturer says the antenna wire for this 651.85Mhz unit should be
> 48" long.
>
> Can anyone tell me what that would equal in a rubber ducky antenna?
==========
The transmitter operates on a wavelength of 300/651.85 equals 0.460 m or
460 mm.

48 inches equals 48*25.4 equals 1219mm So the 'recommended' antenna is
1219/460 equals 2.65 wavelength.

Does not make sense to me

Frank GM0CSZ / KN6WH

5089. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 16:33:43 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g1pa97$m4b$2@news.jpl.nasa.gov>
Source record: 25211

DRA wrote:
> Does anyone have the formula to calculate the acreage needed for a guyed
> tower? We have a 500' guyed tower, with guy wire at 50% guying radius .
> Wires would be 250' to outer anchor.
>
> Thanks -
>
> Don
>
>
So you want the area of a circle 250 ft in radius? pi * r^2 =
3.14*250^250 = about 200,000 sqft. An acre is roughly 43000 square
feet, so about 4 and half acres.

5090. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 17:47:03 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g1peinvrg1@f04n12.cac.psu.edu>
Source record: 25212

```
Highland Ham wrote:
> scooterspal wrote:
>> The manufacturer says the antenna wire for this 651.85Mhz unit should
>> be 48" long.
>>
>> Can anyone tell me what that would equal in a rubber ducky antenna?
> ===========================================
> The transmitter operates on a wavelength of 300/651.85 equals 0.460 m or
> 460 mm.
>
> 48 inches equals 48*25.4 equals 1219mm So the 'recommended' antenna is
> 1219/460 equals 2.65 wavelength.
>
> Does not make sense to me

Beverage?

- 73 de Mike N3LI -
```

5091. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 17:55:23 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9AAE8376D8FF5VeebleFetzer@127.0.0.1>
Source record: 25213

tfg1@mindspring.com (scooterspal) wrote in
news:maV%j.2394$uE5.1377@flpi144.ffdc.sbc.com:

> Hello and thanks for ahy help you can provide.
>
> I have a small assisted hearing type transmitter that normally uses
> the shield of the mic cable for the antenna. I need to change to a
> fixed antenna for a particular application where there is no mic
> cable to extend out.
>
> The manufacturer says the antenna wire for this 651.85Mhz unit
> should be 48" long.
>
> Can anyone tell me what that would equal in a rubber ducky antenna?

You appear to be posting from the US, so I thought I'd mention that if this transmitter is an unlicensed "Part 15 Intentional Radiator" (I don't know what an "assisted hearing" transmitter is, so I might be wildly off base), you'll be running afoul of 47CFR15.204(c) if you use any antenna other than the one supplied with it.

Just trying to help :-)

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

5092. Re: Sunspots and Sporadic E

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 19:08:13 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <4840509f$0$30504$4c368faf@roadrunner.com>
Source record: 25214

"Owen Duffy" <none@no.where> wrote in message
news:Xns9AAE9C4273967nonenowhere@61.9.191.5...
>I heard a theory propounded by a
> net controller to his flock on 40m a couple of days ago that HF sporadic
> E goes down when VHF sporadic E goes up. How is that?

It sounds to me like it was an observation, not a theory. He didn't get to the point yet of developing theory or fact from the observation. Since there would be no motive for his telling a lie it is probably a real observation. The question as to why the onservation is true could be due to several reasons, possibly related to conditions where the VHF and HF transmissions occured at different times or different places or that the VHF propagation was due to other phenomena such as tropospheric effects. Personally I encourage HAM radio propagation observations although I rarely believe the first theory I hear that attempts to explain such observations.

5093. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 19:08:24 UTC
From: scooterspal <tfg1@mindspring.com>
Message-ID: <5hY%j.1325$89.552@nlpi069.nbdc.sbc.com>
Source record: 25215

Bert Hyman wrote:

> You appear to be posting from the US, so I thought I'd mention that if
> this transmitter is an unlicensed "Part 15 Intentional Radiator"

This is a legal device. You can find them at Comtek (www.comtek.com).

I'm just trying to replace the antenna system they are using, which is
a lapel mic with about 48" of shielded cable between the 1/2" connector
and the mic head, with a fixed, shorter high-gain (rubber ducky type)
antenna.

Can anyone help me to accomplish this? What do I need in terms of
the antenna... the exact type?

Thanks.

5094. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 19:28:21 UTC
From: Dave <noone@nowhere.com>
Message-ID: <pzY%j.659$BV.561@trndny05>
Source record: 25216

"scooterspal" <tfg1@mindspring.com> wrote in message
news:5hY%j.1325$89.552@nlpi069.nbdc.sbc.com...
> Bert Hyman wrote:
>
>> You appear to be posting from the US, so I thought I'd mention that if
>> this transmitter is an unlicensed "Part 15 Intentional Radiator"
>
> This is a legal device. You can find them at Comtek (www.comtek.com).
>
> I'm just trying to replace the antenna system they are using, which is
> a lapel mic with about 48" of shielded cable between the 1/2" connector
> and the mic head, with a fixed, shorter high-gain (rubber ducky type)
> antenna.
>
> Can anyone help me to accomplish this? What do I need in terms of
> the antenna... the exact type?
>
> Thanks.

'high-gain rubber ducky' isn't that an oxymoron?? rubber ducks are usually
much lossier than full size antennas.

5095. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 19:32:42 UTC
From: scooterspal <tfg1@mindspring.com>
Message-ID: <UDY%j.3011$jI5.2465@flpi148.ffdc.sbc.com>
Source record: 25217

scooterspal wrote:

> Bert Hyman wrote:
>
>> You appear to be posting from the US, so I thought I'd mention that if
>> this transmitter is an unlicensed "Part 15 Intentional Radiator"

I'm confused, now.

Their web site (www.comtek.com) shows the newer models operate in the 216-217Mhz band. I have a frequency counter. Is there a way I can make a wire loop and set the trasmitter near it to pick off the operating frequency?

Thanks.

5096. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 19:39:00 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9AAE9507C943CVeebleFetzer@127.0.0.1>
Source record: 25218

tfg1@mindspring.com (scooterspal) wrote in
news:5hY%j.1325$89.552@nlpi069.nbdc.sbc.com:

> Bert Hyman wrote:
>
>> You appear to be posting from the US, so I thought I'd mention that
>> if this transmitter is an unlicensed "Part 15 Intentional Radiator"
>
> This is a legal device. You can find them at Comtek
> (www.comtek.com).

I didn't say illegal, I said unlicensed.

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

5097. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 19:50:16 UTC
From: scooterspal <tfg1@mindspring.com>
Message-ID: <lUY%j.3123$xZ.2177@nlpi070.nbdc.sbc.com>
Source record: 25219

OK. I have tested the frequency and found it to be 75.489Mhz. Should have done this first, sorry for the confusion. Comtek did make systems that operated betweeh 72 and 76Mhz. This is one of those.

That said, where do I stand antenna wise?

Thanks!

5098. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 20:38:40 UTC
From: Dave <noone@nowhere.com>
Message-ID: <kBZ%j.21$pK.14@trndny06>
Source record: 25220

"scooterspal" <tfg1@mindspring.com> wrote in message
news:UDY%j.3011$jI5.2465@flpi148.ffdc.sbc.com...
> scooterspal wrote:
>
>> Bert Hyman wrote:
>>
>>> You appear to be posting from the US, so I thought I'd mention that if
>>> this transmitter is an unlicensed "Part 15 Intentional Radiator"
>
> I'm confused, now.
>
> Their web site (www.comtek.com) shows the newer models operate in the
> 216-217Mhz band. I have a frequency counter. Is there a way I can make a
> wire loop and set the trasmitter near it to pick off the operating
> frequency?
>
> Thanks.

yes, make a wire loop, put the transmitter near it and read the frequency...
just like you said.

5099. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 23:46:18 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <4d229d62-11e3-4c9d-91d0-3aa1522dea21@x41g2000hsb.googlegroups.com>
Source record: 25221

On May 30, 12:50 pm, scooterspal <t...@mindspring.com> wrote:
> OK. I have tested the frequency and found it to be 75.489Mhz. Should
> have done this first, sorry for the confusion. Comtek did make systems
> that operated betweeh 72 and 76Mhz. This is one of those.
>
> That said, where do I stand antenna wise?
>
> Thanks!

Depending on how large a distance you want it to cover, you may get by with a considerably shorter antenna than the 48 inch recommended size. But you also didn't say, that I could see, that there was a problem using a 48" piece of wire. Obviously it's not too critical since in use the mic cable can be bent in all sorts of different shapes and it still operates. In other words, try to not make this more difficult than it needs to be. If you need the mechanical antenna to be shorter than 48 inches, just wind that length of wire in a spiral, spaced out as much as you can accommodate. Try that and see how it works. Easy enough? If you need higher performance, that's possible, but in general very short antennas won't be as efficient as straight antennas long enough to be self-resonant at the operating frequency. If you need good performance from a short antenna, get a system that operates at a higher frequency.

Cheers,
Tom

5100. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 23:46:48 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <0k00k.163$h05.87@bignews2.bellsouth.net>
Source record: 25222

"Sonny Hood" <wrhood@cox.net> wrote in message
news:r6qq34tire06i75gms47ol8qjha8lvd2lb@4ax.com...
> I have an efficiency question concerning feed lines. My present
> system is RG-8X to my 75 meter inverted vee which is about 85 feet
> away from the shack. I propose to replace some 88 feet of coax with
> 300 ohm window ladder line that is inserted into the coax run with 4:1
> baluns to match the coax on each end. Also at the feed point of the
> antenna switch from a voltage balun to a current balun (ferrite chock
> type). By my calculations with a 98 watt generator I will increase
> the power to the load by about 11-20 watts and with a 985 watt
> generator, 117-210 more watts will reach the load. Figuring
> theoretical total system (A) against total System (B) or by just the
> difference in the 88 feet of ladder line versus coax. What do you
> think the increase will be?

In all likelihood, no one on the other end will ever be able to tell the
difference after you make the changes. Neither will you.

Ed, NM2K

5101. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-30 23:56:27 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <4t00k.168$h05.86@bignews2.bellsouth.net>
Source record: 25223

"Jim Kelley" <jwkelley@uci.edu> wrote in message
news:g17c9i$5hr$1@news.service.uci.edu...
> Michael Coslo wrote:
>>
>> Buy Febreeze stock........
>
> Proctor and Gamble closed at $65.27 today. It paid $0.40 a share last
> quarter.
>
> Hi Mike, speaking of things that are possible, it's possible that the hot
> air Al Gore produces has contributed more to global warming than anything
> else. Personally, I don't believe that. I think it's caused by the Sun.
>
> ac6xg
>

Years ago I noticed a change in the color of the light being emitted by the Sun. I also noticed a difference in how it felt on my arm while driving the car. At the time I attributed the differences to my own personal aging. Lately I have begun to think that my first suspicions were correct. Something had changed in the nature of the solar output.

This would also partially account for the melting of the polar ice caps on Mars. I find it odd that I haven't been able to find any confirming data from respectable scientific sources illustrating a change in solar output. Maybe I missed it?

Ed, NM2K

5102. EZNEC model file for the TH11DX

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 01:51:40 UTC
From: David J Windisch <davidjw@cinci.rr.com>
Message-ID: <4840af27$0$30499$4c368faf@roadrunner.com>
Source record: 25224

Hi, all concerned:

Does anyone have an EZNEC model file for the TH11DX, please?

I'd like to see if it's worth the effort, to extend the log driven cell "out front" to 1 or 2 elements for 6M and "out back" to one element for 30M.

Issues are the HyGain 4K balun at 6M, and the use of parasitics to manage feedpoint Z.

Tia & 73,

Dave, N3HE

5103. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 10:56:50 UTC
From: Dave <noone@nowhere.com>
Message-ID: <S9a0k.903$BV.460@trndny05>
Source record: 25225

"Ed Cregger" <ecregger@bellsouff.net> wrote in message
news:4t00k.168$h05.86@bignews2.bellsouth.net...
>
> "Jim Kelley" <jwkelley@uci.edu> wrote in message
> news:g17c9i$5hr$1@news.service.uci.edu...
>> Michael Coslo wrote:
>>>
>>> Buy Febreeze stock.....
>>
>> Proctor and Gamble closed at $65.27 today. It paid $0.40 a share last
>> quarter.
>>
>> Hi Mike, speaking of things that are possible, it's possible that the hot
>> air Al Gore produces has contributed more to global warming than anything
>> else. Personally, I don't believe that. I think it's caused by the Sun.
>>
>> ac6xg
>>
>
> -----------
>
> Years ago I noticed a change in the color of the light being emitted by
> the Sun. I also noticed a difference in how it felt on my arm while
> driving the car. At the time I attributed the differences to my own
> personal aging. Lately I have begun to think that my first suspicions were
> correct. Something had changed in the nature of the solar output.
>
> This would also partially account for the melting of the polar ice caps on
> Mars. I find it odd that I haven't been able to find any confirming data
> from respectable scientific sources illustrating a change in solar output.
> Maybe I missed it?
>
> Ed, NM2K
>
you can't trust mars, we have landed too many probes there now and they are
obviously contributing to the warming. They are even measuring warming on
Jupiter and we have only had one or two probes burn up there i think.

5104. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 11:07:05 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <bpb244dtcvq06iquasqn5lvrnlk0g8u5gs@4ax.com>
Source record: 25226

On Fri, 30 May 2008 11:36:25 -0400, scooterspal <tfg1@mindspring.com>
wrote:

>Hello and thanks for ahy help you can provide.
>
>I have a small assisted hearing type transmitter that normally uses the
>shield of the mic cable for the antenna. I need to change to a fixed
>antenna for a particular application where there is no mic cable to
>extend out.
>
>The manufacturer says the antenna wire for this 651.85Mhz unit should be
>48" long.
>
>Can anyone tell me what that would equal in a rubber ducky antenna?
>
>Thanks.

Which model do you have?
http://www.comtek.com/sitemap.html
choose the model, and the device frequency range will be listed. They
only show three frequency ranges, 216-217 Mhz, 72-76 MHz, and 76-78
MHz. They also have several options for external antennas, but I
think these are primarily for the base transmitters.

As mentioned in an earlier reply, if you build your own antenna, the
device _may_ become compliant.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

5105. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 11:58:11 UTC
From: LRKSFAG <LRKSFAG.2871021@radiobanter.com>
Message-ID: <LRKSFAG.2871021@radiobanter.com>
Source record: 25232

Brother's great, I top you and I are also top-Jin top。'NACHI'
(http://www.nsk2008.cn/see/197.html)'IKO'
(http://www.nsk2008.cn/see/198.html)'NTN'
(http://www.nsk2008.cn/see/193.html)'INA'
(http://www.nsk2008.cn/see/196.html)

--
LRKSFAG

5106. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 13:01:35 UTC
From: scooterspal <tfg1@mindspring.com>
Message-ID: <f%b0k.3108$jI5.963@flpi148.ffdc.sbc.com>
Source record: 25227

K7ITM wrote:

> If you need the mechanical
> antenna to be shorter than 48 inches, just wind that length of wire in
> a spiral, spaced out as much as you can accommodate. Try that and see
> how it works. Easy enough? If you need higher performance, that's
> possible, but in general very short antennas won't be as efficient as
> straight antennas long enough to be self-resonant at the operating
> frequency...

Is that all a rubber ducky antenna is? 48" of wire wound around a
flexible core of some type?

If so, what do I look for (type, model, etc.) if I want to purchase
one to try out?

5107. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 13:30:02 UTC
From: no@spam.net
Message-ID: <ikk2445479ettqob41puprah57bi9b51l2@4ax.com>
Source record: 25228

also found at
http://download.come2store.com/DufusMcGee/CebikWebsite.zip

On Fri, 16 May 2008 04:04:44 -0700 (PDT), box73@gmx.net wrote:

>and what's even more valuable: no registration needed !!
>
>http://wy6k.com/cebik%5Fmirror/
>

5108. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 13:51:55 UTC
From: ltdoc@yahoo.com
Message-ID: <535ca665-9b28-4358-9eb9-860544eac704@m45g2000hsb.googlegroups.com>
Source record: 25229

> Is that all a rubber ducky antenna is? 48" of wire wound around a
> flexible core of some type?

No, that isn't all that a 'rubber duck' antenna is, wish it were
that simple. Since the question was asked, I have to assume that you
aren't exactly familiar with what a transmitter 'looks' for in an
antenna, or how that 'looked for' thing is arrived at. (And if you
aren't sort of 'involved' in radio stuff, why should you be?) Once
you learn about all that stuff it really isn't all that hard to
figure. But that 'learning' can certainly be a real chore! :)
- 'Doc

5109. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 13:54:22 UTC
From: ltdoc@yahoo.com
Message-ID: <3d12d69a-00a5-41d3-a161-952b34ccadb3@79g2000hsk.googlegroups.com>
Source record: 25230

...Rats, that didn't post like I thought it would. (Not enough
coffee.) Disregard the part with the ">" thingys. Sorry 'bout that.
- 'Doc

5110. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 13:56:42 UTC
From: ltdoc@yahoo.com
Message-ID: <43b35dc4-db51-456d-9ad0-03f5a7f4b84c@p25g2000hsf.googlegroups.com>
Source record: 25231

...aw @#$%. That didn't work either. Not my day, it seems. Take it
for what it's worth, disregard the rest, or the whole thing for that
matter. I give up.
- 'Doc

5111. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 14:06:42 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6ad4ciF37akkrU1@mid.individual.net>
Source record: 25233

ltdoc@yahoo.com wrote:
> ...aw @#$%. That didn't work either. Not my day, it seems. Take it
> for what it's worth, disregard the rest, or the whole thing for that
> matter. I give up.
> - 'Doc

Not sure what posts you're referring to, Doc. But
yours look fine to me. No odd arrow charcters.

Regarding this antenna for the low power transmitter,
I expect there will be a bit of grief coupling a
rubber duck, or anything else, in place of what
was the mic cable.

Are they somehow using the shield of the cable
as the antenna? If so it's likely floating and
not directly connected to circuit ground. Plugging
a duck in place of the mic, with typical connectors
and adaptors, would likely not connect the antenna
element to the "antenna terminal" of the device.

I have no doubt that modifying the antenna would
alter the intended tuned antenna circuitry as
well as violate the type acceptance.

Perhaps a bit more about "what is the intended use"
from the OP would help.

Lumpy

You Played on Lawrence Welk?
Yes but no blue notes. Just blue hairs.

www.LumpyGuitar.net

5112. Re: Renting amateur tower space

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 14:25:06 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6ad5f2F372h3lU1@mid.individual.net>
Source record: 25234

LRKSFAG wrote:
> Brother's great, I top you and I are also top-Jin top。'NACHI'

Well, I think that goes without saying.

Craig 'Lumpy' Lemke

www.n0eq.com

5113. Re: WANTED: 75/80 Meter Coil for Spider Mobile Assy

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 16:14:10 UTC
From: gprunescaper <gprunescaper.2876480@radiobanter.com>
Message-ID: <gprunescaper.2876480@radiobanter.com>
Source record: 25235

::Good writing. Keep up the good work. I just added your RSS feed my
Google News Reader. 'GP' (http://www.gprunescape.com/), 'RS GUIDE'
(http://www.runescape365.com/), 'RS-PL'
(http://www.runescape-power-leveling.us/),,'MS-MESOS'
(http://www.maplestorymesos.us/), well, I love my site, let’s try
our best together, size everyday, and think just do it, I can! ::::::

--
gprunescaper

5114. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 20:26:21 UTC
From: scooterspal <tfg1@mindspring.com>
Message-ID: <zvi0k.6109$Ri.1866@flpi146.ffdc.sbc.com>
Source record: 25236

Lumpy wrote:

> Regarding this antenna for the low power transmitter,
> I expect there will be a bit of grief coupling a rubber duck, or anything else, in place of what
> was the mic cable.
>
> Are they somehow using the shield of the cable as the antenna? If so it's likely floating and
> not directly connected to circuit ground. Plugging a duck in place of the mic, with typical connectors
> and adaptors, would likely not connect the antenna element to the "antenna terminal" of the device.

Thanks, Lumpy. Now we're getting somewhere.

Yes, they are using the mic cable shield for the antenna. Cable is 48" long with a 1/8" phone plug on the end. The shield side of the mic connector is floating, that is correct.

I would be connecting the antenna to a new socket of some sort. A BNC if I can make that fit this rather smallish casing.

Can you give me any starting point for the antenna itself? If I was to connect it to the existing lead off the coil, the one that now goes to the mic shield... remove if from there and connect it to the center pin on the antenna. Would the outer ring of the BNC go to battery negative ground?

The manufacturer mentioned using a 5K resistor on each side as I recall. Does thie affect the gain in any way?

5115. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 21:07:03 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6adt0oF36aeouU1@mid.individual.net>
Source record: 25237

scooterspal wrote:

> Yes, they are using the mic cable shield for the antenna. Cable is 48"
> long with a 1/8" phone plug on the end. The shield side of the mic
> connector is floating, that is correct.
>
> I would be connecting the antenna to a new socket of some sort. A BNC
> if I can make that fit this rather smallish casing.
>
> Can you give me any starting point for the antenna itself? If I was to
> connect it to the existing lead off the coil, the one that now goes to
> the mic shield... remove if from there and connect it to the center
> pin on the antenna. Would the outer ring of the BNC go to battery negative
> ground?
>
> The manufacturer mentioned using a 5K resistor on each side as I
> recall. Does thie affect the gain in any way?

I'd only be guessing. Perhaps the 5K resistor(s) are
part of the 'float'.

What kind of signal are you going to transmit
if you aren't using the mic? Just answer generically
if you're an Al Qadea operative or something. ie where
on the gizmo will you connect the audio(?) that you
want to transmit?

If you're injecting the signal somewere else besides
that mic jack, try just temporarily clipping a 48"
piece of wire to the OUTSIDE of the mic jack or whatever
terminal connects to the shield of the mic cable (your coil?).
If that seems to work, then consider your rubber duck or other
options.

The mic jack may be designed to shut power off when
disconnected. You might need to plug a dummy phone
plug into the jack to get it to power on.

Just connecting random wires or antennas to the thing
won't damage anything as long as you only connect to
one point (don't short two terminals together). I don't
think I'd be connecting any antennas to power ground
unless I was really sure of how the thing works.

The outer ring of a rubber duck does essentially
nothing on most rubber ducks.

As others have mentioned, you're probably going to
get LESS of a signal by going to the shortened
duck antenna over the original 48" wire.

Is there a schematic somewhere?

Lumpy

You played on "The Love Boat"?
Yes. White tux, huge sideburns.

www.LumpyGuitar.com

5116. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-05-31 22:56:41 UTC
From: nm5k@wt.net
Message-ID: <805ed22e-e45f-48be-826e-609e4834b332@b1g2000hsg.googlegroups.com>
Source record: 25238

On May 30, 6:46 pm, "Ed Cregger" <ecreg...@bellsouff.net> wrote:

>
> ----------
>
> In all likelihood, no one on the other end will ever be able to tell the
> difference after you make the changes. Neither will you.
>
> Ed, NM2K

Maybe not from any practical standpoint, but I could see the
difference on a meter when I fed both a coax dipole, and a
ladder line dipole using the same tuner, which has antenna
switch, and meter built in.
So I could A/B real fast. I could see a slight difference on
receive switching between the two. And if it's enough to see
on a meter, I consider it a noticeable amount.
Most of the signals were in the 20-40 over 9 range being 75m,
and I'd see about 5 db worth of difference between the two
antenna/feed lines.
Course, I make no claim as to the exact DB amount of difference,
but I could see it on a meter.
After many years of 75 and 40 m operating using mostly NVIS
paths, I've come to the conclusion nothing will beat a dipole/loop/
turnstile fed with good coax for sheer system efficiency unless
say you had a run of several hundred feet or something...
Which of those three doesn't really matter much, although I
prefer the turnstile over the other two if I had a choice.
Nothing wrong with a loop, but in my cases, some sections
end up sagging closer to the ground, and you are often a
bit more prone to ground losses, and also overall performance
if sections of heavy current are low to the ground.
With a dipole or turnstile, max current is at the feed point, so
the ends of the wires height above the ground is often not quite
as critical.
As far as I can think of, only Cecil's no tuner/no choke system
would let a ladder line fed dipole equal or slightly beat a coax
fed. And in that case, I'm not sure how noticeable it would be,
being as the 213 I use is quite low loss at 3-4 mhz.
But like you say, for on the air, many would probably not
notice much. #1, you would have to do quick A/B transmit
tests for them to notice any difference, and also make sure
fading doesn't skew the results. It would be best to test with a
stable ground or space wave signal.
But... I still prefer coax.. I want every drop out I can get, and

I also much prefer the convenience of coax. IE: with most
antennas, no tuner required. And really not even a "balun"
required if you roll a choke out of the feed line itself and tie
wrap it. Weather is no issue with coax. I can have it sitting
in standing water with no problems.
The only time I use ladder line is mostly experimental
antennas where the feed point impedance is not the usual
50 ohms. If the mismatch to coax is high, ladder and the
tuner makes sense.

5117. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-01 01:17:41 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <fc6dnc-IRMMEd9zVnZ2dnUVZ_u2dnZ2d@earthlink.com>
Source record: 25239

<nm5k@wt.net> wrote in message
news:805ed22e-e45f-48be-826e-609e4834b332@b1g2000hsg.googlegroups.com...
> On May 30, 6:46 pm, "Ed Cregger" <ecreg...@bellsouff.net> wrote:
>
>>
>> ----------
>>
>> In all likelihood, no one on the other end will ever be able to tell the
>> difference after you make the changes. Neither will you.
>>
>> Ed, NM2K
>
> Maybe not from any practical standpoint, but I could see the
> difference on a meter when I fed both a coax dipole, and a
> ladder line dipole using the same tuner, which has antenna
> switch, and meter built in.
> So I could A/B real fast. I could see a slight difference on
> receive switching between the two. And if it's enough to see
> on a meter, I consider it a noticeable amount.
> Most of the signals were in the 20-40 over 9 range being 75m,
> and I'd see about 5 db worth of difference between the two
> antenna/feed lines.
> Course, I make no claim as to the exact DB amount of difference,
> but I could see it on a meter.

Most of it had to be the antennas. Going from almost no loss open wire to
much higher loss rg58 would be only 1 db at the most on 75 meters.
You still need a magnifing glass to see the smeter move this much on a ham
receiver.

5118. Does anyone have an EZNEC model file for the TH11DX

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-01 10:14:42 UTC
From: David J Windisch <davidjw@cinci.rr.com>
Message-ID: <48427691$0$12915$4c368faf@roadrunner.com>
Source record: 25240

Hi, all concerned:
Does anyone have an EZNEC model file for the TH11DX, please?
I'd like to see if it's worth the effort, to extend the log driven cell "out front" to 1 or 2 elements for 6M and "out back" to one element for 30M.
That would solve several nagging band-coverage problems.
Possible issues are the HyGain 4K balun at 6M, and the original designer's use of parasitics to manage feedpoint Z.
Tia & 73,
Dave, N3HE

5119. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-01 14:15:34 UTC
From: scooterspal <tfg1@mindspring.com>
Message-ID: <1by0k.7019$nW2.2238@nlpi064.nbdc.sbc.com>
Source record: 25241

Lumpy wrote:

> I'd only be guessing. Perhaps the 5K resistor(s) are
> part of the 'float'.
>
> What kind of signal are you going to transmit
> if you aren't using the mic?

The original use for the device was to transmit from
someone speaking to someone who was hard of hearing.
Assistive listening is what it's called, I believe.

The same company offers essentially the very same product
WITH the antenna for sending a progam feed from an audio
mixer to the producer or director during a film or video shoot.

That's my need. I'm simply patching the output of my portable
mixer into the existing mic jack on the unit. I'm doing away
with the 48" extended mic cable and the antenna that is part of it.

Holding out 4' of wire will not work for my needs. I need to use
a fixed antenna.

Will any antenna designed for 75-76mhz work?

5120. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-01 14:38:59 UTC
From: nm5k@wt.net
Message-ID: <e553124f-3d5c-4ace-9f40-67755510db6f@r66g2000hsg.googlegroups.com>
Source record: 25242

On May 31, 8:17 pm, "Ralph Mowery" <rmowery28...@earthlink.net> wrote:

> Most of it had to be the antennas. Going from almost no loss open wire to
> much higher loss rg58 would be only 1 db at the most on 75 meters.
> You still need a magnifing glass to see the smeter move this much on a ham
> receiver.

What about the tuner loss? And.. I was using the least amount
of inductance needed to tune.. The difference was noticeable on a
meter.
So that would tend to indicate the difference was more than 1 db.
The 213 I use at the house would be even lower loss than the 58,
but I do use rg-58 sometimes when portable, etc..
Doesn't do any good to use a slightly lower loss feed line, if the
tuner
needed to match causes more loss than the feed line saves vs coax.
And tuners will vary also. Also setting the tuner itself can lose even
more power if the minimum inductance is not use. It's not too hard
to lose up to 20% of your power if the inductance settings are wrong.
I'll still stick with coax and no tuner. :)

5121. Re: Transmitter antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-01 18:05:35 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6ag6okF36oehgU1@mid.individual.net>
Source record: 25243

scooterspal wrote:
> ...I'm simply patching the output of my portable
> mixer into the existing mic jack on the unit. I'm doing away
> with the 48" extended mic cable and the antenna that is part of it.
>
> Holding out 4' of wire will not work for my needs. I need to use
> a fixed antenna.
>
> Will any antenna designed for 75-76mhz work?

Aside from the differences in level/impedance between
your mixer and the original mic, the simplest hurdle
is the floating shield on the orig mic that they
use as the antenna.

I don't recall now the freq of your device. But antenna
length probably won't make a huge difference. A 48 inch wire
might give you just the same performance as a 12 inch wire.

If you're going into the guts of the transmitter to
connect the mixer, that will reduce the antenna float
problem. But if you're somehow plugging the mixer output
into the mic input, then the shield/ground of the mixer,
perhaps all the way back to the 3rd lug ground in the AC
wall supply (if it's AC powered), will become the antenna.

There might also be some kind of DC power on the mic
line from the transmitter to power a condensor mic.

There's just a ton of variables. And it all seems to
hinge around them using the mic cable for the antenna.

PERHAPS a simple solution would be to use an impedance
matching xformer (Shure, RatShack etc) between the mixer
output and the transmitter input. Make your mixer to
transmitter cable 48 inches long, use the xformer between
the mixer and that cable, and use the cable as the antenna,
as originally designed. In other words, replace the mic with
a transformer and appropriate connector to mate with your mixer.
The transformer would tend to isolate the mixer from the antenna
somewhat, as well as matching the two audio levels a little better.

[Transmitter]---mic cable 48"---{|xformer|]--[Mixer]

Lumpy

Did you do a lot of those Emergency Broadcast Warnings?
Yes. Had it been an actual emergency I would have hid.

www.LumpyVoice.net

5122. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-01 18:43:09 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <i4C0k.9056$vP5.2073@bignews6.bellsouth.net>
Source record: 25244

"Dave" <noone@nowhere.com> wrote in message
news:S9a0k.903$BV.460@trndny05...
>
> "Ed Cregger" <ecregger@bellsouff.net> wrote in message
> news:4t00k.168$h05.86@bignews2.bellsouth.net...
>>
>> "Jim Kelley" <jwkelley@uci.edu> wrote in message
>> news:g17c9i$5hr$1@news.service.uci.edu...
>>> Michael Coslo wrote:
>>>>
>>>> Buy Febreeze stock........
>>>
>>> Proctor and Gamble closed at $65.27 today. It paid $0.40 a share last
>>> quarter.
>>>
>>> Hi Mike, speaking of things that are possible, it's possible that the
>>> hot air Al Gore produces has contributed more to global warming than
>>> anything else. Personally, I don't believe that. I think it's caused by
>>> the Sun.
>>>
>>> ac6xg
>>>
>>
>> -----------
>>
>> Years ago I noticed a change in the color of the light being emitted by
>> the Sun. I also noticed a difference in how it felt on my arm while
>> driving the car. At the time I attributed the differences to my own
>> personal aging. Lately I have begun to think that my first suspicions
>> were correct. Something had changed in the nature of the solar output.
>>
>> This would also partially account for the melting of the polar ice caps
>> on Mars. I find it odd that I haven't been able to find any confirming
>> data from respectable scientific sources illustrating a change in solar
>> output. Maybe I missed it?
>>
>> Ed, NM2K
>>
> you can't trust mars, we have landed too many probes there now and they
> are obviously contributing to the warming. They are even measuring
> warming on Jupiter and we have only had one or two probes burn up there i
> think.
>

Damn! You're right. I hadn't thought of that possibility. Plus the Jupiter thing. After all, we nuked Junpiter.

Ed, NM2K

5123. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-01 20:15:58 UTC
From: Robert Smits <bob@rsmits.ca>
Message-ID: <bb2847e15ab6c4aeed85140f6cffa89a@grapevine.islandnet.com>
Source record: 25245

ltdoc@yahoo.com wrote:

> The actual 'size' of an acre depends on who'z doing the measuring,
> where, and why. It varies.

Um, no, it does not. The actual amount of land included in a particular property will vary only as far as the truthfulness of the describer is concerned. 1 acre will always be 1 acre. Or about 43560 sq. feet ...or for those of us with more modern measuring systems, 4050 square meters or about .4 hectares.

Bob, VE7HS

5124. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-01 21:01:05 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6agh1mF36990tU1@mid.individual.net>
Source record: 25246

ltdoc:
> > The actual 'size' of an acre
> > depends on who'z doing the measuring,
> > where, and why. It varies.

Robert Smits:
> Um, no, it does not...

I'm sitting on a half acre that is
short by 500 sq feet due to an easement.
It's legally recorded as an acre.

An acre doesn't have to be square or rectangular.
It could be 1ft wide, it could be 209 ft wide.

An acre could include a penninsula or boot heel
or other odd shaped piece of land.

An acre could exist entirely on that odd shaped
piece of land and be triangular in shape or
any other polygon shaped.

An acre could be measured from the theoretical
centerline of a stream in which case it would
mean you don't have land on that stream portion.

An acre could be on the side of the hill
and therefore the ground distance from one
side of the acre is FARTHER than the 2 dimensionally
measured distance.

An acre could have been converted from a
metes and bounds survey system and be quite
inaccurate but still legally recorded
as an acre.

An acre could have been measured decades ago
and could have been inaccurate due to the
technology or politics of the day.

An acre could have been accurately measured
at one time and then the land shifted and
changed dimensions.

An acre with rectangular borders sits on
a planet that is the shape of a distorted globe.
2 dimensional straight lines and square corners
will become distorted when applied to the earth's

surface.

Bottom line, for purposes of putting a tower on
a piece of real estate, is that "how many acres"
will not be a very conclusive number. More accurate
would be -"I need a lot that is at least XX ft by YY ft".

Craig 'Lumpy' Lemke

www.n0eq.com

5125. Re: Acreage needed for a guyed tower

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-02 05:47:09 UTC
From: Robert Smits <bob@rsmits.ca>
Message-ID: <eaa9e655565ac3614a7d0b7c0915f7ed@grapevine.islandnet.com>
Source record: 25247

Lumpy wrote:

> ltdoc:
>> > The actual 'size' of an acre
>> > depends on who'z doing the measuring,
>> > where, and why. It varies.
>
> Robert Smits:
>> Um, no, it does not...
>
> I'm sitting on a half acre that is
> short by 500 sq feet due to an easement.
> It's legally recorded as an acre.

Of course it is. It is still an acre lot. The fact that you can't use 500 square feet because there's an easement on it doesn't make it any smaller, even though your usable portion is.

> An acre doesn't have to be square or rectangular.
> It could be 1ft wide, it could be 209 ft wide.

Absolutely

> An acre could include a penninsula or boot heel
> or other odd shaped piece of land.

Yep

> An acre could exist entirely on that odd shaped
> piece of land and be triangular in shape or
> any other polygon shaped.

Yep. The lot I live on is about .91 acres, but it's a corner lot and is almost triangular in shape.

> An acre could be measured from the theoretical
> centerline of a stream in which case it would
> mean you don't have land on that stream portion.

Yep

> An acre could be on the side of the hill
> and therefore the ground distance from one
> side of the acre is FARTHER than the 2 dimensionally
> measured distance.

Yep

> An acre could have been converted from a
> metes and bounds survey system and be quite
> inaccurate but still legally recorded
> as an acre.

Despite whatever legal fiction the land registry uses to describe it, it's either an acre or it isn't. An acre is a standard measure of area and it never changes.

> An acre could have been measured decades ago
> and could have been inaccurate due to the
> technology or politics of the day.

Whether or not land you bought was accurately measured at the time or not has a bearing on how much land you have, but it has no bearing on the amount of land you have in an acre. If you buy land that is described as a one acre lot and it's actually a 0.8 acre lot, then even if some charlatan described it to you as a one acre lot, it's not - it's a 0.8 acre lot.

> An acre could have been accurately measured
> at one time and then the land shifted and
> changed dimensions.

Yep. And it's time to measure it again.

> An acre with rectangular borders sits on
> a planet that is the shape of a distorted globe.
> 2 dimensional straight lines and square corners
> will become distorted when applied to the earth's
> surface.

As you've already pointed out, lots come in all shapes and sizes, although the distortion you get from the earth's curvature is so small for the purposes of this discussion it's negligible.

> Bottom line, for purposes of putting a tower on
> a piece of real estate, is that "how many acres"
> will not be a very conclusive number. More accurate
> would be -"I need a lot that is at least XX ft by YY ft".

I agree completely with the last statement, and would argue further that anyone putting up a five hundred foot tower should have at least a five hundred foot radius from the tower centre - meaning a lot that is at least 1000 feet by 1000 feet, assuming a square lot with the tower in the centre. That's a helluva lot of hardware if it drops.

I think we're largely in agreement here - what is sometimes described in terms of acres is often inaccurate, sometimes wildly so. My point was that the size of an acre DOES NOT change, whether or not the lot is measured accurately. Obviously the size of a LOT can change, especially if it's waterfront property.

5126. DX PROGRAM RADIOCRONACHE N.3

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-02 08:36:53 UTC
From: francesco <francec58@libero.it>
Message-ID: <f8bb7fb0-ebcb-43cf-a29b-fe0bffcea957@56g2000hsm.googlegroups.com>
Source record: 25248

DX PROGRAM RADIOCRONACHE N.3

The weekly dx program "radiocronache" of june012008 is now available
here:
http://blog.libero.it/radioascolto/4813738.html

In this transmission:

- QSL card from LX2007G spacial prefix
- OE3XAC the first austrian beacon from Vienna (audioclip)
- Monaco Radio 3AC services on SW (audioclip)
- Shuttle mission frequency control of 5711 KHz (adioclip)
SPECIAL FROM HORN OF AFRICA
- Voice of Broad Masses (audioclip)
- Radio Fana (audioclip)
- IRIN radio (audioclip)

73's Francesco

5127. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-02 12:13:15 UTC
From: AC7PN <brunius@rockisland.com>
Message-ID: <b3c12774-06c3-4300-8346-d2933f5a69c4@y38g2000hsy.googlegroups.com>
Source record: 25249

I tuned into this thread to get the latest thinking about the sunspot cycle and what did I find? A discussion of federal budgeting and welfare babies. Boy is this thread miss named!

5128. What would you check - A4S 10 meter problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-02 17:33:54 UTC
From: "R.Scott" <w7psk@yahoo.com>
Message-ID: <8c2c05e4-8617-4479-b31e-de343d908147@j1g2000prb.googlegroups.com>
Source record: 25250

I will try to describe it best I can.

Its something loose but cant tell from Visual

10 meters when I rotate the antenna will go Numb as the antenna moves and wiggles. It will settle down when it stops sometimes. but If i tx and drop it will come back to hearing. Anytime the wind blows does the same thing.

NOW here is the weird part, If I rotate while KEY DOWN ... SWR stays flat .... but I unkey and it goes numb while moving.

Weirdest thing Ive seen. Driving me nuts too.

Im thinking trap but if it was loose it would stay that way i would think

Help, going crazy.

Scotty W7PSK

5129. Re: What would you check - A4S 10 meter problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-02 17:58:14 UTC
From: ltdoc@yahoo.com
Message-ID: <716e9ec0-b758-4363-925d-a02fe988e826@f63g2000hsf.googlegroups.com>
Source record: 25101

Scotty,
No idea where, but it does sound like an intermittent connection problem. Since the feed line 'loop' around the rotor does the most moving, I think I'd check that first... then everything else, naturally. Then again, since the problem area is always the last place you check, start at the most unlikely place and work away from it...
- 'Doc

5130. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-02 18:31:15 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <g21fvn$6oc$1@news.service.uci.edu>
Source record: 25104

Ed Cregger wrote:

> I find it odd that I haven't been able to find any confirming data
> from respectable scientific sources illustrating a change in solar output.

I have trouble finding data that doesn't show changes in solar output.

ac6xg

5131. Re: What would you check - A4S 10 meter problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-02 18:59:06 UTC
From: "R.Scott" <w7psk@yahoo.com>
Message-ID: <053931e6-7334-4014-b236-6b7edc341226@j33g2000pri.googlegroups.com>
Source record: 25102

On Jun 2, 10:58 am, lt...@yahoo.com wrote:
> Scotty,
> No idea where, but it does sound like an intermittent connection
> problem. Since the feed line 'loop' around the rotor does the most
> moving, I think I'd check that first... then everything else,
> naturally. Then again, since the problem area is always the last
> place you check, start at the most unlikely place and work away from
> it...
> - 'Doc

Thanks Doc, But if it was Feed Line Id assume 20 and 15 would be
effected, but they are not :)

Ill get up there soon and take a peek

5132. Re: What would you check - A4S 10 meter problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-02 19:03:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <MtX0k.4308$jI5.311@flpi148.ffdc.sbc.com>
Source record: 25103

R.Scott wrote:
> but If i tx and drop it will come back to hearing.

Sure sounds like a cold solder joint to me. When
you TX, it heats up the joint.
--
73, Cecil http://www.w5dxp.com

5133. Re: What would you check - A4S 10 meter problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-03 00:37:15 UTC
From: Jim-NN7K
Message-ID: <7n01k.412$L_.246@flpi150.ffdc.sbc.com>
Source record: 25105

Cecil Moore wrote:
> R.Scott wrote:
>> but If i tx and drop it will come back to hearing.
>
> Sure sounds like a cold solder joint to me. When
> you TX, it heats up the joint.

OR a bad connection on a Element (close to a trap)
(High Voltage Point RF wise, xmitting arcs it to make intermitant
contact at that joint- Maybe need to use No-Ox at EACH joint
on antenna?? Jim NN7K

5134. Re: What would you check - A4S 10 meter problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-03 00:53:45 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <wA01k.613$rm5.564@bignews7.bellsouth.net>
Source record: 25106

I would take each piece apart a little, put some no-alox or penetrox on all
the joints and reassemble - one joint at a time until I had done them all.
It would probably be a good idea to use some emery cloth on the joints
first.
Probably oxidized alum joints. Alum oxide is an insulator, so the electrical
joint compound will probably fix it.

"R.Scott" <w7psk@yahoo.com> wrote in message
news:8c2c05e4-8617-4479-b31e-de343d908147@j1g2000prb.googlegroups.com...
>I will try to describe it best I can.
>
> Its something loose but cant tell from Visual
>
> 10 meters when I rotate the antenna will go Numb as the antenna moves
> and wiggles. It will settle down when it stops sometimes. but If i
> tx and drop it will come back to hearing. Anytime the wind blows does
> the same thing.
>
> NOW here is the weird part, If I rotate while KEY DOWN ... SWR stays
> flat .... but I unkey and it goes numb while moving.
>
> Weirdest thing Ive seen. Driving me nuts too.
>
> Im thinking trap but if it was loose it would stay that way i would
> think
>
>
>
> Help, going crazy.
>
> Scotty W7PSK
>

5135. Re: What would you check - A4S 10 meter problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-03 01:42:43 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <h_OdnVzxTaELPNnVnZ2dnUVZ_qzinZ2d@posted.easystreetonline>
Source record: 25107

It's much more difficult to make a reliable "dry circuit" contact (low voltage and current) than one handling substantial power. The reason is that any oxidation or other crud will ruin a dry circuit contact, but higher voltage and current will burn through the crud to make good contact. So it's no surprise that your situation improves when you hold the key down. I had some open frame relays in a plastic box outside doing some antenna switching which would crud up after a while. But all it took was a "dit" from the transmitter, and they'd behave for a while. You apparently have a situation where the contacts are re-oxidizing rapidly (as aluminum, for example, will do), or where some contaminant runs down over the contacts to recontaminate them after the transmitter key-down period. Track down the signal path, and put something like DeOxIt on any contacts. The oil will prevent re-oxidation, and normal wiping action should push the oil out of the way in the contact area to allow good contact. I wouldn't use a grease like NoAlOx unless you have a pretty fair amount of contact pressure. I've found that WD-40 works quite well, too. You might find it handy to at least find the problem area.

Roy Lewallen, W7EL

R.Scott wrote:
> I will try to describe it best I can.
>
> Its something loose but cant tell from Visual
>
> 10 meters when I rotate the antenna will go Numb as the antenna moves
> and wiggles. It will settle down when it stops sometimes. but If i
> tx and drop it will come back to hearing. Anytime the wind blows does
> the same thing.
>
> NOW here is the weird part, If I rotate while KEY DOWN ... SWR stays
> flat .... but I unkey and it goes numb while moving.
>
> Weirdest thing Ive seen. Driving me nuts too.
>
> Im thinking trap but if it was loose it would stay that way i would
> think
>
>
>
> Help, going crazy.
>
> Scotty W7PSK
>

5136. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-03 10:18:25 UTC
From: David J Windisch <davidjw@cinci.rr.com>
Message-ID: <48451a68$0$20194$4c368faf@roadrunner.com>
Source record: 25108

Shucks, Ed, simply google ' change in solar output '
73 Dave W8FGX

SNIP>>> on Mars. I find it odd that I haven't been able to find any
confirming
>>> data from respectable scientific sources illustrating a change in solar
>>> output. Maybe I missed it?
>>>
>>> Ed, NM2K
SNIP

5137. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-03 14:01:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <K8c1k.3338$N87.2837@nlpi068.nbdc.sbc.com>
Source record: 25109

David J Windisch wrote:
> Shucks, Ed, simply google ' change in solar output '

First listing:
http://www.space.com/scienceastronomy/sun_output_030320.html

"In what could be the simplest explanation for one component
of global warming, a new study shows the Sun's radiation has
increased by .05 percent per decade since the late 1970s."
--
73, Cecil http://www.w5dxp.com

5138. Re: Wrist Rocket Height - EPILOGUE

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-03 15:07:25 UTC
From: "R.Scott" <w7psk@yahoo.com>
Message-ID: <f0c75522-0720-47c1-ab57-ce141bf61922@u36g2000prf.googlegroups.com>
Source record: 25110

Well I finally got the rope cut, I Duct Taped my Tree trimmer extended to 2 10 foot Rat Shack Mast pieces I had, that and getting on the ladder a bit I was able to get up into the rope enough to cut it.

Now the Good News is

I changed Reels in the wrist rocket, I was using Open Faced but noticed all the ones on the net had a Zebco. So I grabbed a spare zebco, walked out and zinngg right to the top of the tree, and then it slid down slick as can be. Sent up the messenger string (small nylon) and pulled the main cable back over and up went the antenna. All is well now, I got frustrated cause the open faced would let it spool out proper it was either short or hung up. Zebco worked peach.

Thanks for all the help folks

Scotty W7PSK.

5139. Re: Dayton

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-03 17:04:11 UTC
From: usoowsin9 <usoowsin9.28b58f8@radiobanter.com>
Message-ID: <usoowsin9.28b58f8@radiobanter.com>
Source record: 25111

Postage Machines, Shipping Solutions, and Postage Printers Need a
postage machine but not sure which one to choose for your business?
Whether you send a few or a few dozen letters or post cards a day,
ship a variety of packages and parcels, or want to stand out with a
custom image on your mailings C Pitney Bowes has the postage metering
solution to match the needs of your small
business.'http://www.bestpostagemeter.com'
(http://www.bestpostagemeter.com/)

--
usoowsin9

5140. Re: Sunspot cycle more dud than radiation flood

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 02:24:40 UTC
From: baadman25 <baadman25.28c01b8@radiobanter.com>
Message-ID: <baadman25.28c01b8@radiobanter.com>
Source record: 25112

Very good!!! Support !'wow gold' (http://dinmo.org/Affiliate.htm)'wow gold' (http://dinmo.org/News.htm)'wow gold' (http://goofeel.org/FAQ.htm)'wow gold' (http://goofeel.org/Contact%20Us.htm)'wow gold' (http://serserline.com/About%20us.htm)

--
baadman25

5141. Re: Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 13:49:51 UTC
From: usoowsin9 <usoowsin9.28c5620@radiobanter.com>
Message-ID: <usoowsin9.28c5620@radiobanter.com>
Source record: 25113

$225+ daily. Processing rebates at home for 60 minutes Work at home positions. Immediate PlacementYour work at home job applicationHuge Work at Home IncomeA Rebate Processor position offers you the chance to work at homeWork from home, start today!Certified, proven, guaranteed work at home positionRebate Processor Position - Easy Work - Great PayRebate Processing Jobs at home. Immediate Placement'http://www.homesclick.net' (http://www.homesclick.net/)

--
usoowsin9

5142. Re: Dayton

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 14:06:28 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <Gjx1k.21482$mM.12434@fe115.usenetserver.com>
Source record: 25114

usoowsin9 wrote:
> Postage Machines, Shipping Solutions, and Postage Printers Need a
> postage machine but not sure which one to choose for your business?
> Whether you send a few or a few dozen letters or post cards a day,
> ship a variety of packages and parcels, or want to stand out with a
> custom image on your mailings C Pitney Bowes has the postage metering
> solution to match the needs of your small
> business.'http://www.bestpostagemeter.com'
> (http://www.bestpostagemeter.com/)

If I'd wanted these things, I'd have looked for them at Dayton.

Dave K8MN

5143. Re: HAM to PC

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 16:07:19 UTC
From: mike hunt <mikehunt77@yahoo.com>
Message-ID: <4846bdbb$0$80732$c5fe31e7@reader.usenet4all.se>
Source record: 25115
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.misc

"W3CQH" <hsgorden@comcast.net> wrote in message
news:wdWdne575MRi5aHVnZ2dnUVZ_s7inZ2d@comcast.com...
>
> "KC8QJP" <KC8QJP@invalid.invalid> wrote in message
> news:483c77af@news.x-privat.org...
>>
>> <bigjcw1023@gmail.com> wrote in message
>> news:c76da90b-19c5-4b1f-9372-c5248ec8b5d9@m44g2000hsc.googlegroups.com...
>>> How do I go about hooking up ham to my pc?
>>>
>> Call honey baked, dummy.
>>
>
> Why are you so down on every post in this NG?
>
It's easy to see why she is banned from posting to QRZ.com.

http://forums.qrz.com/showthread.php?t=36738

Also, she shacks up with that known criminal felon N8WWN. What a pair of
losers.

5144. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 17:05:11 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <PemdnUXdwe7hStrVRVnyjgA@pipex.net>
Source record: 25130

Dieter Kiel wrote:
> The tuner doesn`t change the antenna specification, e.g. gain,
> impedance, or pattern.
> If you buy a beam antenna you will get this data, and the pattern of the
> antenna is most time a free room pattern.
>
> As the tuner is used to match the impedance of the radio to the line it
> will effect the power getting to the antenna or the signal received from
> the antenna if it is passed through the tuner.
==========
Agree with the above because the matching device (tuner) is NOT 100%
efficient , hence some (hopefully very little) RF power from the
transmitter will be converted in heat inside the matching device.

Frank GM0CSZ / KN6WH.

5145. What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 17:33:16 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ulA1k.3837$xZ.1215@nlpi070.nbdc.sbc.com>
Source record: 25116

A popular myth is developing that the tuner has no effect at the antenna feedpoint and the only goal is to make the transmitter "happy". My question is: if we monitored only the forward current or forward power at the antenna feedpoint, could we still adjust the tuner? If the answer is "yes", the myth is false.
--
73, Cecil http://www.w5dxp.com

5146. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 19:39:32 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <UbC1k.35925$yg6.27830@trnddc01>
Source record: 25117

I now have my AA-200 up and running with the latest firmware and software.
Support from RigExpert Canada has been first rate too.
I have owned about every analyzer out there from Autek to Timewave- except
the AIM as it requires a PC and that is not convenient for me. The AA-200 is
a vector device that even allows one to change the connector simulation L/C.
It agrees extremely well with my HP 8711B and the software allows easy
archiving and documentation.

Dale W4OP

5147. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 20:12:09 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <g26tcl$9a9$1@news.service.uci.edu>
Source record: 25118

Cecil Moore wrote:

> A popular myth is developing that the tuner has no effect
> at the antenna feedpoint and the only goal is to make the
> transmitter "happy".

The myth is undoubtedly that the implied point of view is either
popular or developing.

ac6xg

5148. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 20:38:47 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <p3D1k.4679$jl5.470@flpi148.ffdc.sbc.com>
Source record: 25119

Jim Kelley wrote:

> w5dxp wrote:
>> A popular myth is developing that the tuner has no effect
>> at the antenna feedpoint and the only goal is to make the
>> transmitter "happy".
>
> The myth is undoubtedly that the implied point of view is either popular
> or developing.

From QRZ.com regarding tuners:

"The tuner has absolutely no effect at the antenna."

From eHam.net regarding tuners:

"Does nothing. The tuner as the other poster said,
just makes your radio happy."
--
73, Cecil http://www.w5dxp.com

5149. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 21:43:17 UTC
From: ltdoc@yahoo.com
Message-ID: <dc522760-3c11-424c-9c8e-a4aa2dc0a060@d77g2000hsb.googlegroups.com>
Source record: 25120

Oh, I think the 'myth' is fairly true as far as it goes. It just
doesn't 'go' far enough, sort of.
As in;
It does make the transmitter 'happy'. Since it 'sees' an impedance it
likes, it decides to not
hold back but put out full power. That means that more signal does
reach the antenna than
may have before using that tuner. Which means that the antenna can
radiate more signal.
Does that mean the tuner changes anything about the antenna? It's
input impedance? Or
just the amount of signal that gets radiated. Sort of depends on just
'where' that tuner is,
doesn't it.
People who do know something about how all that stuff works, do know
that this whole thingy
is a 'myth' of sorts. It needs Paul Harvey's, the "rest of the
story", to finish it off. Then it makes
sense.
I seriously doubt if I busted and bubbles here, or repudiated any
'myth'. I'm devastated!
- 'Doc

5150. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 21:52:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <E8E1k.4126$co7.3954@nlpi066.nbdc.sbc.com>
Source record: 25121

ltdoc@yahoo.com wrote:
> That means that more signal does reach the antenna than
> may have before using that tuner.

Sounds like an effect that the tuner has on the
antenna, huh?
--
73, Cecil http://www.w5dxp.com

5151. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-04 22:23:08 UTC
From: Ed_G <Huckleberry_REMOVE_@bigvalley.net>
Message-ID: <Xns9AB39C8357918Huckleberrybigvalley@198.186.192.196>
Source record: 25122

>
> From QRZ.com regarding tuners:
>
> "The tuner has absolutely no effect at the antenna."
>
> From eHam.net regarding tuners:
>
> "Does nothing. The tuner as the other poster said,
> just makes your radio happy."

Neither Eham nor QRZ publish official technical opinions of the staff, near as I can tell..... thus the above comments only reflect the opinions of some anonymous contributers. As we all know, regarding antenna theory there is a huge gap in the knowledge of many hams.

Regarding tuners and antennas, isn't the main job of an antenna coupler (tuner at feedpoint) to maximize the efficient transfer of power from the feedline to the antenna? If true, then the coupler (tuner) certainly does have an effect !

Ed K7AAT

5152. zzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzz zzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzz

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 00:24:30 UTC
From: an old friend <kb9rqz@yahoo.com>
Message-ID: <1d3bdf00-5f5b-4712-9a81-f785f551b56d@y38g2000hsy.googlegroups.com>
Source record: 25123
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.misc

On Jun 4, 12:07 pm, "mike hunt" <mikehun...@yahoo.com> wrote:
>
get a life beyond spreading filth to several ng

5153. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 01:03:09 UTC
From: nm5k@wt.net
Message-ID: <ef495f46-fbea-4fad-a696-660f910d0e37@b1g2000hsg.googlegroups.com>
Source record: 25124

On Jun 4, 5:23 pm, "Ed_G" <Huckleberry_REMO...@bigvalley.net> wrote:
> > From QRZ.com regarding tuners:
>
> > "The tuner has absolutely no effect at the antenna."
>
> > From eHam.net regarding tuners:
>
> > "Does nothing. The tuner as the other poster said,
> > just makes your radio happy."
>
> Neither Eham nor QRZ publish official technical opinions of the
> staff, near as I can tell..... thus the above comments only reflect the
> opinions of some anonymous contributers. As we all know, regarding
> antenna theory there is a huge gap in the knowledge of many hams.
>
> Regarding tuners and antennas, isn't the main job of an antenna
> coupler (tuner at feedpoint) to maximize the efficient transfer of
> power from the feedline to the antenna? If true, then the coupler (
> tuner) certainly does have an effect !
>
> Ed K7AAT

I'd never really heard of this myth, but myself, I think the feed
point
is the best place for a tuner if the intent is to match the load to
the
feed line. As an example, if you were using 50 ohm coax, and the load
was in the 1000 ohm range, you would have an overall lower system
loss matching the load to the coax, rather than place the tuner at
the
rig and matching the load seen at the coax to the rig.
With the lower loss ladder lines I suppose it becomes less critical.

5154. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 03:36:16 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <48475f32$0$3354$4c368faf@roadrunner.com>
Source record: 25125

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:ulA1k.3837$xZ.1215@nlpi070.nbdc.sbc.com...
>A popular myth is developing that the tuner has no effect
> at the antenna feedpoint and the only goal is to make the
> transmitter "happy". My question is: if we monitored
> only the forward current or forward power at the antenna
> feedpoint, could we still adjust the tuner? If the answer
> is "yes", the myth is false.

I think this is a trick question :-) With a tuner connected to the transmitter by a short length of transmission line to the xmtr output, if we were to literally measure only the forward power component without taking into account the reflected power, a 100 watt net forward output power could consist of 300 watts forward plus (negative) 200 watts reflected ignoring dissipated power along the xmission line for the moment. The forward power meter would not make a distinction between such a mismatch and the desired case of 100 watts total forward and zero watts reflected (or dissipated). One cannot operate the tuner in this configuration for maximum power transfer with either a forward-only meter or one that measure net power delivered (smmation of forward plus reflected). Also, if we did use a forward power meter along with a reverse power meter, a resistive dummy load would appear to be a great antenna when using such a meter combination, just as an antenna that dissipated 100 watts through the insulation system would. The problem with any meter that is used as configured above (placed at the transmitter) is that it cannot distinguish between resistive "dissipated power" along the transmission line and other components, from radiated power leaving the antenna into free space. However, measuring power/current at the feed point gets you much closer to the desired measurement, thus it indicates more correctly an optimum tuner operation. However, it still would not distinguish desired radiated power from ohmic antenna losses such as a might result from a thin gauge wire or heat losses due to high current nodes on the antenna of supposedly acceptable wire diameter.

AI4QJ

5155. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 03:43:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <HhJ1k.6417$mh5.2850@nlpi067.nbdc.sbc.com>
Source record: 25126

AI4QJ wrote:
> One cannot operate the tuner in this configuration for maximum power
> transfer with either a forward-only meter or one that measure net power
> delivered (smmation of forward plus reflected).

If we adjusted the tuner for maximum forward power
at the antenna, wouldn't that mean the tuner was
properly tuned for a Z0-match at the transmitter?
--
73, Cecil http://www.w5dxp.com

5156. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 03:59:32 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <484764a5$0$3381$4c368faf@roadrunner.com>
Source record: 25127

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:HhJ1k.6417$mh5.2850@nlpi067.nbdc.sbc.com...
> AI4QJ wrote:
>> One cannot operate the tuner in this configuration for maximum power
>> transfer with either a forward-only meter or one that measure net power
>> delivered (smmation of forward plus reflected).
>
> If we adjusted the tuner for maximum forward power
> at the antenna, wouldn't that mean the tuner was
> properly tuned for a Z0-match at the transmitter?

I think it would be essentially true for today's FET transmitters that automatically limit output power when the Z0 is not matched, but not for any reason having to do with transmission line theory. You would have to know the output power from the transmitter (assume 100 w) and measure as close to 100 w forward power out at the antenna. Anything less than 100 watts would indicate a Z0 mismatch, again using todays transmitters that throttle down during mismatch as protection. For the theoretical transmitter with no throttle down function, then this configuration would not indicate a proper Z0 matcgh at the transmitter; however, for the old tube driven models, their output stages were much more robust and the mismatch between xmitter and transmission line did not matter so much, especially when they used ladder line, before coax was widely available, and transmission line dissipation was nil.

AI4QJ

5157. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 07:25:43 UTC
From: Jeff <jeff@local.host>
Message-ID: <4847952a$0$30640$834e42db@reader.greatnowhere.com>
Source record: 25128

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:E8E1k.4126$co7.3954@nlpi066.nbdc.sbc.com...
> ltdoc@yahoo.com wrote:
>> That means that more signal does reach the antenna than
>> may have before using that tuner.
>
> Sounds like an effect that the tuner has on the
> antenna, huh?
> --
> 73, Cecil http://www.w5dxp.com

No, it sounds like it has an effect on the signal that is reaching the
antenna.

Jeff

5158. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 07:30:52 UTC
From: nospam@online.de
Message-ID: <1ii210g.1kfgzo07d71r6N%nospam@online.de>
Source record: 25129

Cecil Moore <nospam@w5dxp.com> wrote:

> > The myth is undoubtedly that the implied point of view is either popular
> > or developing.
>
> From QRZ.com regarding tuners:
>
> "The tuner has absolutely no effect at the antenna."
>
> From eHam.net regarding tuners:
>
> "Does nothing. The tuner as the other poster said,
> just makes your radio happy."

The tuner doesn`t change the antenna specification, e.g. gain,
impedance, or pattern.
If you buy a beam antenna you will get this data, and the pattern of the
antenna is most time a free room pattern.

As the tuner is used to match the impedance of the radio to the line it
will effect the power getting to the antenna or the signal received from
the antenna if it is passed through the tuner.

--
DK
DJ4PB

5159. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 12:52:03 UTC
From: ltdoc@yahoo.com
Message-ID: <024ba0a3-b80e-4e99-b6f7-94e8758690c2@f63g2000hsf.googlegroups.com>
Source record: 25131

...100% efficient? The only thing I have ever had that was 100%
efficient was my 'Ex', which she pointed out to me quite often. So,
using a tuner that got just a tiny bit 'warm' from it's inefficiency
just wasn't/isn't that big'a deal. When it became noticeably 'warm',
it was because I was trying to match something that just was not very
close to reasonable. Then again, it sort of depends on the tuner you
happen to be using, it's 'usable' impedance matching range, just how
'robust' the thing happens to be built, and what you are trying to do
with it to start with. There are limits. How often you approach
those limits sort of defines how much heat you will see, they make
pretty nice coffee warmers at times ;), not the best idea in the
world, but...
- 'Doc

And just for 'grins', for those who do not 'approve' of using a tuner,
what do you think those gama, delta, and other variety of thingys on
the feed point of that beam are?
(if that don't stir the 'worm soup' up a little, I just haven't had
enough coffee yet. I'm still warming it on the tuner.)
:)

5160. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 13:02:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ItR1k.4801$jl5.1546@flpi148.ffdc.sbc.com>
Source record: 25132

AI4QJ wrote:
> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>> If we adjusted the tuner for maximum forward power
>> at the antenna, wouldn't that mean the tuner was
>> properly tuned for a Z0-match at the transmitter?
>
> I think it would be essentially true for today's FET transmitters that
> automatically limit output power when the Z0 is not matched, but not for any
> reason having to do with transmission line theory.

Let's see what is wrong with the following reasoning:

1. Maximum power is delivered to a mismatched load
when the forward power is at a maximum.

2. Maximum available power is delivered to the load
when the source sees its designed-for impedance, e.g.
is Z0-matched.

Why wouldn't the forward power at the antenna be
maximized by a Z0-match at the source while the
tuner is being adjusted?
--
73, Cecil http://www.w5dxp.com

5161. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 13:07:11 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3yR1k.4803$jI5.3691@flpi148.ffdc.sbc.com>
Source record: 25133

Dieter Kiel wrote:
> As the tuner is used to match the impedance of the radio to the line it
> will effect the power getting to the antenna or the signal received from
> the antenna if it is passed through the tuner.

If the power getting to the antenna is measurable, then
the tuner is causing something to happen at the antenna.
It is doing more than just making the transmitter happy.
After all, a dummy load makes the transmitter just as
happy as a tuner.
--
73, Cecil http://www.w5dxp.com

5162. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 14:52:28 UTC
From: nospam@online.de
Message-ID: <1ii2ktz.1b07d6o1frka5aN%nospam@online.de>
Source record: 25134

Cecil Moore <nospam@w5dxp.com> wrote:

> > As the tuner is used to match the impedance of the radio to the line it
> > will effect the power getting to the antenna or the signal received from
> > the antenna if it is passed through the tuner.
>
> If the power getting to the antenna is measurable, then
> the tuner is causing something to happen at the antenna.
> It is doing more than just making the transmitter happy.
> After all, a dummy load makes the transmitter just as
> happy as a tuner.

The power at the antenna will also be measurable if you decide to bypass
the tuner.
If you have a good match you don`t need a tuner.
But most of the transmitters don`t work correct with a high swr.
Even if they would the best match will get the most power into the
antenna.
The tuner at the transmitter doesn`t change the impedance of the
antenna. It also doesn`t change the gain or the pattern of the antenna.
DK

5163. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 15:04:13 UTC
From: commander john <crazytvjohn@yahoo.com>
Message-ID: <8cdd62ea-40f0-4fcb-81c5-2532a18a4fa8@p25g2000hsf.googlegroups.com>
Source record: 25135

On Jun 4, 12:33 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> A popular myth is developing that the tuner has no effect
> at the antenna feedpoint and the only goal is to make the
> transmitter "happy". My question is: if we monitored
> only the forward current or forward power at the antenna
> feedpoint, could we still adjust the tuner? If the answer
> is "yes", the myth is false.
> --
> 73, Cecil http://www.w5dxp.com

I the early books I have that is how things were tuned up. The
antenna was dirrectly tapped on to the tank coil. Adjusted for
maximum antenna current. No one had heard of swr meters. Antennas
worked just fine. Today the antenna tuner resonates the antenna. No
antenna tuner? Then no resonanting the antenna. You have to take what
the antenna gives.

john w9zy

5164. Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 15:08:57 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <cb9c1c34-b902-4cd6-ad1f-6f565fbc4caf@j22g2000hsf.googlegroups.com>
Source record: 25136

Thought I would drop in and provide an update on the above.

The patent request has not emerged by being published as per the norm
as I am my own attorney
thus normal PTO protocol has not been followed as they are assisting
me as per requirements by law.
Regarding the antenna sent to Michigan for testing per a request on
this newsgroup and receipt acknoweledged on this newsgroup.
Since that day therei has been no communication from him. With him
being in the business of antennas that has really surprised me but
again many cruel jokes came about with respect to that antenna.
Now the acedemic semesters have come to an end I am expecting the
professor who has volunteered to supply and publish a paper on my work
should start to pick up again. Papers have to follow a proper protical
with mathematics and the professor has written many papers. As
President of the IEEE group on Antennas and Propagation she will
begiving several talks at the International show in a few weeks at San
Diego after which things should get up to speed.
I will put up a page later today that will be intended more for the
lay man and without all the mathematical details that a true physics
paper requires for submission. The page will be titled Unwin antennas
or something like that for those who wish to read it. I am not coming
back to the group to discuss it or accepting E mails because of passed
experience, but some on this group did supply interesting comments
over the years and it is for them this post is adressesd to.
I'm gone and no. the door did not hit my arse as I left the scene
quite a while ago
Art Unwin KB9MZ.......XG

5165. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 16:10:30 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <48480fe4$0$18149$4fafbaef@reader3.news.tin.it>
Source record: 25138

"Cecil Moore" <nospam@w5dxp.com> ha scritto nel messaggio
news:ulA1k.3837$xZ.1215@nlpi070.nbdc.sbc.com...
>A popular myth is developing that the tuner has no effect
> at the antenna feedpoint and the only goal is to make the
> transmitter "happy". My question is: if we monitored
> only the forward current or forward power at the antenna
> feedpoint, could we still adjust the tuner? If the answer
> is "yes", the myth is false.
> --
> 73, Cecil http://www.w5dxp.com

5166. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 16:21:02 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <4848125c$0$18160$4fafbaef@reader3.news.tin.it>
Source record: 25139

"Cecil Moore" <nospam@w5dxp.com> ha scritto nel messaggio
news:ulA1k.3837$xZ.1215@nlpi070.nbdc.sbc.com...
>A popular myth is developing that the tuner has no effect
> at the antenna feedpoint and the only goal is to make the
> transmitter "happy". My question is: if we monitored
> only the forward current or forward power at the antenna
> feedpoint, could we still adjust the tuner? If the answer
> is "yes", the myth is false.
> --
> 73, Cecil http://www.w5dxp.com

If somebody really wrote that "the tuner has no effect at the antenna feedpoint", there are two cases:

1) either he meant to correctly say that, adjusting the tuner, the impedance seen at the antenna terminations - or any other antenna property - does not change (independently of whether the tuner is placed at the transmitter end or at the antenna end). If so, it is just a matter of bad wording, and I would be tempted to say that his english is even worse than my non-mother tongue one

2) or he has a poor understanding of transmission lines and antenna theory

73

Tony I0JX

5167. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 16:31:56 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <ibOdnWDpM79Cm9XVnZ2dnUVZ_rPinZ2d@earthlink.com>
Source record: 25137

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:ulA1k.3837$xZ.1215@nlpi070.nbdc.sbc.com...
>A popular myth is developing that the tuner has no effect
> at the antenna feedpoint and the only goal is to make the
> transmitter "happy". My question is: if we monitored
> only the forward current or forward power at the antenna
> feedpoint, could we still adjust the tuner? If the answer
> is "yes", the myth is false.
> --
> 73, Cecil http://www.w5dxp.com

Everyone makes more of a tuner than what it is. If all transmitters were designed to work into very wide loads the tuners would not be needed. Tubes have an impedance of around 1000 to 4000 ohms and must be matched to 50 ohm coax (usual ham antenna design) or some other combination of resistance and reactance. The transisitors must be matched from a very low value (under 10 ohms usually) to a higher impedance.
Many transmitters now in use are for only 50 ohm output (fixed tuning) or a small range (maybe 3:1 for some amps) if they do have an adjustiable tuning.

There are some antenna designs that fall way out of the 50 ohm design inpedance so some way must be made to match the inpedances for maximum power transfer.

Take an amplifier that has a pi-L network built in. If it is adjusted for max power out , and an amp with a pi network with an external L network to match an antenna, what is the differance ?

5168. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 17:11:56 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g296osvdc2@f04n12.cac.psu.edu>
Source record: 25140

Antonio Vernucci wrote:
> "Cecil Moore" <nospam@w5dxp.com> ha scritto nel messaggio
> news:ulA1k.3837$xZ.1215@nlpi070.nbdc.sbc.com...
>> A popular myth is developing that the tuner has no effect
>> at the antenna feedpoint and the only goal is to make the
>> transmitter "happy". My question is: if we monitored
>> only the forward current or forward power at the antenna
>> feedpoint, could we still adjust the tuner? If the answer
>> is "yes", the myth is false.
>> --
>> 73, Cecil http://www.w5dxp.com
>
> If somebody really wrote that "the tuner has no effect at the antenna
> feedpoint", there are two cases:
>
> 1) either he meant to correctly say that, adjusting the tuner, the
> impedance seen at the antenna terminations - or any other antenna
> property - does not change (independently of whether the tuner is placed
> at the transmitter end or at the antenna end). If so, it is just a
> matter of bad wording, and I would be tempted to say that his english is
> even worse than my non-mother tongue one
>
> 2) or he has a poor understanding of transmission lines and antenna theory

Yeah. This is probably the first time some random poster over at QRZ or
Eham has been wrong! 8^)

- 73 de Mike N3LI -

5169. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 17:31:49 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <MtV1k.4846$jI5.2418@flpi148.ffdc.sbc.com>
Source record: 25141

Cecil Moore wrote:
> Dieter Kiel wrote:
>> As the tuner is used to match the impedance of the radio to the line it
>> will effect the power getting to the antenna or the signal received from
>> the antenna if it is passed through the tuner.
>
> If the power getting to the antenna is measurable, then
> the tuner is causing something to happen at the antenna.
> It is doing more than just making the transmitter happy.
> After all, a dummy load makes the transmitter just as
> happy as a tuner.

Cecil;

An antenna tuner does not and can not and will not make any physical or electrical changes to any antenna it is attached to. It will, however, make electrical changes to an "ANTENNA SYSTEM" such that a transmitter or receiver will react to the system more efficiently.

Take a dummy load that exhibits a characteristic impedance of say 75 ohms and hook it up to a transmitter that exhibits a characteristic impedance of 50 ohms. I guarantee that the transmitter won't like it as well as a dummy load that exhibits a characteristic impedance of 50 ohms. All impedances are purely resistive with no inductive component. Place a tuner in the circuit and adjust it for best conditions. The transmitter will think it is looking at 50 ohms not 75.

Dave WD9BDZ

5170. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 17:36:22 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <1yV1k.4847$jI5.2382@flpi148.ffdc.sbc.com>
Source record: 25142

ltdoc@yahoo.com wrote:
> ...100% efficient? The only thing I have ever had that was 100%
> efficient was my 'Ex', which she pointed out to me quite often. So,
> using a tuner that got just a tiny bit 'warm' from it's inefficiency
> just wasn't/isn't that big'a deal. When it became noticeably 'warm',
> it was because I was trying to match something that just was not very
> close to reasonable. Then again, it sort of depends on the tuner you
> happen to be using, it's 'usable' impedance matching range, just how
> 'robust' the thing happens to be built, and what you are trying to do
> with it to start with. There are limits. How often you approach
> those limits sort of defines how much heat you will see, they make
> pretty nice coffee warmers at times ;), not the best idea in the
> world, but...
> - 'Doc
>
> And just for 'grins', for those who do not 'approve' of using a tuner,
> what do you think those gama, delta, and other variety of thingys on
> the feed point of that beam are?
> (if that don't stir the 'worm soup' up a little, I just haven't had
> enough coffee yet. I'm still warming it on the tuner.)
> :)

For more grins, what do you think the "LOAD" and "TUNE" knobs on an older tube transmitter are? They match the output power tube impedance to the antenna system impedance. If you don't believe me mistune a tube transmitter and feel the warmth come from the finals. Have a spare in stock for when you are done.

Dave WD9BDZ

5171. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 17:54:44 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <ELV1k.3609$ZE5.2790@nlpi061.nbdc.sbc.com>
Source record: 25143

Michael Coslo wrote:
> Yeah. This is probably the first time some random poster over at QRZ or
> Eham has been wrong! 8^)

What is troubling is that the myth seems to be approaching
50% of the posters. If all an antenna tuner does is make the
transmitter happy, it is no better than a dummy load.
--
73, Cecil http://www.w5dxp.com

5172. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 17:59:27 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <3QV1k.3610$ZE5.1482@nlpi061.nbdc.sbc.com>
Source record: 25144

David G. Nagel wrote:
> An antenna tuner does not and can not and will not make any physical or
> electrical changes to any antenna it is attached to.

Seems to me that delivery of the maximum available power
to the radiation resistance of an antenna is certainly
a physical/electrical change capable, in the extreme, of
melting the antenna.

Consider what a 1kw amp could do to a 40m hamstick used
on 75m when matched with a 1kw antenna tuner.
--
73, Cecil http://www.w5dxp.com

5173. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 19:08:21 UTC
From: Ralph Mowery <rmowery28146@earthlink.net>
Message-ID: <I7KdnVpAndYVttXVnZ2dnUVZ_qqgnZ2d@earthlink.com>
Source record: 25145

"David G. Nagel" <nagel.david@sbcglobal.net> wrote in message
news:1yV1k.4847$jI5.2382@flpi148.ffdc.sbc.com...
> ltdoc@yahoo.com wrote:
> For more grins, what do you think the "LOAD" and "TUNE" knobs on an older
> tube transmitter are? They match the output power tube impedance to the
> antenna system impedance. If you don't believe me mistune a tube
> transmitter and feel the warmth come from the finals. Have a spare in
> stock for when you are done.
>
> Dave WD9BDZ

I think I am trying to say the same thing.

One has to define where the matching system of the final amplifier stops and the antenna system starts. I look at an antenna tuner that is within a few feet of the transmitter as an extention of the matching network between the amplifier device (tube or transistor) and the load which starts with the transmission line.

If the antenna tuner is actually at the antenna, then it is a matching device for the antenna and not in the scope of this discussion.

Is the automatic internal antenna tuner such as in my Icom746 pro really an antenna tuner or is it just taking the place of some knobs that I could turn such as in a Heathkit sb100 ? All that is being done in either case is to match the amplifing device to whatever load is put to it.
I thnk it is just a mater of what someone wants to call it at the time.

5174. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 19:57:45 UTC
From: Roger D Johnson <n1rj~@roadrunner.com>
Message-ID: <4848453a$0$4073$4c368faf@roadrunner.com>
Source record: 25146

David G. Nagel wrote:

> For more grins, what do you think the "LOAD" and "TUNE" knobs on an
> older tube transmitter are? They match the output power tube impedance
> to the antenna system impedance. If you don't believe me mistune a tube
> transmitter and feel the warmth come from the finals. Have a spare in
> stock for when you are done.
>
> Dave WD9BDZ

Not strictly true. The transmitter output network only matches
impedances to the extent that the transmitter puts out its designed
power.

73, Roger

--
Remove tilde (~) to reply

Remember the USS Liberty (AGTR-5)
http://ussliberty.org/

5175. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 21:16:45 UTC
From: Larry Benko <xxw0qe@comcast.net>
Message-ID: <484857BD.5020204@comcast.net>
Source record: 25147

Dale,

Glad you are happy with the AA-200 but the ability to calibrate an analyzer with standards at the end of a cable or through a filter is IMHO the absolute most important feature an analyzer can have. The difference in accuracy is huge. Additionally the ability to make measurements with a tuned tracking receiver rather than a broadband detector separates the toys from the real equipment in the presence of other RF interference when making antenna measurements. Granted that the absence of a PC is a plus but the larger screen of a notebook PC is a big deal to me as is the ability to capture plots for others to see. I would take the AIM4170 over the AA-200 any day. If you wish, take a look at http://www.bnk.com/w0qe/AIM4170_page1.html for a detailed examination of the AIM4170. I am in no way connected to Array Solutions who sells the 4170.

73,
Larry, W0QE

Dale Parfitt wrote:
> I now have my AA-200 up and running with the latest firmware and software.
> Support from RigExpert Canada has been first rate too.
> I have owned about every analyzer out there from Autek to Timewave- except
> the AIM as it requires a PC and that is not convenient for me. The AA-200 is
> a vector device that even allows one to change the connector simulation L/C.
> It agrees extremely well with my HP 8711B and the software allows easy
> archiving and documentation.
>
> Dale W4OP
>
>

5176. Re: Rigexpert AA-200 antenna analyser

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-05 21:59:02 UTC
From: Danny Richardson <>
Message-ID: <nong441s97m4h4iu0ihq91dnc1ssqd57m6@4ax.com>
Source record: 25148

On Thu, 05 Jun 2008 15:16:45 -0600, Larry Benko <xxw0qe@comcast.net>
wrote:

>Dale,
>
>Glad you are happy with the AA-200 but the ability to calibrate an
>analyzer with standards at the end of a cable or through a filter is
>IMHO the absolute most important feature an analyzer can have. The
>difference in accuracy is huge. Additionally the ability to make
>measurements with a tuned tracking receiver rather than a broadband
>detector separates the toys from the real equipment in the presence of
>other RF interference when making antenna measurements. Granted that
>the absence of a PC is a plus but the larger screen of a notebook PC is
>a big deal to me as is the ability to capture plots for others to see.
>I would take the AIM4170 over the AA-200 any day. If you wish, take a
>look at http://www.bnk.com/w0qe/AIM4170_page1.html for a detailed
>examination of the AIM4170. I am in no way connected to Array Solutions
>who sells the 4170.
>
>73,
>Larry, W0QE
>

I'll second that Larry. If you really want to soar add a Bluetooth to
RS232 serial adapter and battery to the AIM. That makes it much more
convenient to use plus it will improve measurement accuracies by
easily having everything floating above ground potential.

73,
Danny, K6MHE

.

5177. Re: 1Hz click external noise? - HF Radar ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 01:10:16 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <23ed089c-f574-4084-98a0-58778c4b4368@34g2000hsf.googlegroups.com>
Source record: 25149

On May 24, 2:59 pm, "Lumpy" <lu...@digitalcartography.com> wrote:
> Richard Harrison wrote:
> > Yes and I`ve often heard a regular pulse in the USA every time a radar
> > antenna swept in my direction within line of sight range. Radar was in
> > the gigahertz band but the disturbed receiver was at a much lower
> > frequency and of good quality.
>
> There's a municipal airport, KSDL, about 2 miles
> from me. Except for a very occasional tree, it's
> line of sight.
>
> Would a radar induced noise tend to attenuate
> if my receiving antenna (dipole) were off axis
> to the radar? Seems to me that it was indeed
> stronger when the lobes pointed toward the
> airport.
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

Usually inference from an airport radar ASR takes the form of a very raspy 1000Hz more or less burst occuring every 4.5 seconds or so.There is one radar an ASDE that rotates a 60 rpm or once per second. If there is one of these located nearby you may hear the burst once a second. The pattern of the antenna is aimed at the ground hence its name Airport Surface Detection Equipment.At two miles out you could be in its coverage area

5178. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 01:45:18 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <UH02k.4411$co7.1869@nlpi066.nbdc.sbc.com>
Source record: 25150

Cecil Moore wrote:
> David G. Nagel wrote:
>> An antenna tuner does not and can not and will not make any physical
>> or electrical changes to any antenna it is attached to.
>
> Seems to me that delivery of the maximum available power
> to the radiation resistance of an antenna is certainly
> a physical/electrical change capable, in the extreme, of
> melting the antenna.
>
> Consider what a 1kw amp could do to a 40m hamstick used
> on 75m when matched with a 1kw antenna tuner.

Cecil;

How much change in physical length or diameter of wire does an antenna tuner make to an antenna?

Dave

5179. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 01:54:30 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <484898ca$0$31737$4c368faf@roadrunner.com>
Source record: 25151

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:ItR1k.4801$jI5.1546@flpi148.ffdc.sbc.com...
> AI4QJ wrote:
>> "Cecil Moore" <nospam@w5dxp.com> wrote in message
>>> If we adjusted the tuner for maximum forward power
>>> at the antenna, wouldn't that mean the tuner was
>>> properly tuned for a Z0-match at the transmitter?
>>
>> I think it would be essentially true for today's FET transmitters that
>> automatically limit output power when the Z0 is not matched, but not for
>> any reason having to do with transmission line theory.
>
> Let's see what is wrong with the following reasoning:
>
> 1. Maximum power is delivered to a mismatched load
> when the forward power is at a maximum.
>
> 2. Maximum available power is delivered to the load
> when the source sees its designed-for impedance, e.g.
> is Z0-matched.
>
> Why wouldn't the forward power at the antenna be
> maximized by a Z0-match at the source while the
> tuner is being adjusted?

I agree. You adjust the tuner until you have 100 watts measured output. This is an indirect indication of Z0 match at the transmitter. The fact that you can drive 100 watts of real power to the antenna feed point is itself an indirect indication that you must a Z0 match at the transmitter. With a mismatched transmitter, you might be able to drive only 75 watts with a 3:1 SWR or 5 watts at 5:1. You can take advantage of the "information" provided by the transmitter, with reference to its Z0 match condition, by merely observing the maximum available output power.

5180. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 03:37:02 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <4848b0d2$0$31749$4c368faf@roadrunner.com>
Source record: 25152

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:cb9c1c34-b902-4cd6-ad1f-6f565fbc4caf@j22g2000hsf.googlegroups.com...
> Thought I would drop in and provide an update on the above.
>
> The patent request has not emerged by being published as per the norm
> as I am my own attorney
> thus normal PTO protocol has not been followed as they are assisting
> me as per requirements by law.
> Regarding the antenna sent to Michigan for testing per a request on
> this newsgroup and receipt acknoweledged on this newsgroup.

Obviously that person was an MI5 agent trying to demoralize you into self destructive behaviour. The design is apparently a national security risk and I will predict that for this reason no Western patent office will ever agree to its publication.

> Since that day therei has been no communication from him. With him
> being in the business of antennas

A "Company" front business I'm sure.

> that has really surprised me but
> again many cruel jokes came about with respect to that antenna.
> Now the acedemic semesters have come to an end I am expecting the
> professor who has volunteered to supply and publish a paper on my work
> should start to pick up again.

Are you absolutely certain this person is really a "professor"?

> Papers have to follow a proper protical
> with mathematics and the professor has written many papers. As
> President of the IEEE group on Antennas and Propagation she will
> begiving several talks at the International show in a few weeks at San
> Diego after which things should get up to speed.

Look for hidden microphones and cameras in your hotel room.

> I will put up a page later today that will be intended more for the
> lay man and without all the mathematical details that a true physics
> paper requires for submission.

Until the State department applies the proper pressure to the host ISP to shut the website down. The Chinese may be experimenting with unwin antennas too, I'm afraid. And they do it with slide rules, not Cray super computers. The Chinese are amazing!

> The page will be titled Unwin antennas

No search engine will be permitted to link to it.

> or something like that for those who wish to read it. I am not coming
> back to the group to discuss it or accepting E mails because of passed
> experience, but some on this group did supply interesting comments
> over the years and it is for them this post is adressesd to.
> I'm gone and no. the door did not hit my arse as I left the scene
> quite a while ago
> Art Unwin KB9MZ.......XG

5181. Re: 1Hz click external noise? - HF Radar ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 03:51:51 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <b26a1107-8647-4d93-8884-07331dc2096d@26g2000hsk.googlegroups.com>
Source record: 25153

On Jun 5, 9:10 pm, JIMMIE <JIMMIEDEE...@yahoo.com> wrote:
> On May 24, 2:59 pm, "Lumpy" <lu...@digitalcartography.com> wrote:
>
>
>
>
>
> > Richard Harrison wrote:
> > > Yes and I`ve often heard a regular pulse in the USA every time a radar
> > > antenna swept in my direction within line of sight range. Radar was in
> > > the gigahertz band but the disturbed receiver was at a much lower
> > > frequency and of good quality.
>
> > There's a municipal airport, KSDL, about 2 miles
> > from me. Except for a very occasional tree, it's
> > line of sight.
>
> > Would a radar induced noise tend to attenuate
> > if my receiving antenna (dipole) were off axis
> > to the radar? Seems to me that it was indeed
> > stronger when the lobes pointed toward the
> > airport.
>
> > Craig 'Lumpy' Lemke
>
> >www.n0eq.com
>
> Usually inference from an airport radar ASR takes the form of a very
> raspy 1000Hz more or less burst occuring every 4.5 seconds or so.There
> is one radar an ASDE that rotates a 60 rpm or once per second. If
> there is one of these located nearby you may hear the burst once a
> second. The pattern of the antenna is aimed at the ground hence its
> name Airport Surface Detection Equipment.At two miles out you could be
> in its coverage area- Hide quoted text -
>
> - Show quoted text -

I dont think SDL has an ASDE though I know they were supposed to get
an ASR-11. Im not sure if they got it. The airport does have a REIL
that flashes stobes to mark the end of the runway. Once a second is
probably about the right rate for these. They could eaasily be the
source of your RF interference.

Jimmie

5182. Re: 1Hz click external noise? - HF Radar ?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 07:52:59 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6as8ngF39ic02U1@mid.individual.net>
Source record: 25154

JIMMIE wrote:
> I dont think SDL has an ASDE though I know they were supposed to get
> an ASR-11. Im not sure if they got it. The airport does have a REIL
> that flashes stobes to mark the end of the runway. Once a second is
> probably about the right rate for these. They could eaasily be the
> source of your RF interference.

Thanks very much, Jimmie.

Craig 'Lumpy' Lemke

www.n0eq.com

5183. Re: W4RNL mirror-site

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 07:58:21 UTC
From: nsk <nsk.28ea4b2@radiobanter.com>
Message-ID: <nsk.28ea4b2@radiobanter.com>
Source record: 25155

O-K-.-.--*-w---w---w---.---9---n---s---k---.---c---n---.---*-'-n-t-n-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-S-K-F-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-F-A-G-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-N-S-K-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)- -'-t-i-m-k-e-n-'-
-(-h-t-t-p-:-/-/-w-w-w-.-9-n-s-k-.-c-n-/-)-[-i-m-a-g-e-:-
-h-t-t-p-:-/-/-w-w-w-.-t-j-n-r-z-c-.-c-n-/-i-m-a-g-e-s-/-h-t-t-p-_-i-m-g-l-o-a-d-.-g-i-f-]
-

--
nsk

5184. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 12:19:01 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9W92k.7814$Ri.1990@flpi146.ffdc.sbc.com>
Source record: 25156

David G. Nagel wrote:
> Cecil Moore wrote:
>> Consider what a 1kw amp could do to a 40m hamstick used
>> on 75m when matched with a 1kw antenna tuner.
>
> How much change in physical length or diameter of wire does an antenna
> tuner make to an antenna?

In the above example, it vaporizes the hamstick wire.
IMO, that is quite a change.
--
73, Cecil http://www.w5dxp.com

5185. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 12:21:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <rY92k.7815$Ri.7391@flpi146.ffdc.sbc.com>
Source record: 25157

AI4QJ wrote:
> You can take advantage of the "information" provided
> by the transmitter, with reference to its Z0 match condition, by merely
> observing the maximum available output power.

The point is, it can be monitored *at the antenna*
thus proving that a tuner does indeed have an effect
at the antenna.
--
73, Cecil http://www.w5dxp.com

5186. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 12:38:19 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <48492FBB.8060305@nosspam.activ8.net.au>
Source record: 25158

Cecil Moore wrote:
> AI4QJ wrote:
>
>> You can take advantage of the "information" provided by the
>> transmitter, with reference to its Z0 match condition, by merely
>> observing the maximum available output power.
>
>
> The point is, it can be monitored *at the antenna*
> thus proving that a tuner does indeed have an effect
> at the antenna.

An effect "at" the antenna is not the same as an effect "on" the
antenna. Which did you mean in your OP?
Alan

5187. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 12:48:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <vma2k.997$L_.625@flpi150.ffdc.sbc.com>
Source record: 25159

Alan Peake wrote:
> An effect "at" the antenna is not the same as an effect "on" the
> antenna. Which did you mean in your OP?

The subject line says it all - "at the antenna".
--
73, Cecil http://www.w5dxp.com

5188. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 13:02:47 UTC
From: ltdoc@yahoo.com
Message-ID: <5b1ba1d2-2f51-4e03-afcc-2d2af428d03b@f63g2000hsf.googlegroups.com>
Source record: 25160

"it is no better than a dummy load."
Well, good. If it does it's job as well as a dummy load does it's
job, then I would think it's doing a pretty good job. Wouldn't you?
'Course, they don't have the same job so I wouldn't expect one to
replace the other (although, it isn't impossible).
Where are you going with this Cecil?
- 'Doc

5189. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 13:15:29 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g2bd9hriu2@f04n12.cac.psu.edu>
Source record: 25161

Cecil Moore wrote:
> David G. Nagel wrote:
>> An antenna tuner does not and can not and will not make any physical
>> or electrical changes to any antenna it is attached to.
>
> Seems to me that delivery of the maximum available power
> to the radiation resistance of an antenna is certainly
> a physical/electrical change capable, in the extreme, of
> melting the antenna.
>
> Consider what a 1kw amp could do to a 40m hamstick used
> on 75m when matched with a 1kw antenna tuner.

It will do to it just what the Hamstick deserves! ;^)

- 73 de Mike N3LI -

5190. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 13:24:12 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g2bdps$rj0$1@f04n12.cac.psu.edu>
Source record: 25162

Cecil Moore wrote:
> AI4QJ wrote:
>> You can take advantage of the "information" provided by the
>> transmitter, with reference to its Z0 match condition, by merely
>> observing the maximum available output power.
>
> The point is, it can be monitored *at the antenna*
> thus proving that a tuner does indeed have an effect
> at the antenna.

All canards have a kernel of truth in them. My guess is that someone observed that an antenna "tuner" would "tune" a wide variety of oddball antennas to transmitters that were looking for a particular impedance.

Then to simplify matters, someone said "the transmitter doesn't care what is on the end of it, so long as it sees that 50 ohms impedance.

It's a short drive from there to "the tuner has no effect on the antenna".

- 73 de Mike N3LI -

5191. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 13:47:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <qeb2k.1$cW3.0@nlpi064.nbdc.sbc.com>
Source record: 25163

ltdoc@yahoo.com wrote:
> Where are you going with this Cecil?

"Reflections"
--
73, Cecil http://www.w5dxp.com

5192. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 13:50:36 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <7hb2k.2$cW3.1@nlpi064.nbdc.sbc.com>
Source record: 25164

Michael Coslo wrote:
> It's a short drive from there to "the tuner has no effect on the antenna".

Actually, it went farther than that:

From QRZ.com regarding tuners:

"The tuner has absolutely no effect at the antenna."

From eHam.net regarding tuners:

"Does nothing. The tuner as the other poster said,
just makes your radio happy."
--
73, Cecil http://www.w5dxp.com

5193. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 15:15:04 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g2bk9oupg2@f04n12.cac.psu.edu>
Source record: 25165

Cecil Moore wrote:
> ltdoc@yahoo.com wrote:
>> Where are you going with this Cecil?
>
> "Reflections"

Again? ;^)

- 73 de Mike N3LI -

5194. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 15:48:47 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <w2d2k.5040$jl5.4429@flpi148.ffdc.sbc.com>
Source record: 25166

Cecil Moore wrote:
> David G. Nagel wrote:
>> Cecil Moore wrote:
>>> Consider what a 1kw amp could do to a 40m hamstick used
>>> on 75m when matched with a 1kw antenna tuner.
>>
>> How much change in physical length or diameter of wire does an antenna
>> tuner make to an antenna?
>
> In the above example, it vaporizes the hamstick wire.
> IMO, that is quite a change.

Cecil;

A "HAMSTICK" antenna has a "MAX" power rating. If you exceed this power rating you will indeed vaporize the wire. Of course this is true of ALL antenna's. Hook up a 50,000 watt transmitter to a 20 gage wire dipole and watch the copper vapor drift off in the wind.
I am currently to lazy to look up the HAMSTICK power rating but you can at your leisure.

Dave

PS: Good to talk with you again, it's been a while. I learn from you each time, usually.

5195. Re: RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 20:05:03 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2c59fjce1@news.albasani.net>
Source record: 25167

John Smith wrote:
> [stuff]
> Regards,
> JS

This:
The movie about John Kanzius and his invention of a machine that might lead to a cure for cancer is on the verge of becoming a reality. At a meeting Monday with the Erie Times-News Editorial Board, Kanzius said a motion picture company in Los Angeles that will make the film has yet to issue a press release about it, so he cannot discuss plans at length. Kanzius said different actors have been mentioned as possible stars of the film, but it depends on their availability.

From here:
http://www.goerie.com/apps/pbcs.dll/article?AID=/20080605/OPINION13/806050425

Excursions into space were accomplished during my lifetime; I consider this to be of equal or above importance ...

JS

5196. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 20:14:08 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2c5qgjce2@news.albasani.net>
Source record: 25168

Art Unwin wrote:

>> ..
> I will put up a page later today that will be intended more for the
> lay man and without all the mathematical details that a true physics
> paper requires for submission. ...
> Art Unwin KB9MZ.......XG

Will be looking forward to giving that paper a glance, keep me posted
... thanks Art.

Regards,
JS

5197. Re: Wrist Rocket Height

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 21:07:34 UTC
From: john Wiener <jawod@fuse.net>
Message-ID: <4849A716.6000402@fuse.net>
Source record: 25169

Tim Shoppa wrote:
> On May 15, 12:46 pm, "R.Scott" <w7...@yahoo.com> wrote:
>> I'm trying to restring my Dipole up in a Pine (the tree has grown
>> about 10 ft, and the rope needs replacing) so I got out my trusty
>> Surgical tubing wrist rocket and a 1oz egg weight tied to my 15# test
>> fishing rod/reel (only using the bottom eye).
>>
>> No matter how far I pulled back I got about 2/3s of the way up. Im
>> estimating that is about the 35 ft level.
>>
>> Shouldn't a wrister go farther ???? need bigger weight ?
>
> How high are you trying to go? With everything in my favor (wind,
> etc.) I could get over about a 50 foot branch with a wrist-slingshot
> and a 1oz weight. And I think I was standing on a 12 foot ladder to do
> it, and this was a "best ever" shot.
>
> Having the line catch on anything - grass, leaves, etc., is a major
> downer. If there's no brush on the ground you might get a little more
> height by spooling some line out in front of you.
>
> Others here regularly claim being able to get 100+ feet with a
> slingshot. I never said out loud that they're exaggerating, but I know
> I could just barely do half that. To get to 100feet I went straight to
> a tennis ball cannon.
>
> Tim.
A little late to this thread so may be redundant.

I have used a compound bow and arrow attached to a fishing reel and the problem I had was firing TOO high and overshooting the target.

you could give it a try.

John
AB8O

5198. Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 21:12:00 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <4849a80e$0$18158$4fafbaef@reader3.news.tin.it>
Source record: 25170

Someone may regard the following question a bit OT, but as it deals with impedances I have considered that the antenna newsgroup could be the most appropriate one where to post it.

Let us regard a transmitter as an ideal RF generator with a resistance in series. It is well known that, for maximum power transfer, the load resistance must be equal to the generator resistance. Under such conditions efficiency is 50% (half power dissipated in the generator, half delivered to the load).

To achieve a higher efficiency, the load resistance should be made higher than the generator resistance, although this would turn into a lower power delivered to the load (the maximum power transfer condition is now no longer met). This can be verified in practice: by decreasing the antenna coupling in a transmitter, one obtains a higher efficiency though with a lower output power.

That said, now the question.

Usually, when a transmitter is tuned for maximum output power, efficiency results to be higher than 50% (typically >60% for class-B, >70% for class-C). This would seem to contradict the above cited fact that, under maximum power transfer condition, efficiency is 50%.

Pertinent comments are welcome.

73

Tony I0JX - Rome, Italy

5199. PornForum is Free Porn Movies, the best porn tube! Thousands of long cumshot, hardcore, teen, milf, pornstar

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 22:01:12 UTC
From: "pornforum.cc" <bangkaka@gmail.com>
Message-ID: <d4ca0ec2-fc01-4d1c-8ced-833daff708af@p39g2000prm.googlegroups.com>
Source record: 25171

www.pornforum.cc
www.pornforum.cc
www.pornforum.cc
www.pornforum.cc
www.pornforum.cc
www.pornforum.cc
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enjoy.

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Hot Porn Pics
Hot Porn Tube
Hardcore Porn videos
Teen sex videos
Anime, Hentai, & Cartoon Sex Movies
Amateur sex videos
Blowjob videos
Famous Pornstars
Cam Girl videos
Anal sex movies
Asian porn movies
Cumshot Videos
Latina sex videos
Girl on Girl Sex Videos
Big Tit Movies
College sex videos
Celebrity sex tapes
Adult Models

http://www.pornforum.cc

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PornStars/Teen Models

http://www.pornforum.cc

All the best,

The pornforum.cc forum - new world of entertainment!

5200. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 22:04:52 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <dba2b3fa-332b-4ff1-be22-107ee15a040a@x35g2000hsb.googlegroups.com>
Source record: 25172

On Jun 6, 2:12 pm, "Antonio Vernucci" <vernu...@tin.it> wrote:
> Someone may regard the following question a bit OT, but as it deals with
> impedances I have considered that the antenna newsgroup could be the most
> appropriate one where to post it.
>
> Let us regard a transmitter as an ideal RF generator with a resistance in
> series. It is well known that, for maximum power transfer, the load resistance
> must be equal to the generator resistance. Under such conditions efficiency is
> 50% (half power dissipated in the generator, half delivered to the load).
>
> To achieve a higher efficiency, the load resistance should be made higher than
> the generator resistance, although this would turn into a lower power delivered
> to the load (the maximum power transfer condition is now no longer met). This
> can be verified in practice: by decreasing the antenna coupling in a
> transmitter, one obtains a higher efficiency though with a lower output power.
>
> That said, now the question.
>
> Usually, when a transmitter is tuned for maximum output power, efficiency
> results to be higher than 50% (typically >60% for class-B, >70% for class-C).
> This would seem to contradict the above cited fact that, under maximum power
> transfer condition, efficiency is 50%.
>
> Pertinent comments are welcome.
>
> 73
>
> Tony I0JX - Rome, Italy

Simple: a transmitter is not an ideal voltage source with a resistor
in series.

I'm playing with a switching power supply design that delivers about a
kilowatt at 100 volts. The output is designed specifically to have a
negative resistance, so the output voltage increases as the current
drawn increases. The output dynamic impedance is about -1 ohms
(adjustable, actually). The linear model is a 100 volt battery in
series with -1 ohms. With an 11 ohm load, I get 10 amps load current,
with the battery thus delivering 1000 watts, the load dissipating 1100
watts, and the -1 ohm resistance dissipating -100 watts. Which shows
the absurdity of thinking of a dynamic output resistance being
anything like a real resistance. In my switching supply, I can adjust
the dynamic output resistance between a small negative value and a
rather larger positive value, with very little change in efficiency.

Although transmitters MAY have dynamic output resistances similar to
the recommended load resistance, that's not a necessary condition, and
has little to do directly with efficiency.

Cheers,
Tom

5201. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-06 22:58:07 UTC
From: jgboyles@aol.com
Message-ID: <73353273-a079-499c-89df-c11975b37c78@z66g2000hsc.googlegroups.com>
Source record: 25173

On Jun 6, 4:12 pm, "Antonio Vernucci" <vernu...@tin.it> wrote:
> Someone may regard the following question a bit OT, but as it deals with
> impedances I have considered that the antenna newsgroup could be the most
> appropriate one where to post it.
>
> Let us regard a transmitter as an ideal RF generator with a resistance in
> series. It is well known that, for maximum power transfer, the load resistance
> must be equal to the generator resistance. Under such conditions efficiency is
> 50% (half power dissipated in the generator, half delivered to the load).
>
> To achieve a higher efficiency, the load resistance should be made higher than
> the generator resistance, although this would turn into a lower power delivered
> to the load (the maximum power transfer condition is now no longer met). This
> can be verified in practice: by decreasing the antenna coupling in a
> transmitter, one obtains a higher efficiency though with a lower output power.
>
> That said, now the question.
>
> Usually, when a transmitter is tuned for maximum output power, efficiency
> results to be higher than 50% (typically >60% for class-B, >70% for class-C).
> This would seem to contradict the above cited fact that, under maximum power
> transfer condition, efficiency is 50%.
>
> Pertinent comments are welcome.
>
> 73
>
> Tony I0JX - Rome, Italy

In addition to Tom's comments, an RF Power Amplifier's efficiency is defined as (Pout/Pin)X100%. Pout is RF and Pin is usually DC. So if you pump 1000 watts DC in to a class B RF amp and get 600 watts rms out you are 60% efficient. Your model of a Voltage Source in series with an internal resistance does not apply here.

The maximum power theorem gives conditions where power in the load, is equal to internal power in the generator. Not always a good idea. A 50HZ generator capable of Megawatts of power would dissiapate 1/2 in the generator and 1/2 in our houses if they designed them to conform to the MPT. The 50HZ generators would melt. Utilities design their Generators to have nearly 0.0 ohms internal impedance.

Good question.
Gary N4AST

5202. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 01:55:19 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <fUl2k.3543$uE5.2877@flpi144.ffdc.sbc.com>
Source record: 25174

David G. Nagel wrote:
> A "HAMSTICK" antenna has a "MAX" power rating. If you exceed this power
> rating you will indeed vaporize the wire.

The point is that if an amp is equipped with foldback,
it probably cannot vaporize a severely mismatched antenna
without the aid of an antenna tuner.
--
73, Cecil http://www.w5dxp.com

5203. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 01:58:13 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <UWl2k.3544$uE5.2826@flpi144.ffdc.sbc.com>
Source record: 25175

Antonio Vernucci wrote:
> Usually, when a transmitter is tuned for maximum output power,
> efficiency results to be higher than 50% (typically >60% for class-B,
> >70% for class-C). This would seem to contradict the above cited fact
> that, under maximum power transfer condition, efficiency is 50%.

The maximum power transfer theorem only applies to
linear sources. What is the linear source impedance
of a class-C amp?
--
73, Cecil http://www.w5dxp.com

5204. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 02:44:22 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <afudna-afueea9TVnZ2dnUVZ_qHinZ2d@bright.net>
Source record: 25176

Dear Tom K7ITM:

Thank you. Thank you. Thank you.

Let us put away forever the idea that a normal transmitter fits the
passive, linear model of an ideal voltage source in series with an actual
resistor.

The active device(s) in an amplifier (tube, BJT, FET, ...) needs to see
a certain impedance (at a given frequency) in order to have desirable
performance characteristics. Too many have extrapolated from that
information (found in data sheets for the active devices) the conclusion
that the active device has an internal Z that is the complex-conjugate of
the load Z.

The wording found in another string of messages communicates the right
idea. A normal transmitter "wants to see" a certain Z. That Z is most
often 50 ohms.

RIP 73, Mac N8TT

P.S. An IEEE paper explored this issue in the last year.
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"K7ITM" <k7itm@msn.com> wrote in message
news:dba2b3fa-332b-4ff1-be22-107ee15a040a@x35g2000hsb.googlegroups.com...
> On Jun 6, 2:12 pm, "Antonio Vernucci" <vernu...@tin.it> wrote:
>> Someone may regard the following question a bit OT, but as it deals with
>> impedances I have considered that the antenna newsgroup could be the most
>> appropriate one where to post it.
>>
>> Let us regard a transmitter as an ideal RF generator with a resistance in
>> series. It is well known that, for maximum power transfer, the load
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>> must be equal to the generator resistance. Under such conditions
>> efficiency is
>> 50% (half power dissipated in the generator, half delivered to the load).
>>
>> To achieve a higher efficiency, the load resistance should be made higher
>> than
>> the generator resistance, although this would turn into a lower power
>> delivered
>> to the load (the maximum power transfer condition is now no longer met).
>> This
>> can be verified in practice: by decreasing the antenna coupling in a

>> transmitter, one obtains a higher efficiency though with a lower output
>> power.
>>
>> That said, now the question.
>>
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>> results to be higher than 50% (typically >60% for class-B, >70% for
>> class-C).
>> This would seem to contradict the above cited fact that, under maximum
>> power
>> transfer condition, efficiency is 50%.
>>
>> Pertinent comments are welcome.
>>
>> 73
>>
>> Tony I0JX - Rome, Italy
>
> Simple: a transmitter is not an ideal voltage source with a resistor
> in series.
>
> I'm playing with a switching power supply design that delivers about a
> kilowatt at 100 volts. The output is designed specifically to have a
> negative resistance, so the output voltage increases as the current
> drawn increases. The output dynamic impedance is about -1 ohms
> (adjustable, actually). The linear model is a 100 volt battery in
> series with -1 ohms. With an 11 ohm load, I get 10 amps load current,
> with the battery thus delivering 1000 watts, the load dissipating 1100
> watts, and the -1 ohm resistance dissipating -100 watts. Which shows
> the absurdity of thinking of a dynamic output resistance being
> anything like a real resistance. In my switching supply, I can adjust
> the dynamic output resistance between a small negative value and a
> rather larger positive value, with very little change in efficiency.
>
> Although transmitters MAY have dynamic output resistances similar to
> the recommended load resistance, that's not a necessary condition, and
> has little to do directly with efficiency.
>
> Cheers,
> Tom

5205. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 03:38:31 UTC
From: "David G. Nagel" <nagel.david@sbcglobal.net>
Message-ID: <Asn2k.3873$ZE5.496@nlpi061.nbdc.sbc.com>
Source record: 25177

```
Cecil Moore wrote:
> David G. Nagel wrote:
>> A "HAMSTICK" antenna has a "MAX" power rating. If you exceed this
>> power rating you will indeed vaporize the wire.
>
> The point is that if an amp is equipped with foldback,
> it probably cannot vaporize a severely mismatched antenna
> without the aid of an antenna tuner.

Actually it will most likely vaporize the tuner first...
```

5206. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 03:42:43 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6aueebF39lmvcU1@mid.individual.net>
Source record: 25178

Cecil Moore wrote:
> > > Consider what a 1kw amp could do to a 40m hamstick used
> > > on 75m when matched with a 1kw antenna tuner.

David:
> > How much change in physical length or diameter of wire does an
> > antenna tuner make to an antenna?

Cecil:
> In the above example, it vaporizes the hamstick wire.
> IMO, that is quite a change.

You have a tuner that vaporizes hamsticks?

Craig 'Lumpy' Lemke

www.n0eq.com

5207. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 03:49:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <B6Cdnd43g4b4mNfVnZ2dnUVZ_oninZ2d@posted.easystreetonline>
Source record: 25179

This has been a good example of a common pitfall in modeling. The error made in this case was to attempt to apply an unsuitable model (a voltage source in series with a resistance) to a system to be modeled (a transmitter). As the OP showed, the attempt leads to an impossible result. The classic example of this is the "proof" that a bumblebee can't fly, based on a flawed model and immediately shown to be false by simply observing that they do, indeed, fly. Yet we see people falling into this trap daily, not only in modeling electrical circuits, but also in modeling such diverse processes as human behavior, economic systems, and roulette wheel numbers.

Unfortunately, the bad results of applying unsuitable models aren't always so obvious as they were here. So it's always wise to check to see if the model fits before putting faith in the results.

Roy Lewallen, W7EL

5208. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 04:15:24 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <j21k44h0a4o46j9lnnrqq7cbffigseliqb@4ax.com>
Source record: 25180

On Fri, 06 Jun 2008 20:58:13 -0500, Cecil Moore <nospam@w5dxp.com> wrote:

>Antonio Vernucci wrote:
>> Usually, when a transmitter is tuned for maximum output power,
>> efficiency results to be higher than 50% (typically >60% for class-B,
>> >70% for class-C). This would seem to contradict the above cited fact
>> that, under maximum power transfer condition, efficiency is 50%.
>
>The maximum power transfer theorem only applies to
>linear sources. What is the linear source impedance
>of a class-C amp?

The source resistance appearing at the output of either a Class B or C amplifier is R = E/I, where E is the
peak voltage at the output terminals and I is the peak current at the output. Or RMS values can also be used.
Since E/I is simply a ratio, R is also a ratio. And we know that a ratio cannot dissipate power, or turn
electrical energy into heat, thus the output resistance R is non-dissipative. I have made many measurements
that prove this. It is also the reason why reflected power does not dissipate in the tubes, because it never
reaches the tubes. The reflected power simply causes a mismatch to the source, causing the source to deliver
less power than it would if there were no mismatch. The input at the pi-network in the xmtr is non-linear, but
the fly-wheel effect of the network tank isolates the input from the output, resulting in a linear condition
appearing at the output. Except for a very slight deviation from a sine wave due to a small amount of harmonic
content, the voltage E and current I at the output are essentially a sine wave, which one can easily prove
with a good oscilloscope, proving the output to be linear. I'm speaking for tube rigs with pi-network tanks,
not for solid-state rigs.

I nearly forgot. The only dissipation in the amp tube(s) is due to the filament-to-plate current as the
electrons bombard the plate. The efficiency is determined by the ratio of the DC input power to the RF output
power. The maximum power is delivered when the load resistance equals the output resistance R of the source.
But since resistance R is non-dissipative it is not a factor in determining efficiency. The only factors in
determining efficiency are the RF output power and the dissipation in the tube caused by

the electrons
striking the plate. The non-dissipative output resistance is the reason Class B and C amps can have an
efficiency greater than 50 percent. If the output resistance were dissipative it would be the determining
factor in efficiency, which could never be greater than 50 percent if the load resistance was equal to the the
output resistance.

A report of my measurements will soon be available in Reflections 3, from measurements taken since those
reported in Chapter 19 of Reflections 2.

Cecil, if I send you a copy of the new chapter that has the report of my newer measurements do you have any
way to make it available to the guys on this thread?

Walt, W2DU

5209. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 05:43:50 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AB6A00286CC6nonenowhere@61.9.191.5>
Source record: 25181

jgboyles@aol.com wrote in
news:73353273-a079-499c-89df-c11975b37c78@z66g2000hsc.googlegroups.com:

...
> The maximum power theorem gives conditions where power in the load, is
> equal to internal power in the generator. Not always a good idea. A
> 50HZ generator capable of Megawatts of power would dissiapate 1/2 in
> the generator and 1/2 in our houses if they designed them to conform
> to the MPT. The 50HZ generators would melt. Utilities design their
> Generators to have nearly 0.0 ohms internal impedance.

Actually, the AC power distribution system from alternator down has a
manged substantial equivalent source impedance.

The source impedance serves to limit fault currents, which reduces the
demands on protection devices.

Sure, the network is not operated under Jacobi MPT conditions, but neither
does it have near zero source impedance.

Owen

5210. Seeking New FAQ/Intro Maintainers for rec.radio.amateur.*

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 06:05:02 UTC
From: rram@panix.com
Message-ID: <radio/ham-radio/recruitment-1-1212818701@panix.com>
Source record: 25182
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.info

```
Posted-By: auto-faq 3.3.2 beta (PGPMoose V2.0, Perl 5.005)
Archive-name: radio/ham-radio/recruitment
Revision: 1.1 2007/09/29 18:42:47
Posting-Frequency: posted monthly
URL: http://www.faqs.org/faqs/radio/personal-intro/

Changes followed by "|".

The rec.radio.info newsgroup, first established in 1993, has been
recently revived by an active moderation team. We are currently seeking
suitable information, FAQ, and bulletin articles from the entire
rec.radio.* newsgroup hierarchy for simultaneous cross-posting to our
newsgroup.

We are seeking a replacement maintainer for the following information
bulletin formerly posted to rec.radio.amateur.* (and currently archived
at http://www.faqs.org/faqs/radio/personal-intro/ ):

radio/personal-intro
Subject: Guide to the rec.radio Newsgroups
Maintainer: jeffreyh@Hawaii.Edu (Jeffrey Herman)
Last Posted: 9 Nov 2001 06:18:17 GMT
Posting-Frequency: 15th of each month

We are willing to provide any technical support necessary to get this
article updated and automatically posted again at a regular interval.
This would include establishing contact with the original maintainer for
any necessary permissions. We would prefer to seek a new, dedicated
maintainer at this time, rather than start auto-posting the original
article ourselves.

For more information about our newsgroup, see:

http://www.panix.com/~rram/usenet/rri/index.html

Please direct any comments, questions, or criticisms to
rec-radio-info-request@panix.com.
```

5211. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 08:51:50 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AB6BFE242F29nonenowhere@61.9.191.5>
Source record: 25183

"Antonio Vernucci" <vernucci@tin.it> wrote in
news:4849a80e$0$18158$4fafbaef@reader3.news.tin.it:

> Someone may regard the following question a bit OT, but as it deals
> with impedances I have considered that the antenna newsgroup could be
> the most appropriate one where to post it.
>
> Let us regard a transmitter as an ideal RF generator with a resistance
> in series. It is well known that, for maximum power transfer, the load
> resistance must be equal to the generator resistance. Under such
> conditions efficiency is 50% (half power dissipated in the generator,
> half delivered to the load).
>
> To achieve a higher efficiency, the load resistance should be made
> higher than the generator resistance, although this would turn into a
> lower power delivered to the load (the maximum power transfer
> condition is now no longer met). This can be verified in practice: by
> decreasing the antenna coupling in a transmitter, one obtains a higher
> efficiency though with a lower output power.
>
> That said, now the question.

But your statements are not true. The model you propose for a transmitter
does not apply in general. Whilst it would be possible to build a
transmitter like that, most transmitters that hams use are not built like
that.

So... it is a loaded question of a type, a question premised on a
falsehood.

>
> Usually, when a transmitter is tuned for maximum output power,
> efficiency results to be higher than 50% (typically >60% for class-B,
> >70% for class-C). This would seem to contradict the above cited fact
> that, under maximum power transfer condition, efficiency is 50%.
>

If the equivalent source impedance is not important, ie it does not need
to be fixed by the design, there here is an analysis.

If you take the case of a grounded cathode triode in class C with a
steady signal, the conduction angle is usually somewhere around 120°. The
anode current waveform is a little like a truncated sine wave, but even
for the range of grid voltages where anode current is greater than zero,
the transfer characteristic is not exactly linear, and the wave will be
further distorted.

If the nature of the anode load is that it is some equivalent R at the fundamental and zero impedance at all other frequencies, the power output can be determined by finding the fundamental component of the anode current waveform, squaring it, and multiplying it by R. The input power is the average anode current multiplied by the DC supply voltage. Efficiency is OutputPower/InputPower. By varying the grid bias, drive voltage, load impedance and supply voltage for a given triode, different efficiencies will be found, and the maximum could be well over 80%.

Nothing in this approach to design attempts to fix the equivalent source impedance, the design is performed without regard to that characteristic.

Nevertheless, some argue that the output network performs magic and achieves source matching naturally without designer intervention, and does this irrespective of parameters like the dynamic anode resistance, and the effects of feedback (such as cathode degeneration in grounded grid amplifiers which in turns depends on the source impedance of the exciter).

Owen

5212. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 09:19:17 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AB6C4899DD4Anonenowhere@61.9.191.5>
Source record: 25184

Owen Duffy <none@no.where> wrote in
news:Xns9AB6BFE242F29nonenowhere@61.9.191.5:

...
> voltage. Efficiency is OutputPower/InputPower. By varying the grid
> bias, drive voltage, load impedance and supply voltage for a given
> triode, different efficiencies will be found, and the maximum could be
> well over 80%.

If you want to explore this approach to design, I have implemented a spreadsheet which in turn implements the methods described in CPI/Eimac's "Care and Feeding of Power Tubes" it is described and can be downloaded at http://www.vk1od.net/RFPATPC/index.htm . The spreadsheet is populated with the example 4CX20000 in Class C from the above publication.

The spreadsheet calculates the anode current wave form from an interpolation based on a number of points from the published characteristics, and calculates the fundamental component of anode current using an FFT. It then calculates anode efficiency and overall efficiency given operating parameters.

Owen

5213. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 12:07:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <0Ru2k.7994$Ri.467@flpi146.ffdc.sbc.com>
Source record: 25185

David G. Nagel wrote:
> Cecil Moore wrote:
>> The point is that if an amp is equipped with foldback,
>> it probably cannot vaporize a severely mismatched antenna
>> without the aid of an antenna tuner.
>
> Actually it will most likely vaporize the tuner first...

With #10 wire in the tuner coil and #26 wire in the
hamstick coil?
--
73, Cecil http://www.w5dxp.com

5214. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 12:09:28 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9Tu2k.7995$Ri.3357@flpi146.ffdc.sbc.com>
Source record: 25186

Lumpy wrote:
> You have a tuner that vaporizes hamsticks?

Assume a legal limit amp that folds back when mismatched.
Add a legal limit tuner and indeed you can vaporize
hamsticks.
--
73, Cecil http://www.w5dxp.com

5215. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 12:15:10 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <hZu2k.3894$ZE5.51@nlpi061.nbdc.sbc.com>
Source record: 25187

Walter Maxwell wrote:
> Cecil, if I send you a copy of the new chapter that has the report of my newer measurements do you have any
> way to make it available to the guys on this thread?

Walt, it is sure good to hear from you and I hope you are doing well. I can certainly post your new chapter to my web page thus making it available for downloading.
--
73, Cecil http://www.w5dxp.com

5216. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 13:28:49 UTC
From: ltdoc@yahoo.com
Message-ID: <813356be-3227-4114-b6e6-302f76f8c25c@c65g2000hsa.googlegroups.com>
Source record: 25188

Cecil,
I think I'll take my tuner and go home. Not saying it wasn't fun,
just other things to do, you know, that four letter word... 'X'ork.
- 'Doc

5217. Re: RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 13:40:13 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484a8f8d$0$5717$4c368faf@roadrunner.com>
Source record: 25189

John Smith wrote:
> John Smith wrote:
>
>> [stuff]
>> Regards,
>> JS
>
>
> This:
> The movie about John Kanzius and his invention of a machine that might
> lead to a cure for cancer is on the verge of becoming a reality. At a
> meeting Monday with the Erie Times-News Editorial Board, Kanzius said a
> motion picture company in Los Angeles that will make the film has yet to
> issue a press release about it, so he cannot discuss plans at length.
> Kanzius said different actors have been mentioned as possible stars of
> the film, but it depends on their availability.
>
> From here:
> http://www.goerie.com/apps/pbcs.dll/article?AID=/20080605/OPINION13/806050425
>
>
> Excursions into space were accomplished during my lifetime; I consider
> this to be of equal or above importance ...
>
> JS

Wow, a whole daily newspapers contents in 2 paragraphs!

My head is still spinning.

5218. Chapter 19A from "Reflections III"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 16:43:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <VUy2k.5199$jl5.3691@flpi148.ffdc.sbc.com>
Source record: 25190

Walter Maxwell has asked me to make this item available
to the newsgroup. In MS Word format, it is at:

http://www.w5dxp.com/Chapt19a.doc
--
73, Cecil http://www.w5dxp.com

5219. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-07 23:44:54 UTC
From: jgboyles@aol.com
Message-ID: <44e36c19-1767-403e-852a-48b07971f176@c65g2000hsa.googlegroups.com>
Source record: 25191

On Jun 7, 12:43 am, Owen Duffy <n...@no.where> wrote:
> jgboy...@aol.com wrote innews:73353273-a079-499c-89df-c11975b37c78@z66g2000hsc.googlegroups.com:
>
> ...
>
> > The maximum power theorem gives conditions where power in the load, is
> > equal to internal power in the generator. Not always a good idea. A
> > 50HZ generator capable of Megawatts of power would dissiapate 1/2 in
> > the generator and 1/2 in our houses if they designed them to conform
> > to the MPT. The 50HZ generators would melt. Utilities design their
> > Generators to have nearly 0.0 ohms internal impedance.
>
> Actually, the AC power distribution system from alternator down has a
> manged substantial equivalent source impedance.
>
> The source impedance serves to limit fault currents, which reduces the
> demands on protection devices.
>
> Sure, the network is not operated under Jacobi MPT conditions, but neither
> does it have near zero source impedance.
>
> Owen

Not really sure I agree. A multi-megawatt 60HZ generator by necessity
has near zero source impedance. The ones I am familar with require
forced air cooling on their output buses. If you are pumping out Mega-
watts, then any non -zero source impedance results in serious heat.
I^2R.
Gary N4AST

5220. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 00:14:02 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AB76817FA74nonenowhere@61.9.191.5>
Source record: 25192

jgboyles@aol.com wrote in
news:44e36c19-1767-403e-852a-48b07971f176@c65g2000hsa.googlegroups.com:

> On Jun 7, 12:43 am, Owen Duffy <n...@no.where> wrote:
>> jgboy...@aol.com wrote
>> innews:73353273-a079-499c-89df-c11975b37c78@z66g200
> 0hsc.googlegroups.com:
>>
>> ...
>>
>> > The maximum power theorem gives conditions where power in the load,
>> > is equal to internal power in the generator. Not always a good
>> > ide
> a. A
>> > 50HZ generator capable of Megawatts of power would dissiapate 1/2
>> > in the generator and 1/2 in our houses if they designed them to
>> > conform to the MPT. The 50HZ generators would melt. Utilities
> design their
>> > Generators to have nearly 0.0 ohms internal impedance.
>>
>> Actually, the AC power distribution system from alternator down has a
>> manged substantial equivalent source impedance.
>>
>> The source impedance serves to limit fault currents, which reduces
>> the demands on protection devices.
>>
>> Sure, the network is not operated under Jacobi MPT conditions, but
>> neither
>
>> does it have near zero source impedance.
>>
>> Owen
>
> Not really sure I agree. A multi-megawatt 60HZ generator by necessity
> has near zero source impedance. The ones I am familar with require
> forced air cooling on their output buses. If you are pumping out
> Mega- watts, then any non -zero source impedance results in serious
> heat. I^2R.
> Gary N4AST
>

Gary, you use the terms impedance and resistant as if they were
equivalent.

Alternators have a designed value of leakage reactance, and they also have resistance. The combination make the equivalent source impedance, and it is sufficient to limit fault current to something typically in the range of 20 to 50 times the rated output current.

Transmission lines and transformers in the transmission and distribution networks are usually designed in the same way.

It is not zero, and it is not purely resistive. Most supply authorities would not allow you to connect a capacitive load (a leading PF load), so another concept, conjugate matching (in the Jacobit MPT sense) is also not practiced.

Understanding the electricity network does not really give an insight into a typical ham radio transmitter, they do not share the same design objectives.

Owen

5221. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 07:09:57 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2g0k6$9og$1@news.albasani.net>
Source record: 25193

Cecil Moore wrote:
> Lumpy wrote:
>> You have a tuner that vaporizes hamsticks?
>
> Assume a legal limit amp that folds back when mismatched.
> Add a legal limit tuner and indeed you can vaporize
> hamsticks.

Hmmm. Past experience suggests my Russian 5KW amp has no "foldback." I hesitate to think other experience the same--but, judging from some signals, it is quite likely!

BUT! Very happy with the SDR!

Regards,
JS

5222. Re: RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 08:01:02 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2g3ju$f4k$1@news.albasani.net>
Source record: 25194

Christopher Cox wrote:
> John Smith wrote:
>> John Smith wrote:
>>
>>> [stuff]
>>> Regards,
>>> JS
>>
>>
>> This:
>> The movie about John Kanzius and his invention of a machine that might
>> lead to a cure for cancer is on the verge of becoming a reality. At a
>> meeting Monday with the Erie Times-News Editorial Board, Kanzius said
>> a motion picture company in Los Angeles that will make the film has
>> yet to issue a press release about it, so he cannot discuss plans at
>> length. Kanzius said different actors have been mentioned as possible
>> stars of the film, but it depends on their availability.
>>
>> From here:
>> http://www.goerie.com/apps/pbcs.dll/article?AID=/20080605/OPINION13/806050425
>>
>>
>> Excursions into space were accomplished during my lifetime; I
>> consider this to be of equal or above importance ...
>>
>> JS
>
> Wow, a whole daily newspapers contents in 2 paragraphs!
>
> My head is still spinning.
>

Hmmmm ... did I miss something? Or, what that you? Uh, you did notice
the URL, right? :-)

JS

5223. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 13:52:43 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <484be419$0$41653$4fafbaef@reader4.news.tin.it>
Source record: 25195

Good to see that everyone agrees that a generator with a resistor in series is an unsuitable model for an RF transmitter.The easy part of the work is done!

Now the more difficult part. As, by the Thevenin theorem, any complex circuit comprising resistors, voltage generators and current generators is equivalent to a generator with a resistor in series, evidently the transmitter model must comprise elements other than just resistors, voltage generators and current generators.

Can one suggest how such a model looks like? (even a plain one, that does not take into account second- or superior-order effects).

73

Tomy I0JX - Rome, Italy

5224. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 14:16:56 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <484be9c5$0$41665$4fafbaef@reader4.news.tin.it>
Source record: 25196

> Since E/I is simply a ratio, R is also a ratio. And we know that a ratio
> cannot dissipate power, or turn
> electrical energy into heat, thus the output resistance R is non-dissipative.
> I have made many measurements
> that prove this.

> Walt, W2DU

Hello Walter,

thanks for your explanation.

I remember having read your excellent articles on QST magazine many years ago, in which you also explained, among many other things, why reflected power cannot dissipate in the final stage of a transmitter.

I am not at all opposing your explanation of "non disspative resistance" (on the other hand how may I contradict a person named Maxwell, hi), but I have some difficulties to appreciate it.

In my understanding resistance just means that current and voltage are in phase.

There are two possibilities for this to occur:

1) dissipative resistance. Example is a pure resistor, in which power is converted into heat.
2) non-dissipative resistance: Example is a DC motor, that converts electrical power into mechanical power. An ideal motor would convert all absorbed power into mechanical power, producing no heat

But I am unable to see how the second case could be fitted into the transmitter model.

Thanks and 73

Tony I0JX - Rome, Italy

5225. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 14:36:52 UTC
From: Antonio Vernucci <vernucci@tin.it>
Message-ID: <484bee72$0$41662$4fafbaef@reader4.news.tin.it>
Source record: 25197

The maximum power theorem gives conditions where power in the load, is
equal to internal power in the generator. Not always a good idea. A
50HZ generator capable of Megawatts of power would dissiapate 1/2 in
the generator and 1/2 in our houses if they designed them to conform
to the MPT. The 50HZ generators would melt. Utilities design their
Generators to have nearly 0.0 ohms internal impedance.

Good question.
Gary N4AST

Whay you write is perfectly true.

To maximize efficiency, the ratio between load resistance and generator
resistance must be as high as possible. That is the reason why the internal
resistance of the Megawatts generator you took as an example is always made
extremely low (very little power is so dissipated within the generator).

Those generators however do not operate in the maximum power transfer condition
(generator resistance = load resistance). As a matter of fact one cannot
decrease the load resistance below a certain threshold because of the generator
power delivery limitations.

In other words the generator can deliver the maximun power it is able to
deliver, but not under maximum power transfer conditions. Never mind, what is
important is that efficiency is good!

73

Tony I0JX - Rome, Italy

5226. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 14:59:38 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <l5sn44thb91sojpm6d4pdmt6r8rpbop1i3@4ax.com>
Source record: 25198

On Sun, 8 Jun 2008 16:16:56 +0200, "Antonio Vernucci" <vernucci@tin.it> wrote:

>> Since E/I is simply a ratio, R is also a ratio. And we know that a ratio
>> cannot dissipate power, or turn
>> electrical energy into heat, thus the output resistance R is non-dissipative.
>> I have made many measurements
>> that prove this.
>
>> Walt, W2DU
>
>Hello Walter,
>
>thanks for your explanation.
>
>I remember having read your excellent articles on QST magazine many years ago,
>in which you also explained, among many other things, why reflected power cannot
>dissipate in the final stage of a transmitter.
>
>I am not at all opposing your explanation of "non disspative resistance" (on
>the other hand how may I contradict a person named Maxwell, hi), but I have some
>difficulties to appreciate it.
>
>In my understanding resistance just means that current and voltage are in phase.
>
>There are two possibilities for this to occur:
>
>1) dissipative resistance. Example is a pure resistor, in which power is
>converted into heat.
>2) non-dissipative resistance: Example is a DC motor, that converts electrical
>power into mechanical power. An ideal motor would convert all absorbed power
>into mechanical power, producing no heat
>
>But I am unable to see how the second case could be fitted into the transmitter
>model.
>
>Thanks and 73
>
>Tony I0JX - Rome, Italy

Hi Tony,

The reason a Class B or C amplifier can have efficiencies greater than 50 percent is because the output source
resistance at the output of the pi-network is non-dissipative, as I said in an earlier post. I realize this

phenomenon is somewhat difficult to appreciate. However, I have explained it, and proved it with measurements
reported in Chapter 19 in Reflections 2. I have explained it further in an addition to Chapter 19 that will
appear in Reflections 3, which has additional proof from measurements made since the original Chapter 19 was
written.

This addition to Chapter 19 is Chapter 19A, which I asked Cecil to put on his web page for all to see. Just
scroll down to Cecil's post to see "Chapter 19A from Reflections III", and double click on the url. You will
see the entire Chapter 19A. Apparently you don't have a copy of Reflections 2, so I'm going to email you a
copy of the original Chapter 19. I hope these papers will help in understanding why the output resistance of
the pi-network is non-dissipative.

Walt, W2DU

5227. 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 17:41:35 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <cRU2k.100212$x55.63138@newsfe17.ams2>
Source record: 25199

I have just put up an 80 Meter End Fed Flexweave wire. Its about 63 feet long and fed direct with 50 Ohm coax at the far end of the garden. The shield is connected straight down to a ground earth stake at this point and it is tuned for 3.700 MHz. It receives better than any thing I have used so far, but it is very death on 40 meters. Almost unusable.

Is there a reason for this?

The antenna is only up at 20 feet and my old G5RV is only 6 feet off the ground at the moment and receives far better on 40 meters than the End Fed wire.

73 Andy

5228. Re: Chapter 19A from "Reflections III"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 18:16:03 UTC
From: commander john <crazytvjohn@yahoo.com>
Message-ID: <713132cc-74a9-459e-9261-e4b57216545a@l42g2000hsc.googlegroups.com>
Source record: 25200

On Jun 7, 11:43 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Walter Maxwell has asked me to make this item available
> to the newsgroup. In MS Word format, it is at:
>
> http://www.w5dxp.com/Chapt19a.doc
> --
> 73, Cecil http://www.w5dxp.com

Why doesn't he have it on his own website as a pdf like the others?
john w9zy

5229. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 18:32:19 UTC
From: "-.-. --.-" <newstst@nntp.org>
Message-ID: <g2h8j2$rh3$1@aioe.org>
Source record: 25051

So, let me call this NG rec.radio.true.amateur.

Compliments, sincerely, to all you OM here. For sure in the posts here it is the maximum efficiency to transfer the power of experience and knowledge to anyone subrscribe this NG - and for sure to a novice as i am, with a bit of losses due to things that i don't know when i'm reading something.

Anyway, true Radio Amateurs are here. Apologize for mistakes in my poor english.

73,
-.-. --.- , Cristiano, Italy.

5230. Balun 1:1 with FT 240-61 toroid

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 18:37:50 UTC
From: leon_it@hotmail.com
Message-ID: <92aeb7fd-91ff-4720-b516-dcb66c0aa796@79g2000hsk.googlegroups.com>
Source record: 25052

Hi to everyone,
i need to replace my 1:1 balun on my yagi tribander 14-21-28 Mhz. I
have in my stuff a toroid FT 240-61 and some pieces of rg-142 coaxial
cable. Anyone can help me to know how many winding needs on toroid to
achieve good reactance on 14 to 28 Mhz ?
Thank you ,
Daniel.

5231. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 18:39:36 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <357caf99-5703-4c62-b331-006f20114b67@w5g2000prd.googlegroups.com>
Source record: 25053

On Jun 8, 6:52 am, "Antonio Vernucci" <vernu...@tin.it> wrote:
> Good to see that everyone agrees that a generator with a resistor in series is
> an unsuitable model for an RF transmitter.The easy part of the work is done!
>
> Now the more difficult part. As, by the Thevenin theorem, any complex circuit
> comprising resistors, voltage generators and current generators is equivalent to
> a generator with a resistor in series, evidently the transmitter model must
> comprise elements other than just resistors, voltage generators and current
> generators.
>
> Can one suggest how such a model looks like? (even a plain one, that does not
> take into account second- or superior-order effects).
>
> 73
>
> Tomy I0JX - Rome, Italy

I believe you have mis-stated the Thevenin theorem. First, it applies only to linear circuits. Fine -- over some narrow range at least, a transmitter does indeed look like a linear circuit. But more importantly, it describes ONLY what you observe at an external pair of terminals, with no other connections, NOT what goes on inside the "black box" containing those elements you mentioned.

A very simple example is a voltage source (a perfect battery) and two resistors in series across the battery; the external terminals for this example will be at opposite ends of one of the resistors. Let's say the battery is 2 volts and each resistor is 2 ohms. That will look like a Thevenin equivalent 1V in series with 1 ohm. Note that it also looks like a one amp source in parallel with a one ohm resistor. But it does not behave INTERNALLY like either of those. Consider also the same internal circuit, except drop the voltage source to 1V and add a 1/2A current source across the output terminals, polarity so that there's no drop across the resistor between the voltage and the current source (with no external load). Now figure the internal dissipation for each of those two cases, with no load, with a 1 ohm load, and with a short-circuit load.

Cheers,
Tom

5232. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 18:47:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <JrCdnR01Yp20tNHVnZ2dnUVZ_sednZ2d@easystreetonline>
Source record: 25054

There's a common misconception that, for a linear circuit, the maximum efficiency and/or power available from a voltage source occurs when the source resistance equals the load resistance (or, more generally, when they're complex conjugates). But this isn't universally true, as I'll show with a simple example.

Suppose we have a 100 volt perfect voltage source in series with a variable source resistance, and a fixed load resistance of 100 ohms. If we make the source resistance 100 ohms, the source delivers 50 watts, 25 of which are dissipated in the source resistance and 25 watts in the load. The efficiency, if you consider the source resistance dissipation as wasted, is 50%. But what happens if we reduce the source resistance to 50 ohms? Now the source delivers 66.7 watts, of which 22.2 is dissipated in the source resistance and 44.4 in the load resistance. The power to the load has increased, and the efficiency has increased from 50 to 66.7%. The efficiency and load power continue to increase as the source resistance is made smaller and smaller, reaching a maximum when the source resistance is zero. At that point, the source will deliver 100 watts, all of which is dissipated in the load, for an efficiency of 100%.

The well known and often misapplied rule about maximizing power transfer by matching the source and load impedances applies only when you're stuck with a fixed source resistance and can only modify the load.

Roy Lewallen, W7EL

5233. Re: Chapter 19A from "Reflections III"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 19:22:22 UTC
From: M0WYM <Sansspam@peartreegreen.org>
Message-ID: <g2hbhe$p3$1@news.albasani.net>
Source record: 25055

commander john wrote:

>
> Why doesn't he have it on his own website as a pdf like the
> others? john w9zy

Good point, PDF is an open format but better still put it up in the
ISO standard : ODF

Charlie.

--
M0WYM
www.radiowymsey.org

Wymsey - Ten years Old!
www.wymsey.co.uk

5234. Re: Chapter 19A from "Reflections III"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 19:25:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <5nW2k.5801$xZ.2751@nlpi070.nbdc.sbc.com>
Source record: 25056

commander john wrote:
> Why doesn't he have it on his own website as a pdf like the others?
> john w9zy

It is my understanding that Walt's webmaster is
unavailable at the moment.
--
73, Cecil http://www.w5dxp.com

5235. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 19:37:09 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <QwW2k.8131$Ri.3009@flpi146.ffdc.sbc.com>
Source record: 25057

Roy Lewallen wrote:
> But what happens if we reduce the source resistance to 50 ohms?
> Now the source delivers 66.7 watts, of which 22.2 is dissipated
> in the source resistance and 44.4 in the load resistance.

> The well known and often misapplied rule about maximizing power transfer
> by matching the source and load impedances applies only when you're
> stuck with a fixed source resistance and can only modify the load.

What if we assume that we are stuck with the 50 ohm source
impedance above? How do we get greater than 50% power transfer?
--
73, Cecil http://www.w5dxp.com

5236. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 20:13:30 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <K3X2k.2824$lE3.246@trnddc05>
Source record: 25058

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:cRU2k.100212$x55.63138@newsfe17.ams2...
>I have just put up an 80 Meter End Fed Flexweave wire. Its about 63 feet
>long and fed direct with 50 Ohm coax at the far end of the garden. The
>shield is connected straight down to a ground earth stake at this point and
>it is tuned for 3.700 MHz. It receives better than any thing I have used so
>far, but it is very death on 40 meters. Almost unusable.
>
> Is there a reason for this?
>
> The antenna is only up at 20 feet and my old G5RV is only 6 feet off the
> ground at the moment and receives far better on 40 meters than the End Fed
> wire.
>
> 73 Andy
Yes there is- it's a half wave long on 40M which implies voltage feed and a
VSWR in the 60--80:1 range.

Dale W4OP

5237. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 20:31:52 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <7IX2k.49$Mk4.30@newsfe05.lga>
Source record: 25059

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:JrCdnR01Yp20tNHVnZ2dnUVZ_sednZ2d@easystreetonline...
> There's a common misconception that, for a linear circuit, the maximum
> efficiency and/or power available from a voltage source occurs when the
> source resistance equals the load resistance (or, more generally, when
> they're complex conjugates). But this isn't universally true, as I'll
> show with a simple example.
>
> Suppose we have a 100 volt perfect voltage source in series with a
> variable source resistance, and a fixed load resistance of 100 ohms. If
> we make the source resistance 100 ohms, the source delivers 50 watts, 25
> of which are dissipated in the source resistance and 25 watts in the
> load. The efficiency, if you consider the source resistance dissipation
> as wasted, is 50%. But what happens if we reduce the source resistance
> to 50 ohms? Now the source delivers 66.7 watts, of which 22.2 is
> dissipated in the source resistance and 44.4 in the load resistance. The
> power to the load has increased, and the efficiency has increased from
> 50 to 66.7%. The efficiency and load power continue to increase as the
> source resistance is made smaller and smaller, reaching a maximum when
> the source resistance is zero. At that point, the source will deliver
> 100 watts, all of which is dissipated in the load, for an efficiency of
> 100%.
>
> The well known and often misapplied rule about maximizing power transfer
> by matching the source and load impedances applies only when you're
> stuck with a fixed source resistance and can only modify the load.
>
> Roy Lewallen, W7EL

What seems to be overlooked here is that the source resistance at the output terminals of the pi-nework in Class B and C amplifiers is non-dissipative, which is the reason they can be loaded for delivering all available power for a given grid drive, and still have efficiencies greater than 50 percent. One of the myths circulated for years, and still prevelant, is that the reason for Class B and C amps to have efficiencies greater than 50 percent is that the load resistance must be greater than the source resistance. Tain't so.

I've proved the above to be true with extensive measurements using laboratory grade instruments. Reports on those measurements are reported in Chapter 19 in Reflections 2, and additional measurements taken after Reflections 2 was published are reported in Chapter 19A, to be published soon in Reflections 3. This additional chapter is listed here in the rraa for your information. If anyone is interested in reading Chapter 19 in Reflections 2 it appears in my website at www.w2du.com.

Walt, W2DU

5238. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 21:45:11 UTC
From: jgboyles@aol.com
Message-ID: <b1e481ab-6cbb-46ca-bc13-b1f29e73ee29@c65g2000hsa.googlegroups.com>
Source record: 25060

On Jun 7, 7:14 pm, Owen Duffy <n...@no.where> wrote:
> jgboy...@aol.com wrote innews:44e36c19-1767-403e-852a-48b07971f176@c65g2000hsa.googlegroups.com:
>
>
>
>
>
> > On Jun 7, 12:43 am, Owen Duffy <n...@no.where> wrote:
> >> jgboy...@aol.com wrote
> >> innews:73353273-a079-499c-89df-c11975b37c78@z66g200
> > > 0hsc.googlegroups.com:
>
> >> ...
>
> >> > The maximum power theorem gives conditions where power in the load,
> >> > is equal to internal power in the generator. Not always a good
> >> > ide
> > > a. A
> >> > 50HZ generator capable of Megawatts of power would dissiapate 1/2
> >> > in the generator and 1/2 in our houses if they designed them to
> >> > conform to the MPT. The 50HZ generators would melt. Utilities
> > > design their
> >> > Generators to have nearly 0.0 ohms internal impedance.
>
> >> Actually, the AC power distribution system from alternator down has a
> >> manged substantial equivalent source impedance.
>
> >> The source impedance serves to limit fault currents, which reduces
> >> the demands on protection devices.
>
> >> Sure, the network is not operated under Jacobi MPT conditions, but
> >> neither
>
> >> does it have near zero source impedance.
>
> >> Owen
>
> > Not really sure I agree. A multi-megawatt 60HZ generator by necessity
> > has near zero source impedance. The ones I am familar with require
> > forced air cooling on their output buses. If you are pumping out
> > Mega- watts, then any non -zero source impedance results in serious
> > heat. I^2R.
> > Gary N4AST

>
> Gary, you use the terms impedance and resistant as if they were
> equivalent.
>
> Alternators have a designed value of leakage reactance, and they also
> have resistance. The combination make the equivalent source impedance,
> and it is sufficient to limit fault current to something typically in the
> range of 20 to 50 times the rated output current.
>
> Transmission lines and transformers in the transmission and distribution
> networks are usually designed in the same way.
>
> It is not zero, and it is not purely resistive. Most supply authorities
> would not allow you to connect a capacitive load (a leading PF load), so
> another concept, conjugate matching (in the Jacobit MPT sense) is also
> not practiced.
>
> Understanding the electricity network does not really give an insight
> into a typical ham radio transmitter, they do not share the same design
> objectives.
>
> Owen- Hide quoted text -
>
> - Show quoted text -

We are obviously talking about two different things, that as you say
have little to do with a Ham Radio transmitter.
Gary N4AST

5239. Re: Balun 1:1 with FT 240-61 toroid

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-08 22:22:41 UTC
From: Danny Richardson <>
Message-ID: <2smo449oa4ed3ceneumas0sil6aob1mbsg@4ax.com>
Source record: 25061

On Sun, 8 Jun 2008 11:37:50 -0700 (PDT), leon_it@hotmail.com wrote:

>Hi to everyone,
>i need to replace my 1:1 balun on my yagi tribander 14-21-28 Mhz. I
>have in my stuff a toroid FT 240-61 and some pieces of rg-142 coaxial
>cable. Anyone can help me to know how many winding needs on toroid to
>achieve good reactance on 14 to 28 Mhz ?
>Thank you ,
>Daniel.

Here's a very good paper on balun and chokes.

http://audiosystemsgroup.com/RFI-Ham.pdf

5240. Re: Ladder line Vs. Coax

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 00:50:47 UTC
From: Bob Miller <NOSPAM@neosoft.com>
Message-ID: <8hvo4490029oihrfps0dn3riahkcdo7tnq@4ax.com>
Source record: 25062

On Wed, 28 May 2008 10:48:56 -0700 (PDT), Tim Shoppa
<shoppa@trailing-edge.com> wrote:

> Seeing the ladderline go up 85 feet to the
>middle of the dipole is a pure joy!
>
>Tim N3QE

Having a dipole at 85 feet would be a joy :-)

bob
k5qwg

5241. Stainless Steel Tube for Yagi Directors

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 05:24:19 UTC
From: maxpowervk@yahoo.com.au
Message-ID: <907f6218-7a36-4bf6-a25c-c6b1568e6db5@h1g2000prh.googlegroups.com>
Source record: 25063

Hello All,
I am building a DL6WU Yagi for 2 metres and am wondering if 1/4 inch stainless steel tube would be okay for the directors and reflector. I have been given some so it would save me from having to buy aluminium. I will still use aluminium for the folded dipole and for the boom. Any thoughts would be welcome.
Cheers
Max

5242. Re: Stainless Steel Tube for Yagi Directors

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 05:37:32 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <484CC19C.7070006@nosspam.activ8.net.au>
Source record: 25064

maxpowervk@yahoo.com.au wrote:
> Hello All,
> I am building a DL6WU Yagi for 2 metres and am wondering if 1/4 inch
> stainless steel tube would be okay for the directors and reflector. I
> have been given some so it would save me from having to buy aluminium.
> I will still use aluminium for the folded dipole and for the boom. Any
> thoughts would be welcome.
> Cheers
> Max

It will probably be a bit lossier than using Al but my first Yagi on 288 MHz(in the early 60s)was made out of 8g fencing wire and it seemed to work reasonably well. Try the evaluation version of Eznec - I think you can specify the material.
Alan

5243. Re: Stainless Steel Tube for Yagi Directors

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 06:04:47 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <484CC7FF.2070001@nosspam.activ8.net.au>
Source record: 25065

maxpowervk@yahoo.com.au wrote:
> Hello All,
> I am building a DL6WU Yagi for 2 metres and am wondering if 1/4 inch
> stainless steel tube would be okay for the directors and reflector. I
> have been given some so it would save me from having to buy aluminium.
> I will still use aluminium for the folded dipole and for the boom. Any
> thoughts would be welcome.
> Cheers
> Max

Just checked - tried a 6m yagi and with Cu elements, gain is 9.64dB With
SS elements, gain is 9.41 dB
Alan

5244. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 07:04:00 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <njgp44liciikg5bgp63thstsjap9sm9uc7@4ax.com>
Source record: 25066

On Wed, 04 Jun 2008 12:33:16 -0500, Cecil Moore <nospam@w5dxp.com>
wrote:

>A popular myth is developing that the tuner has no effect
>at the antenna feedpoint and the only goal is to make the
>transmitter "happy". My question is: if we monitored
>only the forward current or forward power at the antenna
>feedpoint, could we still adjust the tuner? If the answer
>is "yes", the myth is false.

Would it help to attach an antenna analyzer to the back side of a
tuner, tune the antenna and see if it affects the analyzer?
--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

5245. Re: Stainless Steel Tube for Yagi Directors

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 07:05:57 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <RS2lr0AVZNTIFwwA@b-howie.demon.co.uk>
Source record: 25067

In message <484CC19C.7070006@nosspam.activ8.net.au>, Alan Peake
<adpeake@nosspam.activ8.net.au> writes
>
>
>maxpowervk@yahoo.com.au wrote:
>> Hello All,
>> I am building a DL6WU Yagi for 2 metres and am wondering if 1/4 inch
>> stainless steel tube would be okay for the directors and reflector. I
>> have been given some so it would save me from having to buy aluminium.
>> I will still use aluminium for the folded dipole and for the boom. Any
>> thoughts would be welcome.
>> Cheers
>> Max
>
>
>It will probably be a bit lossier than using Al but my first Yagi on 288
>MHz(in the early 60s)was made out of 8g fencing wire and it seemed to work
>reasonably well. Try the evaluation version of Eznec - I think you can
>specify the material.
>Alan
>
MMANA gives >3dB degradation for Fe over Al (11ele DK7ZB on 2m), which
surprises me. What does Eznec give ?

Brian GM4DIJ

--
Brian Howie

5246. Re: Balun 1:1 with FT 240-61 toroid

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 08:44:52 UTC
From: leon_it@hotmail.com
Message-ID: <aa45daa5-9b6a-40a3-a3f0-51a6fed7d1be@m36g2000hse.googlegroups.com>
Source record: 25068

Thank you Danny for the very interesting document on balun.

> Here's a very good paper on balun and chokes.
>
> http://audiosystemsgroup.com/RFI-Ham.pdf

5247. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 09:11:00 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <nlpbVjPkOPTIFw1I@g3ohx.demon.co.uk>
Source record: 25070

In message <K3X2k.2824$lE3.246@trnddc05>, Dale Parfitt
<parinc1@verizon.net> writes
>
>"Andy" <dx90@blueyounder.co.uk> wrote in message
>news:cRU2k.100212$x55.63138@newsfe17.ams2...
>>I have just put up an 80 Meter End Fed Flexweave wire. Its about 63 feet
>>long and fed direct with 50 Ohm coax at the far end of the garden. The
>>shield is connected straight down to a ground earth stake at this point and
>>it is tuned for 3.700 MHz. It receives better than any thing I have used so
>>far, but it is very death on 40 meters. Almost unusable.
>>
>> Is there a reason for this?
>>
>> The antenna is only up at 20 feet and my old G5RV is only 6 feet off the
>> ground at the moment and receives far better on 40 meters than the End Fed
>> wire.
>>
>> 73 Andy
>Yes there is- it's a half wave long on 40M which implies voltage feed and a
>VSWR in the 60--80:1 range.
>
>Dale W4OP
>

The question is, what are the consequences of having such a high SWR? It
all depends on how much attenuation the coax has. If the coax was
lossless, there would be no signal loss, regardless of the SWR.

For many years, I have been an advocate of this 'far-end feed' type of
antenna. Its great advantage is that it greatly reduces the amount of
local interference it receives (and creates). Also, all the essential RF
grounding is at the far end. You don't need an RF ground in the shack.
The shack is RF-dead.

Ideally, you would use a tuning/matching unit at the antenna feedpoint
but, provided your coax has adequately low loss, you can get away with
having the tuning unit at the shack end of the coax. It's surprising how
well this works - especially on the lower frequency amateur bands.

For reception only, it might be worth while considering fitting a
matching transformer at the antenna feedpoint. These typically have an
impedance ratio of 9:1. The essential purpose is to prevent extremes of
impedance mismatch between the antenna and the coax. Below, I have
appended some information from 'RHF', one of the contributors to the
rec.radio.shortwave newsgroup. Note that these devices are NOT baluns!

My present antenna is about twice the size of that described. It's about 120 foot inverted-L, at around 25 feet. The coax length is about 90 foot. I can tune it up from 160 to 10m. It certainly seems lively enough up to 20m.

As I said, you do need really good low-loss coax. CATV trunk cable is pretty good, if you can lay your hands on some. Don't worry about it being 75 ohms.

Depending on frequency, you are going to get quite a variety of weird impedances at the shack end of the coax. What you get will be whatever the feed impedance of the antenna is, but transformed by the length of the coax, and influenced by its attenuation. In the example of the Flexweave wire, the antenna is around a halfwave long, so the impedance is very high. However, the coax will be (guessing) 40 foot long, which, allowing for a velocity factor of 0.6, will also be a halfwave at 40m. The impedance at the shack end will therefore be very high, which may not suit the receiver. You will certainly need a matching unit to transmit.

Finally, having used the 'tuner-in-the-shack' method for around 30 years, in my old age I am considering investing in one of the automatic remote tuning units (such as the SG-230). However, one slight disadvantage is that, in order to work, they need to be fed with RF, so are not suitable for SWL-use only.

From 'RHF' in rec.radio.shortwave (29 March 2008)

Some people as a result of the coining of the Word "Balun"
[Bal-Un] for Balanced-to-Unbalance Matching Transformer :
Also like to use the Word "Unun" [Un-Un] for the Unbalance-
to-Unbalanced Matching Transformer.

"Balun" a specific Contraction becoming an inclusive Buzz Word
relegated to commonly misused technical Jargon.
http://en.wikipedia.org/wiki/Balun

Most of these Matching Transformers used between Single Wire
Antenna Elements and Coax Cable are 'not' Baluns but Ununs
since the Match-up an Unbalanced Antenna Element with an
Unbalanced Coax Calbe feed-in-line.

Many Manufactures have come-up with Trade Marked Names
for these Products like :

* Magnetic Longwire Balun (MLB)
-by- RF Systems
http://www.rf-systems.nl/pdf/mlbm.pdf

* Magnetic Longwire Balun(MLB-1)
-by- Palomar Enginers
http://www.palomar-engineers.com/MLB-1/mlb-1.html

* Long Wire Antenna Adapter (LWA) LWA-0130
-by- WinRadio
http://www.winradio.com/home/lwa.htm

* Longwire Balun 9:1 Transformer
-by- LowBander
http://cgi.ebay.com/_W0QQitemZ180227972387

* Universal Magnetic Balun (UMB)
-by- Wellbrook
http://www.wellbrook.uk.com/longwire.html
+ UMB and Antenna Feed-in-Line Isolation
http://www.wellbrook.uk.com/UMB.html

* Longwire Impedance Matcher (LIM)
http://www.angelfire.com/mb/amandx/lim.html
http://www.shortwavestore.com/pdf/longwire-impedance-matcher.pdf

READ - Magnetic Longwire Balun - Not Really a Balun
http://www.hard-core-dx.com/nordicdx/antenna/feed/magbal2.html
From : John Doty (jpd@space.mit.edu)
Date : August 24, 1995
Original Source : UseNet's Rec.Radio.Shortwave

READ - Magnetic Longwire Balun - A Con or Not ?
http://www.hard-core-dx.com/nordicdx/antenna/feed/magbal1.html
-hosted by- Hard Core DX .Com

READ - The Verdict {One Man's Opinion} :
The Magnetic Longwire Balun Is Too Expensive
http://www.hard-core-dx.com/nordicdx/antenna/feed/magbalun.html
-by- Alan Johnson

READ - About the MLB "Magnetic Longwire Balun" - How To !
http://users.belgacom.net/hamradio/schemas/Magnetic%20Longwire%20Balun_ML
B.htm
-by- Guy Roels [ON6MU]
.
READ - A 9:1 Balun - For Your End Fed Antenna
http://bobsamerica.com/9-1balun.html
+Plus+ RF Grounding with a Balun Feed
http://bobsamerica.com/grounding.html
-by- Robert W. Betts [N1KPR]

=PS= I have always thought that Par Electronics should
sell their Matching Transformer "MatchBox" separately
since it allows the User to Configure the Primary and
Secondary Grounds for best Noise Reduction at their
particular location. {Nice Feature - Hint Dale ;-}
http://www.parelectronics.com/swl_end.htm
-by- Dale R. Parfitt [W4OP]

well this message has gone on long enough . . .
it is time for me to bal-un out of here - iane ~ RHF {pomkia}

.
Shortwave Listener (SWL) Antennas Group => http://tinyurl.com/ogvcf
GoTo => http://groups.yahoo.com/group/Shortwave-SWL-Antenna/
.
RHF's Standard "Shortwave Radio Listener (SWL) Antennas Group"
Reference Message Signature-Line => http://tinyurl.com/25zbrg
http://groups.google.com/group/rec.radio.shortwave/msg/411dac3b4a1798e0
--
Ian

5248. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 09:15:18 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <Hw63k.141878$UP6.11431@newsfe14.ams2>
Source record: 25069

Hi Dale,

Does this only apply to 1/2 wave long end feds only?

Does this apply to any frequency?

The maximum space here is only 66 feet at best.

What options am I left with that would work for 80-40 meters?

I have a question about traps. I read yesterday that traps should not be
tuned to resonance of the wanted frequency. If I constructed a homebrew trap
for say 7.1 MHz.
How far away from this frequency should I tune the trap?

Should it be tuned higher or lower?

I did search the internet, but I could not find any info on whether its best
to setup the trap higher or lower than the wanted frequency and by how much.

Andy

"Dale Parfitt" <parinc1@verizon.net> wrote in message
news:K3X2k.2824$lE3.246@trnddc05...
>
> "Andy" <dx90@blueyounder.co.uk> wrote in message
> news:cRU2k.100212$x55.63138@newsfe17.ams2...
>>I have just put up an 80 Meter End Fed Flexweave wire. Its about 63 feet
>>long and fed direct with 50 Ohm coax at the far end of the garden. The
>>shield is connected straight down to a ground earth stake at this point
>>and it is tuned for 3.700 MHz. It receives better than any thing I have
>>used so far, but it is very death on 40 meters. Almost unusable.
>>
>> Is there a reason for this?
>>
>> The antenna is only up at 20 feet and my old G5RV is only 6 feet off the
>> ground at the moment and receives far better on 40 meters than the End
>> Fed wire.
>>
>> 73 Andy
> Yes there is- it's a half wave long on 40M which implies voltage feed and
> a VSWR in the 60--80:1 range.
>
> Dale W4OP
>

5249. Re: RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 12:39:08 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484d2436$0$7067$4c368faf@roadrunner.com>
Source record: 25071

John Smith wrote:
> Christopher Cox wrote:
>
>> John Smith wrote:
>>
>>> John Smith wrote:
>>>
>>>> [stuff]
>>>> Regards,
>>>> JS
>>>
>>>
>>>
>>> This:
>>> The movie about John Kanzius and his invention of a machine that
>>> might lead to a cure for cancer is on the verge of becoming a
>>> reality. At a meeting Monday with the Erie Times-News Editorial
>>> Board, Kanzius said a motion picture company in Los Angeles that will
>>> make the film has yet to issue a press release about it, so he cannot
>>> discuss plans at length. Kanzius said different actors have been
>>> mentioned as possible stars of the film, but it depends on their
>>> availability.
>>>
>>> From here:
>>> http://www.goerie.com/apps/pbcs.dll/article?AID=/20080605/OPINION13/806050425
>>>
>>>
>>> Excursions into space were accomplished during my lifetime; I
>>> consider this to be of equal or above importance ...
>>>
>>> JS
>>
>>
>> Wow, a whole daily newspapers contents in 2 paragraphs!
>>
>> My head is still spinning.
>>
>
> Hmmmm ... did I miss something? Or, what that you? Uh, you did notice
> the URL, right? :-)
>
> JS
Yepï¿½
From the link:

1) Marx Toy Museum plans to sell hundreds of toyï¿½.
2) The movie about John Kanzius and his invention of a machine that might lead to a cure for cancerï¿½
3) Millcreek School Director Judy Wheaton did a great job raising funds to purchase trees and shrubs for the new J.S. Wilson Middle School, but I wish they could have been planted in a different spot.
4) Actor Tim Conway recalled the enthusiastic Erie crowds at the Warner Theatreï¿½.
5) Chad Hoops, the 14-year-old violin whiz who was such a hit with the Erie Philharmonic earlier this year,ï¿½
6) Old friend and colleague John LaPlaca is singing the praises of his grandson, Ethan LaPlaca, who's a top student at Duquesne University's Mary Pappert School of Musicï¿½.
7) Congratulations to Bertrand Artigues, of Bertrand's Bistro, on his election as president of the revived Northwest Chapter of the Pennsylvania Restaurant Associationï¿½
8) Illness prevented Elizabeth Trigilio from traveling to New York to see Pope Benedict XVI in April,ï¿½
9) Ruthe Overton will be honored Saturday at a dinner in Meadville for all her charity work. She succeeded Mary Jane Roy as illustrious commandress of the Pharaoh Court.

Like I said, a whole daily newspapers contents in 2 paragraphs.

5250. Re: Stainless Steel Tube for Yagi Directors

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 12:57:45 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <484D28C9.3050001@nosspam.activ8.net.au>
Source record: 25072

Brian Howie wrote:

> MMANA gives >3dB degradation for Fe over Al (11ele DK7ZB on 2m), which
> surprises me. What does Eznec give ?
>
> Brian GM4DIJ

Using an 11 el DL6WU at 144.2MHz and 10mm elements, EZNEC gives gains of 14.31 dBi for Al and 14.22 for SS. With 5mm elements, it's 14.54 for Al and 14.37 for SS.
I used a figure of 7e-7 ohm-m for the resistivity. Most stainless steels range from 5e-7 to 7.4e-7 ohm-m.
3dB does seem excessive.
Alan VK2ADB

5251. ladder line??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 13:26:55 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <VdudnSngWfwLstDVnZ2dnUVZ_oHinZ2d@comcast.com>
Source record: 25073

If 1 does not have access to a handbook, is there any way to determine the value of a piece of ladder line as to whether or not it is either 300 or 450 ohm?

5252. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 13:28:05 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Hda3k.5844$ZE5.761@nlpi061.nbdc.sbc.com>
Source record: 25074

Buck wrote:
> Would it help to attach an antenna analyzer to the back side of a
> tuner, tune the antenna and see if it affects the analyzer?

Certainly it changes the impedance looking into the tuner
input and that has an effect on the entire antenna system.
The forward and reflected voltages, currents, and powers are
at their maximum values when the tuner achieves a Z0-match.
--
73, Cecil http://www.w5dxp.com

5253. Re: Chapter 19A from "Reflections III"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 13:37:45 UTC
From: commander john <crazytvjohn@yahoo.com>
Message-ID: <29ffb746-ec8b-413f-bc60-f83a43ba0a4d@r66g2000hsg.googlegroups.com>
Source record: 25075

On Jun 8, 1:16 pm, commander john <crazytvj...@yahoo.com> wrote:
> On Jun 7, 11:43 am, Cecil Moore <nos...@w5dxp.com> wrote:
>
> > Walter Maxwell has asked me to make this item available
> > to the newsgroup. In MS Word format, it is at:
>
> >http://www.w5dxp.com/Chapt19a.doc
> > --
> > 73, Cecil http://www.w5dxp.com
>
> Why doesn't he have it on his own website as a pdf like the others?
> john w9zy

I went and looked chapter 19a is on walts site as a pdf file and very
readable.
I am more concerned that there will not be a reflections 3.
john

5254. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 13:43:18 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <g2jc1s$8hg$1@aioe.org>
Source record: 25076

"Walter Maxwell" wrote
> What seems to be overlooked here is that the source resistance at the
> output
> terminals of the pi-nework in Class B and C amplifiers is non-dissipative,
> which
> is the reason they can be loaded for delivering all available power for a
> given
> grid drive, and still have efficiencies greater than 50 percent. One of
> the
> myths circulated for years, and still prevelant, is that the reason for
> Class B
> and C amps to have efficiencies greater than 50 percent is that the load
> resistance must be greater than the source resistance. Tain't so.

Walt - what is your thinking on the point that untuned, solid-state amplifiers also can have PA DC-to-RF power conversion efficiencies of 70% or more at the device level?

In fact the solid-state, analog FM broadcast transmitters supplied by Harris Corporation and others need no tuning to produce their rated output power into a 1.3:1 SWR or less, anywhere in the FM broadcast band 88-108 MHz. Even the harmonic filter needs no changes, and maintains harmonics at -80 dBc or better. They are frequency agile, and can be reset from one carrier frequency to another, anywhere in the FM band with a transition time of a few seconds

The overall AC input to r-f output efficiency of these transmitters exceeds 60% (includes the exciter, control system, IPA, and cabinet fans).

RF

5255. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 13:43:39 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <gsa3k.5877$ZE5.2271@nlpi061.nbdc.sbc.com>
Source record: 25077

Ian Jackson wrote:
> The question is, what are the consequences of having such a high SWR? It
> all depends on how much attenuation the coax has. If the coax was
> lossless, there would be no signal loss, regardless of the SWR.

True, but the value of Z0 of the transmission line has a
large effect. Let's say we are feeding one of those 5000
ohm antennas. The SWR on 50 ohm coax would be 100:1. The
SWR on 450 ohm ladder-line would be 11:1. Even if the coax
had the same matched-line loss as the ladder-line, it would
still be much lossier than the ladder-line - and much more
expensive.
--
73, Cecil http://www.w5dxp.com

5256. Re: ladder line??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 13:49:15 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <484D34DB.4080804@nosspam.activ8.net.au>
Source record: 25078

W3CQH wrote:
> If 1 does not have access to a handbook, is there any way to determine the
> value of a piece of ladder line as to whether or not it is either 300 or 450
> ohm?

Lots of technical ways but as a first guess, TV ribbon (ladder line) is
300 ohms and the conductors are spaced about 8.5mm
450 ohm ribbon has wider spacing.

Alan

5257. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 13:58:53 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <4b159149-c406-4c42-9366-24bf26fdb0ae@l42g2000hsc.googlegroups.com>
Source record: 25079

On Jun 6, 3:14 pm, John Smith <assemblywiz...@gmail.com> wrote:
> Art Unwin wrote:
>
> >> ..
>
> > > I will put up a page later today that will be intended more for the
> > > lay man and without all the mathematical details that a true physics
> > > paper requires for submission. ...
> > > Art Unwin KB9MZ.......XG
>
> > Will be looking forward to giving that paper a glance, keep me posted
> > ... thanks Art.
>
> > Regards,
> > JS

John, I am new to this stuff. It takes a couple of weeks for the
search engines to pick it up.
In the mean time I have been told that

htt://unwinantennas.com/

will pick it up.
Don't know what else I can do as I haven't tried it for myself yet
Have fun
Art

5258. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 13:59:54 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <tHa3k.5908$ZE5.4432@nlpi061.nbdc.sbc.com>
Source record: 25080

Andy wrote:
> I have a question about traps. I read yesterday that traps should not be
> tuned to resonance of the wanted frequency. If I constructed a homebrew trap
> for say 7.1 MHz. How far away from this frequency should I tune the trap?
>
> Should it be tuned higher or lower?

Tune it for lower than the operating frequency to
minimize trap losses. The point to shoot for is
the maximum inductive reactance point which is
at a lower frequency than the parallel resonant
resistance point. How much lower depends upon
the Q of the trap.
--
73, Cecil http://www.w5dxp.com

5259. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 14:13:42 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <gUa3k.38847$yb3.27938@newsfe18.ams2>
Source record: 25081

I have nothing here to measure the Q of the trap.

Is there another way of working out the correct frequency needed for the trap?

The traps are made from RG58 C/U. I think these are a low Q but I'm not sure.

Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message news:tHa3k.5908$ZE5.4432@nlpi061.nbdc.sbc.com...
> Andy wrote:
>> I have a question about traps. I read yesterday that traps should not be
>> tuned to resonance of the wanted frequency. If I constructed a homebrew
>> trap for say 7.1 MHz. How far away from this frequency should I tune the
>> trap?
>>
>> Should it be tuned higher or lower?
>
> Tune it for lower than the operating frequency to
> minimize trap losses. The point to shoot for is
> the maximum inductive reactance point which is
> at a lower frequency than the parallel resonant
> resistance point. How much lower depends upon
> the Q of the trap.
> --
> 73, Cecil http://www.w5dxp.com
>

5260. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 14:44:02 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <bdsULyAyGUTIFwBm@g3ohx.demon.co.uk>
Source record: 25082

In message <gsa3k.5877$ZE5.2271@nlpi061.nbdc.sbc.com>, Cecil Moore
<nospam@w5dxp.com> writes
>Ian Jackson wrote:
>> The question is, what are the consequences of having such a high SWR?
>>It all depends on how much attenuation the coax has. If the coax was
>>lossless, there would be no signal loss, regardless of the SWR.
>
>True, but the value of Z0 of the transmission line has a
>large effect. Let's say we are feeding one of those 5000
>ohm antennas. The SWR on 50 ohm coax would be 100:1. The
>SWR on 450 ohm ladder-line would be 11:1. Even if the coax
>had the same matched-line loss as the ladder-line, it would
>still be much lossier than the ladder-line - and much more
>expensive.

I think that the secret is to make sure that antenna is not exact
multiples of a halfwave. This prevents the SWR being absolutely sky-high
- say, 'only' 20:1, worst case. The proviso is certainly that the coax
should be as lossless as possible. I'm happy to lose 3 or 4dB in the
interests of simplicity and good EMC. It's mainly 160/80/40 which I'm
interested in. There's just a load of foreigners on the higher bands!

Some time ago, I did some (more) Smith Chart guestimation with the
object of trying to find which 'magic' inverted-L antenna lengths would
present 'reasonable' impedances on all (or most) of the amateur bands up
to 30Mhz. [Many years ago, I reckoned that around 185 feet was a good
length.] However, my recent efforts ended in dismal failure. In the
meantime, I will continue in complete ignorance, and use my antenna as
it is, accidentally having the occasional QSO and causing no obvious
interference problems. But, after all these years, I might treat myself
to an automatic tuner for the far end of the coax.
--
Ian

5261. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 15:01:46 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <uBb3k.4691$89.2887@nlpi069.nbdc.sbc.com>
Source record: 25083

Andy wrote:
> I have nothing here to measure the Q of the trap.
> Is there another way of working out the correct frequency needed for the
> trap?

Sorry, I would just be guessing. I made my 40m traps
resonant on 7.4 MHz and they worked well over the
40m band. But I never made any measurements or A/B
comparisons.

> The traps are made from RG58 C/U. I think these are a low Q but I'm not
> sure.

The following web page might be of interest:

http://www.seed-solutions.com/gregordy/Amateur%20Radio/Experimentation/CoaxTrap.htm
--
73, Cecil http://www.w5dxp.com

5262. Re: Stainless Steel Tube for Yagi Directors

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 15:20:11 UTC
From: ltdoc@yahoo.com
Message-ID: <ce5ff35e-0e1e-4889-9ef6-aeef1256c404@t54g2000hsg.googlegroups.com>
Source record: 25084

Max,
While there may be some degradation in gain from using stainless steel, would it really make that much difference? I think the 'biggy' is that you already have the stainless steel and would have to find the aluminum. Maybe the next 'biggest' thing would be making electrical contact between sections of that steel? A tenth of a dB loss just ain't no step for a stepper...
- 'Doc

(all puns intended)

5263. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 15:26:34 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484d4b79$0$5721$4c368faf@roadrunner.com>
Source record: 25085

Read this:
http://en.wikipedia.org/wiki/Neutrino
Re-write this:
http://unwinantennas.com/

5264. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 15:50:11 UTC
From: "Helmut Wabnig"
Message-ID: <q7kq441bc3ilrgebn6qa3u8gsll5ut1ig8@4ax.com>
Source record: 25086

On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
<chrisTOPHERcOX@coboxincORORATED.com> wrote:

>Read this:
> http://en.wikipedia.org/wiki/Neutrino

>Re-write this:
> http://unwinantennas.com/

That unwin page is full utter nonsense.
Absolute crackpottery.

w.

5265. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 16:05:57 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2jkd6irg1@news.albasani.net>
Source record: 25087

Art Unwin wrote:
>> ...
>
> htt://unwinantennas.com/
>
> will pick it up.
> Don't know what else I can do as I haven't tried it for myself yet
> Have fun
> Art

Works for me! Well, once I added the missing "p" in http ... or:

http://unwinantennas.com/

Thanks Art.

Warm regards,
JS

5266. Re: RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 16:09:34 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2jkjt$ih7$1@news.albasani.net>
Source record: 25088

Christopher Cox wrote:

> ...
> Like I said, a whole daily newspapers contents in 2 paragraphs.

Oh, I see. Well, yes; if one is either unable or unwilling to utilize a search engine to extrapolate and expand ones search area(s), severe limitations may be encountered ...

Regards,
JS

5267. Re: Stainless Steel Tube for Yagi Directors

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 17:13:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <JdadnVG0m79Y-dDVnZ2dnUVZ_q_inZ2d@posted.easystreetonline>
Source record: 25089

Alan Peake wrote:
>
>
> Brian Howie wrote:
>
>> MMANA gives >3dB degradation for Fe over Al (11ele DK7ZB on 2m), which
>> surprises me. What does Eznec give ?
>>
>> Brian GM4DIJ
>
> Using an 11 el DL6WU at 144.2MHz and 10mm elements, EZNEC gives gains of
> 14.31 dBi for Al and 14.22 for SS. With 5mm elements, it's 14.54 for Al
> and 14.37 for SS.
> I used a figure of 7e-7 ohm-m for the resistivity. Most stainless steels
> range from 5e-7 to 7.4e-7 ohm-m.
> 3dB does seem excessive.
> Alan VK2ADB

Apparently Brian used iron as the model material, which of course is magnetic. Skin depth is reduced, and therefore RF resistance increased, by the square root of the permeability. So if the iron model's permeability is, say, 100, it would increase the effective resistance by a factor of 10.

Some stainless steels are magnetic, some are not. The magnetic ones have much higher RF resistance than the non-magnetic ones for the above reason.

Roy Lewallen, W7EL

5268. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 17:16:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <JdadnVC0m7_p-NDVnZ2dnUVZ_q_inZ2d@posted.easystreetonline>
Source record: 25090

Richard Fry wrote:
> "Walter Maxwell" wrote
>> What seems to be overlooked here is that the source resistance at the
>> output
>> terminals of the pi-nework in Class B and C amplifiers is
>> non-dissipative, which
>> is the reason they can be loaded for delivering all available power
>> for a given
>> grid drive, and still have efficiencies greater than 50 percent. One
>> of the
>> myths circulated for years, and still prevelant, is that the reason
>> for Class B
>> and C amps to have efficiencies greater than 50 percent is that the load
>> resistance must be greater than the source resistance. Tain't so.
> ____________
>
> Walt - what is your thinking on the point that untuned, solid-state
> amplifiers also can have PA DC-to-RF power conversion efficiencies of
> 70% or more at the device level?
>
> In fact the solid-state, analog FM broadcast transmitters supplied by
> Harris Corporation and others need no tuning to produce their rated
> output power into a 1.3:1 SWR or less, anywhere in the FM broadcast band
> 88-108 MHz. Even the harmonic filter needs no changes, and maintains
> harmonics at -80 dBc or better. They are frequency agile, and can be
> reset from one carrier frequency to another, anywhere in the FM band
> with a transition time of a few seconds
>
> The overall AC input to r-f output efficiency of these transmitters
> exceeds 60% (includes the exciter, control system, IPA, and cabinet fans).
>
> RF

I know this question was directed to Walt, but I'd like to mention that
I've designed and built solid state class C amplifiers at the 5 - 10
watt level which have measured efficiencies of greater than 85%.

Roy Lewallen, W7EL

5269. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 17:33:30 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484d693b$0$5714$4c368faf@roadrunner.com>
Source record: 25091

>
>
> Works for me! Well, once I added the missing "p" in http ... or:

Judging from this response, I assume you think I have a problem with the
link. I do not.

I do have a problem with several sentences in the web page. I recently
watched "The Ghost Particle" on Nova. Some of the Neutrino particle's
behaviors stated on Art's page just did not jive with Nova's program, so
I looked up a Wiki definition of the Neutrino. The Wiki follows Nova's
description of the Neutrinos Particle, hence the post:

Read this:
http://en.wikipedia.org/wiki/Neutrino
Re-write this:
http://unwinantennas.com/

5270. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 17:49:21 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2jqf3$v3o$1@news.albasani.net>
Source record: 25092

Christopher Cox wrote:
>
>>
>>
>> Works for me! Well, once I added the missing "p" in http ... or:
>
> Judging from this response, I assume you think I have a problem with the
> link. I do not.
>
> I do have a problem with several sentences in the web page. I recently
>> ...

Uh, no ...

But, you do give yourself away with your text and its' direction. Your problem is a very simple one; you see yourself as the center of importance and my focus in any exchange of text you and I have had. Rest assured, you are in error--at least where it involves myself.

Most often, I say what I mean and mean what I say.

Your tea leaves, crystal balls and examinations of my text are likely only lead you to draw more erroneous conclusions, and are likely to lead you further astray of my meanings and intentions--given your mindset ...

Or, in summary, if you desire a childish conflict, search for those of a like mind and purpose.

Regards,
JS

5271. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 17:57:44 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484d6ee9$0$5736$4c368faf@roadrunner.com>
Source record: 25093

John Smith wrote:
> Christopher Cox wrote:
>
>>
>>>
>>>
>>> Works for me! Well, once I added the missing "p" in http ... or:
>>
>>
>> Judging from this response, I assume you think I have a problem with
>> the link. I do not.
>>
>> I do have a problem with several sentences in the web page. I recently
>
> >> ...
>

Ok, you are right.

What did you mean by the phrase "Works for me" so that I can be corrected.

Thanks for all your help.

Chris

5272. TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 18:14:06 UTC
From: Solomon_Man <cmgray74@gmail.com>
Message-ID: <925c0d83-b760-4fcf-a2e9-90a5fb94fc04@l42g2000hsc.googlegroups.com>
Source record: 25094

All,
Some History...
My home, previously owned by my parents, has approximately a 30' Tower and has a channel master antenna (whats left) attached to it. It was used for TV/Radio reception originally. If I remember correctly it was around a $100-$125 bucks for the antenna alone and had a range (supposedly) of around 100-125 miles. I live in the suburbs of Toledo, Ohio. The current antenna had a bumpy start when the original installer (a professional) dropped the antenna from about 25 feet up. A few things were dented and broken. It was cleaned up and then the antenna was still installed. The decision was based on the fact that we are in the surburbs and the antenna was an overkill. From memory the unit had a cracked chunk of plastic and a bunch of dented\bent rods. We had no problems with the unit reception wise so it really did not affect its use. The antenna tower was second hand, but the rotor motor, antenna, all wiring and the control box was new. The rotor motor and its control box since installation has been used maybe 3 times. Once installed we had really good reception and picked up Detroit,Toledo,Some Cleveland (Good Day) and some single channel in Indiana. I do not remember any Columbus channels as some channels were really fuzzy. (not sure if it was columbus or not)

Any Ways...Fast Forward ...a few years.....

Then about 6 yrs ago, a year before I took posession of the house and when my parents were cable TV subscribers, the antenna broke basically in two and a large chunk of the antenna came crashing to the ground. The remaining antenna chunk and tower is still standing to this day. Its a eye sore to say the least.

My goal is to replace the antenna and I need some advice.

Would you keep the tower? The only thing I can see wrong with it is that it has a large bunch of vines growing up the middle. There is little to no rust. The vines have been recently chopped down but the higher section of vine is still intangled in the tower. I have tried to climb the tower and got about 15 feet up and it swayed a little so I came down. I am a little to heavy, or chicken, to be climbing towers. The vines should not affect climbing the tower.

Or would I be better off/the same to get a roof mount antenna?

I liked the range of the previous antenna, so what would everyone suggest for an antenna with a range of around 100-125 miles that could be mounted to a 30 foot tower and will be used for radio and TV reception I have made a few phone calls and everyone locally pushes

the Channel Master but I am little nervous about having to have to do this every 7-10 years based on the last antenna. Has anyone had better experience with Channel Master?

As its been used like three times, would you replace the rotor motor?

What should I expect to pay to have a new antenna and rotor motor installed in my home?

Anyone know a good antenna dealer in the Toledo, Ohio area?

Thanks,
Chris

5273. Re: RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 18:17:59 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484d73a9$0$5709$4c368faf@roadrunner.com>
Source record: 25095

John Smith wrote:
> Christopher Cox wrote:
>
>> ...
>> Like I said, a whole daily newspapers contents in 2 paragraphs.
>
>
> Oh, I see. Well, yes; if one is either unable or unwilling to utilize a
> search engine to extrapolate and expand ones search area(s), severe
> limitations may be encountered ...
>
> Regards,
> JS

Actually I was poking fun at the author of the page.

Anyhow, in looking for your reference in the page, I became a bit wheezy
from the disconnected content of the author.

I don't know, maybe that is the mission he was given.....

5274. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 18:36:26 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2jt7b$5ea$1@news.albasani.net>
Source record: 25096

Christopher Cox wrote:

> ...
> Ok, you are right.
>
> What did you mean by the phrase "Works for me" so that I can be corrected.
>
> Thanks for all your help.
>
> Chris

Really? That is the problem? Huh, never would have seen that one coming!

OK, let me expand and give greater detail on "the meaning" of those words, by example--at least where they involve myself.

1) Say a host offers me a Jim Beam on ice at a social event--I have replied, "That works for me!" (my favorite drink is a Vodka Collins!)

2) A kludge is thrown together to patch a nasty little glitch in a computer program (a real fix will be done later), I have replied, "Works for me!"

3) Someone offers me a website which provides the data/information I have requested, they have made a slight error which I wish to, and mostly overlook--so, playing down the importance of such, I reply, "Works for me ..."

4) The wife purchases a new "nightie", I have been known to reply, on occasion, "THAT WORKS FOR ME!" <EVIL GRIN>

5) etc ...

Again, I feel you are too focused on your "perceived importance" or else my desire for conflict, I assure you, I am unhindered by such.

Perhaps and far too often, one is given to find what one searches for. Let's control the direction of these endeavors. And, in such light, I am pleased you asked for clarification, so my intents would become known to you--hopefully, you will accept my stated intent.

Regards,
JS

5275. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 18:40:07 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <qOe3k.159$Qy2.4@newsfe06.lga>
Source record: 25097

"Richard Fry" <rfry@adams.net> wrote in message news:g2jc1s$8hg$1@aioe.org...
> "Walter Maxwell" wrote
> > What seems to be overlooked here is that the source resistance at the
> > output
> > terminals of the pi-nework in Class B and C amplifiers is non-dissipative,
> > which
> > is the reason they can be loaded for delivering all available power for a
> > given
> > grid drive, and still have efficiencies greater than 50 percent. One of
> > the
> > myths circulated for years, and still prevelant, is that the reason for
> > Class B
> > and C amps to have efficiencies greater than 50 percent is that the load
> > resistance must be greater than the source resistance. Tain't so.
> ____________
>
> Walt - what is your thinking on the point that untuned, solid-state
> amplifiers also can have PA DC-to-RF power conversion efficiencies of 70% or
> more at the device level?
>
> In fact the solid-state, analog FM broadcast transmitters supplied by Harris
> Corporation and others need no tuning to produce their rated output power
> into a 1.3:1 SWR or less, anywhere in the FM broadcast band 88-108 MHz.
> Even the harmonic filter needs no changes, and maintains harmonics at -80
> dBc or better. They are frequency agile, and can be reset from one carrier
> frequency to another, anywhere in the FM band with a transition time of a
> few seconds
>
> The overall AC input to r-f output efficiency of these transmitters exceeds
> 60% (includes the exciter, control system, IPA, and cabinet fans).
>
> RF

Hello Richard,

Sorry, Richard, I have no knowledge of solid-state untuned amps, so my thinking on them is zero, nada. As you'll note, all of my discussion on the subject concerns only tube amps with a pi-network output, and I've specifically stated these conditions.

If you've read Chapter 19 and its addition as Chapter 19A, do you agree with my position that the output resistance at the output terminals of the pi-network is non-dissipative?

Walt, W2DU

5276. Re: ladder line??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 18:43:10 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <gRe3k.160$Qy2.15@newsfe06.lga>
Source record: 25098

"W3CQH" <hsgorden@comcast.net> wrote in message
news:VdudnSngWfwLstDVnZ2dnUVZ_oHinZ2d@comcast.com...
> If 1 does not have access to a handbook, is there any way to determine the
> value of a piece of ladder line as to whether or not it is either 300 or 450
> ohm?
>
If you're going to use a tuner it doesn't matter whether it's 300, 450 or 600
ohms.

Walt, W2DU

5277. Re: RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 18:53:05 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2ju6h$7d0$1@news.albasani.net>
Source record: 25099

Christopher Cox wrote:

> ...
> Actually I was poking fun at the author of the page.
>
> Anyhow, in looking for your reference in the page, I became a bit wheezy
> from the disconnected content of the author.
>
> I don't know, maybe that is the mission he was given.....

Ahhh, yes!

In that case, we are not in such disagreement :-)

Some information/material/data/text I simply digest. Perhaps it will be
useful in the future, perhaps not ...

And, I must refrain against being too critical of others, my own
"suspicions" over antennas is not above being "questioned" by others ...
you know, that pesky "ether thing" I have brought up at times.

Forgive me, "dry humor" often escapes me ... and the British are so good
at it! :-(

Warm regards,
JS

5278. Re: Stainless Steel Tube for Yagi Directors

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 19:04:06 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <U4qEhvCm6XTIFwyM@b-howie.demon.co.uk>
Source record: 25100

In message <JdadnVG0m79Y-dDVnZ2dnUVZ_q_inZ2d@posted.easystreetonline>,
Roy Lewallen <w7el@eznec.com> writes
>Alan Peake wrote:
>> Brian Howie wrote:
>>
>>> MMANA gives >3dB degradation for Fe over Al (11ele DK7ZB on 2m),
>>>which surprises me. What does Eznec give ?
>>>
>>> Brian GM4DIJ
>> Using an 11 el DL6WU at 144.2MHz and 10mm elements, EZNEC gives
>>gains of 14.31 dBi for Al and 14.22 for SS. With 5mm elements, it's
>>14.54 for Al and 14.37 for SS.
>> I used a figure of 7e-7 ohm-m for the resistivity. Most stainless
>>steels range from 5e-7 to 7.4e-7 ohm-m.
>> 3dB does seem excessive.
>> Alan VK2ADB
>
>Apparently Brian used iron as the model material, which of course is
>magnetic. Skin depth is reduced, and therefore RF resistance increased,
>by the square root of the permeability. So if the iron model's
>permeability is, say, 100, it would increase the effective resistance
>by a factor of 10.
>
>Some stainless steels are magnetic, some are not. The magnetic ones
>have much higher RF resistance than the non-magnetic ones for the above
>reason.

Yes I rechecked it with 7e-7 ohm-m and 0 permeability and got a lot
better results. Moral here is don't use iron wire for antennas .

73 Brian GM4DIJ

--
Brian Howie

5279. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 19:30:14 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484d849a$0$5715$4c368faf@roadrunner.com>
Source record: 25001

>
> Again, I feel you are too focused on your "perceived importance" or else
> my desire for conflict, I assure you, I am unhindered by such.

Wow, does not look that way from here.

1)Art offers a web site address which I go and look at because for the life of me I do not understand why he and other have such dislike for each other. I find the site to state things about Neutrino's that is contradictory to what I just learned.

2)I post a link to web page that contains information about what I understood a Neutrino to be and a corrected link to his site. The post is terse but in a way that shows that I disagree with his information.

3)Helmut Wabnig posts a response indicating that Art's page is silly.

4)You post a response correcting the URL.

5)I post a response to you indicating that the URL is not in question, but the information on Art's web page is, and why I feel so.

6)I am called self important.

7)Feeling I missed something I ask what you meant by the question "Work's for me".

8)You respond that you were correcting the URL.

The only thing I can figure is since I was viewing only unread posts, the tree indicated you were responding to me. This is why I responded to you that the error in the URL was not why I was responding to Art.

I believed you were responding to me, and you thought I was responding to you at point #4.

Hmmm....

Thunderbird BTW.

5280. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 19:32:14 UTC
From: nm5k@wt.net
Message-ID: <cd423f2e-5326-4dca-ae55-59de685cee81@t54g2000hsg.googlegroups.com>
Source record: 25002

On Jun 9, 10:50 am, Helmut Wabnig <hwabnig@ .- --- -. dotat> wrote:
> On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
>
> <chrisTOPHER...@coboxincORORATED.com> wrote:
> >Read this:
> > http://en.wikipedia.org/wiki/Neutrino
> >Re-write this:
> > http://unwinantennas.com/
>
> That unwin page is full utter nonsense.
> Absolute crackpottery.
>
> w.

That pottery is so cracked, even epoxy wouldn't help
put Unwin Dumpty back together again.. :/

5281. Re: Chapter 19A from "Reflections III"

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 19:52:17 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <1Sf3k.2598$Vk7.1823@newsfe05.lga>
Source record: 25003

"commander john" <crazytvjohn@yahoo.com> wrote in message
news:29ffb746-ec8b-413f-bc60-f83a43ba0a4d@r66g2000hsg.googlegroups.com...
On Jun 8, 1:16 pm, commander john <crazytvj...@yahoo.com> wrote:
> On Jun 7, 11:43 am, Cecil Moore <nos...@w5dxp.com> wrote:
>
> > Walter Maxwell has asked me to make this item available
> > to the newsgroup. In MS Word format, it is at:
>
> >http://www.w5dxp.com/Chapt19a.doc
> > --
> > 73, Cecil http://www.w5dxp.com
>
> Why doesn't he have it on his own website as a pdf like the others?
> john w9zy

I went and looked chapter 19a is on walts site as a pdf file and very
readable.
I am more concerned that there will not be a reflections 3.
john

Sorry John, you're imagining things. Chapter 19 is on my web page, but not the
19A addition. I am presently working on the page layout for Reflections 3.
Worldradio was originally going to publish it, but they became shorthanded and
had to withdraw from the publication.

I'm emailing you a copy of 19A. And for any others who'd like a copy give me
your email address.

Walt, W2DU

5282. Re: ladder line??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 21:09:00 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <uMidnSM9KeB5BtDVnZ2dnUVZ_vKdnZ2d@comcast.com>
Source record: 25004

"Alan Peake" <adpeake@nosspam.activ8.net.au> wrote in message
news:484D34DB.4080804@nosspam.activ8.net.au...
>
>
> W3CQH wrote:
>> If 1 does not have access to a handbook, is there any way to determine
>> the value of a piece of ladder line as to whether or not it is either 300
>> or 450 ohm?
>
> Lots of technical ways but as a first guess, TV ribbon (ladder line) is
> 300 ohms and the conductors are spaced about 8.5mm
> 450 ohm ribbon has wider spacing.
>
> Alan

Thank Alan - that will work! Best 73's

5283. Re: RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 22:28:26 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484dae66$0$5718$4c368faf@roadrunner.com>
Source record: 25005

> Ahhh, yes!
>
> In that case, we are not in such disagreement :-)
>
> Some information/material/data/text I simply digest. Perhaps it will be
> useful in the future, perhaps not ...
>
> And, I must refrain against being too critical of others, my own
> "suspicions" over antennas is not above being "questioned" by others ...
> you know, that pesky "ether thing" I have brought up at times.
>
> Forgive me, "dry humor" often escapes me ... and the British are so good
> at it! :-(
>
> Warm regards,
> JS

About his editorial style, I bet we are in complete agreement.
On the subject of antennas, I pretty much just lurk here.
The minds here are a bit to large for me to tackle at this point.

5284. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 23:16:47 UTC
From: Dave <noone@nowhere.com>
Message-ID: <zRi3k.5553$LN.4861@trndny03>
Source record: 25006

great one art! a work of absolute unabashed fiction.. i wonder how many will bite??? I needed something to make me laugh, and that definately filled the bill tonight!

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message news:4b159149-c406-4c42-9366-24bf26fdb0ae@l42g2000hsc.googlegroups.com...
> On Jun 6, 3:14 pm, John Smith <assemblywiz...@gmail.com> wrote:
>> Art Unwin wrote:
>>
>> >> ..
>>
>> > I will put up a page later today that will be intended more for the
>> > lay man and without all the mathematical details that a true physics
>> > paper requires for submission. ...
>> > Art Unwin KB9MZ.......XG
>>
>> Will be looking forward to giving that paper a glance, keep me posted
>> ... thanks Art.
>>
>> Regards,
>> JS
>
> John, I am new to this stuff. It takes a couple of weeks for the
> search engines to pick it up.
> In the mean time I have been told that
>
> htt://unwinantennas.com/
>
> will pick it up.
> Don't know what else I can do as I haven't tried it for myself yet
> Have fun
> Art

5285. Re: TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-09 23:21:48 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <DVi3k.2628$bh5.2591@bignews4.bellsouth.net>
Source record: 25007

You would probably need to replace the twinlead as well as the antenna.
The next time you see a Radio shack, you might sneak inside and ask about TV antennas.
Or they probably have a web site. with prices
Yeah - they do - click on this link...
http://www.radioshack.com/family/index.jsp?categoryId=2032205&cp=2032057.2032187.2032189
HTH
Hal
w4pmj

"Solomon_Man" <cmgray74@gmail.com> wrote in message
news:925c0d83-b760-4fcf-a2e9-90a5fb94fc04@l42g2000hsc.googlegroups.com...
> All,
> Some History...
> My home, previously owned by my parents, has approximately a 30' Tower

> I liked the range of the previous antenna, so what would everyone
> suggest for an antenna with a range of around 100-125 miles that could
> be mounted to a 30 foot tower and will be used for radio and TV
> reception I have made a few phone calls and everyone locally pushes
> the Channel Master but I am little nervous about having to have to do
> this every 7-10 years based on the last antenna. Has anyone had better
> experience with Channel Master?
>
> As its been used like three times, would you replace the rotor motor?
>
> What should I expect to pay to have a new antenna and rotor motor
> installed in my home?
>
> Anyone know a good antenna dealer in the Toledo, Ohio area?
>
> Thanks,
> Chris
>
>
>
>
>

5286. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 00:58:05 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2kjiuffm1@news.albasani.net>
Source record: 25008

Christopher Cox wrote:
>> ...

As always, you are free to carry on ...

Regards,
JS

5287. Re: Stainless Steel Tube for Yagi Directors

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 01:33:20 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6b6405F39v1lmU1@mid.individual.net>
Source record: 25009

ltdoc@yahoo.com wrote:
> While there may be some degradation in gain from using stainless
> steel, would it really make that much difference? I think the 'biggy'
> is that you already have the stainless steel and would have to find
> the aluminum. Maybe the next 'biggest' thing would be making
> electrical contact between sections of that steel? A tenth of a dB
> loss just ain't no step for a stepper...

"Sorry OM, I just can't copy you.
Can you switch to a beam with aluminum elements?"

...

"CQ Aluminum, CQ Aluminum, CQ Aluminum"

Lumpy

You Played on Lawrence Welk?
Yes but no blue notes. Just blue hairs.

www.LumpyGuitar.net

5288. Re: Balun 1:1 with FT 240-61 toroid

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 01:42:50 UTC
From: Bryan <bryan.swadenerNOSPAM@comcast.net>
Message-ID: <SMKdnbiN-MybQdDVnZ2dnUVZ_sDinZ2d@giganews.com>
Source record: 25010

Daniel wrote:
> Hi to everyone,
> i need to replace my 1:1 balun on my yagi tribander 14-21-28 Mhz. I
> have in my stuff a toroid FT 240-61 and some pieces of rg-142 coaxial
> cable. Anyone can help me to know how many winding needs on toroid to
> achieve good reactance on 14 to 28 Mhz ?
> Thank you ,
> Daniel.

I used a dozen turns of RG58 on the same core, and achieved XL ~= 200 ohms at 14MHz for a Cushcraft A3. RG142 is about the same OD, so you should be able to fit that many turns on the toroid. If you want more XL, stack two (or more) toroids.

Bryan WA7PRC

5289. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 02:34:13 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <484de82a$0$7046$4c368faf@roadrunner.com>
Source record: 25011

"John Smith" <assemblywizard@gmail.com> wrote in message
news:g2kjiuffm1@news.albasani.net...
> Christopher Cox wrote:
>>> ...
>
> As always, you are free to carry on ...
>
> Regards,
> JS

John, "As always" you are posting pure BS in your constant search to look for a petty argument in which your persona can then pose as one who prefers to take the high road. If you really prefer to take the high road, then do so; don't try to preach to everyone else that this is what YOU do, therefore the rest of us should do the same. Sorry "John" but the road you take is neither high nor low. Your persona, like your usenet id, is a mere abstraction which explains your fondness with Art's fantasy antennas

5290. Re: Balun 1:1 with FT 240-61 toroid

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 03:11:11 UTC
From: Larry Benko <xxw0qe@comcast.net>
Message-ID: <c9ednVFTk55ZbdDVnZ2dnUVZ_qPinZ2d@comcast.com>
Source record: 25012

Dan and Bryan,

200 ohms seems too low. I just wound 10 turns on a FT-240-61 core,
single layer occupying about 70% of the core and made the following
measurements of choking impedance on an HP8753 network analyzer in a
calibrated test fixture. The choke was mounted clear of any metal.

14MHz: 220 + j2850
21MHz: >20K
28MHz: 895 - j3.9K

The 10 turns were parallel resonant at 20.9MHz and the calculations for
10 turns would be ~18uH at low frequencies.

The above choke would be very very good from 20 thru 10m.

73,
Larry, W0QE

Bryan wrote:
> Daniel wrote:
>> Hi to everyone,
>> i need to replace my 1:1 balun on my yagi tribander 14-21-28 Mhz. I
>> have in my stuff a toroid FT 240-61 and some pieces of rg-142 coaxial
>> cable. Anyone can help me to know how many winding needs on toroid to
>> achieve good reactance on 14 to 28 Mhz ?
>> Thank you ,
>> Daniel.
>
> I used a dozen turns of RG58 on the same core, and achieved XL ~= 200 ohms
> at 14MHz for a Cushcraft A3. RG142 is about the same OD, so you should be
> able to fit that many turns on the toroid. If you want more XL, stack two
> (or more) toroids.
>
> Bryan WA7PRC
>
>

5291. Re: TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 03:55:41 UTC
From: ltdoc@yahoo.com
Message-ID: <cc04e608-6b51-4501-bd5d-9f1a09f692a5@m3g2000hsc.googlegroups.com>
Source record: 25013

Chris,
Seven to ten years ain't bad for the life span of a TV antenna really. Some might last longer but most are ready for replacement/ repair in that time period.
You might give a thought to the cabling when replacing that antenna. Might not have to replace the rotor, but certainly wouldn't hurt to replace it's control cables. If it isn't used, why not just remove it? Then again, you might want to see if you can't receive more stations by swinging that antenna before doing that.
Best advice for finding a 'cost affective' bargain would be to shop around, see what things are going for. Nothing wrong with being frugal, but don't expect miracles no matter what the price.
If quality reception is the goal, I also think you might consider keeping that cable or sat' system, rather than going back to an antenna. Getting rid of the tower, rotor, etc, shouldn't be a problem at all, too many of them hams around for that! Something on the order of, "You get it down and out'a here and you can have it!", will make your ears pop from the air slamming shut when it disappears.
- 'Doc

5292. Re: Balun 1:1 with FT 240-61 toroid

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 04:05:40 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AB98F5D9F618nonenowhere@61.9.191.5>
Source record: 25014

leon_it@hotmail.com wrote in news:92aeb7fd-91ff-4720-b516-dcb66c0aa796@79g2000hsk.googlegroups.com:

> Hi to everyone,
> i need to replace my 1:1 balun on my yagi tribander 14-21-28 Mhz. I
> have in my stuff a toroid FT 240-61 and some pieces of rg-142 coaxial
> cable. Anyone can help me to know how many winding needs on toroid to
> achieve good reactance on 14 to 28 Mhz ?
> Thank you ,
> Daniel.
>

Be wary of putting too many turns on, especially for a lower loss mix such as 61.

As you put more turns on, the series R and X of the ideal choke increase, but the distributed capacitance also increases. Self resonance isn't so bad for lossy mixes, because the impedance is still fairly high where the total ZX passes through zero, but with a lower loss mix, you may find choking impedance at frequencies a bit above resonance become unacceptably low.

It is really hard to assess this with spot frequency measurements.

To start of with, I would wind as many turns as you can fit with a inter-turn spacing equal to the coax diameter... in other words, half the turns that you could get by a completely filled single layer, then make sure the turns are evenly spaced.

There is a cross over winding configuration used which its supporters argue increases the self resonance frequency. I haven't seen that happen reliably in my experiments, rather the reverse happens more often (ie that it reduces the self resonant frequency a little).

Owen

5293. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 06:14:30 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <4OivsJBGvhTIFw0t@b-howie.demon.co.uk>
Source record: 25015

In message <q7kq441bc3ilrgebn6qa3u8gsll5ut1ig8@4ax.com>, Helmut Wabnig
<hwabnig@?.-.invalid> writes
>On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
><chrisTOPHERcOX@coboxincORORATED.com> wrote:
>
>>Read this:
>> http://en.wikipedia.org/wiki/Neutrino
>
>
>
>
>>Re-write this:
>> http://unwinantennas.com/
>
>That unwin page is full utter nonsense.
>Absolute crackpottery.

Deep joy, megacyclymolds folloloping out of the endybits.

B
--
Brian Howie

5294. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 08:12:12 UTC
From: nm5k@wt.net
Message-ID: <47d9e8c1-69e1-42f5-809a-60ee1f804df9@79g2000hsk.googlegroups.com>
Source record: 25016
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

Sayeth Art,

>2. All dynamic particles have a degree of torque or spin which aids directional movement within the universe.

The universe is a big rifle.. I wonder what the rate of twist
is.... :/

>Static particles has a less spin which allows a scattering of movement after ejection from the sun’s arbitrary >field to various parts of the universe and beyond, included what is known as the milky way constellation.

How can a static particle move, much less have spin? I'm confused..
I guess it's because I don't have the vast education that Art had in
some
past life. I say past life, because judging from most I read, he must
have
forgotten everything he learned.. Either that or he just wants to be
different
and proclaims all prior art as something to be ignored.
I do agree to his statement as to the existence of the Milky Way.
But... even a redneck dummy like me knows it's a galaxy, not a
constellation. I guess his astronomy learnin was in a past life

also...
I like to look at it, but I can only see it well when I'm out in the sticks.
You generally can't see the Milky Way in the city limits of Houston. Too much light pollution.

But lets ponder a "static" particle that decided to propel itself across the great lawn of outer space all the way to the Milky Way. I wonder what will happen when these "static" particles that decided to move, clash with the like particles being ejected by all the zillions
of stars in the Milky Way galaxy. Will they collide with a mighty flash of light? Will they taunt each other to fight? Would they combine
to form "Unwin particles" which begin to twist in a opposite direction?
Maybe we could name these "Articles" in Art's honor. Well, in Art's case, I'm sure he would prefer honour. I think that would be the UK version.
Makes my head swim considering all the possibilities of this "New Science"...

5295. Re: RF continues to look "like the answer." Yes, OT!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 08:55:33 UTC
From: baadman25 <baadman25.2943f34@radiobanter.com>
Message-ID: <baadman25.2943f34@radiobanter.com>
Source record: 25035

Very good!!! Support !'wow gold' (http://banbooler.com) 'wow gold' (http://gogoneverstop.com) 'wow gold' (http://dqgate.com) 'wow gold' (http://brogame.com)'wow gold' (http://dianaslink.com)

--
baadman25

5296. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:03:24 UTC
From: nm5k@wt.net
Message-ID: <680b2124-53be-4166-b825-50c7590d142c@26g2000hsk.googlegroups.com>
Source record: 25017
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art...
The millions of particles after ejection travel in a straight line
with zero gravitation effects on its movements all of which are
following each other in a particular sequence that is reflective of
the oscillations applied to the radiator, bouncing off of the
arbitrary outer surfaces of the earth until they impact and rest on a
diamagnetic surface' which by virtue of its mechanical properties
accepts the arrival of the airborne particles in the same progression
that they left the radiator such that a mirror image of oscillations
from the sending antenna is imparted to the receiving antenna to
complete the communication process.

How will these millions of particles travel in a straight line?
In another paragraph you said they had a twist?
I'm confused. Enlighten me, Obe-wan Kenobe.
You're our only hope.
I wonder about the resting of these particles on surfaces
of virtuous mechanical properties.
What happened to them? All tuckered out?
Decided to stop for gas and some choke and puke
food?
Or maybe they were enticed by some hottie female

particle that danced seductively along this surface
of virtuous mechanical properties?
The rest kind of reminds me of looking at a picture
of a picture in a picture in a picture, etc ad nausium.
Fascinating this new science is.

5297. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:07:47 UTC
From: nm5k@wt.net
Message-ID: <e3ccfc86-85a2-458c-a75f-c7525eab538b@c58g2000hsc.googlegroups.com>
Source record: 25018
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art..
Of course with modern day computer programs of the optimizer form if
we move away from standard physics and not predetermine a planar form,
the computer program which is based on Maxwell's laws will include the
anti gravitational field(4) which as predicted by applying an
extension to Gaussian law will show radiators where the majority are
resonant such that the array in it's entirety is in equilibrium and
certainly not parallel to the earth's surface!

What other physics would you suggest? Substandard physics?

5298. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:10:13 UTC
From: nm5k@wt.net
Message-ID: <93b9f410-a5f1-4fc3-8a92-27e54fbdcf5a@p25g2000hsf.googlegroups.com>
Source record: 25019
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art..

We can now state that:

A RADIATOR CAN BE ANY SIZE, SHAPE OR VARYING ELEVATIONS AS LONG AS IT
IS IN A STATE OF EQUILIBRIUM.

What will be the efficiency of a 1 inch long Unwin antenna that
is used at 1.890 mhz? This may or may not be a trick question.

5299. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:13:46 UTC
From: nm5k@wt.net
Message-ID: <9038e9c9-0461-467b-8f20-f286d9cb85b8@d77g2000hsb.googlegroups.com>
Source record: 25020
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art...

7. Ground planes are a means of placing a fractional wavelength
antenna into equilibrium form where the operating period includes
other actions within the system but outside the confines of the
radiator itself.

I'm impressed. That just craps all over everything I ever learned
about
ground planes.
Art, you *are* truly gifted.
I nominate you as the cover boy of QST for the April 09 edition.

5300. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:14:38 UTC
From: nm5k@wt.net
Message-ID: <0450754e-9270-4f47-ac26-fd6fbe894a48@k13g2000hse.googlegroups.com>
Source record: 25021
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art.

3. The connection between Gauss’s law and Maxwell’s law is not readily
apparent since one law is formulated with the metrics of SI whereas
the other is formulated in CGS units.

I admit it. My cat has mittens.

5301. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:21:41 UTC
From: nm5k@wt.net
Message-ID: <7cc6dfd4-74eb-4679-942a-c1d239e4aa0c@34g2000hsf.googlegroups.com>
Source record: 25022
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art..

Patent applied for
All rights reserved
Rev 0
June 2008

You patent a web page of jibber jabber?
Ok, I admit you have the right to post
a web page of jibber jabber.
I also acknowledge your right to
decide this jibber jabber is incorrect, and
to revise it to suit the wind direction at
the moment of revision.
Yes, it is June 2008. The grass is green
this time of year.
Well unless you happen to live down under..

5302. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:23:51 UTC
From: nm5k@wt.net
Message-ID: <2a2ddf4e-6673-4747-96f1-13c18ef4021e@e39g2000hsf.googlegroups.com>
Source record: 25023
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art..

Note. A fractional wavelength antenna is NOT in equilibrium so the
above do not apply. Thus the question surfaces regarding a electrical
field now being present in the center of a fractional wave length
antenna!

That paragraph got you excited huh? I note the !... Hummmm thinketh
I..

5303. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:25:41 UTC
From: nm5k@wt.net
Message-ID: <a5bfa204-a279-451c-b958-48d84ecbbd79@26g2000hsk.googlegroups.com>
Source record: 25024
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art...

(one of many methods of dampening including the addition of a
resister)

Shame on the mess!

5304. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:26:59 UTC
From: nm5k@wt.net
Message-ID: <206cd3ff-a923-45b5-abd8-dc95cbc8e992@y38g2000hsy.googlegroups.com>
Source record: 25025
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art..

Remember that on our radiators the surface is completely covered by
particles that started out as neutrinos

Would those be fig neutrinos?
All this new science talk is making me hungry...

5305. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:37:06 UTC
From: nm5k@wt.net
Message-ID: <92c10712-518c-4747-bd51-f866d4314cd9@w7g2000hsa.googlegroups.com>
Source record: 25026
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art...

However, all is not lost since the tank circuit and the pendulum
mechanism produce identical oscillations for a particular period.

Whew! that's a relief.. Would this be kind of like a perpetual
cuckoo clock? Or would this resemble the identical amounts
of motion that the little dancing people do when it's O-clock?
"Note" Many cheap cuckoo clocks only have a small bird that
jumps out of the little door near the top.
But some higher level cuckoo clocks have little dancing people
that dance around in a perfect circle. Being as they are mechanically
affixed to some kind of plate, I assume you could say these
dancers are in a state of equilibrium..
This new science is making me hungry... I need a fig neutrino...

5306. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:49:55 UTC
From: nm5k@wt.net
Message-ID: <dcbcb505-4aca-48e4-a5c6-b5e112bd0958@c58g2000hsc.googlegroups.com>
Source record: 25027
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art...

With reference to the now smaller radiators, the new definition for a
radiator can now be achieved by two Meander type circuits on different
levels and connected such that the combination is in equilibrium.

You could patent that one as a Meanderlibrium antenna.
I tried a fig neutrino.. Had no taste at all.. I've seen shoe boxes
wrapped with 22 gauge wire with more flavor to them..

5307. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:54:46 UTC
From: nm5k@wt.net
Message-ID: <00abec41-2c93-4b2b-a6d3-c4599c522cad@m73g2000hsh.googlegroups.com>
Source record: 25028
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art..

Derived oscillations for a 12 inch diameter close contra -wound
helical antenna in equilibrium with a length of 12 inches Wire used is
approximately 2 thousand feet of
19 a.w.g magnet wire and without the implementation of a variometer or
a progression of jumpers to bring continuity to the SWR in the less
than 3:1 level of impedance.
Note. No tuner losses are encountered and the antenna in equilibrium
is placed on top of a tower without the need for a ground plane where
it follows the rules of a traveling wave antenna.

I had thought it followed the rules of the average dummy load...
But yea, who is worried about any puny amount of tuner loss
when you got 2000 feet of 19 gauge wire loading in the program.. :/
Isn't new science wonderful!

5308. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 09:57:32 UTC
From: nm5k@wt.net
Message-ID: <64553717-cde2-47e7-901a-103d7ec99aad@d45g2000hsc.googlegroups.com>
Source record: 25029
Body handling: HTML body converted to readable text

On Jun 10, 1:14 am, Brian Howie wrote:
> In message , Helmut Wabnig
> writes
>
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> > wrote:
>
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
>
> >>Re-write this:
> >> http://unwinantennas.com/
>
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

So sayeth Art...

1. As the particles decay over time they are pushed into the surface
of materials by the impact of succeeding arrival of particles up to a
certain depth called ‘skin depth’.

Kind of like stomping grapes to make wine!
This new science can be intoxicating!

5309. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 10:09:08 UTC
From: NM5K <nm5k@wt.net>
Message-ID: <484E52C4.6A0E@wt.net>
Source record: 25030

Brian Howie wrote:
>
> In message <q7kq441bc3ilrgebn6qa3u8gsll5ut1ig8@4ax.com>, Helmut Wabnig
> <hwabnig@?.-.invalid> writes
> >On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
> ><chrisTOPHERcOX@coboxincORORATED.com> wrote:
> >
> >>Read this:
> >> http://en.wikipedia.org/wiki/Neutrino
> >
> >
> >
> >>Re-write this:
> >> http://unwinantennas.com/
> >
> >That unwin page is full utter nonsense.
> >Absolute crackpottery.
>
> Deep joy, megacyclymolds folloloping out of the endybits.
>
> B
> --
> Brian Howie

Dang, all that pondering of new science depleted my
daily allotment of googlings.
But I have other doors to this place... :/
Whew, besides all this new science pondering has me tuckered out..
I'm going to go outside and see if I can see the Milky Way.
You all can take two aspirin and call me in the morning
with any updates on this new technology I've been learnin
myself.

5310. Re: TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 12:06:17 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <XaydnYZNLbwM8NPVnZ2dnUVZ8qjinZ2d@pipex.net>
Source record: 25031

Hal Rosser wrote:
> You would probably need to replace the twinlead as well as the antenna.
> The next time you see a Radio shack, you might sneak inside and ask about TV
> antennas.
> Or they probably have a web site. with prices
> Yeah - they do - click on this link...
> http://www.radioshack.com/family/index.jsp?categoryId=2032205&cp=2032057.2032187.2032189
> HTH
> Hal
> w4pmj
>
> "Solomon_Man" <cmgray74@gmail.com> wrote in message
> news:925c0d83-b760-4fcf-a2e9-90a5fb94fc04@l42g2000hsc.googlegroups.com...
>> All,
>> Some History...
>> My home, previously owned by my parents, has approximately a 30' Tower
>
>> I liked the range of the previous antenna, so what would everyone
>> suggest for an antenna with a range of around 100-125 miles that could
>> be mounted to a 30 foot tower and will be used for radio and TV
>> reception I have made a few phone calls and everyone locally pushes
>> the Channel Master but I am little nervous about having to have to do
>> this every 7-10 years based on the last antenna. Has anyone had better
>> experience with Channel Master?
>>
>> As its been used like three times, would you replace the rotor motor?
>>
>> What should I expect to pay to have a new antenna and rotor motor
>> installed in my home?
>>
>> Anyone know a good antenna dealer in the Toledo, Ohio area?
>>
>> Thanks,
>> Chris
==========
Firstly ,it is my understanding that in the USA all terrestrial TV
stations will go digital in 2009 , so it would be useful to know which
are the frequencies/bands this service will be offered in your (Toledo)
area ,before you buy any new antenna.

Secondly ,most ,if not all TV sets nowadays have an antenna input socket
for 75 Ohms coax. Since coax is less 'environment sensitive' than twin
lead feeder , it does make sense to run coax to the antenna.
If the antenna's active element is a folded dipole ,its connection box

will include a (usually pig nose type) 4:1 balun.

Frank GM0CSZ / KN6WH

5311. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 12:58:33 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <g2ltq2$j1s$1@aioe.org>
Source record: 25032

"Walter Maxwell" wrote
>The source resistance appearing at the output of either a Class B or C
>amplifier is R = E/I, where E is the peak voltage at the output terminals
>and I is the peak current at the output. Or RMS values can also be
>used.Since E/I is simply a ratio, R is also a ratio. And we know that a
>ratio cannot dissipate power, or turn electrical energy into heat, thus the
>output resistance R is non-dissipative. I have made many measurements that
>prove this. It is also the reason why reflected power does not dissipate in
>the tubes, because it never reaches the tubes. The reflected power simply
>causes a mismatch to the source, causing the source to deliver less power
>than it would if there were no mismatch.

If the source resistance of a tuned r-f PA stage was truly non-dissipative, and the tx simply supplied less power into poor matches, how would that explain the catastrophic failures to the output circuit components often seen when high power transmitters operate without suitable SWR protection into highly mismatched loads?

Another reality is that r-f power from two co-sited, tuned transmitters on two frequencies in the same band can be present in each others output stage due to antenna coupling, which causes r-f intermodulation between them. The non-linear (mixing) process occurs at the active PA stage. If reflected (reverse) r-f energy never reaches the PA stage as you assert, then how could this IM generation occur?

RF

5312. Re: TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 13:23:06 UTC
From: Tam <t-tammaru@comcast.net>
Message-ID: <ddudnWxWA4K7HdPVnZ2dnUVZ_umdnZ2d@comcast.com>
Source record: 25033

"Solomon_Man" <cmgray74@gmail.com> wrote in message
news:925c0d83-b760-4fcf-a2e9-90a5fb94fc04@l42g2000hsc.googlegroups.com...
> All,
> Some History...
> My home, previously owned by my parents, has approximately a 30' Tower
> and has a channel master antenna (whats left) attached to it. It was
> used for TV/Radio reception originally. If I remember correctly it was
> around a $100-$125 bucks for the antenna alone and had a range
> (supposedly) of around 100-125 miles. I live in the suburbs of Toledo,
> Ohio. The current antenna had a bumpy start when the original
> installer (a professional) dropped the antenna from about 25 feet up.
> A few things were dented and broken. It was cleaned up and then the
> antenna was still installed. The decision was based on the fact that
> we are in the surburbs and the antenna was an overkill. From memory
> the unit had a cracked chunk of plastic and a bunch of dented\bent
> rods. We had no problems with the unit reception wise so it really did
> not affect its use. The antenna tower was second hand, but the rotor
> motor, antenna, all wiring and the control box was new. The rotor
> motor and its control box since installation has been used maybe 3
> times. Once installed we had really good reception and picked up
> Detroit,Toledo,Some Cleveland (Good Day) and some single channel in
> Indiana. I do not remember any Columbus channels as some channels were
> really fuzzy. (not sure if it was columbus or not)
>
> Any Ways...Fast Forward ...a few years.....
>
> Then about 6 yrs ago, a year before I took posession of the house and
> when my parents were cable TV subscribers, the antenna broke
> basically in two and a large chunk of the antenna came crashing to the
> ground. The remaining antenna chunk and tower is still standing to
> this day. Its a eye sore to say the least.
>
> My goal is to replace the antenna and I need some advice.
>
> Would you keep the tower? The only thing I can see wrong with it is
> that it has a large bunch of vines growing up the middle. There is
> little to no rust. The vines have been recently chopped down but the
> higher section of vine is still intangled in the tower. I have tried
> to climb the tower and got about 15 feet up and it swayed a little so
> I came down. I am a little to heavy, or chicken, to be climbing
> towers. The vines should not affect climbing the tower.
>
> Or would I be better off/the same to get a roof mount antenna?
>

> I liked the range of the previous antenna, so what would everyone
> suggest for an antenna with a range of around 100-125 miles that could
> be mounted to a 30 foot tower and will be used for radio and TV
> reception I have made a few phone calls and everyone locally pushes
> the Channel Master but I am little nervous about having to have to do
> this every 7-10 years based on the last antenna. Has anyone had better
> experience with Channel Master?
>
> As its been used like three times, would you replace the rotor motor?
>
> What should I expect to pay to have a new antenna and rotor motor
> installed in my home?
>
> Anyone know a good antenna dealer in the Toledo, Ohio area?
>
> Thanks,
> Chris
>

I used to live about 10 mi east of Toledo off Ohio Rt2, and my experience was similar to what you are seeing. I was about 4 mi from the Toledo antenna farm; so, anything more than a bent paper clip was overkill for the Toledo channels. Got Detroit, Flint, Cleveland. Never Columbus or Dayon.

After the digital switchover all the Detroit stations will be on UHF. Flint will have 2 UHF plus CH12. Toledo stations will be on 5, 11, 13, 29,, 46, and 49. Cleveland will be all UHF, except for CH8. If you live on the east side, you will be able to get by with a UHF only antenna. Else, I would wait until the CH7 - CH51 antennas get more common. No sense getting a CH3 - 69 antenna because they are 3X as big as a 7 -51 antenna with the same performance. Also, people here claim the big ChannelMaster 8x bow tie UHF antenna works well on the higher VHF channels.

Keep the tower and rotator, but make sure the tower is not rusted out at the base before you let anyone climb it. If you don't want to save the rotator, just point at Detroit and hope.

Tam/WB2TT

5313. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 13:32:16 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484e8224$0$4256$4c368faf@roadrunner.com>
Source record: 25034

John Smith wrote:
> Christopher Cox wrote:
>
>>> ...
>
>
> As always, you are free to carry on ...
>
> Regards,
> JS

What I am saying is Thunderbird made it look like you were responding to
my post with a "Works for me!", which you were not.

Moving Thunderbird's settings from:
View->Threads->Unread
to
View->Threads->All
I was able to see you were actually responding to Art's post.

That being said, my response was not out of hand, but I did wonder why
the tone of your post was as such.
Now I understand.

5314. Re: TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 14:57:19 UTC
From: Solomon_Man <cmgray74@gmail.com>
Message-ID: <bb3e1f6d-8768-4796-a211-8d60525411a6@x35g2000hsb.googlegroups.com>
Source record: 25036

On Jun 10, 9:23 am, "Tam" <t-tamm...@comcast.net> wrote:
> "Solomon_Man" <cmgra...@gmail.com> wrote in message
>
> news:925c0d83-b760-4fcf-a2e9-90a5fb94fc04@l42g2000hsc.googlegroups.com...
>
>
>
> > All,
> > Some History...
> > My home, previously owned by my parents, has approximately a 30' Tower
> > and has a channel master antenna (whats left) attached to it. It was
> > used for TV/Radio reception originally. If I remember correctly it was
> > around a $100-$125 bucks for the antenna alone and had a range
> > (supposedly) of around 100-125 miles. I live in the suburbs of Toledo,
> > Ohio. The current antenna had a bumpy start when the original
> > installer (a professional) dropped the antenna from about 25 feet up.
> > A few things were dented and broken. It was cleaned up and then the
> > antenna was still installed. The decision was based on the fact that
> > we are in the surburbs and the antenna was an overkill. From memory
> > the unit had a cracked chunk of plastic and a bunch of dented\bent
> > rods. We had no problems with the unit reception wise so it really did
> > not affect its use. The antenna tower was second hand, but the rotor
> > motor, antenna, all wiring and the control box was new. The rotor
> > motor and its control box since installation has been used maybe 3
> > times. Once installed we had really good reception and picked up
> > Detroit,Toledo,Some Cleveland (Good Day) and some single channel in
> > Indiana. I do not remember any Columbus channels as some channels were
> > really fuzzy. (not sure if it was columbus or not)
>
> > Any Ways...Fast Forward ...a few years.....
>
> > Then about 6 yrs ago, a year before I took posession of the house and
> > when my parents were cable TV subscribers, the antenna broke
> > basically in two and a large chunk of the antenna came crashing to the
> > ground. The remaining antenna chunk and tower is still standing to
> > this day. Its a eye sore to say the least.
>
> > My goal is to replace the antenna and I need some advice.
>
> > Would you keep the tower? The only thing I can see wrong with it is
> > that it has a large bunch of vines growing up the middle. There is
> > little to no rust. The vines have been recently chopped down but the
> > higher section of vine is still intangled in the tower. I have tried
> > to climb the tower and got about 15 feet up and it swayed a little so

> > I came down. I am a little to heavy, or chicken, to be climbing
> > towers. The vines should not affect climbing the tower.
>
> > Or would I be better off/the same to get a roof mount antenna?
>
> > I liked the range of the previous antenna, so what would everyone
> > suggest for an antenna with a range of around 100-125 miles that could
> > be mounted to a 30 foot tower and will be used for radio and TV
> > reception I have made a few phone calls and everyone locally pushes
> > the Channel Master but I am little nervous about having to have to do
> > this every 7-10 years based on the last antenna. Has anyone had better
> > experience with Channel Master?
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>
> > What should I expect to pay to have a new antenna and rotor motor
> > installed in my home?
>
> > Anyone know a good antenna dealer in the Toledo, Ohio area?
>
> > Thanks,
> > Chris
>
> I used to live about 10 mi east of Toledo off Ohio Rt2, and my experience
> was similar to what you are seeing. I was about 4 mi from the Toledo antenna
> farm; so, anything more than a bent paper clip was overkill for the Toledo
> channels. Got Detroit, Flint, Cleveland. Never Columbus or Dayon.
>
> After the digital switchover all the Detroit stations will be on UHF. Flint
> will have 2 UHF plus CH12. Toledo stations will be on 5, 11, 13, 29,, 46,
> and 49. Cleveland will be all UHF, except for CH8. If you live on the east
> side, you will be able to get by with a UHF only antenna. Else, I would wait
> until the CH7 - CH51 antennas get more common. No sense getting a CH3 - 69
> antenna because they are 3X as big as a 7 -51 antenna with the same
> performance. Also, people here claim the big ChannelMaster 8x bow tie UHF
> antenna works well on the higher VHF channels.
>
> Keep the tower and rotator, but make sure the tower is not rusted out at the
> base before you let anyone climb it. If you don't want to save the rotator,
> just point at Detroit and hope.
>
> Tam/WB2TT- Hide quoted text -
>
> - Show quoted text -

Everyone thanks for the help!

I am looking at the following combination;

Please Chime in with opinions ....

Digicon Coax Cable 50Ft
Winegard HD 8200U High Definition Platinum VHF/UHF/FM Antenna
Channel Master Complete 9521A Complete Antenna Rotator Kit with Infra Red and 100Ft of Rotator Wire
Invisible MultiRoom Frequency Remote Extender (Converts the InfraRed to RF)
I currently have a amplifier- but was looking at a Eagle Aspen 15db (DISTAMP-15GX). I am not really sure if its really needed or not but on my furthest run out to the second Garage it makes a difference there. Probably will skip the amplifier until its needed as mine works fine.

I will get over the height issue of the tower by renting a portable 50ft Lift for around 100 bucks a 24 hr period. I then can clean the tower of the vines, do some trim work on a few trees, and easy place the antenna. The height does not bother me, its the flexibilty of the tower with me on it that makes me nervous. Plus the $100 bucks is far cheaper then falling off the tower. Total bill should be around $450. I was quoted prices in the $800 plus range using my tower when I called around Toledo. Totally new with new tower was $1500-2000. The run of cabling to the house's main antenna connection and power needs (rotator etc) is a breeze as its 12 feet from roof edge to main house panel.

Thanks again,
Chris

5315. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 18:04:56 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2mfob$9hd$1@news.albasani.net>
Source record: 25037

AI4QJ wrote:

> ...
> John, "As always" you are posting pure BS in your constant search to look
> for a petty argument in which your persona can then pose as one who prefers
> to take the high road. If you really prefer to take the high road, then do
> so; don't try to preach to everyone else that this is what YOU do, therefore
> the rest of us should do the same. Sorry "John" but the road you take is
> neither high nor low. Your persona, like your usenet id, is a mere
> abstraction which explains your fondness with Art's fantasy antennas
>
>

As always, idiots are easy to find; and, especially those who wish to
tell everyone else what they are, who they are and what they need to do.

I suggest you focus on yourself; that is the only person you have power
over ...

Regards,
JS

5316. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 18:31:16 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2mh9o$d3v$1@news.albasani.net>
Source record: 25038

Christopher Cox wrote:

> ...
> What I am saying is Thunderbird made it look like you were responding to
> my post with a "Works for me!", which you were not.
>
> Moving Thunderbird's settings from:
> View->Threads->Unread
> to
> View->Threads->All
> I was able to see you were actually responding to Art's post.
>
> That being said, my response was not out of hand, but I did wonder why
> the tone of your post was as such.
> Now I understand.

Wow, a little dense here. Got you now.

Thunderbird is my favorite newsreader. Thank you for making me aware of what was happening. Now I wonder if this has happened before and taken advantage of my ignorance? Well, at least I have a chance of watching out for this now! Sorry for any misunderstanding on my part.

I just copy-the-mail mostly here; I believe you mentioned you tend to do the same also. New ideas, methods, designs, new construction methods, new ways of looking at old ideas, etc. are what I mainly search for in my personal interests; And, those who share some of their knowledge and use of smith charts, maths, etc. are always of interest to me. Too often threads are just a rehash of some tried-and-true antenna design and construction methods. While this is always of interest to newbies, and should be if not, I tend to skip over them (or, been there, done that, built it, etc.)

However, I was collecting a lot of material on conventional antennas, matching circuits, SWR bridges, etc. and properly indexing it so someone asking a common question or seeking a common design could be referred there without reinventing some ancient conversation describing their constructions, workings, operation, etc.; But, some evil person broke in while I was on holiday and stole a lot of computer equipment here. Among the computer equipment stolen was the USB external hard drive containing the website I was constructing. I have just started the project all over ... A few individuals here have already done this, to some degree and have some material on baluns/ununs, antennas, etc. on a website and available for view.

Warm regards,
JS

5317. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 18:37:41 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <5Sz3k.12$NV4.3@newsfe02.lga>
Source record: 25039

"Richard Fry" <rfry@adams.net> wrote in message news:g2ltq2$j1s$1@aioe.org...
> "Walter Maxwell" wrote
> >The source resistance appearing at the output of either a Class B or C
> >amplifier is R = E/I, where E is the peak voltage at the output terminals
> >and I is the peak current at the output. Or RMS values can also be
> >used.Since E/I is simply a ratio, R is also a ratio. And we know that a
> >ratio cannot dissipate power, or turn electrical energy into heat, thus the
> >output resistance R is non-dissipative. I have made many measurements that
> >prove this. It is also the reason why reflected power does not dissipate in
> >the tubes, because it never reaches the tubes. The reflected power simply
> >causes a mismatch to the source, causing the source to deliver less power
> >than it would if there were no mismatch.
> _________
>
> If the source resistance of a tuned r-f PA stage was truly non-dissipative,
> and the tx simply supplied less power into poor matches, how would that
> explain the catastrophic failures to the output circuit components often
> seen when high power transmitters operate without suitable SWR protection
> into highly mismatched loads?

You must be talking about solid-state tx when you mention SWR protection. I don't know of any tube tx that have such protection. Any catastrophic failures in tube tx with pi-network output circuits due to poor impedance match at the output without retuning to match the the network to the load simply leaves the tx detuned away from resonance. The result is excessive plate current that would be reduced to normal by resonating the tank circuit. No operator in his right mind would allow the tx to be operated with the tank not tuned for the resonant dip in plate current.

> Another reality is that r-f power from two co-sited, tuned transmitters on
> two frequencies in the same band can be present in each others output stage
> due to antenna coupling, which causes r-f intermodulation between them. The
> non-linear (mixing) process occurs at the active PA stage. If reflected
> (reverse) r-f energy never reaches the PA stage as you assert, then how
> could this IM generation occur?
>
> RF
>
:You said two tx operating on two different frequencies, which means the RF signals from the two tx are not phase coherent. In this condition the signal from each tx does enter the other. On the other hand, the wave reflected from a mismatched termination is phase coherent with the source wave, resulting in the addition of the reflected wave to the source wave when either the antenna tuner or the pi-network is adjusted to deliver all available power at the desired grid drive.

W2DU

5318. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 18:42:30 UTC
From: Dave Heil <k8mn@frontiernet.net>
Message-ID: <uWz3k.105$_n.6@fe95>
Source record: 25040
Body handling: HTML body converted to readable text

nm5k@wt.net wrote:
> On Jun 10, 1:14 am, Brian Howie wrote:
>> In message , Helmut Wabnig
>> writes
>>
>>> On Mon, 09 Jun 2008 11:26:34 -0400, Christopher Cox
>>> wrote:
>>>> Read this:
>>>> http://en.wikipedia.org/wiki/Neutrino
>>>> Re-write this:
>>>> http://unwinantennas.com/
>>> That unwin page is full utter nonsense.
>>> Absolute crackpottery.
>> Deep joy, megacyclymolds folloloping out of the endybits.
>>
>> B
>> --
>> Brian Howie
>
> Sayeth Art,
>
>> 2. All dynamic particles have a degree of torque or spin which aids directional movement
within the universe.
>
> The universe is a big rifle.. I wonder what the rate of twist
> is.... :/
>
>> Static particles has a less spin which allows a scattering of movement after ejection
from the suni¿½s arbitrary >field to various parts of the universe and beyond, included
what is known as the milky way constellation.
>
> How can a static particle move, much less have spin? I'm confused..
> I guess it's because I don't have the vast education that Art had in
> some
> past life. I say past life, because judging from most I read, he must
> have
> forgotten everything he learned.. Either that or he just wants to be
> different
> and proclaims all prior art as something to be ignored.
> I do agree to his statement as to the existence of the Milky Way.
> But... even a redneck dummy like me knows it's a galaxy, not a
> constellation. I guess his astronomy learnin was in a past life
> also...

> I like to look at it, but I can only see it well when I'm out in the
> sticks.
> You generally can't see the Milky Way in the city limits of Houston.
> Too much light pollution.
>
> But lets ponder a "static" particle that decided to propel itself
> across the great lawn of outer space all the way to the Milky Way.
> I wonder what will happen when these "static" particles that decided
> to move, clash with the like particles being ejected by all the
> zillions
> of stars in the Milky Way galaxy. Will they collide with a mighty
> flash of light? Will they taunt each other to fight? Would they
> combine
> to form "Unwin particles" which begin to twist in a opposite
> direction?
> Maybe we could name these "Articles" in Art's honor. Well, in Art's
> case, I'm sure he would prefer honour. I think that would be the UK
> version.
> Makes my head swim considering all the possibilities of this
> "New Science"...

Don't knock it. I've taken down my HF tribander, 40m beam, 160m inverted L and put up antennas based upon my interpretations of the vast storehouse of technical data posted by Art in the past. Not only are the new antennas much, much smaller, I've been able to contact others in several negative galaxies. ;-)

Wouldn't you love to be a fly on the wall in the Patent Office?

Dave K8MN

5319. How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 20:08:20 UTC
From: Dave99 <dpdphoto@aol.com>
Message-ID: <a424bfb9-7e59-4a4e-b3a1-124fe80dd884@z66g2000hsc.googlegroups.com>
Source record: 25041

Can anyone explain to me how to calculate the wind area for an antenna? I assume you combine the square footage/inches on what would be the largest side, then factor in any round parts... Which if I understand correctly, you do by taking the sum of those round parts and multiply by 2/3? So then you add that with the square parts and that's your wind load area? I'm sure I'm probably missing something.

Thanks,

Dave

5320. BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 20:36:25 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2mokerjr1@news.albasani.net>
Source record: 25042

It is my belief VERY few would ever oppose an attack on child porn and the perverts it serves; however, that is not what this is about. I believe this is an attack on free speech and the peoples' right to engage in the free exchange of ideas--a CREATOR given right ...

http://news.cnet.com/8301-13578_3-9964895-38.html

"We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness. ï¿½ That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed, ï¿½ That whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to institute new Government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness. ..."

Deny perverts access and exercise of their perversions. Don't deny citizens their rights which are beyond any governments authority.

Regards,
JS

5321. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 21:26:56 UTC
From: richardharrison@webtv.net
Message-ID: <19686-484EF1A0-147@storefull-3251.bay.webtv.net>
Source record: 25043

Dave, K8MN wrote:
"Wouldn`t you like to be a fly on the wall in the Patent Office?"

My perception of Art`s latest is a dipole composed of elements consisting of 1/4-wavelengths in effect but constructed of helices of 1/2-wavelengths of wire.

My 20th edition of "The ARRL Antenna Book" on page 16-13 says:
"The general approach has been to use a coil made from heavy wire (#14 or larger) with length-to-diameter ratios as high as 21. British experimenters have reported good results with 8-foot overall lengths on the 1.8 and 3.5 MHz bands."

Also, on page 78 of "All About Vertical Antennas" by William Orr, W6SAI and Stu Cowan:
"In general, a half-wavelength of no. 14 formvar-coated wire is spirally wrapped around the form, with turn spacing approximately equal to the wire diameter. This amount of wire will approximate a quarter-wave resonance."

The Unwin Antenna seems to be in Richard Clark`s phrase: "Prior Art".

Best regards, Richard Harrison, KB5WZI

5322. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 22:07:53 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <-qadnXo-VIGxZtPVnZ2dnUVZ_j2dnZ2d@comcast.com>
Source record: 25044

OK - SO WHAT DOES THIS HAVE TO DO WITH ANTENNAS - OR ARE YOU JUST TROLLING ALONG??

"John Smith" <assemblywizard@gmail.com> wrote in message news:g2mokerjr1@news.albasani.net...
> It is my belief VERY few would ever oppose an attack on child porn and the
> perverts it serves; however, that is not what this is about. I believe
> this is an attack on free speech and the peoples' right to engage in the
> free exchange of ideas--a CREATOR given right ...
>
> http://news.cnet.com/8301-13578_3-9964895-38.html
>
> "We hold these truths to be self-evident, that all men are created equal,
> that they are endowed by their Creator with certain unalienable Rights,
> that among these are Life, Liberty and the pursuit of Happiness. • That to
> secure these rights, Governments are instituted among Men, deriving their
> just powers from the consent of the governed, • That whenever any Form of
> Government becomes destructive of these ends, it is the Right of the
> People to alter or to abolish it, and to institute new Government, laying
> its foundation on such principles and organizing its powers in such form,
> as to them shall seem most likely to effect their Safety and Happiness.
> ..."
>
> Deny perverts access and exercise of their perversions. Don't deny
> citizens their rights which are beyond any governments authority.
>
> Regards,
> JS

5323. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 22:09:25 UTC
From: Dave <noone@nowhere.com>
Message-ID: <pYC3k.357$7A1.7@trndny04>
Source record: 25045

"Richard Fry" <rfry@adams.net> wrote in message
news:g2ltq2$j1s$1@aioe.org...
> "Walter Maxwell" wrote
>>The source resistance appearing at the output of either a Class B or C
>>amplifier is R = E/I, where E is the peak voltage at the output terminals
>>and I is the peak current at the output. Or RMS values can also be
>>used.Since E/I is simply a ratio, R is also a ratio. And we know that a
>>ratio cannot dissipate power, or turn electrical energy into heat, thus
>>the output resistance R is non-dissipative. I have made many measurements
>>that prove this. It is also the reason why reflected power does not
>>dissipate in the tubes, because it never reaches the tubes. The reflected
>>power simply causes a mismatch to the source, causing the source to
>>deliver less power than it would if there were no mismatch.
> ----------
>
> If the source resistance of a tuned r-f PA stage was truly
> non-dissipative, and the tx simply supplied less power into poor matches,
> how would that explain the catastrophic failures to the output circuit
> components often seen when high power transmitters operate without
> suitable SWR protection into highly mismatched loads?

if the load impedance seen at the transmitter terminals is outside the range
that it was designed for you end up with either arcing from excessive
voltage or meltdown from high currents. remember, the pa output as long as
it is connected to a linear load and you consider only the sinusoidal steady
state condition can be completely replaced by a lumped load impedance, hence
no reflections necessary to figure it out... same load, same result, hence
the reflections have no effect on the internals of the pa.

>
> Another reality is that r-f power from two co-sited, tuned transmitters on
> two frequencies in the same band can be present in each others output
> stage due to antenna coupling, which causes r-f intermodulation between
> them. The non-linear (mixing) process occurs at the active PA stage. If
> reflected (reverse) r-f energy never reaches the PA stage as you assert,
> then how could this IM generation occur?

non-coherent input would of course pass through the matching network going
into a pa, there is nothing that precludes that. that current would cause
mixing in the non-linear tube or transistor and therefore im generation.
but that incoming rf is not reflected, it is the incident wave, with nothing
coherent to interfer with why would it not pass into the pa?

Now, have fun with this one... two transmitters on exactly the same
frequency feeding a common load through equal lengths of coax... what

happens if you change the phase relationship between them? make it simpler, remove the coax and connect both pa outputs togther with a single load, now no reflections to worry about... does it matter? do the two pa's feed all their power into each other? where do the reflections go??

5324. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 22:27:28 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2mv4m$84l$1@news.albasani.net>
Source record: 25046

W3CQH wrote:
> OK - SO WHAT DOES THIS HAVE TO DO WITH ANTENNAS - OR ARE YOU JUST TROLLING
> ALONG??
> ...

U R kidding, right? Or, are you just attempting to play the part of a
LARGE idiot?

If USENET is dropped by major ISP's, as already has began (actually
forced the the Attorney General), there will be no antenna newsgroup
left. I don't know how that could be more fitting to be discussed here!

Please tell me you were just blind, and not that big an idiot--from past
discussions here I am beginning to believe this NG is full of such ...
it causes one to doubt the sanity of many here.

Regards,
JS

5325. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 22:58:31 UTC
From: richardharrison@webtv.net
Message-ID: <10691-484F0717-212@storefull-3258.bay.webtv.net>
Source record: 25047

Richard Fry wrote:
"If the source resistance of a tuned r-f PA stage was truly non-dissipative, and the tx simply supplied less power into poor matches, how would that explain the catastropic failures to the output circuit components often seen when high power transmitters operate without suitable SWR protection into highly mismatched loads?"

The PA is a switch. Almost no voltage across it when it is closed and no current through it when it is open. Some of its impedance is dissipative and some is non-dissipative.

A conjugate match to its total impedance is the way to deliver maximum power from the transmitter to its load. Alexander H. Wing wrote on page 43 of "Thansmission Lines, Antennas, and Wave Guides":
"If a dissipationless network is insrted between a constant voltage generator of internal impedance Zg1 and a load ZR such that maximum power is delivered to the load, at every pair of terminals the impedances looking in opposite directions are conjugates of each other."

An operating transmitter is normally adjusted for conjugate match with its load.

Normal plate dissipation occurs when electrons strike the anode and there is little damage to the tube when the current and cooling are within limits.

Let an arc strike across the transmission line and it may effectively become a short circuit which may impose an enormous mismatch in an instant to the transmitter. That`s why a d-c supply is often connected in series with a relay coil across the transmission line. The arc completes the d-c circuit energizing the relay which breaks the interlock circuit. The transmitter instantly is shut down until it is manually restarted.

Tubes are often destroyed by internal arcs if overloads don`t act in time.

Best regards, Richard Harrison, KB5WZI

5326. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 23:05:21 UTC
From: ltdoc@yahoo.com
Message-ID: <7ec704fd-b32c-444f-a51c-38b56b8d7e0f@r66g2000hsg.googlegroups.com>
Source record: 25048

To the best of my knowledge the Attorney General hasn't taken a
stand about/against the average newsgroup, only those such as the
child porn groups. If that isn't so, please enlighten me. Adult porn
groups, dealing with those above the age of consent, haven't been
banned as yet, probably won't be. I can see a difference there, can
you?
I can't see that your 'free speach' has much to do with antennas
either...
- 'Doc (large idiot)

5327. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 23:06:57 UTC
From: ltdoc@yahoo.com
Message-ID: <ae84afa1-c0f6-4fa2-a8e3-99b223e2dfa7@r66g2000hsg.googlegroups.com>
Source record: 25049

...Oops! Sorry, make that LARGE idiot.
- 'Doc

5328. Re: How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 23:11:33 UTC
From: ltdoc@yahoo.com
Message-ID: <28c01762-385e-49f9-897b-fb6f9a5270fd@l42g2000hsc.googlegroups.com>
Source record: 25050

Dave,
That's probably as accurate as needed. Probably the average person just figures the 'square' area and leaves it at that. At least that would give you some 'wiggle room' when figuring what support is needed. If you're talking about graded classroom stuff, you're on your own! Been too long for me...
- 'Doc

5329. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-10 23:15:06 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2n1tvcnc1@news.albasani.net>
Source record: 24901

ltdoc@yahoo.com wrote:
> ...Oops! Sorry, make that LARGE idiot.
> - 'Doc
>

If you have to ask such a question, no explaination would suffice.

Me thinks "Special Ed." is afoot! :-|

Regards,
JS

5330. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 00:05:33 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g2n4sd$pc3$1@news.jpl.nasa.gov>
Source record: 24904

Richard Fry wrote:
> "Walter Maxwell" wrote
>> The source resistance appearing at the output of either a Class B or C
>> amplifier is R = E/I, where E is the peak voltage at the output
>> terminals and I is the peak current at the output. Or RMS values can
>> also be used.Since E/I is simply a ratio, R is also a ratio. And we
>> know that a ratio cannot dissipate power, or turn electrical energy
>> into heat, thus the output resistance R is non-dissipative. I have
>> made many measurements that prove this. It is also the reason why
>> reflected power does not dissipate in the tubes, because it never
>> reaches the tubes. The reflected power simply causes a mismatch to the
>> source, causing the source to deliver less power than it would if
>> there were no mismatch.
> __________
>
> If the source resistance of a tuned r-f PA stage was truly
> non-dissipative, and the tx simply supplied less power into poor
> matches, how would that explain the catastrophic failures to the output
> circuit components often seen when high power transmitters operate
> without suitable SWR protection into highly mismatched loads?

the output network might be non-dissipative, but that doesn't mean that the voltages and/or currents won't exceed the limitations of the components.

Consider a gedanken.. you have an active device acting as a shunt DC regulator that puts out 1 amp at 1000 volts into a matching network, the other side of which is a 50 ohm load. The power supply is a 5000 volt power supply with a 2000 ohm dropping resistor, and 1 amp is also flowing through the active device. The 2 amps total flowing through the dropping resistor results in the 1000 volt output into the network. The implication is that the matching network, with the 50 ohm output, is presenting a 1000 ohm load.

Now, say you change the load impedance on the network so that the impedance on the input side is zero ohms. Now, the voltage across the active device is zero volts, the voltage across that dropping resistor is 5000 volts, instead of 4000 volts, and it will get a bit hotter, and possibly fail.

Or, say you change the load impedance so that the input of the network presents an infinite impedance. The same 1 amp is flowing through the active device (say it's a controlled current source), but, since there's no load current, the voltage drop across the resistor is now 2000 volts instead of 4000 volts, and the voltage across the active device is now 3000 volts instead of 1000. If the device can only take 2000 volts,

it's cooked.

5331. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 00:29:32 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2n69k$k4v$1@news.albasani.net>
Source record: 24902

Res wrote:

> ...
> make the poster responsible for their actions, not protect them.
>
>

Actually, I am for less govt. involvement, NOT more.

However, child porn perverts and their groups is/are one large exception and the govt. banning them would be greatly appreciated by the vast majority.

I think it is obvious some people do not read the material before they begin to enter into the discussion (such as the URL of the article I gave when this thread began.) And, actually, this is good. It gives us warning that we need not be bothered giving them and they their text any consideration(s) at all, i.e. those arguing solely for the purpose of argument--and then only responding with arguments contrary to "common logic." (akin to common sense)

Perhaps they want USENET and r.r.a.a. gone! Who knows what logic drives them--indeed, one can easily draw the conclusion that no logic whatsoever is involved in their text.

The rest of us should write our public servants and demand they take action against this rogue Attorney General, his actions are truly un-American. The ISP's should also be written and/or any subscriptions to their services be dropped.

However, with the number of politicians caught engaging in perversions and/or inappropriate sexual behavior, perhaps only the child porn groups will be left on USENET--and those only populated by our public servants--on their private ISP supported by public monies!

Ya never know, ya just never know ... :-(

Regards,
JS

5332. Re: ladder line??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 00:50:23 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABA6E41CCA9Anonenowhere@61.9.191.5>
Source record: 24903

"W3CQH" <hsgorden@comcast.net> wrote in
news:VdudnSngWfwLstDVnZ2dnUVZ_oHinZ2d@comcast.com:

> If 1 does not have access to a handbook, is there any way to determine
> the value of a piece of ladder line as to whether or not it is either
> 300 or 450 ohm?

The most accurate way is to measure Zo as directly as you can.

Most of these lines have an actual Zo somewhat different to their nominal
Zo.

For most constructions where the conductors are mainly surrounded by air,
you can get a close idea by treating them as an air spaced line.

The calculator at http://www.vk1od.net/tl/twllc.htm allows you to supply
the conductor diameter and spacing, and it will calculate Zo (and a lot
more). If you fiddle with the value of relative permittivity to change the
velocity factor (if you know it), you will get a better approximation.

Owen

5333. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 01:07:24 UTC
From: ltdoc@yahoo.com
Message-ID: <983d6e50-9bf2-4e11-9b1d-f831eb984f35@d45g2000hsc.googlegroups.com>
Source record: 24905

Hmm. I have several 'odd' ideas. One of them is that if I want to
talk politics, civil rights, etc, I do so on/in a user group that
deals with that sort of thing. I don't do so on/in user groups that
don't generally deal with those topic, such as this one. Why? Cuz
'off topic' stuff generally is only irritating, has nothing to do with
the topics generally found here, and only show the poster's general
disregard for that/this group and the people on/in it. It's generally
called SPAM. But then what do I know? I'm just a LARGE idiot...
right?
- 'Doc

5334. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 01:07:32 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABA7129F840nonenowhere@61.9.191.5>
Source record: 24906

richardharrison@webtv.net (Richard Harrison) wrote in news:10691-484F0717-212@storefull-3258.bay.webtv.net:

...
> The PA is a switch. Almost no voltage across it when it is closed and no
> current through it when it is open. ...

The OP's question related to Class B and Class C.

Have you hopped on another tram?

Your statement is definitely not true for Class B RF PAs. In fact it is difficult achieving theoretical Class B efficiency with tetrodes running on relatively low HT (eg 750V as in many transceivers).

If what you state was true, you would expect conversion efficiencies in excess of 95%... and that just doesn't happen with practical electron devices.

Practical Class C electron devices cannot achieve those efficiencies at maximum continuous output power. The anode voltage waveform in practical continuous Class C amplifiers with resonant loads is hardly the rectangular pulse waveform that you suggest. In fact, if you observed it with a CRO you would be hard put to argue that it wasn't an almost pure sine wave.

Owen

5335. Re: ladder line??

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 01:15:32 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <ho2dnQesxK66utLVnZ2dnUVZ_uWdnZ2d@comcast.com>
Source record: 24907

Thanks for the info Owen -

"Owen Duffy" <none@no.where> wrote in message
news:Xns9ABA6E41CCA9Anonenowhere@61.9.191.5...
> "W3CQH" <hsgorden@comcast.net> wrote in
> news:VdudnSngWfwLstDVnZ2dnUVZ_oHinZ2d@comcast.com:
>
>> If 1 does not have access to a handbook, is there any way to determine
>> the value of a piece of ladder line as to whether or not it is either
>> 300 or 450 ohm?
>
> The most accurate way is to measure Zo as directly as you can.
>
> Most of these lines have an actual Zo somewhat different to their nominal
> Zo.
>
> For most constructions where the conductors are mainly surrounded by air,
> you can get a close idea by treating them as an air spaced line.
>
> The calculator at http://www.vk1od.net/tl/twllc.htm allows you to supply
> the conductor diameter and spacing, and it will calculate Zo (and a lot
> more). If you fiddle with the value of relative permittivity to change the
> velocity factor (if you know it), you will get a better approximation.
>
> Owen

5336. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 01:16:52 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2n927$2tn$1@news.albasani.net>
Source record: 24908

ltdoc@yahoo.com wrote:
> Hmm. I have several 'odd' ideas. One of them is that if I want to
> talk politics, civil rights, etc, I do so on/in a user group that
> deals with that sort of thing. I don't do so on/in user groups that
> don't generally deal with those topic, such as this one. Why? Cuz
> 'off topic' stuff generally is only irritating, has nothing to do with
> the topics generally found here, and only show the poster's general
> disregard for that/this group and the people on/in it. It's generally
> called SPAM. But then what do I know? I'm just a LARGE idiot...
> right?
> - 'Doc

Well, if you want to talk amateur antennas on usenet, you will need this
group, IDIOT!

JS

5337. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 01:21:02 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <484f2881$0$30160$4c368faf@roadrunner.com>
Source record: 24909

"John Smith" <assemblywizard@gmail.com> wrote in message
news:g2mfob$9hd$1@news.albasani.net...
> AI4QJ wrote:
>
>> ...
>> John, "As always" you are posting pure BS in your constant search to look
>> for a petty argument in which your persona can then pose as one who
>> prefers to take the high road. If you really prefer to take the high
>> road, then do so; don't try to preach to everyone else that this is what
>> YOU do, therefore the rest of us should do the same. Sorry "John" but the
>> road you take is neither high nor low. Your persona, like your usenet id,
>> is a mere abstraction which explains your fondness with Art's fantasy
>> antennas
>
> As always, idiots are easy to find; and, especially those who wish to tell
> everyone else what they are, who they are and what they need to do.

There is no need to become emotional, "John". Perhaps your mind has been
slightly compromised by one too many injestions of lysergic acid
diethylamide in your earlier years. Take a deep breath and tell yourself
"People in rraa really like me. I am a good person. I am smart. People know
that. And people really do laugh at the absurd nonsense that I write
sometimes, even if I'm not quite sure 'why' I write it myself."

> I suggest you focus on yourself; that is the only person you have power
> over ...

Now what makes you believe it is a 'good thing' to focus on one's self?
Surely you can see what happened to Art after he tried that and ended up
with the MI5 postings. He then refocused into the academic realm and ended
up designing neutrino antennas. His recovery has apparently not been quite
as successful as your's. Sorry "John" but I think people should pass on your
advice, even if it is free.

5338. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 01:28:18 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2n9nm$42b$1@news.albasani.net>
Source record: 24910

AI4QJ wrote:
> "John Smith" <assemblywizard@gmail.com> wrote in message
> news:g2mfob$9hd$1@news.albasani.net...

>
> There is no need to become emotional, "John". Perhaps your mind has been
> slightly compromised by one too many injestions of lysergic acid
> diethylamide in your earlier years. Take a deep breath and tell yourself
> "People in rraa really like me. I am a good person. I am smart. People know
> that. And people really do laugh at the absurd nonsense that I write
> sometimes, even if I'm not quite sure 'why' I write it myself."
>
> Now what makes you believe it is a 'good thing' to focus on one's self?
> Surely you can see what happened to Art after he tried that and ended up
> with the MI5 postings. He then refocused into the academic realm and ended
> up designing neutrino antennas. His recovery has apparently not been quite
> as successful as your's. Sorry "John" but I think people should pass on your
> advice, even if it is free.
>
>

Brother, I cite the above to the reason I now "bit bucket" you ... nuff
said ...

JS

5339. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 01:35:03 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <5im3i5-lo4.ln1@mail.specsol.com>
Source record: 24911

John Smith <assemblywizard@gmail.com> wrote:
> ltdoc@yahoo.com wrote:
> > Hmm. I have several 'odd' ideas. One of them is that if I want to
> > talk politics, civil rights, etc, I do so on/in a user group that
> > deals with that sort of thing. I don't do so on/in user groups that
> > don't generally deal with those topic, such as this one. Why? Cuz
> > 'off topic' stuff generally is only irritating, has nothing to do with
> > the topics generally found here, and only show the poster's general
> > disregard for that/this group and the people on/in it. It's generally
> > called SPAM. But then what do I know? I'm just a LARGE idiot...
> > right?
> > - 'Doc

> Well, if you want to talk amateur antennas on usenet, you will need this
> group, IDIOT!

rec.radio.amateur.equipment
rec.radio.amateur.moderated
rec.radio.amateur.homebrew
sci.physics.electromag

Though the point is moot since your original premise that USENET is being
in any way shut down is utter nonsense.

--
Jim Pennino

Remove .spam.sux to reply.

5340. Re: Unwin antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 01:38:30 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <484f2c9a$0$30211$4c368faf@roadrunner.com>
Source record: 24912

"John Smith" <assemblywizard@gmail.com> wrote in message
news:g2n9nm$42b$1@news.albasani.net...
> AI4QJ wrote:
>> "John Smith" <assemblywizard@gmail.com> wrote in message
>> news:g2mfob$9hd$1@news.albasani.net...
>
>>
>> There is no need to become emotional, "John". Perhaps your mind has been
>> slightly compromised by one too many injestions of lysergic acid
>> diethylamide in your earlier years. Take a deep breath and tell yourself
>> "People in rraa really like me. I am a good person. I am smart. People
>> know that. And people really do laugh at the absurd nonsense that I write
>> sometimes, even if I'm not quite sure 'why' I write it myself."
>>
>> Now what makes you believe it is a 'good thing' to focus on one's self?
>> Surely you can see what happened to Art after he tried that and ended up
>> with the MI5 postings. He then refocused into the academic realm and
>> ended up designing neutrino antennas. His recovery has apparently not
>> been quite as successful as your's. Sorry "John" but I think people
>> should pass on your advice, even if it is free.
>
> Brother, I cite the above to the reason I now "bit bucket" you ... nuff
> said ...

OK, say hi to all your buds at the shelter, "brother"...

5341. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 02:01:03 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2nbl4$69l$1@news.albasani.net>
Source record: 24913

jimp@specsol.spam.sux.com wrote:

> ...
> rec.radio.amateur.equipment
> rec.radio.amateur.moderated
> rec.radio.amateur.homebrew
> sci.physics.electromag
>
> Though the point is moot since your original premise that USENET is being
> in any way shut down is utter nonsense.
>
>

1) Those are not antenna groups.

2) If USENET is made inaccessible, those groups will be gone also.

3) You did NOT read that article, else you are unable or unwilling to realize USENET is very much in danger. There is/was no reason to force those ISP's into dropping USENET support, dropping the perv groups would be enough. Once USENET is gone it will be too late to become aware of what is happening ... now this has been explained enough, if you can't get it by now--you won't ever ...

Trust me, if you don't have the resources to realize the importance of the actions being discussed (and, you can read the comments on the URL I originally gave to see others concerns) just relax, others can move to protect your rights for you ...

Regards,
JS

5342. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 02:35:03 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <14q3i5-7ef.ln1@mail.specsol.com>
Source record: 24914

John Smith <assemblywizard@gmail.com> wrote:
> jimp@specsol.spam.sux.com wrote:

> > ...
> > rec.radio.amateur.equipment
> > rec.radio.amateur.moderated
> > rec.radio.amateur.homebrew
> > sci.physics.electromag
> >
> > Though the point is moot since your original premise that USENET is being
> > in any way shut down is utter nonsense.
> >
> >

> 1) Those are not antenna groups.

Antennas are not electromagnetic devices?

Antennas are not amateur radio equipment?

Antennas are not homebrewed by hams?

Antennas are not a suitable subject for discussion among hams?

> 2) If USENET is made inaccessible, those groups will be gone also.

All American ISP's could drop their USENET feeds and it would not
make USNET inaccessible.

A bunch of clueless dillhole web users would lose access, but that would
be for the better of all.

You obviously haven't a clue what USENET is or how it works.

> 3) You did NOT read that article, else you are unable or unwilling to
> realize USENET is very much in danger. There is/was no reason to force
> those ISP's into dropping USENET support, dropping the perv groups would
> be enough. Once USENET is gone it will be too late to become aware of
> what is happening ... now this has been explained enough, if you can't
> get it by now--you won't ever ...

I did read the article.

You did not read the last three paragraphs.

The ISP's involved were not forced into anything.

They agreed to it voluntarily.

> Trust me, if you don't have the resources to realize the importance of
> the actions being discussed (and, you can read the comments on the URL I
> originally gave to see others concerns) just relax, others can move to
> protect your rights for you ...

Yeah, right.

I've been on USENET since it was distributed by 1200 baud modems over
UUCP and back in the day I was a UUCP leaf node.

Tell me all about it.

--
Jim Pennino

Remove .spam.sux to reply.

5343. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 02:46:42 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2neal$ad0$1@news.albasani.net>
Source record: 24915

jimp@specsol.spam.sux.com wrote:
> John Smith <assemblywizard@gmail.com> wrote:
>> jimp@specsol.spam.sux.com wrote:
>
>>> ...
>>> rec.radio.amateur.equipment
>>> rec.radio.amateur.moderated
>>> rec.radio.amateur.homebrew
>>> sci.physics.electromag
>>>
>>> Though the point is moot since your original premise that USENET is being
>>> in any way shut down is utter nonsense.
>>>
>>>
>
>> 1) Those are not antenna groups.
>
> Antennas are not electromagnetic devices?
>
> Antennas are not amateur radio equipment?
>
> Antennas are not homebrewed by hams?
>
> Antennas are not a suitable subject for discussion among hams?
>
>> 2) If USENET is made inaccessible, those groups will be gone also.
>
> All American ISP's could drop their USENET feeds and it would not
> make USNET inaccessible.
>
> A bunch of clueless dillhole web users would lose access, but that would
> be for the better of all.
>
> You obviously haven't a clue what USENET is or how it works.
>
>> 3) You did NOT read that article, else you are unable or unwilling to
>> realize USENET is very much in danger. There is/was no reason to force
>> those ISP's into dropping USENET support, dropping the perv groups would
>> be enough. Once USENET is gone it will be too late to become aware of
>> what is happening ... now this has been explained enough, if you can't
>> get it by now--you won't ever ...
>
> I did read the article.
>

> You did not read the last three paragraphs.
>
> The ISP's involved were not forced into anything.
>
> They agreed to it voluntarily.
>
>> Trust me, if you don't have the resources to realize the importance of
>> the actions being discussed (and, you can read the comments on the URL I
>> originally gave to see others concerns) just relax, others can move to
>> protect your rights for you ...
>
> Yeah, right.
>
> I've been on USENET since it was distributed by 1200 baud modems over
> UUCP and back in the day I was a UUCP leaf node.
>
> Tell me all about it.
>
>

I cite your reply as a sufficient argument to convince me you are a hopeless idiot and a complete waste of a persons time--if I ever had a doubt.

Good job fool ... :-(

plonk ...

JS

5344. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 04:05:02 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <2dv3i5-vi2.ln1@mail.specsol.com>
Source record: 24916

John Smith <assemblywizard@gmail.com> wrote:

> I cite your reply as a sufficient argument to convince me you are a
> hopeless idiot and a complete waste of a persons time--if I ever had a
> doubt.

> Good job fool ... :-(

> plonk ...

You've already "plonked" me several times genius.

Obviously you are one of the clueless dillweeds without a clue what
USENET is or how it works.

--
Jim Pennino

Remove .spam.sux to reply.

5345. Re: TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 04:23:22 UTC
From: Hal Rosser <hmrosser@bellsouth.net>
Message-ID: <VpI3k.2927$s77.335@bignews3.bellsouth.net>
Source record: 24917

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:XaydnYZNLbwM8NPVnZ2dnUVZ8qjinZ2d@pipex.net...
> ==========
> Firstly ,it is my understanding that in the USA all terrestrial TV
> stations will go digital in 2009 , so it would be useful to know which are
> the frequencies/bands this service will be offered in your (Toledo) area
> ,before you buy any new antenna.
>
> Secondly ,most ,if not all TV sets nowadays have an antenna input socket
> for 75 Ohms coax. Since coax is less 'environment sensitive' than twin
> lead feeder , it does make sense to run coax to the antenna.
> If the antenna's active element is a folded dipole ,its connection box
> will include a (usually pig nose type) 4:1 balun.
>
> Frank GM0CSZ / KN6WH

Give twinlead a twist every couple of feet and you save the cost of that
coax.
At the freqs used, most coax could be rather lossy, depending on the length
of the run, but twinlead has a very happy combination of being low-loss -
and - low-cost compared to most coax. (And lighter weight too.)
The 4-1 balun (coax to twinlead adapter) is cheap enough.
I've used twinlead and tv baluns for a 200-ft run to my antenna on 10 meters
(5 watts) with good results both tx and rec.
Ya just gotta match impedences and you're good to go.

5346. Re: TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 06:15:40 UTC
From: dplatt@radagast.org
Message-ID: <c574i5-smp.ln1@radagast.org>
Source record: 24918

In article <VpI3k.2927$s77.335@bignews3.bellsouth.net>,
Hal Rosser <hmrosser@bellsouth.net> wrote:

>Give twinlead a twist every couple of feet and you save the cost of that
>coax.
>At the freqs used, most coax could be rather lossy, depending on the length
>of the run, but twinlead has a very happy combination of being low-loss -
>and - low-cost compared to most coax.

When it's new, when it's clean, and when it's dry.

As I understand it, one of the bigger downfalls of ordinary 300-ohm
twinlead for TV reception is that its performance can deteriorate
rather badly with age. Sunlight causes the PVC to deteriorate, and
surface contamination and moisture (e.g. rain) can significantly
increase the losses.

Coax is much less vulnerable to these problems.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

5347. Re: TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 07:19:01 UTC
From: gsm@mendelson.com
Message-ID: <slrng4uv0h.chp.gsm@cable.mendelson.com>
Source record: 24919

Dave Platt wrote:
> As I understand it, one of the bigger downfalls of ordinary 300-ohm
> twinlead for TV reception is that its performance can deteriorate
> rather badly with age. Sunlight causes the PVC to deteriorate, and
> surface contamination and moisture (e.g. rain) can significantly
> increase the losses.

It's also subject to problems if it is too close to things, remember those special standoff insulators for it? It can not be looped, wrapped around things, etc.

Geoff.

--
Geoffrey S. Mendelson, Jerusalem, Israel gsm@mendelson.com N3OWJ/4X1GM

5348. re: Big

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 11:55:31 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <wNadnW1TV7a3INLVnZ2dnUVZ_oLinZ2d@comcast.com>
Source record: 24920

picked this up on a different NG!

"Time Warner's Road Runner is discontinuing their coverage of newsgroups.
http://help.rr.com/HMSFaqs/e_newsgroups_termination.aspx They give
everyone until the 23rd of June to buy a 3rd party service if they wish
to continue accessing the newsgroups.
I guess we can thank the child pornography laws for this and can
probably start looking forward to other ISPs doing the same thing in the
future."

5349. Re: Big

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 13:40:51 UTC
From: chrisc@coxtr.com
Message-ID: <239924ac-a6fb-4f18-9ba9-00736c7e5f2a@i76g2000hsf.googlegroups.com>
Source record: 24921

Yep, that stinks. I am trying google right now to see how well it
works.

Chris

On Jun 11, 7:55 am, "W3CQH" <hsgor...@comcast.net> wrote:
> picked this up on a different NG!
>
> "Time Warner's Road Runner is discontinuing their coverage of newsgroups.
> http://help.rr.com/HMSFaqs/e_newsgroups_termination.aspx They give
> everyone until the 23rd of June to buy a 3rd party service if they wish
> to continue accessing the newsgroups.
> I guess we can thank the child pornography laws for this and can
> probably start looking forward to other ISPs doing the same thing in the
> future."

5350. Re: Big

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 13:49:35 UTC
From: Christopher Cox <chrisTOPHERcOX@coboxincORORATED.com>
Message-ID: <484fd7ca$0$7727$4c368faf@roadrunner.com>
Source record: 24922

Uhgggg....

The IDIOTS at GOOGLE posted my email address with no crypting what so ever!

So easy to harvest.
Here comes the SPAM.

chrisc@coxtr.com wrote:
> Yep, that stinks. I am trying google right now to see how well it
> works.
>
> Chris
>
>
> On Jun 11, 7:55 am, "W3CQH" <hsgor...@comcast.net> wrote:
>
>>picked this up on a different NG!
>>
>>"Time Warner's Road Runner is discontinuing their coverage of newsgroups.
>> http://help.rr.com/HMSFaqs/e_newsgroups_termination.aspx They give
>>everyone until the 23rd of June to buy a 3rd party service if they wish
>>to continue accessing the newsgroups.
>>I guess we can thank the child pornography laws for this and can
>>probably start looking forward to other ISPs doing the same thing in the
>>future."
>
>

5351. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 13:55:30 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9ABA5ACA5A85AVeebleFetzer@127.0.0.1>
Source record: 24923

ltdoc@yahoo.com () wrote in
news:7ec704fd-b32c-444f-a51c-38b56b8d7e0f@r66g2000hsg.googlegroups.com:

> To the best of my knowledge the Attorney General hasn't taken a
> stand about/against the average newsgroup, only those such as the
> child porn groups.

But several national ISPs (cable-based privders, generally) are taking
the easy way out by dropping their internal USENET service entirely.

The independent commercial and free servers will still be around (for
a while, anyway).

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

5352. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 14:18:02 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <H8R3k.63$sK5.36@newsfe02.lga>
Source record: 24924

"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:g2n4sd$pc3$1@news.jpl.nasa.gov...
> Richard Fry wrote:
> > "Walter Maxwell" wrote
> >> The source resistance appearing at the output of either a Class B or C
> >> amplifier is R = E/I, where E is the peak voltage at the output
> >> terminals and I is the peak current at the output. Or RMS values can
> >> also be used.Since E/I is simply a ratio, R is also a ratio. And we
> >> know that a ratio cannot dissipate power, or turn electrical energy
> >> into heat, thus the output resistance R is non-dissipative. I have
> >> made many measurements that prove this. It is also the reason why
> >> reflected power does not dissipate in the tubes, because it never
> >> reaches the tubes. The reflected power simply causes a mismatch to the
> >> source, causing the source to deliver less power than it would if
> >> there were no mismatch.
> > _____
> >
> > If the source resistance of a tuned r-f PA stage was truly
> > non-dissipative, and the tx simply supplied less power into poor
> > matches, how would that explain the catastrophic failures to the output
> > circuit components often seen when high power transmitters operate
> > without suitable SWR protection into highly mismatched loads?
>
> the output network might be non-dissipative, but that doesn't mean that
> the voltages and/or currents won't exceed the limitations of the components.

I fail to understand how the limitations of the components have anything to do
with the output resistanceof the network. Can you please explain how this is
relevant?

> Consider a gedanken.. you have an active device acting as a shunt DC
> regulator that puts out 1 amp at 1000 volts into a matching network, the
> other side of which is a 50 ohm load. The power supply is a 5000 volt
> power supply with a 2000 ohm dropping resistor, and 1 amp is also
> flowing through the active device. The 2 amps total flowing through the
> dropping resistor results in the 1000 volt output into the network. The
> implication is that the matching network, with the 50 ohm output, is
> presenting a 1000 ohm load.
>
> Now, say you change the load impedance on the network so that the
> impedance on the input side is zero ohms. Now, the voltage across the
> active device is zero volts, the voltage across that dropping resistor
> is 5000 volts, instead of 4000 volts, and it will get a bit hotter, and
> possibly fail.
>

> Or, say you change the load impedance so that the input of the network
> presents an infinite impedance. The same 1 amp is flowing through the
> active device (say it's a controlled current source), but, since there's
> no load current, the voltage drop across the resistor is now 2000 volts
> instead of 4000 volts, and the voltage across the active device is now
> 3000 volts instead of 1000. If the device can only take 2000 volts,
> it's cooked.

Sorry Jim, I'm not familiar with a 'gedanken'. Is it distant cousin of a Class B or C amplifier? Your discussion above doesn't appear to have any relation whatsoever to those types of RF amplifiers. Are you using your discussion in an attempt to prove that the output resistance of those types of amps is not non-dissipative? Or what are you trying to prove? I don't get it.

Walt, W2DU

5353. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 14:46:06 UTC
From: commander john <crazytvjohn@yahoo.com>
Message-ID: <4268bd6a-cec8-48e7-825a-cc154711089a@8g2000hse.googlegroups.com>
Source record: 24925

On Jun 10, 5:27 pm, John Smith <assemblywiz...@gmail.com> wrote:
> W3CQH wrote:
> > OK - SO WHAT DOES THIS HAVE TO DO WITH ANTENNAS - OR ARE YOU JUST TROLLING
> > ALONG??
> > ...
>
> U R kidding, right? Or, are you just attempting to play the part of a
> LARGE idiot?
>
> If USENET is dropped by major ISP's, as already has began (actually
> forced the the Attorney General), there will be no antenna newsgroup
> left. I don't know how that could be more fitting to be discussed here!
>
> Please tell me you were just blind, and not that big an idiot--from past
> discussions here I am beginning to believe this NG is full of such ...
> it causes one to doubt the sanity of many here.
>
> Regards,
> JS

5354. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 14:47:38 UTC
From: richardharrison@webtv.net
Message-ID: <26007-484FE58A-22@storefull-3252.bay.webtv.net>
Source record: 24927

Owen Duffy wrote:
"Have you hopped on another tram?"

Maybe. I agree. Radio power amplifiers have clean sinusoidal outputs, otherwise they would generate unacceptable harmonics. All except Class A amplifiers which have continuous plate current flows and a maximum efficiency of 50%, have plate currents which flow in pulses.

In Class B, the plate current in individual tubes flows in pulses of approximately a half cycle. Actual efficiency is about 60%.

In Class C, the plate current pulses last less than a half cycle. Practical efficiencies are in the range of 60 to 80 per cent.

Best regards, Richard Harrison, KB5WZI

5355. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 14:48:21 UTC
From: commander john <crazytvjohn@yahoo.com>
Message-ID: <1120da73-9315-491d-bb4d-b4fc0cf510d9@k30g2000hse.googlegroups.com>
Source record: 24926

On Jun 10, 5:07 pm, "W3CQH" <hsgor...@comcast.net> wrote:
> OK - SO WHAT DOES THIS HAVE TO DO WITH ANTENNAS - OR ARE YOU JUST TROLLING
> ALONG??
>
> "John Smith" <assemblywiz...@gmail.com> wrote in message
>
> news:g2mokerjr1@news.albasani.net...
>
>
>
> > It is my belief VERY few would ever oppose an attack on child porn and the
> > perverts it serves; however, that is not what this is about. I believe
> > this is an attack on free speech and the peoples' right to engage in the
> > free exchange of ideas--a CREATOR given right ...
>
> >http://news.cnet.com/8301-13578_3-9964895-38.html
>
> > "We hold these truths to be self-evident, that all men are created equal,
> > that they are endowed by their Creator with certain unalienable Rights,
> > that among these are Life, Liberty and the pursuit of Happiness. — That to
> > secure these rights, Governments are instituted among Men, deriving their
> > just powers from the consent of the governed, — That whenever any Form of
> > Government becomes destructive of these ends, it is the Right of the
> > People to alter or to abolish it, and to institute new Government, laying
> > its foundation on such principles and organizing its powers in such form,
> > as to them shall seem most likely to effect their Safety and Happiness.
> > ..."
>
> > Deny perverts access and exercise of their perversions. Don't deny
> > citizens their rights which are beyond any governments authority.
>
> > Regards,
> > JS- Hide quoted text -
>
> - Show quoted text -

I think this entire group should be shut down.
It serves no useful purpose . The showing of the crap above only show
the truthfullness of what I say.
SHUT USENET DOWN

5356. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 15:06:02 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9ABA66C108CD3VeebleFetzer@127.0.0.1>
Source record: 24928

crazytvjohn@yahoo.com (commander john) wrote in
news:1120da73-9315-491d-bb4d-b4fc0cf510d9@k30g2000hse.googlegroups.com:

> SHUT USENET DOWN

If you simply stop reading googlegroups, that personal problem will be
solved. Then you can get to work on the rest of your problems.

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

5357. Re: TV Antenna.....Please Help....

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 15:09:43 UTC
From: Solomon_Man <cmgray74@gmail.com>
Message-ID: <9857f0bc-eae2-4feb-832d-1cd8bfcb8945@59g2000hsb.googlegroups.com>
Source record: 24929

On Jun 11, 3:19 am, g...@mendelson.com (Geoffrey S. Mendelson) wrote:
> Dave Platt wrote:
> > As I understand it, one of the bigger downfalls of ordinary 300-ohm
> > twinlead for TV reception is that its performance can deteriorate
> > rather badly with age. Sunlight causes the PVC to deteriorate, and
> > surface contamination and moisture (e.g. rain) can significantly
> > increase the losses.
>
> It's also subject to problems if it is too close to things, remember those
> special standoff insulators for it? It can not be looped, wrapped around things,
> etc.
>
> Geoff.
>
> --
> Geoffrey S. Mendelson, Jerusalem, Israel g...@mendelson.com N3OWJ/4X1GM

All,
I think the antenna has a coax connection built into it (One of
advertisements I saw). Also the previous wire was coax as is the rest
of the house. So I think Coax is a given for me due to simplicity and
never having any problems with it in the past. I will keep it in mind
though if something would change on the antenna or plans.

Thanks again,
Chris

5358. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 15:31:53 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2or5d$28b$1@news.albasani.net>
Source record: 24930

Bert Hyman wrote:
> crazytvjohn@yahoo.com (commander john) wrote in
> news:1120da73-9315-491d-bb4d-b4fc0cf510d9@k30g2000hse.googlegroups.com:
>
>> SHUT USENET DOWN
>
> If you simply stop reading googlegroups, that personal problem will be
> solved. Then you can get to work on the rest of your problems.
>

Something tells me there is a common thread which runs though most of
his problems--a solution to that thread will end most of of the problems
he complains of with a single action.

The one you suggest could just be just such a solution. :-)

Regards,
JS

5359. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 15:55:50 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g2osi6$5i8$1@news.jpl.nasa.gov>
Source record: 24931

Walter Maxwell wrote:
> "Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
> news:g2n4sd$pc3$1@news.jpl.nasa.gov...
>> Richard Fry wrote:
>>> "Walter Maxwell" wrote
>>>> The source resistance appearing at the output of either a Class B or C
>>>> amplifier is R = E/I, where E is the peak voltage at the output
>>>> terminals and I is the peak current at the output. Or RMS values can
>>>> also be used.Since E/I is simply a ratio, R is also a ratio. And we
>>>> know that a ratio cannot dissipate power, or turn electrical energy
>>>> into heat, thus the output resistance R is non-dissipative. I have
>>>> made many measurements that prove this. It is also the reason why
>>>> reflected power does not dissipate in the tubes, because it never
>>>> reaches the tubes. The reflected power simply causes a mismatch to the
>>>> source, causing the source to deliver less power than it would if
>>>> there were no mismatch.
>>> _____
>>>
>>> If the source resistance of a tuned r-f PA stage was truly
>>> non-dissipative, and the tx simply supplied less power into poor
>>> matches, how would that explain the catastrophic failures to the output
>>> circuit components often seen when high power transmitters operate
>>> without suitable SWR protection into highly mismatched loads?
>> the output network might be non-dissipative, but that doesn't mean that
>> the voltages and/or currents won't exceed the limitations of the components.
>
> I fail to understand how the limitations of the components have anything to do
> with the output resistanceof the network. Can you please explain how this is
> relevant?
>
>> Consider a gedanken.. you have an active device acting as a shunt DC
>> regulator that puts out 1 amp at 1000 volts into a matching network, the
>> other side of which is a 50 ohm load. The power supply is a 5000 volt
>> power supply with a 2000 ohm dropping resistor, and 1 amp is also
>> flowing through the active device. The 2 amps total flowing through the
>> dropping resistor results in the 1000 volt output into the network. The
>> implication is that the matching network, with the 50 ohm output, is
>> presenting a 1000 ohm load.
>>
>> Now, say you change the load impedance on the network so that the
>> impedance on the input side is zero ohms. Now, the voltage across the
>> active device is zero volts, the voltage across that dropping resistor
>> is 5000 volts, instead of 4000 volts, and it will get a bit hotter, and
>> possibly fail.

>>
>> Or, say you change the load impedance so that the input of the network
>> presents an infinite impedance. The same 1 amp is flowing through the
>> active device (say it's a controlled current source), but, since there's
>> no load current, the voltage drop across the resistor is now 2000 volts
>> instead of 4000 volts, and the voltage across the active device is now
>> 3000 volts instead of 1000. If the device can only take 2000 volts,
>> it's cooked.
>
> Sorry Jim, I'm not familiar with a 'gedanken'. Is it distant cousin of a Class B
> or C amplifier? Your discussion above doesn't appear to have any relation
> whatsoever to those types of RF amplifiers. Are you using your discussion in an
> attempt to prove that the output resistance of those types of amps is not
> non-dissipative? Or what are you trying to prove? I don't get it.
>
> Walt, W2DU
>

I was attempting to discuss the comment above:
"how would that explain the catastrophic failures to the output
circuit components often seen when high power transmitters operate
without suitable SWR protection into highly mismatched loads?"

"gedanken" refers to an intellectual exercise describing an experiment
with (usually) contrived or idealized circumstances so that the
underlying concepts can be understood. Classics are Schroedinger's cat,
Maxwell's demon, etc.

http://en.wikipedia.org/wiki/Thought_experiment for more details and
history than anyone could want.

>

5360. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 17:55:11 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <i76dnWl3G-scjM3VnZ2dnUVZ_sjinZ2d@posted.easystreetonline>
Source record: 24932

Richard Fry wrote:
>
> If the source resistance of a tuned r-f PA stage was truly
> non-dissipative, and the tx simply supplied less power into poor
> matches, how would that explain the catastrophic failures to the output
> circuit components often seen when high power transmitters operate
> without suitable SWR protection into highly mismatched loads?

This question has been asked many times (several times by you, as I recall) and answered (several times at least by me) on this forum. The answer is that when a transmitter is terminated in an impedance too far from the one it's designed to see, voltages and/or currents in the transmitter and tank circuit rise to unacceptably high values. This causes the damage or destruction.

I don't think this is difficult to understand. So the reason for the need to keep asking is that it's apparently not being believed, presumably because of the deeply compelling need to see waves of "reflected power" entering the transmitter to wreak havoc. But the simple answer is true. This is very much like trying to convince an astrology believer that he stubbed his toe because he didn't watch where he was going rather than because Mars was lined up with Jupiter.

> Another reality is that r-f power from two co-sited, tuned transmitters
> on two frequencies in the same band can be present in each others output
> stage due to antenna coupling, which causes r-f intermodulation between
> them. The non-linear (mixing) process occurs at the active PA stage.
> If reflected (reverse) r-f energy never reaches the PA stage as you
> assert, then how could this IM generation occur?

Power from one antenna is coupled to the other antenna by a process known as "mutual coupling". This power enters the other transmitter via normal transmission along the transmission line, where it reaches the final stage for mixing. No mysterious "reverse r-f energy" is needed to explain this well-known and well-understood phenomenon.

Roy Lewallen, W7EL

5361. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 17:58:13 UTC
From: Hasan Schiers <schiers@netins.net>
Message-ID: <g2p3nmhdn1@news.netins.net>
Source record: 24933

Cecil Moore wrote:
> Michael Coslo wrote:
>> It's a short drive from there to "the tuner has no effect on the
>> antenna".
>
> Actually, it went farther than that:
>
> From QRZ.com regarding tuners:
>
> "The tuner has absolutely no effect at the antenna."
>
> From eHam.net regarding tuners:
>
> "Does nothing. The tuner as the other poster said,
> just makes your radio happy."

So we have a score or more posts that boil down to "at" or "on", when it is blatantly obvious what the intent of the statements were.

...good job!

5362. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 18:05:21 UTC
From: Hasan Schiers <schiers@netins.net>
Message-ID: <g2p452lhh1@news.netins.net>
Source record: 24934

Jim Higgins wrote:
> On Wed, 04 Jun 2008 12:33:16 -0500, Cecil Moore <nospam@w5dxp.com>
> wrote:
>
>> A popular myth is developing that the tuner has no effect
>> at the antenna feedpoint and the only goal is to make the
>> transmitter "happy". My question is: if we monitored
>> only the forward current or forward power at the antenna
>> feedpoint, could we still adjust the tuner? If the answer
>> is "yes", the myth is false.
>
>
> I suspect many hams are confused on this subject and that many more
> just express themselves awkwardly.
>
> What's totally beyond my understanding is why so many here repeatedly
> waste their time helping you have fun with either category.

Bravo! Endless self-indulgent mental masturbation appears to be the function of far too many posts over the last several years. This has virtually ruined what at one time was a fine resource for amateurs interested in antennas. I used to recommend that people who had questions about or interest in antennas come to this newsgroup. I stopped doing it, and now only take a look myself every week or two to see if anything has changed...it only seems to get worse.

It's a damn shame what a few frequent posters have done to this newsgroup.

5363. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 18:05:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <8qidnXpVYOBijs3VnZ2dnUVZ_hudnZ2d@posted.easystreetonline>
Source record: 24935

ltdoc@yahoo.com wrote:
> Hmm. I have several 'odd' ideas. One of them is that if I want to
> talk politics, civil rights, etc, I do so on/in a user group that
> deals with that sort of thing. I don't do so on/in user groups that
> don't generally deal with those topic, such as this one. Why? Cuz
> 'off topic' stuff generally is only irritating, has nothing to do with
> the topics generally found here, and only show the poster's general
> disregard for that/this group and the people on/in it. It's generally
> called SPAM. But then what do I know? I'm just a LARGE idiot...
> right?
> - 'Doc

What's more irritating is that people respond to it. I plonked "John Smith" quite some time ago, so I'm not bothered at all by his rantings, since I don't even see them. But I do see the responses from the folks who respond to them. The best way to deal with this kind of posting is to ignore them. Ignored OT posters go elsewhere, where they can get the attention they're after, before very long. But they don't if they get a constant supply of it.

Roy Lewallen, W7EL

5364. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 19:10:40 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2p7vm$1o9$1@news.albasani.net>
Source record: 24936

Roy Lewallen wrote:
> ltdoc@yahoo.com wrote:
>> Hmm. I have several 'odd' ideas. One of them is that if I want to
>> talk politics, civil rights, etc, I do so on/in a user group that
>> deals with that sort of thing. I don't do so on/in user groups that
>> don't generally deal with those topic, such as this one. Why? Cuz
>> 'off topic' stuff generally is only irritating, has nothing to do with
>> the topics generally found here, and only show the poster's general
>> disregard for that/this group and the people on/in it. It's generally
>> called SPAM. But then what do I know? I'm just a LARGE idiot...
>> right?
>> - 'Doc
>
> What's more irritating is that people respond to it. I plonked "John
> Smith" quite some time ago, so I'm not bothered at all by his rantings,
> since I don't even see them. But I do see the responses from the folks
> who respond to them. The best way to deal with this kind of posting is
> to ignore them. Ignored OT posters go elsewhere, where they can get the
> attention they're after, before very long. But they don't if they get a
> constant supply of it.
>
> Roy Lewallen, W7EL

I guess that all implies that if ISPs drop USENET it just doesn't matter, this will not set a trend, the attorney general will just stop with the few he has already manipulated, this will not set the stage encourage frivolous lawsuits--I can't help but differ with that ...

Perhaps they wish to imply that only dimwits use the ISPs in question (the ones which have discontinued USENET)... I simply have no way to prove/disprove that ... however, I suspect NOT!

Perhaps it implies government manipulation of the channels of citizens communications is a good thing ... I think not.

Perhaps it implies that ISPs dropping USENET (and this NG) is a good thing which just falsely appears to be an evil ... again, I differ ...

Perhaps the people who use the pervert NGs are the ones screaming not to worry? They might fear this will focus attention on their perversions? Hmmm ... I wonder, however, sometimes I am given to bouts of paranoia.

Perhaps I am the problem; just plonk me and ISPs dropping USENET are seen for what they really are--only a figment of my imagination. Plonk me and you will immediately realize it is all just a phony bad dream ... well maybe, who knows.

But, I think it all points to the logic of a few which attempts to drive the direction of this newsgroup. A few remain blind to the insanity they drown in ... :-(

I leave this to others to sort out. However, if the small group of illogical amateurs which have manipulated amateur radio are able to influence the course of the internet, why would we think they would do any different than they have done with the amateur bands? i.e. stagnation, decay, good-ole-boys-club mentality, loss of importance, ancient equipment designs, resistance to progress, etc.

Regards,
JS

5365. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 19:36:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <VOV3k.3443$L_.441@flpi150.ffdc.sbc.com>
Source record: 24937

Roy Lewallen wrote:
> This question has been asked many times (several times by you, as I
> recall) and answered (several times at least by me) on this forum. The
> answer is that when a transmitter is terminated in an impedance too far
> from the one it's designed to see, voltages and/or currents in the
> transmitter and tank circuit rise to unacceptably high values. This
> causes the damage or destruction.

But the offending impedance equals (Vfor+Vref)/(Ifor+Iref), a
virtual impedance caused by the superposition of the reflected
wave and the forward wave.

> I don't think this is difficult to understand.

What is difficult to understand is the denial of the role that
the energy content of the reflected wave plays in causing the
offending impedance. If it were not for the reflected waves,
that offending impedance would never happen.
--
73, Cecil http://www.w5dxp.com

5366. Re: Big

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 21:41:08 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <e4a85f36-8014-4e64-b0cd-f702a1cbaf51@r37g2000prm.googlegroups.com>
Source record: 24938

On Jun 11, 6:49 am, Christopher Cox
<chrisTOPHER...@coboxincORORATED.com> wrote:
> Uhgggg....
>
> The IDIOTS at GOOGLE posted my email
> address with no crypting what so ever!
>
> So easy to harvest.
> Here comes the SPAM.

Yeah, you have to create a profile and sign in.
Then Google will munge your e-mail addy to
the point where it requires a bit of human
intervention to get it. It was a shock to me
too when I first saw my e-mail address in
clear text here.

Jim, K7JEB

5367. Re: Big

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 21:49:40 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <a1879eee-a139-4f32-a76f-2ed8f239b9d8@w5g2000prd.googlegroups.com>
Source record: 24939

On Jun 11, 2:41 pm, "Jim, K7JEB" <k7je...@yahoo.com> wrote:

> Yeah, you have to create a profile and sign in.
> Then Google will munge your e-mail addy to
> the point where it requires a bit of human
> intervention to get it. It was a shock to me
> too when I first saw my e-mail address in
> clear text here.

And I have to abruptly correct myself on this.
The address munging only applies to Google.
Everywhere else, what you have as an e-mail
addy in your Google profile is propagated. So
better stock up on throw-away addresses while
they are cheap! K7JEB

5368. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-11 22:24:50 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABB5594CC4F2nonenowhere@61.9.191.5>
Source record: 24940

richardharrison@webtv.net (Richard Harrison) wrote in
news:26007-484FE58A-22@storefull-3252.bay.webtv.net:

> Owen Duffy wrote:
> "Have you hopped on another tram?"
>
> Maybe. I agree. Radio power amplifiers have clean sinusoidal outputs,
> otherwise they would generate unacceptable harmonics. All except Class
> A amplifiers which have continuous plate current flows and a maximum
> efficiency of 50%, have plate currents which flow in pulses.
>
> In Class B, the plate current in individual tubes flows in pulses of
> approximately a half cycle. Actual efficiency is about 60%.

Pulses is not very descriptive, it is definititely not rectangular
pulses as implied by your earlier posting.

For a single ended RF common cathode valve PA with resonant load, an
active device that is perfectly linear and zero saturation voltage,
theoretical efficiency is 79% in Class B.

If saturation is only 20% of the supply voltage, that figure drops to
63%.

For HV tubes, saturation of about 10% of the supply voltage is
reasonable, and efficiency is that case is 71%.

Then the output circuit loss need to be factored in, and 90% is not an
unreasonable output circuit efficiency.

The comination of 10% saturation and practical output circuit arrives at
64% efficiency overall (ie plate and output circuit) ... but tetrodes on
low voltage can't usually deliver low saturation voltage and won't reach
that figure.

>
> In Class C, the plate current pulses last less than a half cycle.
> Practical efficiencies are in the range of 60 to 80 per cent.

Again, not rectangular pulses, not nearly.

For most practical valves in continous mode, they cannot develop their
rated maximum power at very small conduction angles without exceeding
rated cathode current, so there is often little benefit in operating at
conduction angle much below 120 degrees.

Owen

5369. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 02:10:37 UTC
From: richardharrison@webtv.net
Message-ID: <20731-4850859D-120@storefull-3253.bay.webtv.net>
Source record: 24941

I wrote:
"In Class C, the plate current pulses last less than a half cycle.
Practical efficiencies are in the range of 60 to 80 per cent."

Owen Duffy wrote:
"Again, not rectangular pulses, not nearly."

A pulse does not need to be rectangular. According to my electronics dictionary:
"Pulse - 1. The variation of a quantity having a normally constant value. This variation is characterized by a rise and decay of finite duration. 2. An abrupt change in voltage, either positive or negative, which conveys information to a circuit. (See also Impulse.)"

A rectified sine wave could properly be called a string of pulses being constantly off between pulses then rising and falling between pulses for a short finite duration.

Best regards, Richard Harrison, KB5WZI

5370. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 02:42:49 UTC
From: ltdoc@yahoo.com
Message-ID: <4ec23166-c5cd-4757-a19c-5af533befd34@l64g2000hse.googlegroups.com>
Source record: 24942

That has got to be the best example of misdirection, false
humility, and pseudo-apologizing this stagnant, decaying, unimportant,
'GOB' user of ancient equipment who is resistant to progress, has seen
in a long time! Are you by chance a politician? OH! And us 'GOB's
who disagree with you are the reason the amateur bands are in the
state they are in now!
"Dang me, dang me! Ought'a take a rope and hang me!"... that's how it
goes, ain't it? What the hell, might as well admit to being one of
them 'pervs' who live on the child porn sites. Stands to reason,
don't it?
- 'Doc

(I'm 'PC', by the way. ~IF~ that 'PC' stands for Patsy Cline.)

5371. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 02:45:15 UTC
From: ltdoc@yahoo.com
Message-ID: <943cd682-56fc-45cc-b9f0-0e3cbe93b880@26g2000hsk.googlegroups.com>
Source record: 24943

Roy,
Yeah, but there are times when you just can't help it.
Sorry 'bout that.
- 'Doc

5372. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 02:58:06 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <A7GdnbPXL50hDc3VnZ2dnUVZ_tfinZ2d@bright.net>
Source record: 24944

This illustrates, I hope, only one, small point:

Owen says:
>
> For most practical valves in continous mode, they cannot develop their
> rated maximum power at very small conduction angles without exceeding
> rated cathode current, so there is often little benefit in operating at
> conduction angle much below 120 degrees.
>

Recall that valve/tube diodes in rectifier service were not used with capacitive filters because the rated peak to average current ratio was something like 1.5:1. Modern, solid-state diodes can have ratios of 40:1 and can be happy with capacitive filters in rectifier service.

Peak current limits of high-voltage, high-power tubes is a real physical limit. The cathode can only emit so much.

73, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net

5373. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 03:26:25 UTC
From: richardharrison@webtv.net
Message-ID: <7328-48509761-98@storefull-3254.bay.webtv.net>
Source record: 24947

Cecil, W5DXP wrote:
"What is the linear source impedance of a class-C amp?"

A conjugate match is necessary for maximum power transfer.

A Class C amplifier is not inherently linear. That is disasterous for an already modulated AM signal but it is of no importance to an FM signal. As Richard Fry points out, no tank circuit is required. A low-pass filter to suppress all harmonics is all that is needed for a clean signal. No tuning is required of a tank at the operating frequency.

A tank circuit is not selective enough to prevent intermod anyway. When I worked the morning shift at 790 KHz in Houston, and I fired up the transmitter, I would hear 740 KHz`audio coming out of the monitor speaker. They started programming earlier than we did. They were 15 miles away. Our transmitting antenna made a dandy receiving antenna. The received 740 KHz modulated our final amplifier and we rebroadcast it although at a level much lower than our own modulation. Any one listening to 790 KHz who turned up the volume to hear the 740 KHz audio got their ears knocked off when our modulation started. We had high level plate modulation of the final amplifier for our own signal. For the 740 KHz signal the level of modulation was much lower, millivolts not kilovolts. Either program was cleanly modulated on our carrier. The only difference was the enormous difference in modulation levels.

Best regards, Richard Harrison, KB5WZI

5374. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 03:30:46 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2q599$v8q$1@news.albasani.net>
Source record: 24945

ltdoc@yahoo.com wrote:
> That has got to be the best example of misdirection, false
> humility, and pseudo-apologizing this stagnant, decaying, unimportant,
> 'GOB' user of ancient equipment who is resistant to progress, has seen
> in a long time! Are you by chance a politician? OH! And us 'GOB's
> who disagree with you are the reason the amateur bands are in the
> state they are in now!
> "Dang me, dang me! Ought'a take a rope and hang me!"... that's how it
> goes, ain't it? What the hell, might as well admit to being one of
> them 'pervs' who live on the child porn sites. Stands to reason,
> don't it?
> - 'Doc
>
>
> (I'm 'PC', by the way. ~IF~ that 'PC' stands for Patsy Cline.)

To me, the above is proof enough you are an idiot, plonk ...

Regards,
JS

5375. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 03:31:27 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g2q5aj$v8q$2@news.albasani.net>
Source record: 24946

ltdoc@yahoo.com wrote:
> Roy,
> Yeah, but there are times when you just can't help it.
> Sorry 'bout that.
> - 'Doc
>

Hmmm ... yep, affirms my decision above was correct! THANKS!

Regards,
JS

5376. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 03:54:20 UTC
From: richardharrison@webtv.net
Message-ID: <7328-48509DEC-99@storefull-3254.bay.webtv.net>
Source record: 24948

Owen Duffy wrote:
"Most supply authorities would not allow you to connect a capacitive load (a leading PF load),-----."

Incorrect. Overexcited synchronous machines are commonly used to correct the power factor causing reduced line current and lower power loss on the a-c power transmission line.

Best regards, Richard Harrison, KB5WZI

5377. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 05:50:40 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABBA12AC69E2nonenowhere@61.9.191.5>
Source record: 24949

richardharrison@webtv.net (Richard Harrison) wrote in
news:7328-48509DEC-99@storefull-3254.bay.webtv.net:

> Owen Duffy wrote:
> "Most supply authorities would not allow you to connect a capacitive
> load (a leading PF load),-----."
>
> Incorrect. Overexcited synchronous machines are commonly used to
> correct the power factor causing reduced line current and lower power
> loss on the a-c power transmission line.

In this part of the world, connection of an overall leading PF load
usually requires approval of the supply authority. Most electricians
would be aware of the restriction.

The reason being is that it can cause an increase in supply voltage
beyond spec in the local area.

Yes, large factories for example may use static or rotary power factor
correction to improve their PF for tariff reaons, but if an installation
reaches an overall leading PF it usually breaches rules in this part of
the world, and commonly permission is required to attach individual
'devices' with capability for leading PF. Some tariffs are based on
maximum demand, and often maximum apparent power (ie VA), not maxiumum
real power (ie W), hence the economic interest in PF correction.

Today, active static power factor correction that can dynamically track
a varying load at varying PF is a lot more attractive than rotating
machines.

Owen

5378. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 05:54:17 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABBA1C7CF3A9nonenowhere@61.9.191.5>
Source record: 24950

richardharrison@webtv.net (Richard Harrison) wrote in news:20731-4850859D-120@storefull-3253.bay.webtv.net:

> I wrote:
> "In Class C, the plate current pulses last less than a half cycle.
> Practical efficiencies are in the range of 60 to 80 per cent."
>
> Owen Duffy wrote:
> "Again, not rectangular pulses, not nearly."
>
> A pulse does not need to be rectangular. According to my electronics
> dictionary: ...

Yes Richard, pulse can mean all things to all people... but you did say "The PA is a switch. Almost no voltage across it when it is closed and no current through it when it is open." That implies a rectangular current pulse... and I think we are now agree that is not the case for Class B or Class C (which were the stated scope of the OP's question).

Owen

5379. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 09:11:56 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <g2qp92$o02$1@aioe.org>
Source record: 24851

"Roy Lewallen" wrote
> No mysterious "reverse r-f energy" is needed to explain this well-known
> and well-understood phenomenon.

The quote above reads as though the existence of reverse (reflected)
r-f energy is being denied.

For skeptics, the link below leads to a field report showing a measurement
of the reflection of a narrowband r-f pulse by an analog broadcast TV
antenna, back toward the source. The H.A.D. of the sinï¿½ pulse used
represents the shortest transition time that can be accommodated in a ~ 4
MHz transmission channel.

Note that the reflected pulse appears some 6.2 ï¿½s after the incident pulse,
which corresponds to a round trip through the ~1,525 feet of 6" OD, 75 ohm,
air pressurized transmission line leading to the antenna in this system.

The return pulse amplitude indicates a far-end match (elbow complex +
antenna) of about 1.05 VSWR (2.3% reflection).

http://i62.photobucket.com/albums/h85/rfry-100/RFPulseMeasurement.gif

RF (RCA Broadcast Field Engineer 1965-1980)

5380. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 11:30:55 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <XM74k.11586$Ri.4078@flpi146.ffdc.sbc.com>
Source record: 24852

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "What is the linear source impedance of a class-C amp?"
>
> A conjugate match is necessary for maximum power transfer.

Is the class-C amp conjugately matched during
the 75% of the cycle when it is off? Is there
any such thing as an instantaneous conjugate
match? Don't we have to move downstream from
non-linear sources for our linear math models
to start working?
--
73, Cecil http://www.w5dxp.com

5381. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 11:38:17 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <JU74k.4975$89.2408@nlpi069.nbdc.sbc.com>
Source record: 24853

Richard Fry wrote:
> "Roy Lewallen" wrote
>> No mysterious "reverse r-f energy" is needed to explain this
>> well-known and well-understood phenomenon.
> _____
>
> The quote above reads as though the existence of reverse (reflected)
> r-f energy is being denied.

Especially strange since the "reverse r-f energy"
is the cause of the impedance responsible for the
mismatch problem. If there were no "reverse r-f energy",
the impedance causing the mismatch wouldn't even exist.
Why is the cause of the offending impedance of no importance?
--
73, Cecil http://www.w5dxp.com

5382. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 16:54:18 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <dxc4k.6$Lg.5@newsfe06.lga>
Source record: 24854

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:XM74k.11586$Ri.4078@flpi146.ffdc.sbc.com...
> Richard Harrison wrote:
> > Cecil, W5DXP wrote:
> > "What is the linear source impedance of a class-C amp?"
> >
> > A conjugate match is necessary for maximum power transfer.
>
> Is the class-C amp conjugately matched during
> the 75% of the cycle when it is off? Is there
> any such thing as an instantaneous conjugate
> match? Don't we have to move downstream from
> non-linear sources for our linear math models
> to start working?
> --
> 73, Cecil http://www.w5dxp.com

Richard, its a common myth that Class C amps are non-linear, but the truth of the matter is that although the condition at the input of the pi-network is decidedly non-linear, the energy storage in the pi-network tank circuit isolates the input from the output and the result is a totally linear condition at the output of the pi-network. Evidence proving this is true is that the output of an unmodulated signal at the output of the network is an almost pure sine wave. With a Q of at least 12 the difference between a pure sine wave from a signal generator and that from the pi-network output can not be seen on a dual trace scope with the traces overlapping.

I don't know about the energy storage in the filters you mention, but I would assume that if the filter output is a sine wave then the energy storage required to produce a linear output is sufficient.

Walt, W2DU

5383. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 18:56:50 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g2rrhinug1@news.jpl.nasa.gov>
Source record: 24855

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "What is the linear source impedance of a class-C amp?"
>
> A conjugate match is necessary for maximum power transfer.

in a linear system

>

5384. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 20:03:36 UTC
From: richardharrison@webtv.net
Message-ID: <23000-48518118-280@storefull-3257.bay.webtv.net>
Source record: 24856

Jim Lux wrote:
"in a linear system"

It produces no significant harmonics, so the system is linear.

Best regards, Richard Harrison, KB5WZI

5385. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 21:12:43 UTC
From: richardharrison@webtv.net
Message-ID: <26007-4851914B-190@storefull-3252.bay.webtv.net>
Source record: 24857

Cecil, W5DXP wrote:
"Is the class-C amp conjugately matched during the 75% of the cycle it is off?"

We must consider the complete cycle.

Working with spark ignition systems (Hettering) you may have encountered a "dwell meter". It indicates the % of the time ignition points are closed. When the points are closed, impedance between the meter and the battery is insignificant. The meter if left continuously connected through the points would indicate full-scale. When the points open, their impedance is infinite. Left continuously open, the meter indicates zero on the dwell scale.

Dwell is measured while the engine is rotating and the meter is being connected intermittently to the battery through the ignition points.

Intermittent opening and closing of the points causes the same scale reading that would be caused by replacing the points with some particular value of fixed resistance (a resistor).
The main difference is that no dissipation occurs in the open ignition points and precious little energy is lost in the closed points. Voila! We have produced a dissipationless resistance.
The Class C amplifier is a switch which operates in the same manner. The Kettering ignition points have a low-resistance ignition coil primary in series, and the Class-C amplifier has a tuned plate circuit in series, but both are being switched on and off repeatedly.

Best regards, Richard Harrison, KB5WZI

5386. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-12 21:32:00 UTC
From: richardharrison@webtv.net
Message-ID: <26007-485195D0-209@storefull-3252.bay.webtv.net>
Source record: 24858

Walt, W2DU wrote:
"I don`t know about the energy storage in the filter you mention, but I would assume that if the filter output is a sine wave then the energy storage required to produce a linear output is sufficient."

As a former FCC official, Walt knows their regulations sharply limit harmonic content of FM broadcast carrier frequencies. A sine wave must be pure, otherwise it has harmonic content (not allowed).

Best regards, Richard Harrison, KB5WZI

5387. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 00:33:59 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g2sf9nfr1@news.jpl.nasa.gov>
Source record: 24859

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "Is the class-C amp conjugately matched during the 75% of the cycle it
> is off?"

Matched across what boundary? from output pi network to load?
From active device to pi network?
I'd venture that between active device and pi network, there isn't a conjugate match, at any given instant, and perhaps not even considered over the entire cycle (without resorting to some things like "apparent impedance" which doesn't have a real clean definition).

In order to provide a true "conjugate match" to a device that is changing state, the load must also be changing state: i.e. the match is single valued, for any Zload, there is a single Zmatch that maximizes power transfer; except perhaps for some trivial cases, like Z=zero or infinity, but in such cases, the load doesn't dissipate ANY power, so what is there to maximize.

Furthermore, if one looks at situations where you have, for instance, a very low source impedance (a stiff voltage bus) or a very high source impedance (a constant current source), power transfer is maximized to a given load impedance when the reactive components are conjugate. In such a case, the source and load resistances are not equal.

One might look at
http://p1k.arrl.org/~ehare/temp/conjugate_match/conjugate_match_theorum.pdf
http://mysite.orange.co.uk/g3uur/index.html

>
> We must consider the complete cycle.
>
> Working with spark ignition systems (Hettering) you may have encountered
> a "dwell meter". It indicates the % of the time ignition points are
> closed. When the points are closed, impedance between the meter and the
> battery is insignificant. The meter if left continuously connected
> through the points would indicate full-scale. When the points open,
> their impedance is infinite. Left continuously open, the meter indicates
> zero on the dwell scale.
>
> Dwell is measured while the engine is rotating and the meter is being
> connected intermittently to the battery through the ignition points.
>
> Intermittent opening and closing of the points causes the same scale
> reading that would be caused by replacing the points with some
> particular value of fixed resistance (a resistor).

> The main difference is that no dissipation occurs in the open ignition
> points and precious little energy is lost in the closed points. Voila!
> We have produced a dissipationless resistance.

I would say "apparent resistance".. the "conjugate match" and any other linear circuit analysis can't necessarily be "averaged". Something like Kirchoff's current law or voltage law (or Ohm's law, for that matter) has to be true at any instant.

The challenge faced by folks faced with analyzing "real" circuits is that you have to be careful about how you turn a circuit that is likely time-varying AND nonlinear into a linearized approximation. For instance programs like SPICE's transient analysis uses linear circuit theory (via matrix analysis) in combination with an iterative differential equation solver, and tries to treat the circuit as linear at a given instant. (granted, newer versions of SPICE and its ilk are a bit more sophisticated, since they can handle nonlinear terms in the matrix).

> The Class C amplifier is a switch which operates in the same manner. The
> Kettering ignition points have a low-resistance ignition coil primary in
> series, and the Class-C amplifier has a tuned plate circuit in series,
> but both are being switched on and off repeatedly.

Complicated substantially by the fact that the active device in a RF amplifier generally doesn't act as an ideal switch. So the piecewise linearization you describe isn't totally applicable. For instance, a BJT acts like a constant current source if base drive is fixed, but in RF circuits, the base drive isn't fixed. In FET circuits you worry about the gate capacitance.

This is why there are all sorts of variants of SPICE modified for switching power supplies.

>
> Best regards, Richard Harrison, KB5WZI
>

5388. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 01:17:40 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABC72E219692nonenowhere@61.9.191.5>
Source record: 24860

richardharrison@webtv.net (Richard Harrison) wrote in news:26007-4851914B-190@storefull-3252.bay.webtv.net:

...
> The Class C amplifier is a switch ...

If you say it enough times, will it become true?

Owen

5389. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 01:25:15 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%%j4k.3703$L_.2284@flpi150.ffdc.sbc.com>
Source record: 24861

Richard Harrison wrote:
> Jim Lux wrote:
> "in a linear system"
>
> It produces no significant harmonics, so the system is linear.

I'm not trying to be difficult, but I just resurrected the
Fourier equation for the output of a class-B amplifier. It is:

i = 0.318Im + 0.500Im*sin(A) - 0.212Im*cos(2A) - 0.0424Im*cos(4A) - ...

The second harmonic is 42% of the amplitude of the
fundamental frequency at the plate of the tube amp.
--
73, Cecil http://www.w5dxp.com

5390. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 02:11:43 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <HIk4k.70$w77.55@newsfe02.lga>
Source record: 24863

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:%%j4k.3703$L_.2284@flpi150.ffdc.sbc.com...
> Richard Harrison wrote:
> > Jim Lux wrote:
> > "in a linear system"
> >
> > It produces no significant harmonics, so the system is linear.
>
> I'm not trying to be difficult, but I just resurrected the
> Fourier equation for the output of a class-B amplifier. It is:
>
> i = 0.318Im + 0.500Im*sin(A) - 0.212Im*cos(2A) - 0.0424Im*cos(4A) - ...
>
> The second harmonic is 42% of the amplitude of the
> fundamental frequency at the plate of the tube amp.
> --
> 73, Cecil http://www.w5dxp.com

OK Cecil, if the 2nd harmonic is 42% of the amplitude of the fundamental at the plate of the tube, can you determine the amplitude of the 2nd harmonic at the output of a pi-network having a Q of 12?

Walt, W2DU

5391. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 02:12:43 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <HIk4k.71$w77.47@newsfe02.lga>
Source record: 24862

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:%%j4k.3703$L_.2284@flpi150.ffdc.sbc.com...
> Richard Harrison wrote:
> > Jim Lux wrote:
> > "in a linear system"
> >
> > It produces no significant harmonics, so the system is linear.
>
> I'm not trying to be difficult, but I just resurrected the
> Fourier equation for the output of a class-B amplifier. It is:
>
> i = 0.318Im + 0.500Im*sin(A) - 0.212Im*cos(2A) - 0.0424Im*cos(4A) - ...
>
> The second harmonic is 42% of the amplitude of the
> fundamental frequency at the plate of the tube amp.
> --
> 73, Cecil http://www.w5dxp.com

OK Cecil, if the 2nd harmonic is 42% of the amplitude of the fundamental at the plate of the tube, can you determine the amplitude of the 2nd harmonic at the output of a pi-network having a Q of 12?

Walt, W2DU

5392. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 03:50:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <18m4k.1282$LG4.158@nlpi065.nbdc.sbc.com>
Source record: 24864

Walter Maxwell wrote:
> OK Cecil, if the 2nd harmonic is 42% of the amplitude of the fundamental at the
> plate of the tube, can you determine the amplitude of the 2nd harmonic at the
> output of a pi-network having a Q of 12?

I think I understand ideal class-A operation pretty well.

What I am trying to understand is: In class-B operation,
if the frequency of interest is made up of less than 1/2
of the current through the amplifier tube, is more than
1/2 of the current not conjugately matched?
--
73, Cecil http://www.w5dxp.com

5393. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 08:34:43 UTC
From: baadman25 <baadman25.2983382@radiobanter.com>
Message-ID: <baadman25.2983382@radiobanter.com>
Source record: 24866

Very good!!! Support !'*sitemap*'
(http://dianaslink.com/sitemap.html)'*wow gold*'
(http://dianaslink.com/index.htm)'*wow gold*'
(http://dianaslink.com/WOW%20US.htm)'*wow gold*'
(http://dianaslink.com/WOW%20EURO.htm)'*wow gold*'
(http://dianaslink.com/WOW%20Guide.htm) *sitemap*

--
baadman25

5394. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 10:29:41 UTC
From: Richard Fry <rfry@adams.net>
Message-ID: <g2ti6rkaq1@aioe.org>
Source record: 24865

"Richard Fry" wrote
> Note that the reflected pulse appears some 6.2 ï¿½s after the incident
> pulse, ...

Correction: the reflected pulse appears 3.1 ï¿½s after the incident pulse (the time base was 0.5 ï¿½s/cm).

The rest of the statements there remain valid.

RF

5395. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 14:38:43 UTC
From: richardharrison@webtv.net
Message-ID: <23000-48528673-332@storefull-3257.bay.webtv.net>
Source record: 24867

Jim Lux wrote:
"Matched across what boundary?"

Where there is a conjugate match in the transmitter-antenna system, it exists at every pair of terminals. That is, the impedances looking in opposite directions are conjugates. The resistive parts of the impedance are equals and the reactances looking in opposite directions are opposites of each other.

Best regards, Richard Harrison, KB5WZI

5396. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 15:16:43 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Caw4k.11796$Ri.9585@flpi146.ffdc.sbc.com>
Source record: 24868

Richard Harrison wrote:
> Where there is a conjugate match in the transmitter-antenna system, it
> exists at every pair of terminals.

Quoting w2du's web page:
ï¿½The Conjugate Theorem also shows that in a sequence of
matching networks it is necessary to match at only one
junction *if the networks are non-dissipative*. In actual
practice, since there is usually some dissipation, it
is frequently desirable to adjust at more than one point.ï¿½
--
73, Cecil http://www.w5dxp.com

5397. GUGLIELMO MARCONI'S SPECIAL STAMP AND CARD

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 15:21:14 UTC
From: francesco <francec58@libero.it>
Message-ID: <344c08a0-5ad7-4e24-b8a8-54582b221ec4@a1g2000hsb.googlegroups.com>
Source record: 24869

GUGLIELMO MARCONI'S SPECIAL STAMP AND CARD

I have received from the Italian Posts the special philatelic stamp
with Guglielmo Marconi from the 30th radio exposure of Montichiari
(BS).
The picture with the special card to commemorate the 100 years of the
first transoceanic transmisison is available here:

http://i259.photobucket.com/albums/hh311/francesco1958/File0359.jpg

73's Francesco

5398. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 15:33:48 UTC
From: richardharrison@webtv.net
Message-ID: <20731-4852935C-275@storefull-3253.bay.webtv.net>
Source record: 24870

Owen Duffy wrote:
"The Class C amplifier is a switch...
If you say it enough times, will it become true?"

True is true no matter what anyone says. I`ve never seen Terman misspeak.

On page 255 of his 1955 opus Terman wrote:
"---the Class C amplifier is adjusted so the plate current flows in pulses that last less than half a cycle."

On page 450 he wrote:
"The high efficiency of the Class C amplifier is a result of the fact that plate current is not allowed to flow except when the instantaneous voltage drop across the tube is low; i.e. Eb supplies energy to the amplifier only when he largest portion of the energy will be absorbed by the tuned circuit."

Sounds like a switch to me. When switched on, voltage drop across the tube is low. When switched off, voltage drop across the tube is Eb, but since current is zero, no power is lost at that instant in the tube.

Best regards, Richard Harrison, KB5WZI

5399. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 15:48:42 UTC
From: richardharrison@webtv.net
Message-ID: <20731-485296DA-276@storefull-3253.bay.webtv.net>
Source record: 24871

Cecil, W5DXP wrote:
"Quoting W2DU`s web page:"

Sure hope Walt finds a publisher soon for his latest edition of "Reflections". Web TV (a Microsoft company) doesn`t allow me to read pdf.

Best regards, Richard Harrison, KB5WZI

5400. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 16:27:39 UTC
From: "Jim, K7JEB" <k7jeb_2@yahoo.com>
Message-ID: <48529FFB.8040707@yahoo.com>
Source record: 24872

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "Quoting W2DU`s web page:"

> Sure hope Walt finds a publisher soon for his latest edition of
> "Reflections". Web TV (a Microsoft company) doesn`t allow me to read
> pdf.
> Best regards, Richard Harrison, KB5WZI

Richard, try this: Let Google translate it from PDF to
HTML for you.

Do a Google search for "w2du reflections
chapter 19A".

One of the first entries will be a hit
at http://w2du.com/r3ch19a.pdf .

Under the Google entry for this, carefully look for
the words:
"File Format: PDF/Adobe Acrobat - View as HTML"

The words 'View as HTML' will be linked to Google's
HTML translation of the PDF.

The translation isn't pretty, but the essentials are
there. You will have to fill in some of the blanks
yourself.

Posting this as well for anyone else experiencing this
problem.

Jim, K7JEB

5401. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 16:57:30 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <_Fx4k.13778$co7.9320@nlpi066.nbdc.sbc.com>
Source record: 24873

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "Quoting W2DU`s web page:"
>
> Sure hope Walt finds a publisher soon for his latest edition of
> "Reflections". Web TV (a Microsoft company) doesn`t allow me to read
> pdf.

Do a Google search for <NIST definition of "conjugate match">
One of the first entries will be:

[PDF]
Chapter 01
File Format: PDF/Adobe Acrobat - *View as HTML*
Quoting from Robert W. Beatty, NIST, Microwave Mismatch Analysis, (Ref
120):. 1) Conjugate matchï¿½The condition for maximum power absorption by
a load, in ...
w2du.com/Appendix09.pdf - Similar pages

Click on <View as HTML> and the section I quoted should appear
in HTML format.
--
73, Cecil http://www.w5dxp.com

5402. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-13 21:39:50 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABD4DF362DD1nonenowhere@61.9.191.5>
Source record: 24874

richardharrison@webtv.net (Richard Harrison) wrote in
news:20731-4852935C-275@storefull-3253.bay.webtv.net:

> Owen Duffy wrote:
> "The Class C amplifier is a switch...
> If you say it enough times, will it become true?"
>
> True is true no matter what anyone says. I`ve never seen Terman
> misspeak.
>
> On page 255 of his 1955 opus Terman wrote:
> "---the Class C amplifier is adjusted so the plate current flows in
> pulses that last less than half a cycle."
>
> On page 450 he wrote:
> "The high efficiency of the Class C amplifier is a result of the fact
> that plate current is not allowed to flow except when the
> instantaneous voltage drop across the tube is low; i.e. Eb supplies
> energy to the amplifier only when he largest portion of the energy
> will be absorbed by the tuned circuit."
>
> Sounds like a switch to me. When switched on, voltage drop across the
> tube is low.

Lets plug some real world numbers in...

Take a DC supply of 1000V, and a valve that saturates at 200V, the RF approximately sinusoidal voltage swing on the anode is from 200V to 1800V. (For avoidance of doubt, whilst the RF voltage on the anode is approximately sinusoidal, the anode current waveform is not.)

If the conduction angle is 120 degrees (typical for Class C amplifiers), the valve starts conducting at about 1000-800*sin((180-120)/2) or 600V instantaneous anode voltage... and continues conducting as the instantaneous anode voltage passes through the minimum and rises again, cutting off when then instantaneous anode voltage again reaches 600V. In this case, the anode voltage during conduction varies between 400 and 600V, 40% to 60% of the supply voltage.

The switch analogy is not a good one.

>When switched off, voltage drop across the tube is Eb, ...

That is wrong. The anode voltage is approximately a sinusoidal voltage swing of almost (70% to 90%) Eb zero to peak superimposed on the DC supply voltage (Eb).

You have taken a quote from Terman and weaved your own flawed extensions (being the switch analogy and the statement about instantaneous anode voltage).

Owen

5403. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 01:12:25 UTC
From: richardharrison@webtv.net
Message-ID: <26406-48531AF9-343@storefull-3256.bay.webtv.net>
Source record: 24875

I wrote:
"When switched-off, voltage drop across the tube is Eb"

Owen Duffy wrote:
"That is wrong."

Yes as a general statement, that is wrong. The instantaneous drop across the tube is the sum of Eb and EL, the signal voltage across the load.

Terman shows this in Fig. 13-1(b) on page 449 of his 1955 opus.

Fig. 13-1(e) shows the plate current pulse which is less than 180 degrees in duration as the tube is biased beyond cut-off.

My switch analogy is imperfect but good enough to exemplify dissipationless resistance as a part of the output impedance of a Class C amplifier.

Best regards, Richard Harrison, KB5WZI

5404. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 01:29:32 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <%9F4k.13854$co7.9062@nlpi066.nbdc.sbc.com>
Source record: 24876

Richard Harrison wrote:
> My switch analogy is imperfect but good enough to exemplify
> dissipationless resistance as a part of the output impedance of a Class
> C amplifier.

Well, there are mechanical switches, digital switches,
and analog switches. I suspect a class-C amp falls
under the heading of an analog switch.
--
73, Cecil http://www.w5dxp.com

5405. Re: HAM to PC

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 03:08:04 UTC
From: fghi003 <fghi003.299309f@radiobanter.com>
Message-ID: <fghi003.299309f@radiobanter.com>
Source record: 24880

路过！！！顶了！！！'WoW power leveling' (http://brogame.com)'WoW power leveling' (http://brogame.com/Power.2.Final_Fantasy_XI.aspx)'WoW power leveling' (http://brogame.com/contact_us.aspx)'连锁店' (http://www.leexi.com)'烘干机' (http://www.leexi.com/webs/cpjg.aspx)

--
fghi003

5406. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 05:06:34 UTC
From: jimkelleyamps@gmail.com
Message-ID: <17e24476-2725-4317-82ce-45ac4b32c12e@t54g2000hsg.googlegroups.com>
Source record: 24877

On Jun 6, 9:15 pm, Walter Maxwell <w...@w2du.com> wrote:
> Since E/I is simply a ratio, R is also a ratio. And we know that a ratio cannot dissipate power, or turn
> electrical energy into heat, thus the output resistance R is non-dissipative. I have made many measurements
> that prove this.

Hi Walt,

R is by definition a physical "property of conductors which depends on dimensions, material, and temperature". So if we multiply both sides of our "ratio" equation by I^2 to convert to power we get V*I = I^2*R. Given that V, I, and R are all non-zero, why would you ask us to believe that I^2*R and V*I could be zero? It's true that V^2/R is a ratio. And I guess it's probably also true that the equation itself doesn't dissipate power. But what would you have us believe that that is supposed to prove?

73, Jim AC6XG

5407. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 05:14:37 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABD9B0E61D7Dnonenowhere@61.9.191.5>
Source record: 24878

richardharrison@webtv.net (Richard Harrison) wrote in news:23000-48518118-280@storefull-3257.bay.webtv.net:

> Jim Lux wrote:
> "in a linear system"
>
> It produces no significant harmonics, so the system is linear.

That is a new / unconventional definition of 'linear'.

The term is usually used in this context to mean a linear transfer characteristic, ie PowerOut vs PowerIn is linear.

Considering a typical valve Class C RF amplifier with a resonant load:

Conduction angle will typically be around 120°, and to achieve that, the grid bias would be around twice the cutoff voltage.

If you attempted to pass a signal such as SSB though a Class C amplifier that was biased to twice the cutoff value, there would be no output signal when the peak input was less than about 50% max drive voltage, or about 25% power, and for greater drive voltage there would be output. How could such a transfer characteristic be argued to be linear?

Owen

5408. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 05:43:21 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <48535A79.2050104@nosspam.activ8.net.au>
Source record: 24879

jimkelleyamps@gmail.com wrote:
> On Jun 6, 9:15 pm, Walter Maxwell <w...@w2du.com> wrote:
>
>> Since E/I is simply a ratio, R is also a ratio. And we know that a
>> ratio cannot dissipate power, or turn electrical energy into heat,
>> thus the output resistance R is non-dissipative. I have made many
>> measurements that prove this.
>
>
> Hi Walt,
>
> R is by definition a physical "property of conductors which depends
> on dimensions, material, and temperature". So if we multiply both
> sides of our "ratio" equation by I^2 to convert to power we get V*I =
> I^2*R. Given that V, I, and R are all non-zero, why would you ask
> us to believe that I^2*R and V*I could be zero? It's true that V^2/R
> is a ratio. And I guess it's probably also true that the equation
> itself doesn't dissipate power. But what would you have us believe
> that that is supposed to prove?
>
> 73, Jim AC6XG

I always believed that a ratio was a comparative measure between like units - e.g. forward voltage to reverse voltage, output power to input power etc. Voltage to current is not a ratio. V/I has dimensions of resistance - ratios are dimensionless.
Alan

5409. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 14:35:22 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <JGQ4k.13901$co7.8683@nlpi066.nbdc.sbc.com>
Source record: 24881

jimkelleyamps@gmail.com wrote:
> R is by definition a physical "property of conductors which depends on
> dimensions, material, and temperature".

That's only one definition. From "The IEEE Dictionary",
the above is definition (A). Definition (B) is simply
"the real part of impedance" with the following Note:
"Definitions (A) and (B) are not equivalent but are
supplementary. In any case where confusion may arise,
specify definition being used."

Definition (B) covers Walt's non-dissipative resistance.
A common example is the characteristic impedance of
transmission line. In an ideal matched system V^2/Z0, I^2*Z0,
or V*I is the power being transferred under non-dissipative
conditions.
--
73, Cecil http://www.w5dxp.com

5410. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 15:46:30 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <HJR4k.52$JK5.45@newsfe07.lga>
Source record: 24882

<jimkelleyamps@gmail.com> wrote in message
news:17e24476-2725-4317-82ce-45ac4b32c12e@t54g2000hsg.googlegroups.com...
On Jun 6, 9:15 pm, Walter Maxwell <w...@w2du.com> wrote:
> Since E/I is simply a ratio, R is also a ratio. And we know that a ratio
cannot dissipate power, or turn
> electrical energy into heat, thus the output resistance R is non-dissipative.
I have made many measurements
> that prove this.

Hi Walt,

R is by definition a physical "property of conductors which depends on
dimensions, material, and temperature". So if we multiply both sides
of our "ratio" equation by I^2 to convert to power we get V*I =
I^2*R. Given that V, I, and R are all non-zero, why would you ask us
to believe that I^2*R and V*I could be zero? It's true that V^2/R is
a ratio. And I guess it's probably also true that the equation itself
doesn't dissipate power. But what would you have us believe that that
is supposed to prove?

73, Jim AC6XG

Hello Jim,

I don't understand how my statement in the email above indicates that I^2*R and
V*R could be zero. The simple ratio of E/I is not zero, yet it defines a
resistance that is non-dissipative because a ratio cannot dissipate power.

Walt

5411. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 16:02:14 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <9YR4k.8097$jl5.45@flpi148.ffdc.sbc.com>
Source record: 24883

Walter Maxwell wrote:
> I don't understand how my statement in the email above indicates that I^2*R and
> V*R could be zero. The simple ratio of E/I is not zero, yet it defines a
> resistance that is non-dissipative because a ratio cannot dissipate power.

"The IEEE Dictionary" is careful to differentiate between
an E/I ratio equaling an impedance vs an "impedor" consisting
of physical components.
--
73, Cecil http://www.w5dxp.com

5412. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 16:32:50 UTC
From: jimkelleyamps@gmail.com
Message-ID: <225a11d9-4872-4e5f-83b9-4b74688a8b95@25g2000hsx.googlegroups.com>
Source record: 24884

On Jun 13, 10:43 pm, Alan Peake <adpe...@nosspam.activ8.net.au> wrote:
> jimkelleya...@gmail.com wrote:
>
> > On Jun 6, 9:15 pm, Walter Maxwell <w...@w2du.com> wrote:
> >
> >> Since E/I is simply a ratio, R is also a ratio. And we know that a
> >> ratio cannot dissipate power, or turn electrical energy into heat,
> >> thus the output resistance R is non-dissipative. I have made many
> >> measurements that prove this.
> >
> >
> > Hi Walt,
> >
> > R is by definition a physical "property of conductors which depends
> > on dimensions, material, and temperature". So if we multiply both
> > sides of our "ratio" equation by I^2 to convert to power we get V*I =
> > I^2*R. Given that V, I, and R are all non-zero, why would you ask
> > us to believe that I^2*R and V*I could be zero? It's true that V^2/R
> > is a ratio. And I guess it's probably also true that the equation
> > itself doesn't dissipate power. But what would you have us believe
> > that that is supposed to prove?
> >
> > 73, Jim AC6XG
>
> I always believed that a ratio was a comparative measure between like
> units - e.g. forward voltage to reverse voltage, output power to input
> power etc. Voltage to current is not a ratio. V/I has dimensions of
> resistance - ratios are dimensionless.
> Alan

Good point. You may be right.

73 de jk

5413. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 16:40:26 UTC
From: jimkelleyamps@gmail.com
Message-ID: <2b72179f-67e7-4035-8ffe-f3d329b558f2@59g2000hsb.googlegroups.com>
Source record: 24885

On Jun 14, 8:46 am, "Walter Maxwell" <w...@w2du.com> wrote:

> I don't understand how my statement in the email above indicates that I^2*R and
> V*R could be zero. The simple ratio of E/I is not zero, yet it defines a
> resistance that is non-dissipative because a ratio cannot dissipate power.

> Walt

Hi Walt -

If E and I are not zero, then E*I is not zero. But you are correct
that the equations themselves do not dissipate power. :-) Resistors
do, however. If there isn't an actual resistor located where you make
your measurement, then of course there's no power being dissipated
there.

73, ac6xg

5414. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 16:48:42 UTC
From: richardharrison@webtv.net
Message-ID: <1364-4853F66A-474@storefull-3258.bay.webtv.net>
Source record: 24886

Alan Peake wrote:
"V/I has dimensions of resistance - ratios are dimensionless."

Yes, until we name them. Cycles / seconds is now called Hertz.

My electronics dictionary defines ratio -
"The value obtained by dividing one number by another."

Simple and no qualifications.

From Newton:
Acceleration = force / mass

You must pick the right units or use constants to make the numbers work.

Some people are persuaded that resistance = loss. Not so at all. Resistance is just a name given to the ratio of voltage to current. A perfect reactance produces a voltage drop but no power is lost. A transmission line can be lossless enough to qualify and have a Zo = sq rt of L/C. Reg Edwards used to say that if your perfect line were long enough you could measure its Zo with an ohmmeter. Reg was right because no reflection would ever return to change the current supplied by the ohmmeter.

Free-space has a lossless Zo of 120 pi (or 377 ohms) according to page 326 of Saveskie`s "Radio Propagation Handbook". This is a ratio which is related to volts and amps but is actually the ratio of the electric field strength to the magnetic field strength in an EM wave. The volts and amps are in phase so it has the units of a pure resistance.

Best regards, Richard Harrison, KB5WZI

5415. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 18:42:26 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <ziU4k.62$JK5.58@newsfe07.lga>
Source record: 24887

"Owen Duffy" <none@no.where> wrote in message
news:Xns9ABD9B0E61D7Dnonenowhere@61.9.191.5...
> richardharrison@webtv.net (Richard Harrison) wrote in news:23000-
> 48518118-280@storefull-3257.bay.webtv.net:
>
> > Jim Lux wrote:
> > "in a linear system"
> >
> > It produces no significant harmonics, so the system is linear.
>
> That is a new / unconventional definition of 'linear'.
>
> The term is usually used in this context to mean a linear transfer
> characteristic, ie PowerOut vs PowerIn is linear.
>
> Considering a typical valve Class C RF amplifier with a resonant load:
>
> Conduction angle will typically be around 120°, and to achieve that, the
> grid bias would be around twice the cutoff voltage.
>
> If you attempted to pass a signal such as SSB though a Class C amplifier
> that was biased to twice the cutoff value, there would be no output
> signal when the peak input was less than about 50% max drive voltage, or
> about 25% power, and for greater drive voltage there would be output. How
> could such a transfer characteristic be argued to be linear?
>
> Owen

Owen, 'linear transfer characteristic' isn't the only context for the use of the word 'linear'. Even though the input circuit of a Class C amplifier is non-linear, the output is linear due to the energy storage of the tank circuit that isolates the input from the output, therefore, the output is linear. Proof of this is that the output signal is a sine wave. In addition, the voltage and current at the output terminals of the pi-network are in phase. Furthermore, the ratio E/I = R appearing at the network output indicates that the output source resistance R is non-dissipative, because a ratio cannot dissipate power. This resistance R is not a resistor.

Walt

5416. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 19:00:05 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <9zU4k.355$jS.206@newsfe05.lga>
Source record: 24888

<jimkelleyamps@gmail.com> wrote in message
news:2b72179f-67e7-4035-8ffe-f3d329b558f2@59g2000hsb.googlegroups.com...
On Jun 14, 8:46 am, "Walter Maxwell" <w...@w2du.com> wrote:

> I don't understand how my statement in the email above indicates that I^2*R
and
> V*R could be zero. The simple ratio of E/I is not zero, yet it defines a
> resistance that is non-dissipative because a ratio cannot dissipate power.

> Walt

Hi Walt -

If E and I are not zero, then E*I is not zero. But you are correct
that the equations themselves do not dissipate power. :-) Resistors
do, however. If there isn't an actual resistor located where you make
your measurement, then of course there's no power being dissipated
there.

73, ac6xg

Jim, have you reviewed the new section Chapter 19A that appears on Cecil's website that he uploaded on June 7? It appears there posted as 'Chapter 19A from Reflections 3'. If you haven't reviewed it I urge you to do so, especially the last portion where I report the measurements I made with a complex impedance loading the amplifier. These measurements prove two things: 1) that the output resistance of the amp is non-dissipative, and 2) that no reflected energy reaches the amp tube, and in fact the measurements show that the tube doesn't even see the reflected power. When you see the numbers and understand the procedure I used in obtaining them you will be hard pressed to disagree with the results.

Walt, W2DU

5417. Re: How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 19:14:04 UTC
From: Dave99 <dpdphoto@aol.com>
Message-ID: <39ebca9e-2bb9-42a4-91f5-835b14df6eed@27g2000hsf.googlegroups.com>
Source record: 24889

On Jun 10, 4:11 pm, lt...@yahoo.com wrote:
> Dave,
> That's probably as accurate as needed. Probably the average person
> just figures the 'square' area and leaves it at that. At least that
> would give you some 'wiggle room' when figuring what support is
> needed. If you're talking about graded classroom stuff, you're on
> your own! Been too long for me...
> - 'Doc

Thanks, you've got a point there. Better to error on the safe side.

Dave

5418. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 19:20:03 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <SRU4k.357$jS.72@newsfe05.lga>
Source record: 24890

"Alan Peake" <adpeake@nosspam.activ8.net.au> wrote in message
news:48535A79.2050104@nosspam.activ8.net.au...
>
>
> jimkelleyamps@gmail.com wrote:
> > On Jun 6, 9:15 pm, Walter Maxwell <w...@w2du.com> wrote:
> >
> >> Since E/I is simply a ratio, R is also a ratio. And we know that a
> >> ratio cannot dissipate power, or turn electrical energy into heat,
> >> thus the output resistance R is non-dissipative. I have made many
> >> measurements that prove this.
> >
> >
> > Hi Walt,
> >
> > R is by definition a physical "property of conductors which depends
> > on dimensions, material, and temperature". So if we multiply both
> > sides of our "ratio" equation by I^2 to convert to power we get V*I =
> > I^2*R. Given that V, I, and R are all non-zero, why would you ask
> > us to believe that I^2*R and V*I could be zero? It's true that V^2/R
> > is a ratio. And I guess it's probably also true that the equation
> > itself doesn't dissipate power. But what would you have us believe
> > that that is supposed to prove?
> >
> > 73, Jim AC6XG
>
>
> I always believed that a ratio was a comparative measure between like
> units - e.g. forward voltage to reverse voltage, output power to input
> power etc. Voltage to current is not a ratio. V/I has dimensions of
> resistance - ratios are dimensionless.
> Alan

Alan, I disagree with you when you say that 'voltage to current' is not a ratio.
IMHO, your are definine 'ratio' to narrowly. Below is a quote from Google:

Ratio
From Wikipedia, the free encyclopedia
. Learn more about using Wikipedia for research .Jump to: navigation, search
This article is about the mathematical concept. For the Swedish institute, see
Ratio Institute. For the academic journal, see Ratio (journal).
This article or section is in need of attention from an expert on the
subject.
Please help recruit one or improve this article yourself. See the talk
page for details.

Please consider using {{Expert-subject}} to associate this request with a WikiProject

The ratio of width to height of typical computer displays
A ratio is a quantity that denotes the proportional[citation needed] amount or magnitude of one quantity relative to another.

Ratios are unitless when they relate quantities of the same dimension. When the two quantities being compared are of different types, the units are the first quantity "per" unit of the second - for example, a speed or velocity can be expressed in "miles per hour". If the second unit is a measure of time, we call this type of ratio a rate.

Fractions and percentages are both specific applications of ratios. Fractions relate the part (the numerator) to the whole (the denominator) while percentages indicate parts per 100.

Note, Alan, the expression "When the two quantities being compared are different types......

Walt, W2DU

5419. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 19:42:01 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <684854hgbgsgmj8eludjj9f9t7q9taq7e0@4ax.com>
Source record: 24891

On Sat, 14 Jun 2008 09:40:26 -0700 (PDT), jimkelleyamps@gmail.com
wrote:

>On Jun 14, 8:46ï¿½am, "Walter Maxwell" <w...@w2du.com> wrote:
>
>> I don't understand how my statement in the email above indicates that I^2*R and
>> V*R could be zero. The simple ratio of E/I is not zero, yet it defines a
>> resistance that is non-dissipative because a ratio cannot dissipate power.
>
>> Walt
>
>Hi Walt -
>
>If E and I are not zero, then E*I is not zero. But you are correct
>that the equations themselves do not dissipate power. :-) Resistors
>do, however. If there isn't an actual resistor located where you make
>your measurement, then of course there's no power being dissipated
>there.

Hi All,

It has taken considerable restraint not to ask some pointed questions:

1. Is a metal wire wound resistor NOT a resistance because it is not
carbon?

2. Is a carbon resistor NOT a resistance because it is not metal
wire-wound?

3. Is a Tube NOT a resistance because it contains no metal?

4. Is a Tube NOT a resistance because it contains no carbon?

5. Is a cathode resistor NOT a resistance when the tube conduction is
zero?

6. Is that same cathode resistor NOT a resistance because it conducts
non-linearly for some speciously constrained (and myopically chosen)
incomplete cycle of time?

finally, and possibly the only compelling logic that seems to flow
from this thread:

7. Is a Tube NOT a resistance simply because it lacks the familiar
shape of an axial lead resistor? (Or, rather, that a familiar axial
lead resistor cannot be found soldered between cathode and plate
within the vacuum?)

I have offered a spectrum of questions guaranteed to be accessible to the buffet style of responding to cosmetic issues instead of substance.

As this is all Rhetoric, I will take the author's prerogative to short-cut the anticipated sputterings of denial, condemnation, damnation, and outrage.

1. 2. 3. and 4. Carbon is a metal.

3. and 4. Plate dissipation bears scant relation to Ohmic Loss. And yet there is heat there that is correlatably and causally related to match, loss, and drive - from any "source."

4. there are many power tubes with Graphite (carbon) plates. The original 813B comes to mind. Some power tubes have their screen grids graphite (carbon) coated too! (Ohm's law still does not appreciably account for plate dissipation.)

5. and 6. are sucker bait for those who would prove the world is non-linear because of the discontinuity at the time of the big-bang (or creation, take your pick).

7. Is, as I intimated, the implicit populist choice (masked as a question) for those who cannot say what the source resistance IS, but are over fulsome by half to say what it is NOT.

Describing what source resistance is NOT is like moving the stacks of brass disks between the Towers of Hanoi. You can do that forever without really coming to any conclusion. Given the length of many threads that imitate this behavior, its popularity marks its less than stupendous insights. But lest I interrupt the modern interpretation of that game as it is played here, I would point out that parsing "ratio" is even more funny. It sure beats Brett dragging the cesspool for newspaper reports of cures for cancer.

-Phew-

73's
Richard Clark, KB7QHC

5420. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 21:28:42 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABE4C0FE266Bnonenowhere@61.9.191.5>
Source record: 24892

"Walter Maxwell" <walt@w2du.com> wrote in
news:ziU4k.62$JK5.58@newsfe07.lga:

>
> "Owen Duffy" <none@no.where> wrote in message
> news:Xns9ABD9B0E61D7Dnonenowhere@61.9.191.5...
>> richardharrison@webtv.net (Richard Harrison) wrote in news:23000-
>> 48518118-280@storefull-3257.bay.webtv.net:
>>
>> > Jim Lux wrote:
>> > "in a linear system"
>> >
>> > It produces no significant harmonics, so the system is linear.
>>
>> That is a new / unconventional definition of 'linear'.
>>
>> The term is usually used in this context to mean a linear transfer
>> characteristic, ie PowerOut vs PowerIn is linear.
>>
>> Considering a typical valve Class C RF amplifier with a resonant
>> load:
>>
>> Conduction angle will typically be around 120°, and to achieve that,
>> the grid bias would be around twice the cutoff voltage.
>>
>> If you attempted to pass a signal such as SSB though a Class C
>> amplifier that was biased to twice the cutoff value, there would be
>> no output signal when the peak input was less than about 50% max
>> drive voltage, or about 25% power, and for greater drive voltage
>> there would be output. How could such a transfer characteristic be
>> argued to be linear?
>>
>> Owen
>
> Owen, 'linear transfer characteristic' isn't the only context for the
> use of the word 'linear'. Even though the input circuit of a Class C
> amplifier is non-linear, the output is linear due to the energy
> storage of the tank circuit that isolates the input from the output,
> therefore, the output is linear. Proof of this is that the output
> signal is a sine wave. In addition, the voltage and current at the
> output terminals of the pi-network are in phase. Furthermore, the
> ratio E/I = R appearing at the network output indicates that the
> output source resistance R is non-dissipative, because a ratio cannot

> dissipate power. This resistance R is not a resistor.

Hi Walt,

A few issues....

Yes, I understand the context in which you mean linear (though I have issues with your proposition)... but my comment was referring to the assertion that 'no harmonics' relates to linear operation which seems to me to refer to the transfer characteristic linearity context.

I do have issue with your stated 'proof'. Firstly, I must qualify that we are talking steady state... the mention of resonant loads means we are in the frequency domain. Whilst it might seem that the tank circuit / pi coupler / whatever is just a network of passive parts and they are all linear, the energy that is supplied to that circuit in each cycle depends on the resonant load impedance and traditional PA design methods suggest that that Eout/Iout relationship is not linear for changes in load Z, although it might be approximately linear over a small range.

I recognise a distinction between resistance (the ratio of E/I) and a resistor (one type of component that exhibits resistance)... but I would not claim that resistance is just a 'ratio' because it implies it is a dimensionless ratio.

Owen

5421. ham antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-14 23:31:56 UTC
From: Wally <carmar00@bigpond.com>
Message-ID: <MxY4k.11016$IK1.10071@news-server.bigpond.net.au>
Source record: 24893

Hello guys,

would any one be able to tell me the mesurments for a dual bander mobile antenna?
wat length and where to pur the coils am trying to build one mys elf foe own use

your help appreciated

trhnx

5422. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-15 00:51:54 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <485467AA.6010708@nosspam.activ8.net.au>
Source record: 24894

Walter Maxwell wrote:
> "Alan Peake" <adpeake@nosspam.activ8.net.au> wrote in message

> Alan, I disagree with you when you say that 'voltage to current' is not a ratio.
> IMHO, your are definine 'ratio' to narrowly. Below is a quote from Google:
>.............

Well, someone has redefined "ratio" since I went to school. My old maths
text book says "The term ratio is used when we wish to compare the size
ofr magnitude of two quantities (or numbers) of the same kind, i.e.,
expressed in the same units, and is measured by a fraction"
All my dictionaries say much the same thing. There is no mention of
comparing quantities of different units. That to me would be like
comparing apples with oranges.

Alan

5423. Re: How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-15 01:03:41 UTC
From: "J. Mc Laughlin" <jcm@power-net.net>
Message-ID: <U6idnYWTMs3398nVnZ2dnUVZ_szinZ2d@bright.net>
Source record: 24895

Dear Dave (no call):

If you wish to get down to details, the standard for most of such calculations can be found in ANSI/TIA standard 222G. Put 222G and wind - or the like - into Google. A copy of the standard itself is expensive. Earlier versions were quite inexpensive.

For low towers and antennas, especially in an urban or built-up area, simple is usually good enough.

Regards, Mac N8TT
--
J. McLaughlin; Michigan, USA
Home: JCM@power-net.net
"Dave99" <dpdphoto@aol.com> wrote in message
news:39ebca9e-2bb9-42a4-91f5-835b14df6eed@27g2000hsf.googlegroups.com...
> On Jun 10, 4:11 pm, lt...@yahoo.com wrote:
>> Dave,
>> That's probably as accurate as needed. Probably the average person
>> just figures the 'square' area and leaves it at that. At least that
>> would give you some 'wiggle room' when figuring what support is
>> needed. If you're talking about graded classroom stuff, you're on
>> your own! Been too long for me...
>> - 'Doc
>
> Thanks, you've got a point there. Better to error on the safe side.
>
> Dave

5424. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-15 01:09:20 UTC
From: Alan Peake <adpeake@nosspam.activ8.net.au>
Message-ID: <48546BC0.8000407@nosspam.activ8.net.au>
Source record: 24896

Richard Harrison wrote:

> Some people are persuaded that resistance = loss. Not so at all.
> Resistance is just a name given to the ratio of voltage to current.

If you define resistance as simply V/I with no regard to phase, then what you say is true but if V and I aren't in phase then you have impedance consisting of real and imaginary components - resistance AND reactance.

> Free-space has a lossless Zo of 120 pi (or 377 ohms) according to page
> 326 of Saveskie`s "Radio Propagation Handbook". This is a ratio which is
> related to volts and amps but is actually the ratio of the electric
> field strength to the magnetic field strength in an EM wave. The volts
> and amps are in phase so it has the units of a pure resistance.

I suppose you could also say that a real resistor is also lossless as the heat due to I*I*R is radiated into space and thus is not lost :)
Alan

5425. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-15 02:33:13 UTC
From: richardharrison@webtv.net
Message-ID: <26406-48547F69-553@storefull-3256.bay.webtv.net>
Source record: 24897

I found a note I intended to post but don`t see it so I suppose it was lost in cyberspace somewhere. I was responding to Owen Duffy.

Owen wrote:
"How could such a transfer characteristic be argued to be linear?"

I responded:
Conditioning.

Class C amplifiers are used lawfully in great abundance. That is proof enough that they are relatively free from distortion. Pulses in plate current don`t prevent the output of the Class C amplifier from becoming a pure sinusoid. Just as an internal combustion engine uses an almost endless string of exlosions in its cylinders to produce a smooth uniform rotation of its crankshaft and flywheel, the Class C amplifier uses an almost endless series of pulses to produce a smooth sinusoid.

I will quote B. Whitfield Griffith, Jr., Principal Engineer (retired) at Continental Electronics, Dallas Texas, builder of many of the world`s most powerful radio transmitters. Griffith says on page 500 of "Radio-Electronic Transmission Fundamentals", that it is important where you couple the load to the Class C amplifier:
"Figure 56-2 shows how the class C amplifier might look in a typical arrangement. Many refinements of the circuit, which are necessary for practical reasons, are omitted here, since we are concerned only with the fundamental principles of its operation at this time. The plate load impedance consists of a tank circuit of a type similar ro that of Fig. 15-5; the difference is that the load resistor is in series with the inductance rather than the capacitance. This is the preferred arrangement, because the harmonic components of the plate current all have frequencies higher than the fundamental and quite naturally tend to follow the capacitive branch of the circuit. By extracting power from the inductive branch, therefore we can expect to find less harmonic energy in the output than would be present if we loaded the capacitive branch. This load resistance may be an actual resistor, if we wish to feed the output of this amplifier into a dummy load for measurement purposes, or it may be the input resistance presented by some type of impedance-matching network so arranged that the loading of the amplifier can readily be varied. Another common method is to couple resistance effectively into the tank inductance by means of the mutual inductance between the tank and a secondary coil which is coupled to it magnetically, where resistive loads appear in the secondary circuit.

There is also shown in Fig. 56-2 the r-f waveform of voltage and current which we would expect to find at various points in the amplifier circuit. No allowance is made in these illustrations for the differences

in potentials of various portions of the circuit; these diagrams are merely representative of the behavior of the r-f potentials and currents. Notice particularly that the r-f plate voltage is 180 degrees out of phase with the r-f grid voltage. The reason for this is easily understood. When the grid is its at its most positive potential, the plate current is at its maximum. As the plate current is drawn through the load impedance, the increase in plate current causes a corresponding reduction in plate voltage. The plate voltage therefore swings downward at the moment the grid voltage swings upward. We also see that the current in the load resistor is lagging the r-f plate voltage by an angle of a little less than 90 degrees. Correct operation of the tank circuit requires that the resistance of this load resistor be much smaller than the reactance of the coil."

Best regards, Richard Harrison, KB5WZI

5426. Re: ham antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-15 03:27:15 UTC
From: AI4QJ <nospam@ns.nc.com>
Message-ID: <48559e1f$0$4107$4c368faf@roadrunner.com>
Source record: 24952

You will probably want to center load the antenna for max efficiency (min I**2R loss in the coil at the current node minumum). The length will depend on the frequencies involed and the electrical length of the coil, a subject which sometimes generates debate in this group. For the coil's electrical length, I might suggest using the Corum inductance calculator at

http://hamwaves.com/antennas/inductance.html

It will help if you are handy with a smith chart (an antenna is a lossy transmission line).

For this type of antenna I would stay away from software modeling programs like EZNEC until you first fully understand the electrical model (using corum etc.) and only then to use it as a reference. You will find the smith chart and Corum far more useful than method-of-moments software tabulators.

AI4QJ

"Wally" <carmar00@bigpond.com> wrote in message
news:MxY4k.11016$IK1.10071@news-server.bigpond.net.au...
> Hello guys,
>
> would any one be able to tell me the mesurments for a dual bander mobile
> antenna?
> wat length and where to pur the coils am trying to build one mys elf
> foe own use
>
> your help appreciated
>
> trhnx
>
>

5427. re: Big

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-15 06:12:53 UTC
From: fghi003 <fghi003.29a821d@radiobanter.com>
Message-ID: <fghi003.29a821d@radiobanter.com>
Source record: 24898

顶一下！！！'brogame'
(http://brogame.com/OrderTracking.aspx)'brogame'
(http://brogame.com/ContactUs.aspx)'brogame'
(http://brogame.com/Cheap.001.Final_Fantasy_XI.aspx)'brogame'
(http://brogame.com/Cheap.014.Maple_Story.aspx)

--
fghi003

5428. Re: ham antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-15 10:54:06 UTC
From: Dave <noone@nowhere.com>
Message-ID: <ix65k.4535$Mu.1365@trndny07>
Source record: 24899

ham antennas? are we allowed to discuss those on here?? i thought this
group was restricted to endless discussions of waves and reflections???

seriously though... 'dual' band? which two bands??

"Wally" <carmar00@bigpond.com> wrote in message
news:MxY4k.11016$IK1.10071@news-server.bigpond.net.au...
> Hello guys,
>
> would any one be able to tell me the mesurments for a dual bander mobile
> antenna?
> wat length and where to pur the coils am trying to build one mys elf
> foe own use
>
> your help appreciated
>
> trhnx
>
>

5429. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-15 17:38:42 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <Ssc5k.170$uJ2.137@newsfe05.lga>
Source record: 24900

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:26406-48547F69-553@storefull-3256.bay.webtv.net...
> I found a note I intended to post but don`t see it so I suppose it was
> lost in cyberspace somewhere. I was responding to Owen Duffy.
>
> Owen wrote:
> "How could such a transfer characteristic be argued to be linear?"
>
> I responded:
> Conditioning.
>
> Class C amplifiers are used lawfully in great abundance. That is proof
> enough that they are relatively free from distortion. Pulses in plate
> current don`t prevent the output of the Class C amplifier from becoming
> a pure sinusoid. Just as an internal combustion engine uses an almost
> endless string of exlosions in its cylinders to produce a smooth uniform
> rotation of its crankshaft and flywheel, the Class C amplifier uses an
> almost endless series of pulses to produce a smooth sinusoid.
>
> I will quote B. Whitfield Griffith, Jr., Principal Engineer (retired) at
> Continental Electronics, Dallas Texas, builder of many of the world`s
> most powerful radio transmitters. Griffith says on page 500 of
> "Radio-Electronic Transmission Fundamentals", that it is important where
> you couple the load to the Class C amplifier:
> "Figure 56-2 shows how the class C amplifier might look in a typical
> arrangement. Many refinements of the circuit, which are necessary for
> practical reasons, are omitted here, since we are concerned only with
> the fundamental principles of its operation at this time. The plate load
> impedance consists of a tank circuit of a type similar ro that of Fig.
> 15-5; the difference is that the load resistor is in series with the
> inductance rather than the capacitance. This is the preferred
> arrangement, because the harmonic components of the plate current all
> have frequencies higher than the fundamental and quite naturally tend to
> follow the capacitive branch of the circuit. By extracting power from
> the inductive branch, therefore we can expect to find less harmonic
> energy in the output than would be present if we loaded the capacitive
> branch. This load resistance may be an actual resistor, if we wish to
> feed the output of this amplifier into a dummy load for measurement
> purposes, or it may be the input resistance presented by some type of
> impedance-matching network so arranged that the loading of the amplifier
> can readily be varied. Another common method is to couple resistance
> effectively into the tank inductance by means of the mutual inductance
> between the tank and a secondary coil which is coupled to it
> magnetically, where resistive loads appear in the secondary circuit.

>
> There is also shown in Fig. 56-2 the r-f waveform of voltage and current
> which we would expect to find at various points in the amplifier
> circuit. No allowance is made in these illustrations for the differences
> in potentials of various portions of the circuit; these diagrams are
> merely representative of the behavior of the r-f potentials and
> currents. Notice particularly that the r-f plate voltage is 180 degrees
> out of phase with the r-f grid voltage. The reason for this is easily
> understood. When the grid is its at its most positive potential, the
> plate current is at its maximum. As the plate current is drawn through
> the load impedance, the increase in plate current causes a corresponding
> reduction in plate voltage. The plate voltage therefore swings downward
> at the moment the grid voltage swings upward. We also see that the
> current in the load resistor is lagging the r-f plate voltage by an
> angle of a little less than 90 degrees. Correct operation of the tank
> circuit requires that the resistance of this load resistor be much
> smaller than the reactance of the coil."
>
> Best regards, Richard Harrison, KB5WZI
>
Richard, I thoroughly enjoyed reading your post above on the analogy between the action of the energy storage of the tank circuit and that of a automobile engine, so I'd like you to read a portion of Chapter 19 from Reflections 2 to see how I approached the same analogy for the book that I quote below:

Therefore, the pi-network must be designed to provide the equivalent optimum resistance RL looking into the input for whatever load terminates the output. The current pulses flowing into the network deliver bursts of electrical energy to the network periodically, in the same manner as the spring-loaded escapement mechanism in the pendulum clock delivers mechanical energy periodically to the swing of the pendulum. In a similar manner, after each plate current pulse enters the pi-network tank curcuit, the flywheel effect of the resonant tank circuit stores the electromagnetic energy delivered by the current pulse, and thus maintains a continuous sinusoidal flow of current throughout the tank, in the same manner as the pendulum swings continuously and periodically after each thrust from the escapement mechanism. The continuous swing of the pendulum results from the inertia of the weight at the end of the pendulum, due to the energy stored in the weight. The path inscribed by the motion of the pendulum is a sine wave, the same as at the output of the amplifier. We will continue the discussion of the flywheel effect in the tank circuit with a more in-depth examination later.

....

We now return to conduct a close examination of the vitally important flywheel effect of the tank circuit. The energy storage (Q) in the tank produces the flywheel effect that isolates the nonlinear pulsed energy entering the tank at the input from the smoothed energy delivered at the output. As a result of this isolation the energy delivered at the output is a smooth sine wave, with linear voltage/current characteristics that support the theorems generally restricted to linear operation. We know that the widely varying voltage/current

relationship at the tank input results in widely varying impedances, which precludes the possibility of a conjugate match at the input of the tank circuit. However, the energy stored in the tank provides constant impedance at the output that supports both the Conjugate Matching and the Maximum Power-transfer Theorems.1

The acceptance by many engineers and amateurs of the notion that the output of the RF tank is nonlinear is a reason some readers will have difficulty in appreciating that the output of the RF tank circuit is linear, and can thus support the conjugate match. Valid analogies between different disciplines are often helpful in clarifying difficulties in appreciating certain aspects of a particular discipline. Fortunately, energy storage in the mechanical discipline has a valid and rigorous analogous relationship with energy storage in LC circuitry that makes it appropriate to draw upon a mechanical example to clarify the effect of energy storage in the RF tank circuit. (A further convincing analogy involving water appears later in the Chapter, in which the origin of the term 'tank circuit' is revealed.)

The smoothing action of the RF energy stored in the tank circuit is rigorously analogous to the smoothing action of the energy stored in the flywheel in the automobile engine. In the automobile engine the flywheel smooths the pulses of energy delivered to the crankshaft by the thrust of the pistons. As in the tank circuit of the amplifier, the automobile flywheel is an energy storage device, and the smoothing of the energy pulses from the pistons is achieved by the energy stored in the flywheel. In effect, it is the flywheel that delivers the energy to the transmission. The energy storage capacity required of the flywheel to deliver smooth energy to the transmission is determined by the number of piston pulses per revolution of the crankshaft. The greater the number of pistons, the less storage capacity is required to achieve a specified level of smoothness in the energy delivered by the flywheel. The storage capacity of the flywheel is determined by its moment of inertia, and the storage capacity of the tank circuit in the RF amplifier is determined by its Q.

5430. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-15 21:58:02 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABF51093105Anonenowhere@61.9.191.5>
Source record: 24951

richardharrison@webtv.net (Richard Harrison) wrote in news:26406-48547F69-553@storefull-3256.bay.webtv.net:

...
> Class C amplifiers are used lawfully in great abundance. That is proof
> enough that they are relatively free from distortion. Pulses in plate
> current don`t prevent the output of the Class C amplifier from becoming
> a pure sinusoid.

... a very long dissertation on Class C amplifiers snipped.

Richard, analysis of the Class C amplifier excited with a constant amplitude single frequency sine wave is revealing about their transfer linearity.

I do not disagree that a Class C amplifier excited with a constant amplitude single frequency sine wave driving a resonant load produces a low distortion constant amplitude single frequency sine wave output.

But the absence of harmonic distortion in such an amplifier is not evidence that the amplifier transfer characteristic is linear. You may be able to use harmonic distortion to detect non-linearity in, for example, audio amplifiers... but not in RF amplifiers with a resonant load... for the reasons set out in your quotation.

A Class C amplifier is unsuited to amplfying SSB telephony because it is manifestly non-linear. In fact, a Class C amplifier is so non-linear that it is well suited to use as a relatively efficient harmonic multiplier.

Class B and AB RF amplifiers are extremely sensitive to non-linearity in the region near cut-off and must have sufficient idle current in every active device (which means conduction ange is > 180°) so that distortion products are sufficiently low. This means that the theoretical conduction angle of 180° for Class B is just not realisable because of distortion, much less 120°.

Owen

5431. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 03:11:05 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <5Sk5k.8837$613.5272@newsfe07.lga>
Source record: 24954

"Owen Duffy" <none@no.where> wrote in message
news:Xns9ABF51093105Anonenowhere@61.9.191.5...
> richardharrison@webtv.net (Richard Harrison) wrote in news:26406-
> 48547F69-553@storefull-3256.bay.webtv.net:
>
> ...
> > Class C amplifiers are used lawfully in great abundance. That is proof
> > enough that they are relatively free from distortion. Pulses in plate
> > current don`t prevent the output of the Class C amplifier from becoming
> > a pure sinusoid.
>
> ... a very long dissertation on Class C amplifiers snipped.
>
> Richard, analysis of the Class C amplifier excited with a constant
> amplitude single frequency sine wave is revealing about their transfer
> linearity.
>
> I do not disagree that a Class C amplifier excited with a constant
> amplitude single frequency sine wave driving a resonant load produces a
> low distortion constant amplitude single frequency sine wave output.
>
> But the absence of harmonic distortion in such an amplifier is not
> evidence that the amplifier transfer characteristic is linear. You may be
> able to use harmonic distortion to detect non-linearity in, for example,
> audio amplifiers... but not in RF amplifiers with a resonant load... for
> the reasons set out in your quotation.
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> manifestly non-linear. In fact, a Class C amplifier is so non-linear that
> it is well suited to use as a relatively efficient harmonic multiplier.
>
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> the region near cut-off and must have sufficient idle current in every
> active device (which means conduction ange is > 180°) so that distortion
> products are sufficiently low. This means that the theoretical conduction
> angle of 180° for Class B is just not realisable because of distortion,
> much less 120°.
>
> Owen
>
Sorry about the 'long dissertation on Class C amps', Owen, but I thought it
appropriate to include it in view of Richard's similar discussion on the
automotive engine analogy to the RF tank circuit. I'll try to keep my comments

shorter from now on.

Walt, W2DU

5432. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 03:11:48 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <6Sk5k.8838$613.221@newsfe07.lga>
Source record: 24953

"Owen Duffy" <none@no.where> wrote in message
news:Xns9ABF51093105Anonenowhere@61.9.191.5...
> richardharrison@webtv.net (Richard Harrison) wrote in news:26406-
> 48547F69-553@storefull-3256.bay.webtv.net:
>
> ...
> > Class C amplifiers are used lawfully in great abundance. That is proof
> > enough that they are relatively free from distortion. Pulses in plate
> > current don`t prevent the output of the Class C amplifier from becoming
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>
> A Class C amplifier is unsuited to amplfying SSB telephony because it is
> manifestly non-linear. In fact, a Class C amplifier is so non-linear that
> it is well suited to use as a relatively efficient harmonic multiplier.
>
> Class B and AB RF amplifiers are extremely sensitive to non-linearity in
> the region near cut-off and must have sufficient idle current in every
> active device (which means conduction ange is > 180°) so that distortion
> products are sufficiently low. This means that the theoretical conduction
> angle of 180° for Class B is just not realisable because of distortion,
> much less 120°.
>
> Owen
>
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appropriate to include it in view of Richard's similar discussion on the
automotive engine analogy to the RF tank circuit. I'll try to keep my comments

shorter from now on.

Walt, W2DU

5433. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 03:32:23 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ABF89B8DE92Fnonenowhere@61.9.191.5>
Source record: 24955

"Walter Maxwell" <walt@w2du.com> wrote in
news:6Sk5k.8838$613.221@newsfe07.lga:

> Sorry about the 'long dissertation on Class C amps', Owen, but I
> thought it appropriate to include it in view of Richard's similar
> discussion on the automotive engine analogy to the RF tank circuit.
> I'll try to keep my comments shorter from now on.

Walt, it wasn't so much that it was long, but it was long and for all that was said, it didn't address the linearity issue.

I understand your position to be that the behaviour of the tank circuit is independent of the transfer linearity of the active device... but asserting that 'things' are linear because there are no harmonics is wrong and being so, is no support for your argument.

I am wary of analogies, the switch analogy that was raised is not a good approximation and I haven't even thought about the car engine.

I am genuinely insterested in your argument. I don't accept it (yet?) as you know, and I have spent some time over the last 18 months or so exploring the concept you describe.

Fundamentally, I am trying to reconcile what you say with the techniques commonly accepted for designing such a PA. Those design techniques give us a method of predicting power output at different load impedances, and the E/I characteristic for different loads is not always a straight line (as it would be if a Thevenin equivalent circuit exists), though it might appear fairly straight over a narrow domain. Since working from characteristic curves is so prone to error, my modelling has been based on an idealised triode transfer characteristic, but with similar behaviour to an 811A. The analysis is waiting for me to build the analytical equations for the negative feedback due to cathode degeneration in a grounded grid configuration. I need to apply more time to it, and the revived discussion might focus me for a bit!

Owen

5434. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 06:07:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <74sb54lgorpre3v6g4bd5od7f0pr6ougdd@4ax.com>
Source record: 24956

On Mon, 16 Jun 2008 03:32:23 GMT, Owen Duffy <none@no.where> wrote:

>The analysis is waiting for me to build the
>analytical equations for the negative feedback due to cathode
>degeneration in a grounded grid configuration.

Hi Owen,

Consult the work of H.W. Bode taken from his lectures at Bell Labs ca. 1939, and then rendered into text as:
Network Analysis and Feedback Amplifier Design,
Chapter IV Mathematical Definition of Feedback
4.2 Return Voltage and Reduction in Effect of Tube Variations p 46
It attends specifically (grounded grid triode) what you call out above.

In a nutshell, Output (or Input) Z can be tailored by what is called the "noise gain" of an amplifier. In today's parlance, that is that portion of Open loop gain that is fed back to the input to create what is called closed loop gain ("noise gain" is simply the difference when all gains are expressed as dB). The higher the "noise gain" the lower the output Z (or higher the input Z) compared to the native (open loop) Z. There are a host of other characteristics improvements that flow from this same boon offered by "noise gain" (dynamic range, noise rejection, linearity, CMRR, PSRR, and so on).

This shorthand can be found expanded in discussion in
5.5 Effect of Feedback on Input and Output Impedances of Amplifiers
bullets 1. through 4. but it serves the reader to really stick with the first 4 chapters to gain the proficiency to tackle the remaining 15 as the text is heavily cross-referential.

The general formula can be found at:
5.11 Exact Formula for External Gain with Feedback (5-30)

Bode was not simply a chalk-and-talk theorist wholly ignorant of the practical realities as are evidenced in several chapter headings:
Chapter VII Stability and Physical Realizability

Chapter IX Physical Representation of Driving Point Impedance Functions

Chapter XI Physical Representation of transfer Impedance Functions

Chapter XIII General Restrictions on Physical Network Characterizations

Ultimately, it takes very little reading applied to the conventional designs found in Amateur class amplifiers to discover there is really very, very little modification of amplifier characteristics offered through negative feedback design (it costs too much). In fact, I would say none whatever - hence the heavy filtering at the outputs and the customers' universal acceptance of barely mediocre performance. It might be said that every transmitter owned by hams is a museum of 1930s performance. And for those who mistake the feedback of stabilization (barely found in those same cheap designs) - this is not negative feedback, it is compensation. It too has scant effect on tailoring (reducing/increasing) impedances.

As I am undoubtedly the only copy holder of this book in this group, access can be obtained through:

http://books.google.com/books?client=firefox-a&um=1&q=H.W.+Bode&btnG=Search+Books
which will provide a surplus of leads, if not the exact title. Some links might provide a pdf, others full access, yet others limited access, and most have links to copies in the market place.

Given the usual confusion over what constitutes a Conjugate match (when most argue an Impedance match in its place) says discussion of "Efficiency and maximum power transfer" without more rigorous resources fails to even reach the level of tepid conjecture.

Bottom line is the source presents a real resistance and no appeal to ratios, linearity, load lines, fly-wheels, or partial cycles is necessary to arrive at a definitive value (which, to this point has been notably absent in the face of obviously localized heat and loss). There is plenty of discussion of what it is NOT, but none seem to know what it IS. That the typical Amateur amplifier source Z is demonstrable is embarrassment enough to this shortfall of expertise. (The pile of theories, books and formulas merely support the obvious, not replace it.)

73's
Richard Clark, KB7QHC

5435. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 07:08:14 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <Pio5k.12752$Ri.7397@flpi146.ffdc.sbc.com>
Source record: 24957

Richard Clark wrote:
> On Mon, 16 Jun 2008 03:32:23 GMT, Owen Duffy <none@no.where> wrote:
>
>> The analysis is waiting for me to build the
>> analytical equations for the negative feedback due to cathode
>> degeneration in a grounded grid configuration.
>
> Hi Owen,
>
> Consult the work of H.W. Bode taken from his lectures at Bell Labs ca.
> 1939, and then rendered into text as:
> Network Analysis and Feedback Amplifier Design,
> Chapter IV Mathematical Definition of Feedback
> 4.2 Return Voltage and Reduction in Effect of Tube Variations p 46
> It attends specifically (grounded grid triode) what you call out
> above.
>
> In a nutshell, Output (or Input) Z can be tailored by what is called
> the "noise gain" of an amplifier. In today's parlance, that is that
> portion of Open loop gain that is fed back to the input to create what
> is called closed loop gain ("noise gain" is simply the difference when
> all gains are expressed as dB). The higher the "noise gain" the lower
> the output Z (or higher the input Z) compared to the native (open
> loop) Z. There are a host of other characteristics improvements that
> flow from this same boon offered by "noise gain" (dynamic range, noise
> rejection, linearity, CMRR, PSRR, and so on).
>
> This shorthand can be found expanded in discussion in
> 5.5 Effect of Feedback on Input and Output Impedances of
> Amplifiers
> bullets 1. through 4. but it serves the reader to really stick with
> the first 4 chapters to gain the proficiency to tackle the remaining
> 15 as the text is heavily cross-referential.
>
> The general formula can be found at:
> 5.11 Exact Formula for External Gain with Feedback (5-30)
>
> Bode was not simply a chalk-and-talk theorist wholly ignorant of the
> practical realities as are evidenced in several chapter headings:
> Chapter VII Stability and Physical Realizability
>
> Chapter IX Physical Representation of Driving Point Impedance
> Functions
>

> Chapter XI Physical Representation of transfer Impedance Functions
>
> Chapter XIII General Restrictions on Physical Network
> Characterizations
>
> Ultimately, it takes very little reading applied to the conventional
> designs found in Amateur class amplifiers to discover there is really
> very, very little modification of amplifier characteristics offered
> through negative feedback design (it costs too much). In fact, I
> would say none whatever - hence the heavy filtering at the outputs and
> the customers' universal acceptance of barely mediocre performance. It
> might be said that every transmitter owned by hams is a museum of
> 1930s performance. And for those who mistake the feedback of
> stabilization (barely found in those same cheap designs) - this is not
> negative feedback, it is compensation. It too has scant effect on
> tailoring (reducing/increasing) impedances.
>
> As I am undoubtedly the only copy holder of this book in this group,
> access can be obtained through:
>
> http://books.google.com/books?client=firefox-a&um=1&q=H.W.+Bode&btnG=Search+Books
> which will provide a surplus of leads, if not the exact title. Some
> links might provide a pdf, others full access, yet others limited
> access, and most have links to copies in the market place.
>
> Given the usual confusion over what constitutes a Conjugate match
> (when most argue an Impedance match in its place) says discussion of
> "Efficiency and maximum power transfer" without more rigorous
> resources fails to even reach the level of tepid conjecture.
>
> Bottom line is the source presents a real resistance and no appeal to
> ratios, linearity, load lines, fly-wheels, or partial cycles is
> necessary to arrive at a definitive value (which, to this point has
> been notably absent in the face of obviously localized heat and loss).
> There is plenty of discussion of what it is NOT, but none seem to know
> what it IS. That the typical Amateur amplifier source Z is
> demonstrable is embarrassment enough to this shortfall of expertise.
> (The pile of theories, books and formulas merely support the obvious,
> not replace it.)
>
> 73's
> Richard Clark, KB7QHC

Hi Richard,
A more modern treatment is _High Linearity RF Amplifier
Design_ by Peter B. Kenington. ISBN 1-58053-143-1. I think Amazon
still carries it.
73,
Tom Donaly, KA6RUH

5436. Re: Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 07:10:07 UTC
From: "Mike M." <notme@invalid.email.net>
Message-ID: <5r2c541h2kj6lk1ugtigq4gd87nl54b6k8@4ax.com>
Source record: 24958

On Tue, 27 May 2008 12:34:53 +1000, "Gary Smith" <vkthree@gmail.com>
wrotF:

>Hi all, i am installing a mobile radio into my car soon. I need an antenna
>that will cover 2 metres, 70cm and uhfcb as the rig only has one antenna
>socket. I would appreciate any information on how to make one antenna to
>suite these 3 bands or maybe there is one available. I would prefer to build
>one. Yes, i know I'm not supposed to be using a ham radio on UHFCB so don't
>bother mentioning it.
>
>Thanks.
>
>Gary
>VK3LCD

Hi Gary,

The Comet CA-2x4SR almost makes it with 140-160/435-465 MHz @ less
than 1.5:1.
<http://www.cometantenna.com/products.php?CatID=1&famID=4&childID=4>

You could play around with a conical monopole, sort of like an upside
down discone. Nil-Jon used to sell one.
<http://www.eham.net/reviews/detail/1326>

Mike kc9doa

5437. 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 10:19:33 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <N6r5k.124358$TL1.84245@newsfe21.ams2>
Source record: 24959

Hi,

I have a 40 meter centre feed dipole cut for 40 and feed direct with 50 Ohm coax. The house end is connected to the centre of the coax and the pole end is connected to the braid. Seems to work best this way round.
The antenna is fixed tight to the house and the other end is tight to the metal pole in a straight-line, diagonal across the garden, both ends are insulated. The garden is about 64 feet give or take a couple of feet.

I cannot drop the ends down because of the house and metal pole at the end of the garden being so close. I can only feed the antenna with coax. The neighbours are OK with coax but not the ribbon feeder hanging down and I don't want to upset them if I can help it.

My question. What are my options to enable me to operate 80 and 40m on this same antenna wire?

73 Andy

5438. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 11:40:35 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <Jis5k.70717$RE7.60244@newsfe08.ams2>
Source record: 24960

I've given up on this idea for now. I just can't get any ground wires above
or below ground here at present and the couple of earth rods that I have
sunk in just doesn't do the job.

73 Andy

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:uBb3k.4691$89.2887@nlpi069.nbdc.sbc.com...
> Andy wrote:
>> I have nothing here to measure the Q of the trap.
>> Is there another way of working out the correct frequency needed for the
>> trap?
>
> Sorry, I would just be guessing. I made my 40m traps
> resonant on 7.4 MHz and they worked well over the
> 40m band. But I never made any measurements or A/B
> comparisons.
>
>> The traps are made from RG58 C/U. I think these are a low Q but I'm not
>> sure.
>
> The following web page might be of interest:
>
> http://www.seed-solutions.com/gregordy/Amateur%20Radio/Experimentation/CoaxTrap.htm
> --
> 73, Cecil http://www.w5dxp.com
>

5439. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 11:49:46 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <n7Odncn-Z_vszsvVnZ2dnUVZ8uydnZ2d@bt.com>
Source record: 24961

Andy,

Pretty much any antenna tuning unit (ATU) will work to enable you to use this antenna on 80 metres. Obviously efficiency will suffer, but you will get a signal out. The antenna needs extra length or more inductance to bring it to resonance on 80 metres.

You could experiment with an old metal variable capacitor (around 350 pf) and a two inch diameter coil with about 12 or 15 turns and a fly lead to short out the turns. Old mains wiring cable is a good source of wire for this. Connecting this up in the coax feed in an 'L' configuration will allow a surprising range of frequencies to be brought to resonance on your antenna. Check out Google for some ideas on how to wire it up. A metal air spaced variable should be good for powers up to a hundred watts without arcing problems.

There will probably be a lot of articles about an unbalanced feed causing the coax to radiate. Winding the coax into half a dozen 6-inch turns fastened with cable ties at the feed point of the dipole will help avoid this problem.

Or, you could add a couple of coils, one each side of the dipole centre to increase the physical wire length in the air and bridge out the coils to work at 20 metres, but this would involve raising and lowering the antenna. You could use a couple of relays to perform the job, but it all starts to get rather more complex than simply using an ATU.

Regards

Mike G0ULI

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:N6r5k.124358$TL1.84245@newsfe21.ams2...
> Hi,
>
> I have a 40 meter centre feed dipole cut for 40 and feed direct with 50
> Ohm coax. The house end is connected to the centre of the coax and the
> pole end is connected to the braid. Seems to work best this way round.
> The antenna is fixed tight to the house and the other end is tight to the
> metal pole in a straight-line, diagonal across the garden, both ends are
> insulated. The garden is about 64 feet give or take a couple of feet.
>
> I cannot drop the ends down because of the house and metal pole at the end
> of the garden being so close. I can only feed the antenna with coax. The
> neighbours are OK with coax but not the ribbon feeder hanging down and I
> don't want to upset them if I can help it.

>
> My question. What are my options to enable me to operate 80 and 40m on
> this same antenna wire?
>
>
> 73 Andy
>

5440. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 11:58:06 UTC
From: Rick <ricknj10@hotmail.com>
Message-ID: <4856557c$0$7363$607ed4bc@cv.net>
Source record: 24962

Any,
I think one way is to feed the antenna as a top loaded vertical. What you do is at the end of the coax (the PL259 connector) you short the center to the braid. Then you treat it as a single wire, as if it was the bottom end of a vertical. Use a tuner. You will need a ground on the tuner.
The most optimum arrangement would be for the tuner to be sitting on the earth, right under the centre of the dipole with the coax coming straight down to it, and with a series of radials out all over the ground from the tuner. This will probably not be possible so you start making your compromises from there.
Rick K2XT

5441. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 14:06:55 UTC
From: ltdoc@yahoo.com
Message-ID: <20671905-9cee-4e73-a206-f50162c9c17c@34g2000hsh.googlegroups.com>
Source record: 24963

Andy,
You have learned something though. Those 'ground/earth' rods
aren't all they are cracked up to be, not exactly the 'best' choice in
every case (especially for lower frequencies). Not much consolation,
huh? Oh well, that's the way it goes...
- 'Doc

5442. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 14:22:24 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <AGu5k.14071$co7.7377@nlpi066.nbdc.sbc.com>
Source record: 24964

Andy wrote:
> My question. What are my options to enable me to operate 80 and 40m on this
> same antenna wire?

I would consider a switched loading coil at the feedpoint.
Switch it in for 80m and out for 40m.
--
73, Cecil http://www.w5dxp.com

5443. Re: Triband Mobile Vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 14:40:34 UTC
From: Robert Smits <bob@rsmits.ca>
Message-ID: <e1b8208a826271cdf1b7180e380ba0af@grapevine.islandnet.com>
Source record: 24965

Gary Smith wrote:

> Hi all, i am installing a mobile radio into my car soon. I need an antenna
> that will cover 2 metres, 70cm and uhfcb as the rig only has one antenna
> socket. I would appreciate any information on how to make one antenna to
> suite these 3 bands or maybe there is one available. I would prefer to
> build one. Yes, i know I'm not supposed to be using a ham radio on UHFCB
> so don't bother mentioning it.
>
> Thanks.
>
> Gary
> VK3LCD

Two options come to mind, Gary. The first is to find a commercial diplexer that covers your frequency ranges, which is not likely, second is to build a three port diplexer. Google for diplexer, and you find a fair number of designs, many of which could be modified quite easily, I think.

Third, a 1/4 wave antenna at VHF is a 3/4 wave antenna at UHF. Can you make one broadbanded enough to cover? Don't know, but it might be worth trying.

--
Bob Smits, VE7HS, Ladysmith, BC

"What a wonder is USENET; such wholesale production of conjecture from such a trifling investment in fact." -- Carl S. Gutekunst

5444. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 15:32:09 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g3611p$s19$1@news.jpl.nasa.gov>
Source record: 24968

Owen Duffy wrote:
> richardharrison@webtv.net (Richard Harrison) wrote in news:23000-
> 48518118-280@storefull-3257.bay.webtv.net:
>
>> Jim Lux wrote:
>> "in a linear system"
>>
>> It produces no significant harmonics, so the system is linear.
>
> That is a new / unconventional definition of 'linear'.
>
> The term is usually used in this context to mean a linear transfer
> characteristic, ie PowerOut vs PowerIn is linear.

Or, as I used it, that superposition holds.
One can build an amplifier or other device where the Pout(Pin) =straight line, but is not linear in the formal sense. Say you built a widget that measured the input frequency and amplitude, then drove a synthesizer at that frequency and amplitude = 2*input amplitude.

>
> Considering a typical valve Class C RF amplifier with a resonant load:
>
> Conduction angle will typically be around 120ï¿½, and to achieve that, the
> grid bias would be around twice the cutoff voltage.
>
> If you attempted to pass a signal such as SSB though a Class C amplifier
> that was biased to twice the cutoff value, there would be no output
> signal when the peak input was less than about 50% max drive voltage, or
> about 25% power, and for greater drive voltage there would be output. How
> could such a transfer characteristic be argued to be linear?

It would not be.You're right

The active device isn't linear.
neither is the whole assembly.

I think, though, that sometimes we take a more casual view of linear (e.g. people talk about the linearity of a log detector.. referring to the deviation from a Voltage out=dBm in straight line.)

And, some confusion about nonlinear devices in a building block that is, by and large, linear (e.g. a power op amp with an AB2 output stage and a fair amount of negative feedback) with some constraints on frequency and amplitude.
>

> Owen

5445. Re: How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 15:34:47 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g3616n$s19$2@news.jpl.nasa.gov>
Source record: 24966

J. Mc Laughlin wrote:
> Dear Dave (no call):
>
> If you wish to get down to details, the standard for most of such
> calculations can be found in ANSI/TIA standard 222G. Put 222G and wind - or
> the like - into Google. A copy of the standard itself is expensive.
> Earlier versions were quite inexpensive.
>
> For low towers and antennas, especially in an urban or built-up area,
> simple is usually good enough.
>
> Regards, Mac N8TT

Depends on what your regulatory environment is, too...

A 50 foot tower out in the middle of a 160 acre field will typically
require less analysis to meet the local rules than a 100 foot tower on
5000 ft suburban lot.

5446. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 15:42:37 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g361ld$26k$1@news.jpl.nasa.gov>
Source record: 24967

Richard Clark wrote:
>
> Ultimately, it takes very little reading applied to the conventional
> designs found in Amateur class amplifiers to discover there is really
> very, very little modification of amplifier characteristics offered
> through negative feedback design (it costs too much). In fact, I
> would say none whatever - hence the heavy filtering at the outputs and
> the customers' universal acceptance of barely mediocre performance. It
> might be said that every transmitter owned by hams is a museum of
> 1930s performance. And for those who mistake the feedback of
> stabilization (barely found in those same cheap designs) - this is not
> negative feedback, it is compensation. It too has scant effect on
> tailoring (reducing/increasing) impedances.

probably not "every transmitter", but certainly the vast majority of designs, particularly those for HF based on tubes in the ARRL handbook (and by extension, those sold to readers of the handbook).

Cost *is* a factor. The Harris PWM modular transmitters are very cool, but beyond the means of most hams as a commercially manufactured item (in that, the NRE for a consumer mfr to get there would be prohibitively high)

One should also not neglect that the hobby aspect of ham radio provides an incentive (for some) to preserve fine (or not so fine) examples of past radio art. No more unusual than steam train fans or classic auto collectors. There is a visceral satisfaction of seeing those glowing tubes with the plates changing color, notwithstanding that the RF performance, in objective terms, is horrid.

>

> As I am undoubtedly the only copy holder of this book in this group,
> access can be obtained through:
>
I'll bet not..<grin>

5447. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 16:59:52 UTC
From: richardharrison@webtv.net
Message-ID: <20731-48569C08-622@storefull-3253.bay.webtv.net>
Source record: 24969

Owen Duffy wrote:
"... but asserting that things are linear because there are no harmonics is wrong and being so, is no support for your atgument."

No one is arguing that an amplitude modulated wave can be amplified by a Class C amplifier stage unimpaired by amplitude distortion.

Terman wrote on page 525 0f his 1955 opus:
"Amplitude distortion exists when the modulation envelope contains frequency components not present in the modulating signal. Thus if the modulating signal is a sine wave, then amplitude distortion will cause the envelope to contain harmonics of the modulating signal, which in turn denotes the presence of high-order sideband components that differ from the carrier frequency by harmonics of the modulating frequency."

I`ve used microwave system performance monitors which alarmed on this principle.

If there are no harmonics there is no distortion no matter how lousy the transfer function. It is legal to filter out noise and distortion.

Best regards, Richard Harrison, KB5WZI

5448. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 17:16:33 UTC
From: nospam@online.de
Message-ID: <1iin607.xcl2pe6r1p9pN%nospam@online.de>
Source record: 24970

Andy <dx90@blueyounder.co.uk> wrote:

> My question. What are my options to enable me to operate 80 and 40m on this
> same antenna wire?

You could get trap dipoles for the 80 and 40m band with almost the
dimensions of a 40m dipol, e.g Diamond W-8010

My antenna book shows a short antenna for 80 and 40m which is called
"Morgain antenna". It was originally produced in the USA.

http://i4ewh.altervista.org/ShortWaves/Morgain/Morgain.htm

--
73
DJ4PB

5449. Re: How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 17:53:28 UTC
From: richardharrison@webtv.net
Message-ID: <10726-4856A898-677@storefull-3251.bay.webtv.net>
Source record: 24971

Jim Lux wrote:
"Depends on what your regulatory environment is."

Yes, and I think manufacturers will provide projected areas and windloading of antennas and supporting structures.

Best regards, Richard Harrison, KB5WZI

5450. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 18:44:05 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g36c9luks1@f04n12.cac.psu.edu>
Source record: 24972

Richard Clark wrote:
> On Mon, 16 Jun 2008 03:32:23 GMT, Owen Duffy <none@no.where> wrote:
>
>> The analysis is waiting for me to build the
>> analytical equations for the negative feedback due to cathode
>> degeneration in a grounded grid configuration.
>
> Hi Owen,
>
> Consult the work of H.W. Bode taken from his lectures at Bell Labs ca.
> 1939, and then rendered into text as:

Hi Richard,

In this group, would not the work of Vaughn Bode be more appropriate?

- 73 de Mike N3LI -

5451. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 18:56:49 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <7Iy5k.90$h06.83@newsfe07.lga>
Source record: 24973

"Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
news:g3611p$s19$1@news.jpl.nasa.gov...
> Owen Duffy wrote:
> > richardharrison@webtv.net (Richard Harrison) wrote in news:23000-
> > 48518118-280@storefull-3257.bay.webtv.net:
> >
> >> Jim Lux wrote:
> >> "in a linear system"
> >>
> >> It produces no significant harmonics, so the system is linear.
> >
> > That is a new / unconventional definition of 'linear'.
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> > The term is usually used in this context to mean a linear transfer
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>
> Or, as I used it, that superposition holds.
> One can build an amplifier or other device where the Pout(Pin) =straight
> line, but is not linear in the formal sense. Say you built a widget that
> measured the input frequency and amplitude, then drove a synthesizer at
> that frequency and amplitude = 2*input amplitude.
>
> >
> > Considering a typical valve Class C RF amplifier with a resonant load:
> >
> > Conduction angle will typically be around 120°, and to achieve that, the
> > grid bias would be around twice the cutoff voltage.
> >
> > If you attempted to pass a signal such as SSB though a Class C amplifier
> > that was biased to twice the cutoff value, there would be no output
> > signal when the peak input was less than about 50% max drive voltage, or
> > about 25% power, and for greater drive voltage there would be output. How
> > could such a transfer characteristic be argued to be linear?
>
> It would not be.You're right
>
> The active device isn't linear.
> neither is the whole assembly.
>
> I think, though, that sometimes we take a more casual view of linear
> (e.g. people talk about the linearity of a log detector.. referring to
> the deviation from a Voltage out=dBm in straight line.)
>

> And, some confusion about nonlinear devices in a building block that is,
> by and large, linear (e.g. a power op amp with an AB2 output stage and a
> fair amount of negative feedback) with some constraints on frequency and
> amplitude.
> >
> > Owen

Owen, I didn't realize that this thread was specific to 'linear transfer characteristic'. I thought the thread topic was sufficiently broad so as to include the subject of linearity of the output of the tank circuit that permits the use of theorems that require the output to be linear. Richard H's and my posts were simply reminders that the energy storage in the tank circuit is the reason for the linear relation between voltage and current at the output of both Class B and C amplifiers that results in a sine wave. From that perspective I believed our posts were legitimate to the thread topic. Apparently we were wrong.

And Owen, I'm somewhat surprised that you don't agree with the flywheel analogy with respect to the smoothing effect of the energy storage in the tank circuit. This analogy has been around for decades--it's not my invention. IMHO, the periodic energy spurts from the pistons entering the flywheel is precisely an analog of the energy spurts of the periodic current pulses entering the tank citcuit. Why do you not agree? Even the pendulum swing is appropriate, because if you trace the position of the pendulum with respect to time you'll discover the trace is a perfect sine wave, while the short spurt of energy supplied by the spring at the beginning of each cycle is just sufficient to overcome the energy dissipated due to friction at the axis plus the aerodynamic resistance. How could this not be an appropriate analogy? Sorry to have forced you away from the thread topic with questions not pertaining to the thread.

I am also curious as to why the subject of 'linear transfer characteristic' with respect to Class C amps was even considered, because the Class C amp has always been known to have a distorted output relative to its input. I would agree that the subject is appropriate when considering Class AB and B amplifiers, but not C.

Walt, W2DU

5452. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 19:47:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <072d54ld60ssdcmeghe79tc7khbibjjp29@4ax.com>
Source record: 24974

On Mon, 16 Jun 2008 00:08:14 -0700, "Tom Donaly"
<dtdonaly@sbcglobal.net> wrote:

>Hi Richard,
> A more modern treatment is _High Linearity RF Amplifier
>Design_ by Peter B. Kenington. ISBN 1-58053-143-1. I think Amazon
>still carries it.
>73,
>Tom Donaly, KA6RUH

Thanx Tom.

73's
Richard Clark, KB7QHC

5453. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 21:13:53 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AC0498CBD6FCnonenowhere@61.9.191.5>
Source record: 24975

Jim Lux <james.p.lux@jpl.nasa.gov> wrote in
news:g3611p$s19$1@news.jpl.nasa.gov:

...
>> That is a new / unconventional definition of 'linear'.
>>
>> The term is usually used in this context to mean a linear transfer
>> characteristic, ie PowerOut vs PowerIn is linear.
>
> Or, as I used it, that superposition holds.
> One can build an amplifier or other device where the Pout(Pin)
> =straight line, but is not linear in the formal sense. Say you built a
> widget that measured the input frequency and amplitude, then drove a
> synthesizer at that frequency and amplitude = 2*input amplitude.
>

Yes Jim, I should have written Vout/Vin is linear, that Vout(Vin) has no significant terms higher than first order.

Noting that a single ended Class B or AB amplifier can only be linear when a resonant load or suitable filter is included as part of the system.

Elsewhere it was suggested that I do not accept the 'flywheel' explanation of the tank circuit. That is not true, but it is a limited explanation, simple, and appealing, but limited.

Another explanation is to view the anode current waveform as containing a DC component, a fundamental component and harmonic components and a filter that adequately reduces the undesired components provides the solution to a single ended Class B or AB linear amplifier. The filter is not restricted to a resonant 'tank' circuit.

I have modelled the operating characteristics of my HF linear using 4 572B in AB2. An FFT of the anode current reveals the spectral content, it is plotted at http://www.vk1od.net/lost/572BIaSpectrum.png . Of course, the output filter must only select the fundamental component for linear operation, selection of a harmonic would not be acceptable for a complex input waveform because it would destroy the absolute relationship between different frequency components of the input.

Owen

5454. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 21:14:36 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AC049ABE455Cnonenowhere@61.9.191.5>
Source record: 24976

"Walter Maxwell" <walt@w2du.com> wrote in
news:7Iy5k.90$h06.83@newsfe07.lga:

>
> "Jim Lux" <james.p.lux@jpl.nasa.gov> wrote in message
> news:g3611p$s19$1@news.jpl.nasa.gov...
>> Owen Duffy wrote:
>> > richardharrison@webtv.net (Richard Harrison) wrote in news:23000-
>> > 48518118-280@storefull-3257.bay.webtv.net:
>> >
>> >> Jim Lux wrote:
>> >> "in a linear system"
>> >>
>> >> It produces no significant harmonics, so the system is linear.
>> >
>> > That is a new / unconventional definition of 'linear'.
>> >
>> > The term is usually used in this context to mean a linear transfer
>> > characteristic, ie PowerOut vs PowerIn is linear.
>>
>> Or, as I used it, that superposition holds.
>> One can build an amplifier or other device where the Pout(Pin)
>> =straight line, but is not linear in the formal sense. Say you built
>> a widget that measured the input frequency and amplitude, then drove
>> a synthesizer at that frequency and amplitude = 2*input amplitude.
>>
>> >
>> > Considering a typical valve Class C RF amplifier with a resonant
>> > load:
>> >
>> > Conduction angle will typically be around 120°, and to achieve
>> > that, the grid bias would be around twice the cutoff voltage.
>> >
>> > If you attempted to pass a signal such as SSB though a Class C
>> > amplifier that was biased to twice the cutoff value, there would be
>> > no output signal when the peak input was less than about 50% max
>> > drive voltage, or about 25% power, and for greater drive voltage
>> > there would be output. How could such a transfer characteristic be
>> > argued to be linear?
>>
>> It would not be.You're right
>>
>> The active device isn't linear.

>> neither is the whole assembly.
>>
>> I think, though, that sometimes we take a more casual view of linear
>> (e.g. people talk about the linearity of a log detector.. referring
>> to the deviation from a Voltage out=dBm in straight line.)
>>
>> And, some confusion about nonlinear devices in a building block that
>> is, by and large, linear (e.g. a power op amp with an AB2 output
>> stage and a fair amount of negative feedback) with some constraints
>> on frequency and amplitude.
>> >
>> > Owen
>
> Owen, I didn't realize that this thread was specific to 'linear
> transfer characteristic'. I thought the thread topic was sufficiently

Richard stated "It produces no significant harmonics, so the system is linear." It is that with which I disagree.

...
> And Owen, I'm somewhat surprised that you don't agree with the
> flywheel analogy with respect to the smoothing effect of the energy
> storage in the tank circuit. ...

I have not disagreed with that in anything that I wrote.

> ...
> I am also curious as to why the subject of 'linear transfer
> characteristic' with respect to Class C amps was even considered,
> because the Class C amp has always been known to have a distorted
> output relative to its input. I would agree that the subject is
> appropriate when considering Class AB and B amplifiers, but not C.
>

Because Richards statement quoted above (which must be about transfer linearity) is being used to support your assertion that the PA is linear in its terminal V/I response with changing load.

Walt, the thread has become muddled with helpers muddying the water. Your proposition needs to be argued with a single logically developed sound argument. Your Chapter 19 tries to do that.

I have already stated that (as yet?) I am unconvinced, and I make the observation that I am not alone. I will work through resolving the apparent inconsistencies in my own time and without the confusion of whether or not harmonics exist or more correctly the extent to which they exist, and what that might mean.

Owen

5455. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 21:38:21 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <KeSdnforyuuNd8vVnZ2dnUVZ8tzinZ2d@pipex.net>
Source record: 24978

Andy wrote:
> Hi,
>
> I have a 40 meter centre feed dipole cut for 40 and feed direct with 50 Ohm
> coax. The house end is connected to the centre of the coax and the pole end
> is connected to the braid. Seems to work best this way round.
> The antenna is fixed tight to the house and the other end is tight to the
> metal pole in a straight-line, diagonal across the garden, both ends are
> insulated. The garden is about 64 feet give or take a couple of feet.
>
> I cannot drop the ends down because of the house and metal pole at the end
> of the garden being so close. I can only feed the antenna with coax. The
> neighbours are OK with coax but not the ribbon feeder hanging down and I
> don't want to upset them if I can help it.
>
> My question. What are my options to enable me to operate 80 and 40m on this
> same antenna wire?
==========
300 Ohms ribbon twin feeder is hardly more visible than coax feeder .
You don't have to use the 'wide' 450 Ohms ribbon type.
300 Ohms ribbon has an approx velocity factor of 0.8 ,so if you make
half the dipole + the feeder (roughly) an electrical 1/4 -3/4 -etc
wavelength at 80 meters ,you will be home and dry with an appropriate
matching unit or a choke balun in combination with a 'coax-in ,coax-out'
matching box.

Frank GM0CSZ / KN6WH

5456. Re: How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 21:50:07 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AC04FB151B62nonenowhere@61.9.191.5>
Source record: 24977

Jim Lux <james.p.lux@jpl.nasa.gov> wrote in
news:g3616n$s19$2@news.jpl.nasa.gov:

...
> Depends on what your regulatory environment is, too...
...

Regualtory environment? See http://www.users.bigpond.com/vk3bjm/gallery.htm
. The best shots are on the second last row. Mind you, Barry has a good
signal!

Owen

5457. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-16 23:08:59 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <g36s4miek1@news.service.uci.edu>
Source record: 24979

Cecil Moore wrote:
> jimkelleyamps@gmail.com wrote:
>
>> R is by definition a physical "property of conductors which depends on
>> dimensions, material, and temperature".
>
>
> That's only one definition. From "The IEEE Dictionary",
> the above is definition (A). Definition (B) is simply
> "the real part of impedance" with the following Note:
> "Definitions (A) and (B) are not equivalent but are
> supplementary. In any case where confusion may arise,
> specify definition being used."
>
> Definition (B) covers Walt's non-dissipative resistance.
> A common example is the characteristic impedance of
> transmission line. In an ideal matched system V^2/Z0, I^2*Z0,
> or V*I is the power being transferred under non-dissipative
> conditions.

Yes. I agree with that, Cecil. But that's not the claim to which I
responded.

73, ac6xg

5458. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 00:43:00 UTC
From: richardharrison@webtv.net
Message-ID: <20731-48570894-656@storefull-3253.bay.webtv.net>
Source record: 24980

Owen Duffy wrote:
"Richard stated "It produces no significant harmonics, so the system is linear." It is that with which I disagree."

A clear statement. Congratulations. Too bad it is wrong.

Terman wrote:
"Amplitude distortion exists when the modulation envelope contains frequency components not present in the modulating signal."

It is also true that absence of of harmonics is proof of linearity, as in my microwave monitoring system alarm. No alarm, a linear system. An alarm, a nonlinear system. I agree with Terman.

I challenge you to prove a mistake in Terman`s writings.

Best regards, Richard Harrison, KB5WZI

5459. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 03:40:19 UTC
From: lkky00245 <lkky00245.29d2518@radiobanter.com>
Message-ID: <lkky00245.29d2518@radiobanter.com>
Source record: 24982

If games like usfine sell 'buy wow gold'
(http://www.usfine.com/World-of-Warcraft-USA-c-51.html)Quake and Doom
defined action gaming in the gaming world, Need for Speed was the
definition of racing games. Need For Speed, 'maple story power
leveling' (http://www.usfine.com/Maple-Story-PowerLeveling-c-98.html)or
NFS for short has been around since almost the beginning of when
computer gaming gained importance. 'runescape power leveling'
(http://www.usfine.com/runescape-powerleveling-c-90.html)Need For Speed
is 'runescape powerleveling'
(http://www.usfine.com/runescape-powerleveling-c-90.html) a racing game
in which the player chooses cars and then races on various tracks. It
was and is highly playable due to the simplicity of controls and
existence of a thin progressive knack in the game. 'runescape'
(http://www.usfine.com/runescape-powerleveling-c-90.html)

--
lkky00245

5460. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 05:37:06 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AC09EDE06612nonenowhere@61.9.191.5>
Source record: 24981

richardharrison@webtv.net (Richard Harrison) wrote in news:20731-48570894-656@storefull-3253.bay.webtv.net:

> Owen Duffy wrote:
> "Richard stated "It produces no significant harmonics, so the system is
> linear." It is that with which I disagree."
>
> A clear statement. Congratulations. Too bad it is wrong.
>
> Terman wrote:
> "Amplitude distortion exists when the modulation envelope contains
> frequency components not present in the modulating signal."

Fine.

> It is also true that absence of of harmonics is proof of linearity,

That is not a logical implication of your quote from Terman, it is entirely your statement, and without splitting hairs over the absolute meaning of 'absence', it is wrong when applied to a Class C amplifier with pure sine wave excitation and a resonant load.

The converse is not logically equivalent to the original.

> ...
> I challenge you to prove a mistake in Terman`s writings.

I have no problems with the statement you attribute to Terman and haven't said anything contrary to that during the discussion.

Richard, I accept that you are committed to your view, lets leave it at that. I don't think your statements on the matter support Walt's proposition, rather since they are in my view flawed, I think they weaken the body of evidence.

Owen

5461. Re: How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 16:26:34 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g38ojq$4sr$2@news.jpl.nasa.gov>
Source record: 24983

Richard Harrison wrote:
> Jim Lux wrote:
> "Depends on what your regulatory environment is."
>
> Yes, and I think manufacturers will provide projected areas and
> windloading of antennas and supporting structures.
>
> Best regards, Richard Harrison, KB5WZI
>
I think the OP was looking at an old antenna for which there is no mfr data.

5462. Yagicad 5.2 problem

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 17:57:10 UTC
From: <>
Message-ID: <n7uf54dk2h1u76ne81n7q1dnhde8954l5u@4ax.com>
Source record: 24984

Hello,
I have downloaded the latest version from

http://www.nerg.asn.au/software.htm

YC52DIST.zip

The program does not run.

When loading any xxxx.yag file and starting to calculate a pattern,
it says:

"Problem with Nec 2 Check Data file SXINFIL.NEC"

When running an Auto Optimize for gain or F/B ratio
the program goes into an endless loop.

Win XP, all updates, and freshly installed VB5 runtimes.
So far my system has sent ~ 100 problem reports to Microsoft :-)

Can anyone help?

w.

5463. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 20:04:08 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <qrU5k.98$P83.42@newsfe20.ams2>
Source record: 24985

Thanks for all your suggestions. When this wet weather clears I will try
them all out and see where I end up..

73 Andy

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:KeSdnforyuuNd8vVnZ2dnUVZ8tzinZ2d@pipex.net...
> Andy wrote:
>> Hi,
>>
>> I have a 40 meter centre feed dipole cut for 40 and feed direct with 50
>> Ohm coax. The house end is connected to the centre of the coax and the
>> pole end is connected to the braid. Seems to work best this way round.
>> The antenna is fixed tight to the house and the other end is tight to the
>> metal pole in a straight-line, diagonal across the garden, both ends are
>> insulated. The garden is about 64 feet give or take a couple of feet.
>>
>> I cannot drop the ends down because of the house and metal pole at the
>> end of the garden being so close. I can only feed the antenna with coax.
>> The neighbours are OK with coax but not the ribbon feeder hanging down
>> and I don't want to upset them if I can help it.
>>
>> My question. What are my options to enable me to operate 80 and 40m on
>> this same antenna wire?
> ==
> 300 Ohms ribbon twin feeder is hardly more visible than coax feeder .
> You don't have to use the 'wide' 450 Ohms ribbon type.
> 300 Ohms ribbon has an approx velocity factor of 0.8 ,so if you make half
> the dipole + the feeder (roughly) an electrical 1/4 -3/4 -etc wavelength
> at 80 meters ,you will be home and dry with an appropriate matching unit
> or a choke balun in combination with a 'coax-in ,coax-out' matching box.
>
> Frank GM0CSZ / KN6WH
>

5464. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 20:10:16 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <axU5k.108$P83.76@newsfe20.ams2>
Source record: 24986

Hi Doc,
Yep I guess I've learned that earth rods on there own are a no-go for
end-fed wires at those frequencies. I shell know better next time.

73 Andy

<ltdoc@yahoo.com> wrote in message
news:20671905-9cee-4e73-a206-f50162c9c17c@34g2000hsh.googlegroups.com...
> Andy,
> You have learned something though. Those 'ground/earth' rods
> aren't all they are cracked up to be, not exactly the 'best' choice in
> every case (especially for lower frequencies). Not much consolation,
> huh? Oh well, that's the way it goes...
> - 'Doc
>
>

5465. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 20:50:22 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <qtV5k.123$xy.105@newsfe06.lga>
Source record: 24987

"Owen Duffy" <none@no.where> wrote in message
news:Xns9AC09EDE06612nonenowhere@61.9.191.5...
> richardharrison@webtv.net (Richard Harrison) wrote in news:20731-
> 48570894-656@storefull-3253.bay.webtv.net:
>
> > Owen Duffy wrote:
> > "Richard stated "It produces no significant harmonics, so the system is
> > linear." It is that with which I disagree."
> >
> > A clear statement. Congratulations. Too bad it is wrong.
> >
> > Terman wrote:
> > "Amplitude distortion exists when the modulation envelope contains
> > frequency components not present in the modulating signal."
>
> Fine.
>
> > It is also true that absence of of harmonics is proof of linearity,
>
> That is not a logical implication of your quote from Terman, it is
> entirely your statement, and without splitting hairs over the absolute
> meaning of 'absence', it is wrong when applied to a Class C amplifier
> with pure sine wave excitation and a resonant load.
>
> The converse is not logically equivalent to the original.
>
> > ...
> > I challenge you to prove a mistake in Terman`s writings.
>
> I have no problems with the statement you attribute to Terman and haven't
> said anything contrary to that during the discussion.
>
> Richard, I accept that you are committed to your view, lets leave it at
> that. I don't think your statements on the matter support Walt's
> proposition, rather since they are in my view flawed, I think they weaken
> the body of evidence.
>
> Owen

Owen, as I view your last paragraph above it seems apparent that you do not believe Richard's and my position that the output of a Class C amplifier can be linear. We're talking about at the 'output', not the 'thruput'. How can you refute the evidence of a nearly pure sine wave at the output terminals of the pi-network?

Walt, W2DU

5466. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 20:51:18 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <rtV5k.124$xy.27@newsfe06.lga>
Source record: 24988

"Owen Duffy" <none@no.where> wrote in message
news:Xns9AC09EDE06612nonenowhere@61.9.191.5...
> richardharrison@webtv.net (Richard Harrison) wrote in news:20731-
> 48570894-656@storefull-3253.bay.webtv.net:
>
> > Owen Duffy wrote:
> > "Richard stated "It produces no significant harmonics, so the system is
> > linear." It is that with which I disagree."
> >
> > A clear statement. Congratulations. Too bad it is wrong.
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> > Terman wrote:
> > "Amplitude distortion exists when the modulation envelope contains
> > frequency components not present in the modulating signal."
>
> Fine.
>
> > It is also true that absence of of harmonics is proof of linearity,
>
> That is not a logical implication of your quote from Terman, it is
> entirely your statement, and without splitting hairs over the absolute
> meaning of 'absence', it is wrong when applied to a Class C amplifier
> with pure sine wave excitation and a resonant load.
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> The converse is not logically equivalent to the original.
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> > ...
> > I challenge you to prove a mistake in Terman`s writings.
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> said anything contrary to that during the discussion.
>
> Richard, I accept that you are committed to your view, lets leave it at
> that. I don't think your statements on the matter support Walt's
> proposition, rather since they are in my view flawed, I think they weaken
> the body of evidence.
>
> Owen

Owen, as I view your last paragraph above it seems apparent that you do not believe Richard's and my position that the output of a Class C amplifier can be linear. We're talking about at the 'output', not the 'thruput'. How can you refute the evidence of a nearly pure sine wave at the output terminals of the pi-network?

Walt, W2DU

5467. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 21:35:59 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AC14D4BA7CE0nonenowhere@61.9.191.5>
Source record: 24989

"Walter Maxwell" <walt@w2du.com> wrote in
news:rtV5k.124$xy.27@newsfe06.lga:
...
> Owen, as I view your last paragraph above it seems apparent that you
> do not believe Richard's and my position that the output of a Class C
> amplifier can be linear. We're talking about at the 'output', not the
> 'thruput'. How can you refute the evidence of a nearly pure sine wave
> at the output terminals of the pi-network?

Walt, you have posted this twice.

There are subtle word shifts here, you are saying "a Class C
amplifier can be linear" rather than is (always) linear.

It is true that a Class C amplifier with resonant load and a constant
amplitude sine wave drive may appear linear when comparing Vout to Vin.

But, as I explained earlier, if you vary the drive amplitude, it is
clearly not linear... in typical cases output will cease below about 25%
of the drive level required for maximum output.

Further, if you drive it with a complex waveform, it is clearly non
linear at any drive level.

Richard's solution to detecting RF PA distortion by monitoring harmonics
is an interesting one, because it suffers the disadvantage of output
filtering masking the harmonics (unless the monitor point was prior to
filtering).

The most widely accepted test for linearity (Vout/Vin) of an RF PA is the
'two tone test', where the drive is a complex waveform (the sum of two
equal amplitude sine waves quite close in frequency) and at least some of
the distortion products due to third order and fifth order etc transfer
terms appears in-band in the output after all output filtering, and where
they can be reliably compared in amplitude to the desired signals. A
Class C RF PA will not appear to be linear under such a test at any drive
level.

I suspect that the issue of transfer linearity is a red herring to your
proposition about the Thevenin equivalent of an RF PA, but if you do
depend on arguing that the transfer characteristic of a Class C RF PA is
linear, I think you are on shaky ground.

Owen

5468. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 21:59:52 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <LtW5k.997$YQ7.50@newsfe05.lga>
Source record: 24990

"Owen Duffy" <none@no.where> wrote in message
news:Xns9AC14D4BA7CE0nonenowhere@61.9.191.5...
> "Walter Maxwell" <walt@w2du.com> wrote in
> news:rtV5k.124$xy.27@newsfe06.lga:
> ...
> > Owen, as I view your last paragraph above it seems apparent that you
> > do not believe Richard's and my position that the output of a Class C
> > amplifier can be linear. We're talking about at the 'output', not the
> > 'thruput'. How can you refute the evidence of a nearly pure sine wave
> > at the output terminals of the pi-network?
>
> Walt, you have posted this twice.
>
> There are subtle word shifts here, you are saying "a Class C
> amplifier can be linear" rather than is (always) linear.
>
> It is true that a Class C amplifier with resonant load and a constant
> amplitude sine wave drive may appear linear when comparing Vout to Vin.

Owen, with a Class C amplifier biased beyond cutoff the grid is never going to see a constant amplitude sine wave, even if the constant amplitude sine wave were impressed on the grid. How then can the transfer linearity ever occur under these conditions? I maintain that it cannot.

> But, as I explained earlier, if you vary the drive amplitude, it is
> clearly not linear... in typical cases output will cease below about 25%
> of the drive level required for maximum output.
>
> Further, if you drive it with a complex waveform, it is clearly non
> linear at any drive level.
>
> Richard's solution to detecting RF PA distortion by monitoring harmonics
> is an interesting one, because it suffers the disadvantage of output
> filtering masking the harmonics (unless the monitor point was prior to
> filtering).
>
> The most widely accepted test for linearity (Vout/Vin) of an RF PA is the
> 'two tone test', where the drive is a complex waveform (the sum of two
> equal amplitude sine waves quite close in frequency) and at least some of
> the distortion products due to third order and fifth order etc transfer
> terms appears in-band in the output after all output filtering, and where
> they can be reliably compared in amplitude to the desired signals. A
> Class C RF PA will not appear to be linear under such a test at any drive
> level.
>

> I suspect that the issue of transfer linearity is a red herring to your
> proposition about the Thevenin equivalent of an RF PA, but if you do
> depend on arguing that the transfer characteristic of a Class C RF PA is
> linear, I think you are on shaky ground.
>
> Owen

Owen, you are either twisting my words, or you're not listening. I've made it very clear that I'm NOT talking about 'transfer linearity', and never have. My position is only that the OUTPUT of the pi-network is linear. The linearity at the output is irrelevant to the waveform at the input of the tank circuit in Class C amplifiers. I don't even understand why the discussion concerning 'transfer linearity' with respect to Class C amplifiers should have come up.

Walt, W2DU

PS--I didn't send two identical emails--something must have happened at the server to have caused it.

5469. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 22:08:12 UTC
From: richardharrison@webtv.net
Message-ID: <23000-485835CC-734@storefull-3257.bay.webtv.net>
Source record: 24991

Owen Duffy wrote:
"Richard, I accept that you are committed to your view. Let`s leave it at that."

Owen is "throwing in the towel' but not admitting error.

I have no allegiance to a particular view. I am happy to view things from another`s perspective. Owen mught do the same.

Owen Duffy also wrote:
"I understand your position to be that the behavior of a tank circuit is independent of the transfer linearity of the active device...but asserting that things are linear because there are no harmonics is wrong and saying so is no support for your argument."

Owen has it wrong. The final amplifier is linear because its output is an exact replica of its input except for amplitude, or close enough so.

When the waveshape of the output signal from an amplifier varies in any respect other than amplitude from the waveshape of the signal feeding the amplifier, the amplifier is distorting the signal.

Sinewave a-c is considered the perfect waveform. It consists of a single frequency. Any other waveform consists of more than one frequency, So the presence or absence of harmonics in addition to the fundamental is a clear indication of distortion. Anyone can confirm waveform using an oscilloscope.

Best regards, Richard Harrison, KB5WZI

5470. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 22:46:29 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g39es5$79q$1@news.jpl.nasa.gov>
Source record: 24993

Owen Duffy wrote:

>
> The most widely accepted test for linearity (Vout/Vin) of an RF PA is the
> 'two tone test', where the drive is a complex waveform (the sum of two
> equal amplitude sine waves quite close in frequency) and at least some of
> the distortion products due to third order and fifth order etc transfer
> terms appears in-band in the output after all output filtering, and where
> they can be reliably compared in amplitude to the desired signals. A
> Class C RF PA will not appear to be linear under such a test at any drive
> level.

Actually, in modern systems with very complex signals, there are more meaningful tests like noise power ratio with a notch that look for spectral regrowth. The two tone test has the advantage of being moderately easy to perform for middling performance amplifiers/devices. But if you're looking for very high performance, such things as generating the two tones without one generator interfering with the other get to be challenging.

>
> I suspect that the issue of transfer linearity is a red herring to your
> proposition about the Thevenin equivalent of an RF PA, but if you do
> depend on arguing that the transfer characteristic of a Class C RF PA is
> linear, I think you are on shaky ground.

I don't know that the concept of a Thevenin equivalent (a linear circuit theory concept) really has applicability to "box level" models, except over a very restricted range, where one can wave one's hands and ignore the nonlinearities as irrelevant to the question at issue. Sure, over a restricted dynamic range and bandwidth and restricted class of input signals, a Class C (or class E or Class F or E/F1, or a fancy EER system) can be adequately modeled as a linear ideal amplifier.

The real question is what is the value of that model. If the model provides conceptual understanding of some underlying problem, great. For instance, it might help with a link budget. If the model helps design a better amplifier, great. The model might allow prediction of behavior; so that you can, for instance, detect a fault by the difference between model and actual observation, as Richard mentioned with the harmonic energy detector.

>
> Owen

5471. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-17 22:47:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <cjeg54libuf5qe1b0kup8chpbmksoij6h2@4ax.com>
Source record: 24992

On Tue, 17 Jun 2008 17:08:12 -0500, richardharrison@webtv.net (Richard Harrison) wrote:

>Owen has it wrong. The final amplifier is linear because its output is >an exact replica of its input except for amplitude, or close enough so.

Hi Richard,

This is a presumption that is either not in evidence, or it is forced by the necessity of your argument. Consider:

>When the waveshape of the output signal from an amplifier varies in any >respect other than amplitude from the waveshape of the signal feeding >the amplifier, the amplifier is distorting the signal.

The presumption (forced, or otherwise) is that the input is sinusoidal. In fact, the cathode current of the amplifier proves quite positively that only a pulse in, 120 degrees of the sinewave, or even less, is sufficient to generate a remarkably clean sinewave at the final's output.

Simply put, a pulse with a 33% duty cycle, and having sufficient amplitude (and steep skirts) would present an output that was wholly non-linear in relation to the pulse excitation. Looking only at the output, you couldn't possibly say if the input was a complete 360 degrees of sine wave, or 33% DC of a rectangular wave. Not unless new constraints are added that push the argument away from current issues.

To extend an analogy, the circular motion of the car's wheels prove there is a non-linear relationship to the explosion of the gas mixture in the compression cylinder.

Or to further decimate the argument, an oscillator produces as pure a signal to no input at all (barring the excitation of noise that engenders a selectively reinforced oscillation).

But the debate over linearity is window dressing to answering the practical question:
What is the source resistance of any power amplifier?

I am not interested in the values that are NOT the source resistance. I am content that those who have not responded to this specific and observable characteristic don't know. However, given the thrashing of this topic, someone (besides me) should.

73's
Richard Clark, KB7QHC

5472. PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 04:53:53 UTC
From: Richard Neilsen <richardneilsen@optusnet.com.au>
Message-ID: <485894e1$0$13944$afc38c87@news.optusnet.com.au>
Source record: 24994
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Hi there,
Anyone have or used one of these antenna tuners?

Wondering how they perform, have read the reviews on eham ect, just looking for other opinions.

TIA
Richard

5473. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 04:56:38 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9AC1980178B54nonenowhere@61.9.191.5>
Source record: 24995

Jim Lux <james.p.lux@jpl.nasa.gov> wrote in
news:g39es5$79q$1@news.jpl.nasa.gov:

> Owen Duffy wrote:
>
...
> Actually, in modern systems with very complex signals, there are more
> meaningful tests like noise power ratio with a notch that look for
> spectral regrowth. The two tone test has the advantage of being
> moderately easy to perform for middling performance
> amplifiers/devices.
> But if you're looking for very high performance, such things as
> generating the two tones without one generator interfering with the
> other get to be challenging.
>
Noted.
>
>>
>> I suspect that the issue of transfer linearity is a red herring to
>> your proposition about the Thevenin equivalent of an RF PA, but if
>> you do depend on arguing that the transfer characteristic of a Class
>> C RF PA is linear, I think you are on shaky ground.
>
> I don't know that the concept of a Thevenin equivalent (a linear
> circuit theory concept) really has applicability to "box level"
> models, except over a very restricted range, where one can wave one's
> hands and ignore the nonlinearities as irrelevant to the question at
> issue. Sure, over a restricted dynamic range and bandwidth and
> restricted class of input signals, a Class C (or class E or Class F or
> E/F1, or a fancy EER system) can be adequately modeled as a linear
> ideal amplifier.

I agree with you. I am not implying that you cannot design a PA with
controlled equivalent source impedance, but you don't do they way most
ham PAs are designed.

As I understand it, Walt's proposition is that the Thevinin equivalent
source impedance (at the device terminals) of the PA is equal to the
conjugate of Zl (at the device terminals) as a consequence of adjustment
of the PA for maximum power output, a twist on the Jacobi MPT theorem.
For that model to be generally useful in explaining behaviour of the PA
in the presense of 'reflections', it would need to be true for a wide
range of load impedances.

>
> The real question is what is the value of that model. If the model
> provides conceptual understanding of some underlying problem, great.
> For instance, it might help with a link budget. If the model helps
> design a better amplifier, great. The model might allow prediction of
> behavior; so that you can, for instance, detect a fault by the
> difference between model and actual observation, as Richard mentioned
> with the harmonic energy detector.

I think it goes to whether Walt's proposition and observations apply in general, and then a valid explanation for what happens.

Owen

5474. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 05:37:04 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <Fa16k.3519$cW3.115@nlpi064.nbdc.sbc.com>
Source record: 24996

Richard Harrison wrote:
> Owen Duffy wrote:
> "Richard, I accept that you are committed to your view. Let`s leave it
> at that."
>
> Owen is "throwing in the towel' but not admitting error.
>
> I have no allegiance to a particular view. I am happy to view things
> from another`s perspective. Owen mught do the same.
>
> Owen Duffy also wrote:
> "I understand your position to be that the behavior of a tank circuit is
> independent of the transfer linearity of the active device...but
> asserting that things are linear because there are no harmonics is wrong
> and saying so is no support for your argument."
>
> Owen has it wrong. The final amplifier is linear because its output is
> an exact replica of its input except for amplitude, or close enough so.
>
> When the waveshape of the output signal from an amplifier varies in any
> respect other than amplitude from the waveshape of the signal feeding
> the amplifier, the amplifier is distorting the signal.
>
> Sinewave a-c is considered the perfect waveform. It consists of a single
> frequency. Any other waveform consists of more than one frequency, So
> the presence or absence of harmonics in addition to the fundamental is a
> clear indication of distortion. Anyone can confirm waveform using an
> oscilloscope.
>
> Best regards, Richard Harrison, KB5WZI
>
>

From _Filtering in the Time and Frequency Domains_ by Herman J.
Blinchikov and Anatol I. Zverev: "A system is linear if the input
c1f1(t)+ c2f2(t) produces and output c1g1(t)+ c2g2(t) for all
f1(t) and f2(t), when it is known that an input f1(t) produces an
output g1(t) and an input f2(t) produces and output g2(t). The c1 and
c2 are arbitrary constants but may be complex numbers. This property of
superposition is characteristic of linear systems." You're ignoring the
addition part of the concept of linearity, Richard. Moreover, the
functions f1(t) and f2(t) don't have to be sine waves; the concept
is more general than that. Finally, read Richard Clark's post.
A sine wave out doesn't prove a sine wave in.

73,
Tom Donaly KA6RUH

5475. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 07:47:01 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <NOe3AfG11LWIFw7v@g3ohx.demon.co.uk>
Source record: 24997

In message <axU5k.108$P83.76@newsfe20.ams2>, Andy
<dx90@blueyounder.co.uk> writes
><ltdoc@yahoo.com> wrote in message
>news:20671905-9cee-4e73-a206-f50162c9c17c@34g2000hsh.googlegroups.com...
>> Andy,
>> You have learned something though. Those 'ground/earth' rods
>> aren't all they are cracked up to be, not exactly the 'best' choice in
>> every case (especially for lower frequencies). Not much consolation,
>> huh? Oh well, that's the way it goes...
>> - 'Doc
>>
>Hi Doc,
>Yep I guess I've learned that earth rods on there own are a no-go for
>end-fed wires at those frequencies. I shell know better next time.
>
>73 Andy
>
This does sound rather defeatist. While ground rods alone may not be the
'ultimate', surely they are usually be adequate for listening-only
purposes?
--
Ian

5476. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 08:39:54 UTC
From: richardharrison@webtv.net
Message-ID: <27008-4858C9DA-1@storefull-3256.bay.webtv.net>
Source record: 24998

Richard Clark wrote:
"The presumption (forced or otherwise) is that the output is sinusoidal. In fact, the cathode current of the amplifier proves quite positively that only a pulse in, 180 degrees of sinewave, or even less, is sufficient to generate a remarkably clean sinewave at the final`s output."

That is a remarkably clear statement of the behavior of a Class C amplifier. The amplifier acts as a generator of a sinewave which is synchronized by its input signal instead of being an accurate reproducer of the waveform at its input.

The less than half wave of current flow of the Class C amplifier allows an efficiency exceeding 50%. Walt Maxwell`s tests show that the Class C amplifier sticks to the parameters of a Thevenin source.

The question of "what is the source impedance" presented to a load by the amplifier? is answered, not by magic, but by the maximum power transfer theorem. The amplifier must be adjusted to deliver all its available power. Then, the output impedance of the amplifier is simply the conjugate of the load impedance which is easily measured.

Best regards, Richard Harrison, KB5WZI

5477. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 15:00:49 UTC
From: ltdoc@yahoo.com
Message-ID: <b7e76ddd-93a1-4455-a5e7-bb7781f5565a@34g2000hsh.googlegroups.com>
Source record: 24999

Ian,
They probably are adequate for 'just listening'. In a lot of cases,
not using a ground works just fine too. Just depends on the
circumstances. Receivers just don't seem to be very 'picky' like
transmitters are. Since the 'ground' can sort of affect where you
hear things from, that's one of those 'things' to consider too.
There are very few 'perfect' antennas or installations, almost all of
them are a compromise in some way. The idea is to make the best of
what you got (Ooooo, is that a can of worms!:)). And the mostest
important thingy is to have fun at it.
- 'Doc

5478. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 15:33:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <on9i54dvs2b2mf93gnhr44glh184d502u3@4ax.com>
Source record: 25000

On Wed, 18 Jun 2008 03:39:54 -0500, richardharrison@webtv.net (Richard Harrison) wrote:

>The question of "what is the source impedance" presented to a load by
>the amplifier? is answered, not by magic, but by the maximum power
>transfer theorem. The amplifier must be adjusted to deliver all its
>available power. Then, the output impedance of the amplifier is simply
>the conjugate of the load impedance which is easily measured.

Hi Richard,

MPT <> Conjugate Match <> Z Match

You can NOT achieve the COMBINATION of any two, much less all three with a Class C amplifier. This is like checking all three possible answers on a multiple choice exam. It follows that source impedance has not been answered here as a qualifiable (which is certainly not what I was looking for).

I will take it that you don't know what the source impedance is as a quantifiable either. That is, unless you unwind all the confounding statements and remove those in error. There cannot be three, simultaneous quantifiables of differing values.

73's
Richard Clark, KB7QHC

5479. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 15:34:47 UTC
From: ltdoc@yahoo.com
Message-ID: <832b6dd7-6308-4948-bf3a-6a5f60e0156a@34g2000hsf.googlegroups.com>
Source record: 24801
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Richard,
Considering some of the reviews I've seen on various forums, the one thing those reviews proves is that they must work. How well they work just depends on how close to the tuner's limits any particular antenna falls. 'Size' is one consideration that isn't thought of very often. Bigger usually means larger limits cuz all those thingys inside are larger, which is good to some ridiculous point. Deciding where 'ridiculous' starts/stops depends on you to a large extent. It has to do with the antennas you have/want/are allowed, and the size of your bank account.
Is it the mostest best thing on the market? Good question, and another one of those 'depends' thingys. (Mine is the bestest tuner ever made. It isn't produced anymore. It is not for sale, wish I had another one! Can do some really 'weird' antennas. Ain't saying what it is so the price will be cheaper when I find another one.)
- 'Doc

[Large doses of 'B.S.' are always a part of my responses. Deciding which is what is your responsibility. Hows that for a 'CYA'?]

5480. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 15:42:38 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <52a6k.444$7C7.100@newsfe07.lga>
Source record: 24802

"Owen Duffy" <none@no.where> wrote in message
news:Xns9AC1980178B54nonenowhere@61.9.191.5...
> Jim Lux <james.p.lux@jpl.nasa.gov> wrote in
> news:g39es5$79q$1@news.jpl.nasa.gov:
>
> > Owen Duffy wrote:
> >
> ...
> > Actually, in modern systems with very complex signals, there are more
> > meaningful tests like noise power ratio with a notch that look for
> > spectral regrowth. The two tone test has the advantage of being
> > moderately easy to perform for middling performance
> > amplifiers/devices.
> > But if you're looking for very high performance, such things as
> > generating the two tones without one generator interfering with the
> > other get to be challenging.
> >
> Noted.
> >
> >>
> >> I suspect that the issue of transfer linearity is a red herring to
> >> your proposition about the Thevenin equivalent of an RF PA, but if
> >> you do depend on arguing that the transfer characteristic of a Class
> >> C RF PA is linear, I think you are on shaky ground.
> >
> > I don't know that the concept of a Thevenin equivalent (a linear
> > circuit theory concept) really has applicability to "box level"
> > models, except over a very restricted range, where one can wave one's
> > hands and ignore the nonlinearities as irrelevant to the question at
> > issue. Sure, over a restricted dynamic range and bandwidth and
> > restricted class of input signals, a Class C (or class E or Class F or
> > E/F1, or a fancy EER system) can be adequately modeled as a linear
> > ideal amplifier.
>
> I agree with you. I am not implying that you cannot design a PA with
> controlled equivalent source impedance, but you don't do they way most
> ham PAs are designed.
>
> As I understand it, Walt's proposition is that the Thevinin equivalent
> source impedance (at the device terminals) of the PA is equal to the
> conjugate of Zl (at the device terminals) as a consequence of adjustment
> of the PA for maximum power output, a twist on the Jacobi MPT theorem.
> For that model to be generally useful in explaining behaviour of the PA
> in the presense of 'reflections', it would need to be true for a wide

> range of load impedances.
>
>
> >
> > The real question is what is the value of that model. If the model
> > provides conceptual understanding of some underlying problem, great.
> > For instance, it might help with a link budget. If the model helps
> > design a better amplifier, great. The model might allow prediction of
> > behavior; so that you can, for instance, detect a fault by the
> > difference between model and actual observation, as Richard mentioned
> > with the harmonic energy detector.
>
> I think it goes to whether Walt's proposition and observations apply in
> general, and then a valid explanation for what happens.
>
> Owen
>
Owen, on whether my observations apply in general, if you re-read the summarizing paragraph on my Chapter 19A you'll see that I've made measurements of the source impedance of two different xmtrs with several different complex impedance loads. All measurements showed the source impedance equal to the load impedance when all available power is delivered to the load.

As to the explanation, Richard H said it well. When all available power is delivered, according to the maximum power transfer theorem the source impedance equals the load impedance. My measurements have proved this to be true in determining the source impedance of the xmtrs I measured.

Walt, W2DU

5481. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 15:59:40 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <3ia6k.87$m06.45@newsfe06.lga>
Source record: 24803

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:on9i54dvs2b2mf93gnhr44glh184d502u3@4ax.com...
> On Wed, 18 Jun 2008 03:39:54 -0500, richardharrison@webtv.net (Richard
> Harrison) wrote:
>
> >The question of "what is the source impedance" presented to a load by
> >the amplifier? is answered, not by magic, but by the maximum power
> >transfer theorem. The amplifier must be adjusted to deliver all its
> >available power. Then, the output impedance of the amplifier is simply
> >the conjugate of the load impedance which is easily measured.
>
> Hi Richard,
>
> MPT <> Conjugate Match <> Z Match
>
> You can NOT achieve the COMBINATION of any two, much less all three
> with a Class C amplifier. This is like checking all three possible
> answers on a multiple choice exam. It follows that source impedance
> has not been answered here as a qualifiable (which is certainly not
> what I was looking for).
>
> I will take it that you don't know what the source impedance is as a
> quantifiable either. That is, unless you unwind all the confounding
> statements and remove those in error. There cannot be three,
> simultaneous quantifiables of differing values.
>
> 73's
> Richard Clark, KB7QHC

Hi Richard C,

Am I hearing you correctly? Are you disagreeing with Richard H? Are you saying that maximum power transfer, conjugate match at the output, and Z match cannot occur simultaneously? Are you serious? As I understand Everitt's statement of the maximum-power-transfer theorem, when the maximum available power is being transferred to the load there is a conjugate match. Does this not also mean there is a 'Z' match? Can't 'Z' be assumed to be the impedance of the source as well as the load?

Walt, W2DU

5482. Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 16:31:32 UTC
From: XPye <xpye@none.com>
Message-ID: <48594df1$0$19379$6d4158fb@reader.xsnews.nl>
Source record: 24806

Most Americans are convinced that ''big'' and the ''most'' is good etc.
And ofcourse people are juged how ''much money'' they have. Or not ?

Anyway, this most big one comes from Europe : www.ciromazzoni.com/Loop%20Antenna.htm

When talking solid and big in broadcasting it has my interest !

5483. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 17:09:12 UTC
From: richardharrison@webtv.net
Message-ID: <22067-48594138-49@storefull-3257.bay.webtv.net>
Source record: 24804

Richard Clark wrote:
"I will take it that you don`t know what the source impedance is as a quantifiable either."

Terman wrote on page 76 of his 1955 opus:
"Alternatively, a load impedance may be matched to a source of power in such a way as to make the power delivered to the load a maximum. (The power delivered under these conditions is termed the "available power" of the power source.) This is accomplished by making the load impedance the conjugate of the generator as defined by Thevenin`s theorem. That is, the load impedance must have the same magnitude as the generator impedance, but the phase angle of the load is the negative of the phase angle of the generator impedance."

Best regards, Richard Harrison, KB5WZI

5484. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 17:23:07 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <Mvb6k.54963$M63.47312@newsfe13.ams2>
Source record: 24805
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Richard,

My Palstar AT1KP arrived this morning, so early days yet.
What I can say about it is that the build quality inside and out looks
excellent.
I have only run 110 watts through it and it has tuned my 40m Centre Fed
Dipole cut for 40 meters down to 1.1: from 1.8 - 6 meters with ease.

Hope this helps.

73 Andy

<ltdoc@yahoo.com> wrote in message
news:832b6dd7-6308-4948-bf3a-6a5f60e0156a@34g2000hsf.googlegroups.com...
> Richard,
> Considering some of the reviews I've seen on various forums, the one
> thing those reviews proves is that they must work. How well they work
> just depends on how close to the tuner's limits any particular antenna
> falls. 'Size' is one consideration that isn't thought of very often.
> Bigger usually means larger limits cuz all those thingys inside are
> larger, which is good to some ridiculous point. Deciding where
> 'ridiculous' starts/stops depends on you to a large extent. It has to
> do with the antennas you have/want/are allowed, and the size of your
> bank account.
> Is it the mostest best thing on the market? Good question, and
> another one of those 'depends' thingys. (Mine is the bestest tuner
> ever made. It isn't produced anymore. It is not for sale, wish I had
> another one! Can do some really 'weird' antennas. Ain't saying what
> it is so the price will be cheaper when I find another one.)
> - 'Doc
>
>
> [Large doses of 'B.S.' are always a part of my responses. Deciding
> which is what is your responsibility. Hows that for a 'CYA'?]
>
>

5485. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 18:38:27 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <jz7sfSKjYVWIFw8s@g3ohx.demon.co.uk>
Source record: 24807

In message <48594df1$0$19379$6d4158fb@reader.xsnews.nl>, XPye
<xpye@none.com> writes
>
> Most Americans are convinced that ''big'' and the ''most'' is good etc.
> And ofcourse people are juged how ''much money'' they have. Or not ?
>
> Anyway, this most big one comes from Europe :
>www.ciromazzoni.com/Loop%20Antenna.htm
>
> When talking solid and big in broadcasting it has my interest !
>
For these loops, they are quoting a front-to-back ratio of 6dB. I was
unaware that loops HAD a front-to-back ratio.
--
Ian

5486. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 18:44:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jtfi54hmuhakhplufpbmk41kum3hmog8ls@4ax.com>
Source record: 24808

On Wed, 18 Jun 2008 11:59:40 -0400, "Walter Maxwell" <walt@w2du.com>
wrote:

>Hi Richard C,
>
>Am I hearing you correctly? Are you disagreeing with Richard H? Are you saying
>that maximum power transfer, conjugate match at the output, and Z match cannot
>occur simultaneously?

Hi Walt,

For a Class C tube amplifier.

All descriptions of tune-up for a Class C tube amplifier describe a
qualitative MPT as this classic method offers absolutely no
information about the quantitative degree of initial mismatch, nor
subsequent proximate match. In other words, there are no quantitative
values of load impedance revealed by this method. It may even be said
that the classic tune-up only describes "an attempt" at MPT; as it
may, in fact, not even achieve anything more than Mediocre Power
Transfer. After peaking the grid and dipping the plate, I have
observed many different peaks and dips for many various loads to know
that not all loads obtained all available power.

The classic description of a tune-up is based on qualitative
assumptions and the amplifier is brought into its best attempt, which
is not demonstrably efficient, nor even proven to be "matched"
conjugately or by impedance. This takes more information (so far
unrevealed) obtained by current into the known load (unrevealed), and
power into the source (unrevealed). No one other than myself has
expressed the loss of the source because no one else has ever
enumerated its resistance (a topic commonly hedged and avoided) Hence
discussion of efficiency is lost in the woods and correlation to
MPT/Z/Conjugation is equally doomed to ambiguity.

>Are you serious? As I understand Everitt's statement of

Everitt notwithstanding, Lord Kelvin trumps him with
"when you cannot express it in numbers, your knowledge is of a
meagre and unsatisfactory kind"
This thread has suffered from a lack of measurables that are not that
difficult to obtain.

So, to return to my very specific question:
What is the source resistance of any power amplifier?
I will further loosen constraints (if that isn't loose enough)
For any match?

One complex number is sufficient, and certainly that value will
resolve all imponderabilities is what I am asking for.

73's
Richard Clark, KB7QHC

5487. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 18:47:44 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <FLc6k.462$7C7.6@newsfe07.lga>
Source record: 24809

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:22067-48594138-49@storefull-3257.bay.webtv.net...
> Richard Clark wrote:
> "I will take it that you don`t know what the source impedance is as a
> quantifiable either."
>
> Terman wrote on page 76 of his 1955 opus:
> "Alternatively, a load impedance may be matched to a source of power in
> such a way as to make the power delivered to the load a maximum. (The
> power delivered under these conditions is termed the "available power"
> of the power source.) This is accomplished by making the load impedance
> the conjugate of the generator as defined by Thevenin`s theorem. That
> is, the load impedance must have the same magnitude as the generator
> impedance, but the phase angle of the load is the negative of the phase
> angle of the generator impedance."
>
> Best regards, Richard Harrison, KB5WZI
>
That's the way I understand it too, Richard. But also works in the opposite direction too, by adjusting the source impedance to have the same magnitude and opposite phase of the load impedance. This is the procedure I used to prove the value of the source impedance.

Walt, W2DU

5488. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 19:47:43 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <kDd6k.21868$312.16316@newsfe12.ams2>
Source record: 24810

I'm having loads of fun since I started.

I recently purchased an RigExpert AA-200 Antenna Anal;yser from Radio World.
Here's the link if anyone wants a read.
http://www.radioworld.co.uk/~radio/catalog/aa200-antenna-analyzer-p-5841.html?osCsid=a223fcdeb781abc7dba4a96691a21039

Trouble now is I can't put the AA-200 down with out thinking of some thing
else to try out. I'm getting addicted.

73 Andy

<ltdoc@yahoo.com> wrote in message
news:b7e76ddd-93a1-4455-a5e7-bb7781f5565a@34g2000hsh.googlegroups.com...
> Ian,
> They probably are adequate for 'just listening'. In a lot of cases,
> not using a ground works just fine too. Just depends on the
> circumstances. Receivers just don't seem to be very 'picky' like
> transmitters are. Since the 'ground' can sort of affect where you
> hear things from, that's one of those 'things' to consider too.
> There are very few 'perfect' antennas or installations, almost all of
> them are a compromise in some way. The idea is to make the best of
> what you got (Ooooo, is that a can of worms!:)). And the mostest
> important thingy is to have fun at it.
> - 'Doc

5489. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 21:05:44 UTC
From: Dave <noone@nowhere.com>
Message-ID: <IMe6k.2436$ul.110@trndny08>
Source record: 24811

"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
news:jz7sfSKjYVWIFw8s@g3ohx.demon.co.uk...
> In message <48594df1$0$19379$6d4158fb@reader.xsnews.nl>, XPye
> <xpye@none.com> writes
>>
>> Most Americans are convinced that ''big'' and the ''most'' is good etc.
>> And ofcourse people are juged how ''much money'' they have. Or not ?
>>
>> Anyway, this most big one comes from Europe :
>> www.ciromazzoni.com/Loop%20Antenna.htm
>>
>> When talking solid and big in broadcasting it has my interest !
>>
> For these loops, they are quoting a front-to-back ratio of 6dB. I was
> unaware that loops HAD a front-to-back ratio.
> --
> Ian

which side is the front? i wonder if art had anything with designing these?

5490. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 21:16:59 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <zXe6k.116$m06.20@newsfe06.lga>
Source record: 24812

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:jtfi54hmuhakhplufpbmk41kum3hmog8ls@4ax.com...
> On Wed, 18 Jun 2008 11:59:40 -0400, "Walter Maxwell" <walt@w2du.com>
> wrote:
>
> >Hi Richard C,
> >
> >Am I hearing you correctly? Are you disagreeing with Richard H? Are you
saying
> >that maximum power transfer, conjugate match at the output, and Z match
cannot
> >occur simultaneously?
>
> Hi Walt,
>
> For a Class C tube amplifier.
>
> All descriptions of tune-up for a Class C tube amplifier describe a
> qualitative MPT as this classic method offers absolutely no
> information about the quantitative degree of initial mismatch, nor
> subsequent proximate match. In other words, there are no quantitative
> values of load impedance revealed by this method. It may even be said
> that the classic tune-up only describes "an attempt" at MPT; as it
> may, in fact, not even achieve anything more than Mediocre Power
> Transfer. After peaking the grid and dipping the plate, I have
> observed many different peaks and dips for many various loads to know
> that not all loads obtained all available power.
>
> The classic description of a tune-up is based on qualitative
> assumptions and the amplifier is brought into its best attempt, which
> is not demonstrably efficient, nor even proven to be "matched"
> conjugately or by impedance. This takes more information (so far
> unrevealed) obtained by current into the known load (unrevealed), and
> power into the source (unrevealed). No one other than myself has
> expressed the loss of the source because no one else has ever
> enumerated its resistance (a topic commonly hedged and avoided) Hence
> discussion of efficiency is lost in the woods and correlation to
> MPT/Z/Conjugation is equally doomed to ambiguity.
>
> >Are you serious? As I understand Everitt's statement of
>
> Everitt notwithstanding, Lord Kelvin trumps him with
> "when you cannot express it in numbers, your knowledge is of a
> meagre and unsatisfactory kind"

> This thread has suffered from a lack of measurables that are not that
> difficult to obtain.

Richard, are you inferring that I have not submitted the measurables required to determine the source impedances of the xmtrs I measured? What additional measureables that I haven't already submitted are you asking for to prove the source impedances that I've already submitted are valid?

> So, to return to my very specific question:
> What is the source resistance of any power amplifier?

Richard, the source impedance of one of the xmtrs I measured with load impedance of 17.98 + j8.77 ohms measured 18 - j8 ohms. Considering measurement error, wouldn't you agree that these two impedances qualify for a conjugate match, and that this value of source impedance is valid at least within the realm of possibility?

For any match?
>
> One complex number is sufficient, and certainly that value will
> resolve all imponderabilities is what I am asking for.

OK, Richard, is impedance 18 - j8 ohms sufficient?

> Richard Clark, KB7QHC

Walt,W2DU

5491. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 21:53:43 UTC
From: richardharrison@webtv.net
Message-ID: <422-485983E7-178@storefull-3258.bay.webtv.net>
Source record: 24814

Richard Clark wrote:
"What is the source resistance of any power amplifier?"

Most power amplifiers are designed for a specified load but include controls to adjust their outputs, both resistance and reactance, so that a load which deviates can be made to match the 50-ohm or 600-ohm load specified for the transmitter.

Am broadcast stations in the USA have a point at the transmitter output just before power branches out to antenna system elements called the "common point". Impedance here has been adjusted to a specified resistance and a thermocouple ammeter is routinely installed which is used to determine that the specified power output is being delivered by the station by I squared R according to the FCC allocation. There is a multiplier specified of 0.92 for stations of 5 KW or less. For stations more powerful than 5 KW the multiplier is 0.947. This multiplier allows for a slight increase in power to offset misc. errors and losses.

John E. Cunningham writes in "The Complete Broadcast Antenna Book" on page 51:
"Suppose for example, we have a transmitter that is designed to work into a 50-ohm load at an efficiency of 70% (Fig. 1-26). The efficiency of this circuit expressed as a decimal, is given by

eff = RL / RS + RL

Rearranging

RS = RL [1/eff - 1]

Substituting the numbers inti this, we get

RS = 50 [1/0.7 - 1] = 50(1/0,7 - 1) = 50(0.43) = 21.4 ohms

You have an example in numbers. Hope you are happy.

Best regards, Richard Harrison, KB5WZI

5492. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 21:56:59 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <700j54d3i1ermrkv0ihpe76df1h5rk6hge@4ax.com>
Source record: 24813

On Wed, 18 Jun 2008 17:16:59 -0400, "Walter Maxwell" <walt@w2du.com>
wrote:

>OK, Richard, is impedance 18 - j8 ohms sufficient?

Hi Walt,

It is more direct and responsive to every request I've made for
anything from anyone else so far. However, I presume it is the value
at the antenna connections of the amplifier that transforms through
the plate tuning toward the plate itself to render something more like
Rp (several KOhms?). Is it from a direct measurement, or by inference
to the load and tuning adjustments?

73's
Richard Clark, KB7QHC

5493. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 22:51:34 UTC
From: richardharrison@webtv.net
Message-ID: <23525-48599176-107@storefull-3255.bay.webtv.net>
Source record: 24816

Richard Clark wrote:
"I presume it is the value at the antenna connections of the amplifier that transforms through the plate tuning toward the plate itself to render something more like Rp (several KOhms?"

Rp has nothing to do with a Class C amplifier which acts like a switch presenting an impedance to average current flow by being open-circuit most of the time.

Best regards, Richard Harrison, KB5WZI

5494. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 22:56:02 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n54j541oq809g9t6jrbgjiq87i45b8dp0d@4ax.com>
Source record: 24815

On Wed, 18 Jun 2008 16:53:43 -0500, richardharrison@webtv.net (Richard Harrison) wrote:

>RS = 50 [1/0.7 - 1] = 50(1/0,7 - 1) = 50(0.43) = 21.4 ohms
>
>You have an example in numbers. Hope you are happy.

Hi Richard,

As I mentioned to Walt in similar response to my oft-asked question: direct and to the point. I see no others yet.

I know this wasn't arrived at by direct measurement and only by inference. As I remarked to Walt (but in the inverse), I presume this value is that transformed through the plate tuning from the plate's Rp? Can you provide some work-up (presumably several KOhms) from your citation for that?

73's
Richard Clark, KB7QHC

5495. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-18 23:44:14 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <fg6j54lhc13voqpmrciakr469kausjfgta@4ax.com>
Source record: 24817

On Wed, 18 Jun 2008 17:51:34 -0500, richardharrison@webtv.net (Richard Harrison) wrote:

>Richard Clark wrote:
>"I presume it is the value at the antenna connections of the amplifier
>that transforms through the plate tuning toward the plate itself to
>render something more like Rp (several KOhms?"
>
>Rp has nothing to do with a Class C amplifier which acts like a switch
>presenting an impedance to average current flow by being open-circuit
>most of the time.

Hi Richard,

You have no answer to what 18 - j8 ohms transforms to back through plate tuning towards the plate. It is not responsive in kind.

As this operation is a commonplace of any treatment on the subject of amplifier design (consult Bode, et al), then your ambiguous response is outside of the canon of engineering.

I would intuit that you depart from Walt in this regard, and that he will have a quantitative answer.

73's
Richard Clark, KB7QHC

5496. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 00:39:12 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <7Vh6k.45$1W4.26@newsfe02.lga>
Source record: 24818

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:n54j541oq809g9t6jrbgjiq87i45b8dp0d@4ax.com...
> On Wed, 18 Jun 2008 16:53:43 -0500, richardharrison@webtv.net (Richard
> Harrison) wrote:
>
> >RS = 50 [1/0.7 - 1] = 50(1/0,7 - 1) = 50(0.43) = 21.4 ohms
> >
> >You have an example in numbers. Hope you are happy.
>
> Hi Richard,
>
> As I mentioned to Walt in similar response to my oft-asked question:
> direct and to the point. I see no others yet.
>
> I know this wasn't arrived at by direct measurement and only by
> inference. As I remarked to Walt (but in the inverse), I presume
> this value is that transformed through the plate tuning from the
> plate's Rp? Can you provide some work-up (presumably several KOhms)
> from your citation for that?
>
> 73's
> Richard Clark, KB7QHC

Richard, am I now to understand that you haven't reviewed my Chapter 19A, which details the entire procedure I used for the measurements that include the resistance RL = 1400 ohms at the input of the pi-network? If you haven't I can understand the reasons for your questions. I urge you to read 'Section 19.14 Additional Experimental Data', the last portion of the Chapter which describes in detail the procedure is used in the measurements made on a Kenwood TS-830S. I'm sure you'll find the answers you're looking for there.

You can find 19A by using this url from Cecil, http://www.w5dxp.com/Chapt19a.doc. It derives from the thread directly above 'Unwin Antennas'.

Walt, W2DU

5497. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 00:45:21 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <U_h6k.47$1W4.6@newsfe02.lga>
Source record: 24819

Sorry Richard, I goofed. The url I referred you to is directly above the thread 'Pornforum'.

Walt, W2DU

5498. WANTED MC53DM DTMF MIC FOR TMG707E

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 09:22:55 UTC
From: "patrick.obrien47" <patrick.obrien47@virgin.net>
Message-ID: <Nzp6k.17862$zs1.16366@newsfe28.ams2>
Source record: 24820

HI ALL.
I am looking for a MC53DM DTMF
mic for my TM G707E

Patrick GW1SXN

5499. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 15:15:01 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <76sk54hh2t920jad3fbchvicvdo6oqan99@4ax.com>
Source record: 24821

On Wed, 18 Jun 2008 20:39:12 -0400, "Walter Maxwell" <walt@w2du.com>
wrote:

>Richard, am I now to understand that you haven't reviewed my Chapter 19A, which
>details the entire procedure I used for the measurements that include the
>resistance RL = 1400 ohms at the input of the pi-network? If you haven't I can

Hi Walt,

As I expected, you can provide quantitative data. This is a
refreshing change from the, what?, 100+ postings of "thoughts" on the
matter? It would suggest a poor rate of exchange for thinking these
days to come to so little conclusion.

>You can find 19A by using this url from Cecil,
>http://www.w5dxp.com/Chapt19a.doc.

Well, if you posted it through Cecil here, yes I didn't see it as I
don't read him.

Now, however, having a copy of that work from your own web site (why
didn't you reference that?) that I got after my last post, I will go
through it by the steps you lay out so carefully.

http://www.w2du.com/r3ch19a.pdf

Before doing so, and confining that to a separate posting, I would say
that I can acknowledge your fine work and care at creating a protocol
that does seem to reduce the variables, and test your hypothesis
without editorial bias. It seems like a great improvement from
earlier attempts to tackle the same issue.

A preliminary thought, however: What would you say is the Q of the
plate tank, Plate to Load, during operation under each load?

73's
Richard Clark, KB7QHC

5500. Re: How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 18:28:10 UTC
From: Dave99 <dpdphoto@aol.com>
Message-ID: <75848499-1cb6-4025-bc19-dda20d4bb4f6@w5g2000prd.googlegroups.com>
Source record: 24822

Thanks for the help. Actually, I built a monitoring antenna and was
just trying to figure out the basic wind area. So it's not critical or
anything, I was just curious.

Dave

5501. SWR changes on VHF/UHF Log

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 18:39:39 UTC
From: Dave99 <dpdphoto@aol.com>
Message-ID: <9d3ee261-ee70-4cb6-b1e1-732aff6c5ad1@z16g2000prn.googlegroups.com>
Source record: 24823

I've built a VHF/UHF Log Periodic for monitoring. It works quite well, but I've been curious about one thing... Using an analyzer, I get a good SWR on the majority of the antenna (below 1.5), but there's some areas that are fairly high. Well above 3.0. Obviously this isn't crucial for just monitoring, but I use that as a guide as far as seeing how well the antenna is designed. The thing that I don't understand is that the SWR readings will change if the cable is moved. The cable comes off the front end of the boom, travels back to the middle, then comes off across a horizontal mast (the antenna is vertical) and down the vertical mast. All that part of the cable doesn't move... But if I pick up the cable on the ground and change the location a bit, the SWR will change quite a bit... Areas that before had a poor SWR now have a good one, and areas that were good change to poor. Why would this happen? Also, would using a longer cable possibly make the SWR better? Typically I have tested with a 20' RG8X cable. I also usually test with the antenna about 8' off the ground. Would it improve with better elevation off the ground as well?

Thanks for any ideas.

Dave

5502. Re: How to calculate wind load area?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 19:07:25 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g3eapd$sf9$1@news.jpl.nasa.gov>
Source record: 24825

Dave99 wrote:
> Thanks for the help. Actually, I built a monitoring antenna and was
> just trying to figure out the basic wind area. So it's not critical or
> anything, I was just curious.

Thin rods are kind of tricky.. they have a drag that is much more than one would expect from their cross-sectional area, depending on the diameter and wind speed (i.e. the Reynolds number). Cd could be anywhere from 0.4 to almost 2.0

(this is the aerodynamic curse that afflicts old planes using exposed wires as structural members)

>
> Dave

5503. Re: SWR changes on VHF/UHF Log

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 19:50:12 UTC
From: Jerry <jerrymartes@verizon.net>
Message-ID: <ULy6k.28140$8q2.26679@trnddc02>
Source record: 24824

"Dave99" <dpdphoto@aol.com> wrote in message
news:9d3ee261-ee70-4cb6-b1e1-732aff6c5ad1@z16g2000prn.googlegroups.com...
> I've built a VHF/UHF Log Periodic for monitoring. It works quite well,
> but I've been curious about one thing... Using an analyzer, I get a
> good SWR on the majority of the antenna (below 1.5), but there's some
> areas that are fairly high. Well above 3.0. Obviously this isn't
> crucial for just monitoring, but I use that as a guide as far as
> seeing how well the antenna is designed. The thing that I don't
> understand is that the SWR readings will change if the cable is moved.
> The cable comes off the front end of the boom, travels back to the
> middle, then comes off across a horizontal mast (the antenna is
> vertical) and down the vertical mast. All that part of the cable
> doesn't move... But if I pick up the cable on the ground and change
> the location a bit, the SWR will change quite a bit... Areas that
> before had a poor SWR now have a good one, and areas that were good
> change to poor. Why would this happen? Also, would using a longer
> cable possibly make the SWR better? Typically I have tested with a 20'
> RG8X cable. I also usually test with the antenna about 8' off the
> ground. Would it improve with better elevation off the ground as well?
>
> Thanks for any ideas.
>
> Dave

Hi Dave

What type balun did you use?

Jerry KD6JDJ

5504. Re: SWR changes on VHF/UHF Log

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 20:47:09 UTC
From: dplatt@radagast.org
Message-ID: <d7tqi5-jt3.ln1@radagast.org>
Source record: 24826

>> I've built a VHF/UHF Log Periodic for monitoring. It works quite well,
>> but I've been curious about one thing... Using an analyzer, I get a
>> good SWR on the majority of the antenna (below 1.5), but there's some
>> areas that are fairly high. Well above 3.0. Obviously this isn't
>> crucial for just monitoring, but I use that as a guide as far as
>> seeing how well the antenna is designed. The thing that I don't
>> understand is that the SWR readings will change if the cable is moved.
>> The cable comes off the front end of the boom, travels back to the
>> middle, then comes off across a horizontal mast (the antenna is
>> vertical) and down the vertical mast. All that part of the cable
>> doesn't move... But if I pick up the cable on the ground and change
>> the location a bit, the SWR will change quite a bit... Areas that
>> before had a poor SWR now have a good one, and areas that were good
>> change to poor. Why would this happen? Also, would using a longer
>> cable possibly make the SWR better? Typically I have tested with a 20'
>> RG8X cable. I also usually test with the antenna about 8' off the
>> ground. Would it improve with better elevation off the ground as well?

> Hi Dave
>
> What type balun did you use?

'Tis a good question!

If an antenna's measured SWR changes when the doax is moved, it tends to mean one of two things: either there's something physically loose which is causing an intermittent electrical connnection, or you have a significant amount of RF current flowing back down the outside of the coax, and the feedline is acting as part of the antenna.

I suspect that your high-SWR points are at frequencies where the outside of the feedline is close to a multiple of 1/2 electrical wavelength, and appears as a relatively low RF impedance to ground. Changing the feedline position or length could shift the effect of this unwanted RF pathway and move the high-SWR frequencies around.

It's also possible that your SWR meter isn't actually measuring what you think it's measuring. If there's a strong UHF/VHF signal being transmitted in your area, the feedline or antenna might be picking it up and it might be confusing your analyzer (MFJ analyzers are notoriously subject to confusion on the lower HF frequencies for this reason, and you might be having a similar problem at VHF/UHF).

Using a good balun (with the correct impedance-transformation ratio) at the feedpoint may help matters, if you aren't doing this already.

Equally likely to help would be adding some choking impedance to the feedline, in the form of one-or-a-few snap-on two-part ferrite "interference suppressor" chokes. I'd suggest installing one just below the point at which the feedline leaves the antenna boom.

I suspect that choking the feedline will make the wonky SWR measurement settle down.

And, yes, adding a longer feedline will probably reduce the SWR weirdness (or at least move it around to different frequencies), but it's not a particularly good solution to the problem... you'd probably have to add a lot of coax (and thus a lot of unwanted losses) in order to reduce the SWR excursions by much.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

5505. Re: SWR changes on VHF/UHF Log

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 21:38:16 UTC
From: Jerry <jerrymartes@verizon.net>
Message-ID: <clA6k.28148$8q2.21429@trnddc02>
Source record: 24827

"Dave Platt" <dplatt@radagast.org> wrote in message
news:d7tqi5-jt3.ln1@radagast.org...
>>> I've built a VHF/UHF Log Periodic for monitoring. It works quite well,
>>> but I've been curious about one thing... Using an analyzer, I get a
>>> good SWR on the majority of the antenna (below 1.5), but there's some
>>> areas that are fairly high. Well above 3.0. Obviously this isn't
>>> crucial for just monitoring, but I use that as a guide as far as
>>> seeing how well the antenna is designed. The thing that I don't
>>> understand is that the SWR readings will change if the cable is moved.
>>> The cable comes off the front end of the boom, travels back to the
>>> middle, then comes off across a horizontal mast (the antenna is
>>> vertical) and down the vertical mast. All that part of the cable
>>> doesn't move... But if I pick up the cable on the ground and change
>>> the location a bit, the SWR will change quite a bit... Areas that
>>> before had a poor SWR now have a good one, and areas that were good
>>> change to poor. Why would this happen? Also, would using a longer
>>> cable possibly make the SWR better? Typically I have tested with a 20'
>>> RG8X cable. I also usually test with the antenna about 8' off the
>>> ground. Would it improve with better elevation off the ground as well?
>
>> Hi Dave
>>
>> What type balun did you use?
>
> 'Tis a good question!
>
> If an antenna's measured SWR changes when the doax is moved, it tends
> to mean one of two things: either there's something physically loose
> which is causing an intermittent electrical connnection, or you have a
> significant amount of RF current flowing back down the outside of the
> coax, and the feedline is acting as part of the antenna.
>
> I suspect that your high-SWR points are at frequencies where the
> outside of the feedline is close to a multiple of 1/2 electrical
> wavelength, and appears as a relatively low RF impedance to ground.
> Changing the feedline position or length could shift the effect of
> this unwanted RF pathway and move the high-SWR frequencies around.
>
> It's also possible that your SWR meter isn't actually measuring what
> you think it's measuring. If there's a strong UHF/VHF signal being
> transmitted in your area, the feedline or antenna might be picking it
> up and it might be confusing your analyzer (MFJ analyzers are
> notoriously subject to confusion on the lower HF frequencies for this
> reason, and you might be having a similar problem at VHF/UHF).

>
> Using a good balun (with the correct impedance-transformation ratio)
> at the feedpoint may help matters, if you aren't doing this already.
>
> Equally likely to help would be adding some choking impedance to the
> feedline, in the form of one-or-a-few snap-on two-part ferrite
> "interference suppressor" chokes. I'd suggest installing one just
> below the point at which the feedline leaves the antenna boom.
>
> I suspect that choking the feedline will make the wonky SWR
> measurement settle down.
>
> And, yes, adding a longer feedline will probably reduce the SWR
> weirdness (or at least move it around to different frequencies), but
> it's not a particularly good solution to the problem... you'd probably
> have to add a lot of coax (and thus a lot of unwanted losses) in order
> to reduce the SWR excursions by much.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

Hi Dave Platt

I suspect the original Dave has mounted the antenna so the dipoles are
parallel with the mast. And it wasnt clear that he'd taken into account
the need for some sort of a device to allow a balanced antenna to an
unbalanced line. It seemed like a good 'starting question'.
By my analysis, the LPDA is a set of dipoles fed from one end so it tends
to create a pattern null in the direction toward the dipoles from the feed
end. Those dipoles which are too short or too long to be well matched to
the line wont radiate enough to upset the null depth. If the feed line and
tower are coupled to only one half of the dipoles some unbalance is
expected.

Jerry

5506. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-19 23:29:00 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <g3eq3ujph1@news.service.uci.edu>
Source record: 24828

Walter Maxwell wrote:
> <jimkelleyamps@gmail.com> wrote in message
> news:2b72179f-67e7-4035-8ffe-f3d329b558f2@59g2000hsb.googlegroups.com...
> On Jun 14, 8:46 am, "Walter Maxwell" <w...@w2du.com> wrote:
>
>
>>I don't understand how my statement in the email above indicates that I^2*R
>
> and
>
>>V*R could be zero. The simple ratio of E/I is not zero, yet it defines a
>>resistance that is non-dissipative because a ratio cannot dissipate power.
>
>
>>Walt
>
>
> Hi Walt -
>
> If E and I are not zero, then E*I is not zero. But you are correct
> that the equations themselves do not dissipate power. :-) Resistors
> do, however. If there isn't an actual resistor located where you make
> your measurement, then of course there's no power being dissipated
> there.
>
> 73, ac6xg
>
> Jim, have you reviewed the new section Chapter 19A that appears on Cecil's
> website that he uploaded on June 7? It appears there posted as 'Chapter 19A from
> Reflections 3'. If you haven't reviewed it I urge you to do so, especially the
> last portion where I report the measurements I made with a complex impedance
> loading the amplifier. These measurements prove two things: 1) that the output
> resistance of the amp is non-dissipative, and 2) that no reflected energy
> reaches the amp tube, and in fact the measurements show that the tube doesn't
> even see the reflected power. When you see the numbers and understand the
> procedure I used in obtaining them you will be hard pressed to disagree with the
> results.
>
> Walt, W2DU

Hi Walt -

I have skimmed through it. It seems to me that your arguments with
this person named Bruene should be left out of it. Still, I have
enough faith in your considerable engineering talents (and enough

understanding of the underlying physics) to know that nothing in your results would reveal dissipationless resistors having finite ohmic resistance.

On the other hand, a virtual resistor, being the real component of a virtual impedance, should by definition not be allowed the ability to dissipate (or for that matter, reflect) energy. ;-)

73, ac6xg

5507. Re: SWR changes on VHF/UHF Log

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 07:21:57 UTC
From: Dave99 <dpdphoto@aol.com>
Message-ID: <7b2ba0f1-22bc-4a3a-8d9c-cf88d1c823ce@d77g2000hsb.googlegroups.com>
Source record: 24829

Thanks guys... Up until now I hadn't used a Balun. Not to open the balun debate, but I haven't used one on other versions I've done and everything was fine. The testing I did was out in the middle of nowhere, so that limits the chance of their being an outside signal influence. Jerry, if you were asking if the whole antenna is isolated from the mast... it is. There's no electrical contact between the antenna and any part of the mast. The antenna is supported by a thin horizontal 12" mast to the side of the boom. The antenna is isolated from that part as well. So that holds the antenna about 12" away from the parallel vertical mast. I actually put one up at a friends house today. Interestingly enough it was doing the same thing on the ground as the other one. But when we got it up on the mast about 10' off the roof, the SWR was excellent across the whole designed bandwidth. So I don't know, maybe something as simple as proximity to the ground? Like I said, it's not a big issue for just receiving, but it just kind of bugs me. Then of course, as you mentioned, there's the analyzer itself. But I'd think if it was an error in that, it would just stay the same... Not change by moving the coax.

Dave

5508. Re: SWR changes on VHF/UHF Log

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 08:20:15 UTC
From: Jerry <jerrymartes@verizon.net>
Message-ID: <3LJ6k.95259$bs3.29762@trnddc07>
Source record: 24830

"Dave99" <dpdphoto@aol.com> wrote in message
news:7b2ba0f1-22bc-4a3a-8d9c-cf88d1c823ce@d77g2000hsb.googlegroups.com...
> Thanks guys... Up until now I hadn't used a Balun. Not to open the
> balun debate, but I haven't used one on other versions I've done and
> everything was fine. The testing I did was out in the middle of
> nowhere, so that limits the chance of their being an outside signal
> influence. Jerry, if you were asking if the whole antenna is isolated
> from the mast... it is. There's no electrical contact between the
> antenna and any part of the mast. The antenna is supported by a thin
> horizontal 12" mast to the side of the boom. The antenna is isolated
> from that part as well. So that holds the antenna about 12" away from
> the parallel vertical mast. I actually put one up at a friends house
> today. Interestingly enough it was doing the same thing on the ground
> as the other one. But when we got it up on the mast about 10' off the
> roof, the SWR was excellent across the whole designed bandwidth. So I
> don't know, maybe something as simple as proximity to the ground? Like
> I said, it's not a big issue for just receiving, but it just kind of
> bugs me. Then of course, as you mentioned, there's the analyzer
> itself. But I'd think if it was an error in that, it would just stay
> the same... Not change by moving the coax.
>
> Dave

Hi Dave

I did misunderstand about your mount. But, if the vertical antenna is
supported by a 12 inch horizontal mast, I wouldnt expect the support to
effect the radiation. But, when coax is used to feed a balanced antenna,
some sort of device is recommended to minimize conducting currents along the
Outside of the coax. One method of gfeeding a Log Periodic is to run the
coax inside one of the two tubes that form the parallel line connecting the
dipoles.

Jerry

5509. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 08:58:25 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <RiK6k.30765$GF6.18406@newsfe27.ams2>
Source record: 24831
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Hi Richard,

Just an update for you on my AT1KP tuner.
I am only running 110 watts through the tuner due to not owning an
Amplifier.
I have tried it out on an End Fed wire WITH an earth ground rod that has a
very poor ground and also an End Fed Zep. It still tunes these wires down
to 1.1:1 from 160 - 6 Meters with ease.
I am very pleased with it and I'm glade I purchased the AT1KP. Hope this
helps.

73 Andy

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:Mvb6k.54963$M63.47312@newsfe13.ams2...
> Richard,
>
> My Palstar AT1KP arrived this morning, so early days yet.
> What I can say about it is that the build quality inside and out looks
> excellent.
> I have only run 110 watts through it and it has tuned my 40m Centre Fed
> Dipole cut for 40 meters down to 1.1: from 1.8 - 6 meters with ease.
>
> Hope this helps.
>
> 73 Andy
>
>
> <ltdoc@yahoo.com> wrote in message
> news:832b6dd7-6308-4948-bf3a-6a5f60e0156a@34g2000hsf.googlegroups.com...
>> Richard,
>> Considering some of the reviews I've seen on various forums, the one
>> thing those reviews proves is that they must work. How well they work
>> just depends on how close to the tuner's limits any particular antenna
>> falls. 'Size' is one consideration that isn't thought of very often.
>> Bigger usually means larger limits cuz all those thingys inside are
>> larger, which is good to some ridiculous point. Deciding where
>> 'ridiculous' starts/stops depends on you to a large extent. It has to
>> do with the antennas you have/want/are allowed, and the size of your
>> bank account.
>> Is it the mostest best thing on the market? Good question, and
>> another one of those 'depends' thingys. (Mine is the bestest tuner
>> ever made. It isn't produced anymore. It is not for sale, wish I had
>> another one! Can do some really 'weird' antennas. Ain't saying what

>> it is so the price will be cheaper when I find another one.)
>> - 'Doc
>>
>>
>> [Large doses of 'B.S.' are always a part of my responses. Deciding
>> which is what is your responsibility. Hows that for a 'CYA'?]
>>
>>
>
>
>

5510. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 09:28:51 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk>
Source record: 24832
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Andy, is your endfed wire the one in your other thread of the 8th June
(ie the 80 Meter End Fed, fed with coax at the far end)? If so,
presumably the tuner is at the shack end. Or are you feeding it from the
shack end.

In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
<dx90@blueyounder.co.uk> writes
>Hi Richard,
>
>Just an update for you on my AT1KP tuner.
>I am only running 110 watts through the tuner due to not owning an
>Amplifier.
>I have tried it out on an End Fed wire WITH an earth ground rod that has a
>very poor ground and also an End Fed Zep. It still tunes these wires down
>to 1.1:1 from 160 - 6 Meters with ease.
>I am very pleased with it and I'm glade I purchased the AT1KP. Hope this
>helps.
>
>73 Andy
>

--
Ian

5511. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 12:50:27 UTC
From: vk2dmh@gmail.com
Message-ID: <0183310b-29ce-4dca-84f6-9fe7b3650bae@i36g2000prf.googlegroups.com>
Source record: 24833

I'd hate to see Usenet go because it has been around a long time.
However there are a multitude of Ham orientated and Amateur Radio
antenna groups within Yahoo Groups. Most of them are also moderated,
which means flame wars like this usually get extinguished pretty
quickly. 73 de David, VK2DMH.

5512. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 13:24:09 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <YbO6k.17849$7m7.13223@newsfe30.ams2>
Source record: 24834
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Hi Ian,

Yes its the same. The tuner is at the shack end (house) and I'm feeding the antenna with 50 Ohm RG-58 C/U coax at the far end of the garden. If I can get it working well I will replace it with some RG-213 that I have here. I put it back up yesterday and started experimenting again.

The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon feeder. This is all I had left spare. One side is connected to the wire antenna and the other side left, not connected. The coax is connected to the 300 Ohm at the bottom and the braid side is now connected to the unconnected side of the 300 Ohm and also to the earth ground rod.
On 80 the receive is up 2-4 S points compared with the 40m coax Centre Fed Dipole. I have not had chance to get any actual reports on 80 yet. Maybe this weekend.

73 Andy

"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
> Andy, is your endfed wire the one in your other thread of the 8th June (ie
> the 80 Meter End Fed, fed with coax at the far end)? If so, presumably the
> tuner is at the shack end. Or are you feeding it from the shack end.
>
>
> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
> <dx90@blueyounder.co.uk> writes
>>Hi Richard,
>>
>>Just an update for you on my AT1KP tuner.
>>I am only running 110 watts through the tuner due to not owning an
>>Amplifier.
>>I have tried it out on an End Fed wire WITH an earth ground rod that has a
>>very poor ground and also an End Fed Zep. It still tunes these wires down
>>to 1.1:1 from 160 - 6 Meters with ease.
>>I am very pleased with it and I'm glade I purchased the AT1KP. Hope this
>>helps.
>>
>>73 Andy
>>
>
> --
> Ian

5513. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 14:14:46 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <MXO6k.6$KB4.0@newsfe07.lga>
Source record: 24835

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:76sk54hh2t920jad3fbchvicvdo6oqan99@4ax.com...
> On Wed, 18 Jun 2008 20:39:12 -0400, "Walter Maxwell" <walt@w2du.com>
> wrote:
>
> >Richard, am I now to understand that you haven't reviewed my Chapter 19A,
which
> >details the entire procedure I used for the measurements that include the
> >resistance RL = 1400 ohms at the input of the pi-network? If you haven't I
can
>
> Hi Walt,
>
> As I expected, you can provide quantitative data. This is a
> refreshing change from the, what?, 100+ postings of "thoughts" on the
> matter? It would suggest a poor rate of exchange for thinking these
> days to come to so little conclusion.
>
> >You can find 19A by using this url from Cecil,
> >http://www.w5dxp.com/Chapt19a.doc.
>
> Well, if you posted it through Cecil here, yes I didn't see it as I
> don't read him.
>
> Now, however, having a copy of that work from your own web site (why
> didn't you reference that?) that I got after my last post, I will go
> through it by the steps you lay out so carefully.
>
> http://www.w2du.com/r3ch19a.pdf
>
> Before doing so, and confining that to a separate posting, I would say
> that I can acknowledge your fine work and care at creating a protocol
> that does seem to reduce the variables, and test your hypothesis
> without editorial bias. It seems like a great improvement from
> earlier attempts to tackle the same issue.
>
> A preliminary thought, however: What would you say is the Q of the
> plate tank, Plate to Load, during operation under each load?
>
> 73's
> Richard Clark, KB7QHC

Hi Richard,

Sorry for the delay in answering, we were out of town all day yesterday so this is the first opportunity I've had to read your post. Thank you for your kind assessment of my measurements.

Now to the reason I didn't direct you to my own web page for the file 19A. That version is about two years old, and I have made some sigificant changes since then. Son Rick is my webmaster and at the time he was too busy to update the file on the web page, so I gave Cecil the copy for him to put on his web page. However, instead of adding it to this thread, for some reason he started a new thread.

In addition to that I'm a dim-witted jerk. When I told you about accessing 19A I was very tired and sleepy, so it didn't occur to me until the next morning that I should have simply emailed you the most recent version. I've added some more material even since the version I gave to Cecil, but not in the section reporting the measurements.

Richard, I don't know of any way to determine the Q with the data I obtained, I'd have to think about any additional measurements that would give the Q. Unfortunately, my lab is in Florida and Jean and I are at our Summer home in Mt. Pleasant, MI, so there is no way I can work on the Q until we return to FL in November.

I'd appreciate any further comments you might have on the data appearing in 19A.

Walt, W2DU

5514. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 14:43:57 UTC
From: Robert Smits <bob@rsmits.ca>
Message-ID: <ea1bc1b0c171dc5876d30872e1fa782a@grapevine.islandnet.com>
Source record: 24836

vk2dmh@gmail.com wrote:

> I'd hate to see Usenet go because it has been around a long time.
> However there are a multitude of Ham orientated and Amateur Radio
> antenna groups within Yahoo Groups. Most of them are also moderated,
> which means flame wars like this usually get extinguished pretty
> quickly. 73 de David, VK2DMH.

No, thanks. Yahoo groups are NOT the same as Usenet or a reasonable substitute for international newsgroups with nntp feeds. A better alternative at the moment are alternate newsfeeds like giganews.

--
Bob Smits, Ladysmith, BC

"What a wonder is USENET; such wholesale production of conjecture from such a trifling investment in fact." -- Carl S. Gutekunst

5515. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 15:31:16 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <aqiyJALE18WIFwKt@g3ohx.demon.co.uk>
Source record: 24837
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
<dx90@blueyounder.co.uk> writes
>
>
>
>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>> Andy, is your endfed wire the one in your other thread of the 8th June (ie
>> the 80 Meter End Fed, fed with coax at the far end)? If so, presumably the
>> tuner is at the shack end. Or are you feeding it from the shack end.
>>
>>
>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>> <dx90@blueyounder.co.uk> writes
>>
>> --
>
>
>Hi Ian,
>
>Yes its the same. The tuner is at the shack end (house) and I'm feeding the
>antenna with 50 Ohm RG-58 C/U coax at the far end of the garden. If I can
>get it working well I will replace it with some RG-213 that I have here. I
>put it back up yesterday and started experimenting again.
>
>The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon feeder. This
>is all I had left spare. One side is connected to the wire antenna and the
>other side left, not connected. The coax is connected to the 300 Ohm at the
>bottom and the braid side is now connected to the unconnected side of the
>300 Ohm and also to the earth ground rod.
>On 80 the receive is up 2-4 S points compared with the 40m coax Centre Fed
>Dipole. I have not had chance to get any actual reports on 80 yet. Maybe
>this weekend.
>
>73 Andy

OK, Andy. Noted.

I don't know if you will really improve things by using the 15 foot of
300 ohm feeder. It's a sort of a zepp, but with one side of the twin
feeder earthed. I would try disconnecting the earthed ('unconnected')
side from earth / coax braid. You can either leave it floating, or
connect it to the coax inner. It will then be approximately a
quarterwave on 20m, fed in parallel with the long wire.

Don't read too much into the excellent SWR you're getting with the tuner. That's what the TX sees, but the tuner can't affect the SWR on the aerial feeder. If the coax SWR is sky high (and it can be if the impedance at aerial feed point is high), the coax losses will be much more that you would get compared with when it is matched correctly. You only get away with it by using the lowest-loss you can find, and keeping the coax as short as possible.

I'm not surprised that 80m on the endfed is a bit better than the 40m dipole. But what's 40m like on the endfed? That's when the feed impedance (and coax SWR) will be very high, and where the RG-213 might perform better noticeably better than the RG-58.

As I think I said before, although I am an advocate of simply using coax (regardless), after all these years I am considering in investing in something like a SG230 remote tuner for the far end of the coax.
--
Ian

5516. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 16:26:23 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <PSQ6k.8975$jI5.21@flpi148.ffdc.sbc.com>
Source record: 24838

Walter Maxwell wrote:
> ... I gave Cecil the copy for him to put on his web page.
> However, instead of adding it to this thread, for some reason he started a new
> thread.

Walt, the reason I did that was so everyone would see it,
even people who were not following the original thread.
I should have posted it on both threads. Sorry.
--
73, Cecil http://www.w5dxp.com

5517. Re: Efficiency and maximum power transfer

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 17:13:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3von54dgbk5u74ufdu5i1frgdc4188md55@4ax.com>
Source record: 24839

On Fri, 20 Jun 2008 10:14:46 -0400, "Walter Maxwell" <walt@w2du.com>
wrote:

>I'd appreciate any further comments you might have on the data appearing in 19A.

Hi Walt,

Well, I've put a lot of water under the bridge on the 19A at your web
site. If the comments I make on this version are answered in your
most recent one - all good and well. If not, then that will take care
of itself too. I will be starting a new thread when I've shook out
all the surplus commas in my review.

That may take some time because I'm currently assembling a fundraising
presentation for a non-profit.

73's
Richard Clark, KB7QHC

5518. Cheap Air Jordan Air Max Shox Bape DUNK Adidas Puma Shoes Supplier

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-20 20:33:27 UTC
From: "www.24hoursneakers.com" <HHL20008@hotmail.com>
Message-ID: <f5589ad9-8575-4203-9947-17421caf3165@y22g2000prd.googlegroups.com>
Source record: 24840

Air Max 87 / 90 / 95 / 97 / 360 / 180 / 2003 / 2008 / TN / LTD
Sneakers,
Shox R2 / R3 / R4 / R5 / R6 / OZ / NZ / TL / Turob / BMW Sneakers

Discout Puma Trainers, Adidas Trainers, Lacoste Trainers, Jordan1-23
Sneakers, Prada Sneakers, AF1 Sneakers, Mauri Sneakers, Dsquared
Hogan Supplier.
http://groups.google.com/group/macromedia.flex.flex_builder/browse_thread/thread/c563994f4
4a2e26d

5519. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 04:22:44 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3hvmo$kk9$1@news.albasani.net>
Source record: 24841

vk2dmh@gmail.com wrote:
> I'd hate to see Usenet go because it has been around a long time.
> However there are a multitude of Ham orientated and Amateur Radio
> antenna groups within Yahoo Groups. Most of them are also moderated,
> which means flame wars like this usually get extinguished pretty
> quickly. 73 de David, VK2DMH.
>

While "flamers" are an annoyance and an embarrassment to the human race,
I much prefer them to any possible infringement on anyones "voice."
They are a necessary evil ... but, having the groups available, which
you have mentioned, is good!

Regards,
JS

5520. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 04:26:04 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3hvt1$l2j$1@news.albasani.net>
Source record: 24842

Robert Smits wrote:

>
>
> No, thanks. Yahoo groups are NOT the same as Usenet or a reasonable
> substitute for international newsgroups with nntp feeds. A better
> alternative at the moment are alternate newsfeeds like giganews.
>
>
> --
> Bob Smits, Ladysmith, BC
>
> "What a wonder is USENET; such wholesale production of conjecture from such
> a trifling investment in fact." -- Carl S. Gutekunst

Well said.

However the low bandwidth requirements of newsgroups should be included
in any decent ISPs' services, IMHO.

Regards,
JS

5521. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 05:05:02 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <s6eui5-jhj.ln1@mail.specsol.com>
Source record: 24843

John Smith <assemblywizard@gmail.com> wrote:
> Robert Smits wrote:

> >
> >
> > No, thanks. Yahoo groups are NOT the same as Usenet or a reasonable
> > substitute for international newsgroups with nntp feeds. A better
> > alternative at the moment are alternate newsfeeds like giganews.
> >
> >
> > --
> > Bob Smits, Ladysmith, BC
> >
> > "What a wonder is USENET; such wholesale production of conjecture from such
> > a trifling investment in fact." -- Carl S. Gutekunst

> Well said.

> However the low bandwidth requirements of newsgroups should be included
> in any decent ISPs' services, IMHO.

Low bandwidth my ass, a full USENET feed is gigabytes per day.

Know nothing fool.

--
Jim Pennino

Remove .spam.sux to reply.

5522. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 07:20:04 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3ia38$7af$1@news.albasani.net>
Source record: 24844

Res wrote:
> ... 90% of internet users dont know what usenet is let alone
> use it :)
>

MENSA is even worse, only 2% of the population are allowed membership ...

Gigs? Huh, you find that scary? A simple download of one CD is
generally around ~713 megabytes--on a decent feed this only takes a
matter of minutes ...

That is one problem which has plagued 99% of amateurs--small thinking.

Regards,
JS

5523. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 07:23:45 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3iaa6$7me$1@news.albasani.net>
Source record: 24845

jimp@specsol.spam.sux.com wrote:

> ...
> Low bandwidth my ass, a full USENET feed is gigabytes per day.
>
> Know nothing fool.
>
>
>

Perhaps a valid argument for those on dialup or with inadequate access
to the net.

Gigs ain't nothin', we move towards terabytes ... those thinking in gigs
are destined to the path of the dinosaur ...

Regards,
JS

5524. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 10:20:12 UTC
From: M0WYM <Sansspam@peartreegreen.org>
Message-ID: <g3ikkt$pg2$1@news.albasani.net>
Source record: 24846

Andy wrote:
> I'm having loads of fun since I started.
>
> I recently purchased an RigExpert AA-200 Antenna Anal;yser from Radio World.
> Here's the link if anyone wants a read.
> http://www.radioworld.co.uk/~radio/catalog/aa200-antenna-analyzer-p-5841.html?osCsid=a22
3fcdeb781abc7dba4a96691a21039
>
> Trouble now is I can't put the AA-200 down with out thinking of some thing
> else to try out. I'm getting addicted.
>
> 73 Andy
>
>
>
Andy,

I see that it has a USB interface and CD, is this purely Windows
based and is a computer actually necessary?

73,

Charlie

--
M0WYM
www.radiowymsey.org

Wymsey - Ten years Old!
www.wymsey.co.uk

5525. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 15:32:34 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3j6uottr1@news.albasani.net>
Source record: 24847

Res wrote:

>
> and what do you propose we STORE it on? or do you rather ISP's only keep a
> couple weeks news? We have news going back 5 years in most groups.
> you do the maths since your huge brain is apparently better than us
> amateurs.
>

The 750 gig hd in my laptop was unimaginable but a few short years ago
(not to mention, unfordable if possible--NOT today)... pause before
making rash statements--you can answer your own questions.

As I have mentioned, that way of thinking place you in "dinosaur danger!"

Regards,
JS

5526. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 16:53:36 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3jbmk$7dt$1@news.albasani.net>
Source record: 24848

Res wrote:
> ...
> you do the maths since your huge brain is apparently better than us
> amateurs.
>

BTW ... I AM an amateur, IDIOT!

But, you allude to the correct assumption, an amateur with a LARGE brain
is much preferred to the example you demonstrate.

Regards,
JS

5527. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 17:25:02 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <ttpvi5-qei.ln1@mail.specsol.com>
Source record: 24849

John Smith <assemblywizard@gmail.com> wrote:
> jimp@specsol.spam.sux.com wrote:

> > ...
> > Low bandwidth my ass, a full USENET feed is gigabytes per day.
> >
> > Know nothing fool.
> >
> >
> >

> Perhaps a valid argument for those on dialup or with inadequate access
> to the net.

> Gigs ain't nothin', we move towards terabytes ... those thinking in gigs
> are destined to the path of the dinosaur ...

A full T1 line is 1.5 megabits/sec.

The theoretical maximum bandwidth of DSL is 8 megabits/sec and you
will be lucky to get 6 megabits/sec.

A full USENET feed, one way, is about 130 GB day.

130 Gbytes X 8 bits = 1 X 10^12 bits.

1 X 10^12 bits / 6 X 10^6 bit/sec = 1.6 X 10^5 seconds = 46 hours.

So since there are only 24 hours in a day, you need the equivelant of
2 full, good DSL connections just to handle the incoming feed.

Add to the connections necessary for the outgoing feed.

And to store 30 days worth is 4 terabytes of storage.

As I said, know nothing fool.

BTW, how you can read my post when you've plonked me so many times?

--
Jim Pennino

Remove .spam.sux to reply.

5528. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 18:08:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Hsb7k.7815$ZE5.4521@nlpi061.nbdc.sbc.com>
Source record: 24850

John Smith wrote:
> BTW ... I AM an amateur ...

But are you a rank amateur? :-)
--
73, Cecil http://www.w5dxp.com

5529. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 19:23:27 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <4sednZg4ZqOCy8DVnZ2dnUVZ8gOdnZ2d@pipex.net>
Source record: 24751

John Smith wrote:
> BTW ... I AM an amateur, IDIOT!
>
> But, you allude to the correct assumption, an amateur with a LARGE brain
> is much preferred to the example you demonstrate.
==========
IF you are a licensed radio amateur , show us the courtesy to include
your callsign ,like all others contributing to this NG.

I have not come across a single licensed radio amateur , calling another
radio amateur an i***t !

What about 'trying' to show good manners.

Frank GM0CSZ / KN6WH

5530. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 19:35:41 UTC
From: Dave <noone@nowhere.com>
Message-ID: <hKc7k.98$i5.85@trndny07>
Source record: 24752

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:4sednZg4ZqOCy8DVnZ2dnUVZ8gOdnZ2d@pipex.net...
> John Smith wrote:
> > BTW ... I AM an amateur, IDIOT!
>>
>> But, you allude to the correct assumption, an amateur with a LARGE brain
>> is much preferred to the example you demonstrate.
> ==
> IF you are a licensed radio amateur , show us the courtesy to include your
> callsign ,like all others contributing to this NG.
>
> I have not come across a single licensed radio amateur , calling another
> radio amateur an i***t !
>
> What about 'trying' to show good manners.
>
>
> Frank GM0CSZ / KN6WH

then you haven't been reading this group for long!

5531. Chapter 19A from "Reflections III" - Step Reviews Overview

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 21:45:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <98tq545e2fj84jqu5sjve82langijsmtov@4ax.com>
Source record: 24753

Hi All,

This is simply a quick overview from the separate threads that will follow, each thread devoted to only one Step in the progression of measurements Steps offered by Walt Maxwell in his upcoming release of "Reflections III," Chapter 19A in particular.

I have been working off of three revisions of this work, and some quotes may not be accurate. I will leave reconciliation of those to others as this has been a long and exhaustive examination, and I don't perceive any substantive issues shifted along the way. Not all steps will be critiqued as not all contain response beyond my noting they contained simple reports of fact that did not merit challenging. A full article length version containing all discussion of this will be available.

The discussion threads follow immediately.

73's
Richard Clark, KB7QHC

5532. Chapter 19A from "Reflections III" - Step 1 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 21:46:18 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <v4tq54ph4k6lurvrlksthsfl5jmdr49ck3@4ax.com>
Source record: 24754

Step 1.
Using a Kenwood TS-830S transceiver as the RF source, the tuning and loading of the pi-network are adjusted to deliver all the available power into a 50 + j0-ohm load with the grid drive adjusted to deliver the maximum of 100 watts at 4 MHz, thus establishing the area of the RF power window at the input of the pi-network, resistance RLP at the plate, and the slope of the load line. The output source resistance of the amplifier in this condition will later be shown to be 50 ohms. In this condition the DC plate voltage is 800 v and plate current is 260 ma. DC input power is therefore 800 v ? 0.26 a = 208 w. Readings on the Bird 43 wattmeter indicate 100 watts forward and zero watts reflected. (100 watts is the maximum RF output power available at this drive level.) From here on the grid drive is left undisturbed, and the pi-network controls are left undisturbed until Step 10.

There are several points in response here:
1.The load specification (50 + j0-ohm) is for full output power, not some portion of it. This is a minor point.
2.Maximum power from a TS-830S can be as high as 120W, could be lower depending on finals' service life. This is a minor point.
3.Rated typical Plate Current for the 6146B is 220mA. Running more at higher voltage (typical is 750V) to obtain less power sounds like the amp is being strained to produce 100W.
4.ï¿½Available Powerï¿½ is 208W. Efficiency and other considerations certainly lower this, but it would appear that efficiency has been red-lined at 48% by this step's assertions. The red-line at 48% efficiency may reveal the aforementioned strain.

73's
Richard Clark, KB7QHC

5533. Chapter 19A from "Reflections III" - Step 2 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 21:47:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <eltq54di8i0p6b0u8alqjgemd32mgagldp@4ax.com>
Source record: 24755

Step 2.
The amplifier is now powered down and the load resistance RL is measured across the input terminals of the resonant pi-network tank circuit (from plate to ground) with an HP-4815 Vector Impedance Meter. The resistance is found to be approximately 1400 ohms. Because the amplifier was adjusted to deliver the maximum available power of 100 watts prior to the resistance measurement, resistance RLP looking into the plate (upstream from the network terminals) is also approximately 1400 ohms. Accordingly, a non-reactive 1400-ohm resistor is now connected across the input terminals of the pi-network tank circuit and source resistance ROS is measured looking rearward into the output terminals of the network. Resistance ROS was found to be 50 ohms.

Points in response:
1.This is actually two steps: one measurement made from the plate looking towards the load; one measurement made from the output jack looking towards plate.
2.The measurement at the plate without a powered tube unloads the Q of the plate tuning. Does this unloaded Q present a false reading of the transformed load resistance?
3.The load line with 800 v / 0.26 a / 2 = 1539 Ohms.
4.ï¿½Maximum Available Powerï¿½ has not been established, only arrived at by inference. It could be more, it could be less. Being less is unlikely given the subsequent demonstrated power delivered to the load being 100W; but it is suspect that exactly 100W is all that could be obtained. The point, however, is that such attention to ï¿½Available Powerï¿½ is an unnecessary elaboration to the point of taking these steps.
5.The measurement at the output towards the plate similarly unloads the plate tuning Q when the 50 Ohms is removed to make the measurement. Does this unloaded Q present a false reading of the transformed plate resistance?
6.The measurements made in both directions confirm the capacity of an unloaded circuit to perform the transformations in a symmetric fashion (a good test), but you have not tested if the issue of loaded Q is a factor or not. If you were to replace the 1400 Ohm resistor at the plate tuning input (at the plate connection) with a 1000 Ohm resistor, would the 50 Ohms follow that shift? By how much?

73's
Richard Clark, KB7QHC

5534. Chapter 19A from "Reflections III" - Step 7 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 21:48:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5ntq54dgkttqqc2ppl0g0mn7tk70o6ah4b@4ax.com>
Source record: 24756

Step 7.
Due to the 2.88:1 mismatch at the load, neglecting network losses and the small change in plate current resulting from the mismatch, approximately the same mismatch appears between RLP and ZL at the input of the pi-network. Consequently, the change in load impedance changed the network input resistance RL from 1400 ohms to complex ZL ï¿½ 800 ï¿½ j1000 ohms, measured with the Vector Impedance Meter using the method described in Step 2. To verify the impedance measurement of ZL the phase delay of the network was measured using an HP-8405 Vector Voltmeter and found to be 127ï¿½. Using this value of phase delay the input impedance ZL was calculated using two different methods; one yielding 792 ï¿½ j1003 ohms, the other yielding 794.6 ï¿½ j961.3 ohms, thus verifying the accuracy of the measurement. However, because grid voltage EC, grid drive Eg, and plate voltage EB are left unchanged, resistance RLP at the plate has remained at approximately 1400 ohms, leaving a mismatch between RLP and ZL at the input of the pi-network. As stated above, this value of ZL yields the substantially the same mismatch to plate resistance RLP as that between the output impedance of the pi-network and the 17.98 + j8.77-ohm load, i.e., 2.88:1. This mismatch at the network input results in less power delivered into the network, and thus to the load, a decrease in the area of the RF window at the network input, and a change in the slope of the loadline. (It must be remembered that the input and output mismatches contribute only to mismatch loss, which does not result in power delivered and then lost somewhere in dissipation. As we will see in Step 8, the mismatch at the input of the pi-network results only in a reduced delivery of source power proportional to the degree of mismatch.)

Points in response:
1.We enter into a key remark in the first sentence: neglecting network losses and the small change in plate current resulting from the mismatch. By this statement the subordinate thesis being offered: output source resistance of the RF power amplifier is non-dissipative is wholly invalidated. The observation that the plate current changes (and presumably plate voltage has not, unconfirmed in the protocol) through the agency of mismatch must necessarily admit that the plate resistance has also changed if only because it has been explicitly admitted to through the dismissed current change.
2.To whatever degree (as dictated by the phase of the mismatch), plate dissipation must also change. This is the common experience of literally thousands of Amateur radio operators and has been commented upon and reported for generations when through the unfortunate aspect of phase, it becomes a destructive dissipation. Such reports often attain dramatic legendary status, if only for the afflicted amplifier

owner (who may enjoy comedic celebrity among his peers).
3.Moving on to subsequent sentences, the reported values of complex load resistance (792 ï¿½ j1003 Ohms) seen from the plate looking through tuning towards the new, mismatched load confirms that the plate resistance must be impacted. If, as reported, the plate resistance remains at 1400 Ohms, then there is a mismatch which is admitted to in the text of the original. The final argument is based upon mismatch loss, which from the perspective of the load, is that amount of power not seen, but not lost by dissipation. That much is true from the perspective of the load. The same would be true if we replaced the plate tuning with a large resistor which would also reduce power to the load, so such an appeal has nothing to do with the argument of the subordinate thesis: output source resistance of the RF power amplifier is non-dissipative. The nature of this particular plate mismatch affirms the current indication, and rejects the conclusion of non-dissipation (which is characteristically, and artificially constrained to being exothermic when through phasing it could as easily be endothermic).
4.A more careful protocol would allow for phase by lengthening the 13.5ï¿½ length of coax to 103.5ï¿½ (or more but well less than 180ï¿½) and carefully noting the new plate current. In fact, other lengths should be used to draw a more rigorous correlation.

73's
Richard Clark, KB7QHC

5535. Chapter 19A from "Reflections III" - Step 8 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 21:50:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0rtq54d2f17ac0la9miis1uppugf31mts9@4ax.com>
Source record: 24757

Step 8.
Readings on a Bird 43 power meter now indicate 95w forward and 20w reflected, meaning only 75 watts are now delivered by the source and absorbed in the mismatched load. The 20w reflected power remains in the coax, and adds to the 75 watts delivered by the source to establish the total forward power of 95w.

Point in response:
The Bird 43 indications only reveal mismatch loss (unstated as 5W if we are to return to the concept of Available Power, which as a rhetorical point has been uncharacteristically discarded) which is only tangentially related to the subordinate thesis: output source resistance of the RF power amplifier is non-dissipative. Step 7 is sufficient to illustrate the thesis.

73's
Richard Clark, KB7QHC

5536. Chapter 19A from "Reflections III" - Step 9 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 21:50:57 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <estq545vtpgu7buhqajnggvcj1ablil1mj@4ax.com>
Source record: 24758

Step 9.
We now compare the measured power delivered with the calculated power, using the power transmission coefficient, 1 ï¿½ ?2. The calculated power delivered is: 100w ï¿½ (1 ï¿½ ?2) = 76.6w, compared to the 75w indicated by the Bird wattmeter. However, because the new load impedance is less than the original 50 ohms, and also reactive, the amplifier is now overloaded and the pi-network is detuned from resonance. Consequently, the plate current has increased from 260 to 290 ma, plate voltage has dropped to 760 v, and DC input power has increased from 208 w to 220.4 w.

Points in response:
1.This is a surprising departure from reporting in the progression of the protocol. We now find current and voltage reports where formerly they were either dismissed or neglected. However, we will take these as they are reported here.
2.It appears that the calculated power and the reported power agree, this is not directly expressed, but neither these remarks are not stated as being in conflict. Given the editorialization that inhabits the protocol in general, these remarks are remarkably dry and unconnected.
3.Following, with the editorial comment that the amplifier is now overloaded, the connotation is necessarily a rejection of the thesis: output source resistance of the RF power amplifier is non-dissipative; otherwise the condition giving rise to the overload would be of no particular consequence nor interest. Rather, the cautionary should have been the amplifier is not delivering its Maximum Available Power (once again, having raised this topic early on, it is curiously missing as a rhetorical observation). The dialectic seems to have promoted the subordinate thesis while the data in the observations have destroyed it.
4.The detuned state is an untested conjecture. Its inclusion adds nothing without both a rigorous examination and explaining the speculative correlation as causation.

73's
Richard Clark, KB7QHC

5537. Chapter 19A from "Reflections III" - Step 10 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 21:52:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <4utq54pd595cgr2qi3v1erctj23jdgibbo@4ax.com>
Source record: 24759

Step 10.
With the 17.98 + j8.77-ohm load still connected, the pi-network loading and tuning are now re-adjusted to again deliver all available power with drive level setting still left undisturbed. The readjustment of the plate tuning capacitor has increased the capacitive reactance in the pi-network by ï¿½8.77 ohms, canceling the +8.77 ohms of inductive reactance in the load, returning the system to resonance. The readjustment of the loading control capacitor has decreased the output capacitive reactance, thus reducing the output resistance from 50 to 17.98 ohms. Thus the network readjustments have decreased the output impedance from 50 +j0 to 17.98 ï¿½ j 8.77 ohms, the conjugate of the load impedance, 17.98 + j8.77 ohms. The readjustments have also returned the network input impedance ZL to 1400 + j0 ohms (again equal to RLP), have returned the original area of the RF window at the network input, and have returned the slope of the loadline to its original value. For verification of the 1400-ohm network input resistance after the readjustment, ZL was again measured using the method described in Step 2, and found it to have returned to 1400 + j0 ohms.

Points in response:
This step is fraught with leaps of faith substituting for sound, practical evidence.
1.This step consists of several steps. Rhetorically, what is the meaning of steps, to so much shift stylistically? This is not an isolated instance, so writing structure needs to be re-examined.
2.All Available Power, (a rhetorical shift from maximum) has not been established, much less shown. It is not denied that a greater power can be applied to the new load; but the actual amount of power is not reported (a reporting shift from earlier protocol).
3.The declaration of attaining a reactance of -j8.77 Ohms is unsubstantiated in reported measurements. This gives rise to the appearance of speculation serving the argument.
4.Likewise, the declaration of lowering the output (terminal) Z to 17.98 Ohms is a remarkably precise value without any measurement evidenced.
5.The verification measurement, a step of considerable substance, is rendered here as an footnote, clouding the earlier responses, 2 & 3 above, jarring against the lack of the actual measurements of -j8.77 Ohms and 17.98 Ohms. In a nutshell, the verification is shortchanged against the completeness of earlier measurements.
6.The adjustment of the plate load does not reveal a conjugation.

73's
Richard Clark, KB7QHC

5538. Chapter 19A from "Reflections III" - Steps 11 & 12 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 21:54:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <90uq54haiubnjmjh05e3fhtn4sa4o96hok@4ax.com>
Source record: 24760

Step. 11
Bird 43 power meter readings following the readjustment procedure now indicate 130w forward and 29.5w reflected, indicating 100.5w delivered to the mismatched load.

Points in response:
1. The cost of the variation in usage of the term Step now comes home to roost. This step is obviously simple reporting. However, it is reporting out of sequence, which is the purpose of offering Steps so that this can be avoided.
2. It also reveals the problems of precision offered where impedances are reported to 2 decimal places (exceeding the accuracy of equipment). Formerly, Maximum Available Power was explicitly defined (to one decimal place) as 100W, and now we find 100.5W applied to the newly matched load. The laws of precise reporting would suggest the earlier Maximum Available Power should have been specified at 100.0W (tenths of W precision); or consistent with its earlier 1% precision that this new reading should be offered as 101W (with appropriate promotion of the 0.5W).
3. I would point out that the Bird 43 Power Meter's accuracy is 5% of full scale and that to this point no specification has been offered as to what actual equipment is being used as there are seven possible plug-ins available (where only three would be sensibly chosen here). This gives rise to the author conferring upon the reviewer the power to choose for him. I will arbitrarily infer from the information provided that two plug-ins are used: 100W and 250W. The 100W would be selected for the first power reading offered in Step 1 as this would give the greatest accuracy to that cardinal point. The 250W element for the 130W reading in Step 11. I presume that the 100W element would be used for the reverse power readings, as that would be the greatest advantage; unless, of course, the 50W element was available (this is the hazard of incomplete reporting).
4. A 29.5W reading is both an interpolation (there are no half Watt gradations), and subject to error. The proper reporting would allow for the interpolation but cite it as 29.5W ï¿½5W (or nearly 17% of reading).
5. A more substantial ï¿½25W error inhabits the 130W reading due to the use of the 250W element. The proper reporting would allow for the interpolation but cite it as 130W ï¿½25W (or nearly 19% of reading).
Given that these are two, separate measurements, we have to render the delivered power as:
(155W .. 105W) + (-34.5W .. -24.5W)
where the optimistic combination of all inaccuracies offer a spread of delivered power:

120.5W .. 80.5W
This is a huge variation of ï¿½20W around what had been presumed to represent the Maximum Available Power of 100W (which, in itself could only have been reported as 95W .. 105W).
6. For the reader, there is a object lesson to be learned here in regard to RF power measurement accuracy where none is required (as I pointed out, the introduction of Maximum Available Power is an unnecessary elaboration to the subordinate thesis). That is, the greatest usage of the Bird (or any indicating instrument) would be found in returning the system to a cardinal reading point on its scale. This would collapse the nearly 20% error to less than one-tenth that value.... If it mattered at all (it doesn't).

73's
Richard Clark, KB7QHC

5539. Chapter 19A from "Reflections III" - Step 13 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 21:55:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <i4uq54hirtlfcbblmv6k3j759q9tglla71@4ax.com>
Source record: 24761

Step 13.
It is thus evident that the amplifier has returned to delivering the original power, 100 watts into the previously mismatched complex-impedance load, now conjugately matched, the same as when it was delivering 100 watts into the 50-ohm non-reactive load. But the reflected power, 30.6 watts, remains in the coax, adding to the 100 watts delivered by the amplifier to establish the 130.6 watts of forward power, proving that it does not enter the amplifier to dissipate and heat the network or the tube.

Points in response:
1. The power accounting is wholly lacking in accuracy implications as previously noted.
2. That 30.6W remains in the coax has been through the intervention of the amplifier operator's tuning. The reflection of power from the original mismatch clearly impacted the dissipation of the finals without such intervention. Intervention was a necessity of preventing the untoward, catastrophic failure of the amplifier (in a general sense for all possible load reflection angles).
3. The 30.6W remaining in the coax is a function of tuning that cast the issues of dissipation out of the tube, and moved the line of dissipation towards the load (actually, into the tuning elements of the plate and the line itself). This is the whole raison d'etre of tuning the grid/plate or matching the load.

73's
Richard Clark, KB7QHC

5540. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 22:07:52 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <yDe7k.63840$P83.2095@newsfe20.ams2>
Source record: 24762

Charlie,

Yes the software is Windows only, on my CD.
No you don't need to connect it to the computer to use it, but you can do if
you want to.

73 Andy

"M0WYM" <Sansspam@peartreegreen.org> wrote in message
news:g3ikkt$pg2$1@news.albasani.net...
> Andy wrote:
>> I'm having loads of fun since I started.
>>
>> I recently purchased an RigExpert AA-200 Antenna Anal;yser from Radio
>> World. Here's the link if anyone wants a read.
>> http://www.radioworld.co.uk/~radio/catalog/aa200-antenna-analyzer-p-5841.html?osCsid=a2
23fcdeb781abc7dba4a96691a21039
>>
>> Trouble now is I can't put the AA-200 down with out thinking of some
>> thing else to try out. I'm getting addicted.
>>
>> 73 Andy
>>
>>
> Andy,
>
> I see that it has a USB interface and CD, is this purely Windows based and
> is a computer actually necessary?
>
>
> 73,
>
>
> Charlie
>
>
> --
> M0WYM
> www.radiowymsey.org
>
> Wymsey - Ten years Old!
> www.wymsey.co.uk
>

5541. RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-21 22:26:12 UTC
From: hb9abx <hb9abx@freesurf.ch>
Message-ID: <543f1cf2-df9d-4735-abcf-3b88a9eeade8@8g2000hse.googlegroups.com>
Source record: 24763

In September 2007 I conducted a short test between the Roomcap antenna and a large horizontal
Loop antenna. The result was unexpectedly good for the Roomcap.

To have certainty in this respect we planned a long test in which the following criterias applied:
- Installation of the test site, antennas, and cabling by communication specialists of the Army
- Both antennas connected through A/B switch to the same transceiver
- Several operator who log their communication results
- Always two operators: One operating the rig, the other logging the reports

The test was conducted on 40m in SSB under the callsign HB4FF.

This test took place on the 20th May 2008 in the military camp of the communication troops in Emmental.
They installed as comparison antenna a horizontal loop (86m wire (2 wavelength long), 12m above ground
on a free field, with smartuner SG-230 in the feedpoint).
The station was in a barrack next to the antenna. Two coaxes (RG214) were layed and led to the coax-switch
connected the the transceiver. The SWR of both antennas was 1:1.
The comparing antenna was a good one, as analysed by L.B.Cebik (W4RNL) here:
http://www.cebik.com/content/a10/wire/horloop.html
http://www.cebik.com/content/fdim/atl1.html
To access these links you need a passwort (free), which you may obtain here:
www.cebik.com/helpme.htm .

The installation and conduction of the test was supervised by a militay communication instructor.
I only had to drive with the Roomcap Antenna (1.5 m long radiator) to the parking place and connect my antenna
to the coax that was ready there. Connection was through two large current baluns who prevented that RF was
fed to the outside of the coax cable. Furthermore, the coax cable was laying on the ground.

Then, the test could begin. Operators were the two that came with me: Dave HB9KT and Benoit HB3YRX,
and two operators from HB4FF: Jürg HB9BFC and Rolf HB9CVB.

The test was conducted according to "HF antenna tests and comparisons", where in each contact the remote

operator was asked to observe the signal strength during several changeovers between the two antennas.
The antennas were just called "antenna 1" and "antenna 2", to prevent subjective influence. Important was
the signal strength difference und not the absolute value.
In this kind of comparison no calibration of the receiver is required, as we only needed to see the difference of
the signals, or the finding that both signals are equal.
The polarisation of the antennas does not play any role, as only sky wave contacts were accounted for. In these
waves the polarisation is changing permanently and unpredictable.

After 6 hours duration the test was ended, and evaluation of the logs could begin.
The result looks like this: (here is the log)

- In 57% of the contacts the Roomcap antenna received the better report.
- In 29% of the contacts both antennas produced equal signal strength.
- In 14% of the contacts the Loop antenna received the better report.

The largest difference in favor of the Roomcap was reported with 13 dB (abt 2 S points).
The largest difference in favor of the Loop was 6 dB (= 1 S point).

By calculating the arithmetic mean of the signal differences, one obtains a calculated advantage of 1.5 dB
in favor of the Roomcap antenna. This includes the fact, that the coax cable RG214 to the Loop had 2.7 dB more
attenuation (on 7 MHz) caused by the length difference, and that the connecting cable RG58 and the current baluns
had an attenuation of 0.7 dB. Accordingly, the Roomcap reports were reduced by 2 dB (= 1/3 S point).

Here follows the list of the stations who provided comparitive reports:

IK6ZNH, 2E1DHN, DJ6AL, DJ1JW, DL1HWT, DH7VK/p, 9A/DG2XO, DB9WJ, G3GBS, DL7FF, PA3FRD,
DL1BPK, DK0SC, DG1BM, HB9BWV/m, DL5XDL, G0GHK, F/PA0JWV, DJ9OI, OE2008SMC, DL1DXF.

HB9BWV/m reported a 30 dB stronger signal for the Roomcap. This report was excluded in the calculation, as
the station was in the ground wave at a distance of 25 Km, where the polarisation effect was responsible for
this high difference.

By switching between the two antennas during receiption, the same signal difference was noted as received
from the remote station. This shows that the antenna works in reciprocal way.

Conclusion:
This test proves clearly, that the efficiency of the Roomcap Antenna
equals that of large wire antennas,
and hereby confirms the results that I obtained during my own tests
during the last 3 years.
Each operator confirms the logged reports.

The physical explanation of this is, that generation of the EM waves
is done by the dynamic E field, as explained
in "Antennas and Physics". The dominating E field can be measured only
in the near field region of the antenna,
as in the far field a fixed relation between H and E field exists.
The far field does not allow determination how the
wave has been generated originally.

Many thanks to the above mentioned OMs for there voluntary, free
contribution in this antenna test.

Felix, HB9ABX

5542. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 03:57:59 UTC
From: ltdoc@yahoo.com
Message-ID: <d711d1c1-5b85-4d5f-b586-4eb0aa3a8548@c65g2000hsa.googlegroups.com>
Source record: 24764

Felix,
Interesting. Now, what is a 'Roomcap antenna'?
- 'Doc

5543. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 05:41:31 UTC
From: nm5k@wt.net
Message-ID: <4e928adb-f7c8-491b-9dd3-c4a918257528@59g2000hsb.googlegroups.com>
Source record: 24765

On Jun 21, 5:26 pm, hb9abx <hb9...@freesurf.ch> wrote:

>
> Conclusion:
> This test proves clearly, that the efficiency of the Roomcap Antenna
> equals that of large wire antennas,
> and hereby confirms the results that I obtained during my own tests
> during the last 3 years.
> Each operator confirms the logged reports.

I have problems with your reference antenna though..
If they are trying to ensure efficiency from the reference
antenna, why use a multi wavelength loop fed with a tuner?
They would have been better off using a standard dipole, or
if a loop, a direct fed 1 wavelength loop for the band to be
used.
Also, this test does not prove that the efficiency of the "roomcap"
antenna equals that of large wire antennas.
All it proves it that at the time of the test and the path used,
that the roomcap antenna had a higher level of radiation at
that particular angle. This has nothing to do with efficiency.
If you really believe a 1.5 meter tall antenna is as efficient
as a 1/2 wave dipole fed with coax, I have some ocean front
property in AZ I'd like to show you.
I've had my mobile antenna outplay my 1/2 wave dipole at
certain times of the day and using certain "usually low"
angles. But I would never be so foolish as to suggest that
my mobile whip is just as efficient as my 1/2 wave dipole
at home.
Anyway, the testing is good to do, but this test has warts,
and I wouldn't place too much trust in it. I sure wouldn't go
so far as to claim any certain efficiency from the roomcap
antenna. I'm not too keen on the reference antenna you
used. It has warts too.. You are losing system efficiency
in the feed system using coax to a tuner.
And also the pattern of the multi wavelength loop would need
to be looked into. I'd almost bet money a 1/2 wave coax
fed dipole would have beat that loop in most all directions.
It would almost certainly have a higher system efficiency
by doing away with the tuner.
Anyway, I'm not too convinced.. :(

See Art, I don't just pick on you... Anyone with dubious
test results gets a comment from me...
I'm an equal opportunity heckler... :/

5544. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 06:55:07 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3kt0fajj1@news.albasani.net>
Source record: 24766

jimp@specsol.spam.sux.com wrote:
> John Smith <assemblywizard@gmail.com> wrote:
>> jimp@specsol.spam.sux.com wrote:
>
>>> ...
>>> Low bandwidth my ass, a full USENET feed is gigabytes per day.
>>>
>>> Know nothing fool.
>>>
>>>
>>>
>
>> Perhaps a valid argument for those on dialup or with inadequate access
>> to the net.
>
>> Gigs ain't nothin', we move towards terabytes ... those thinking in gigs
>> are destined to the path of the dinosaur ...
>
> A full T1 line is 1.5 megabits/sec.
>
> The theoretical maximum bandwidth of DSL is 8 megabits/sec and you
> will be lucky to get 6 megabits/sec.
>
> A full USENET feed, one way, is about 130 GB day.
>
> 130 Gbytes X 8 bits = 1 X 10^12 bits.
>
> 1 X 10^12 bits / 6 X 10^6 bit/sec = 1.6 X 10^5 seconds = 46 hours.
>
> So since there are only 24 hours in a day, you need the equivelant of
> 2 full, good DSL connections just to handle the incoming feed.
>
> Add to the connections necessary for the outgoing feed.
>
> And to store 30 days worth is 4 terabytes of storage.
>
> As I said, know nothing fool.
>
> BTW, how you can read my post when you've plonked me so many times?
>
>

Wow!!! If everyone was as you, you would be correct!

Unfortunately you either offer substandard ISP bandwidth, or you are an idiot--now let me guess???? :-)

But hey, you add bytes of usage--maybe you will even find someone who cares or believes you!! Good going man! BTW--are you from a 3rd world country?

Regards,
JS

5545. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 06:58:08 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3kt62ajj2@news.albasani.net>
Source record: 24767

Cecil Moore wrote:
> John Smith wrote:
>> BTW ... I AM an amateur ...
>
> But are you a rank amateur? :-)

LOL ... gawd man, you just don't know how "rank" I am! I guess I need
pay attention to personal hygiene more, ya' think? :-)

<grin>

Regards,
JS

5546. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 06:59:10 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3kt80ajj3@news.albasani.net>
Source record: 24768

Highland Ham wrote:
> John Smith wrote:
> > BTW ... I AM an amateur, IDIOT!
>>
>> But, you allude to the correct assumption, an amateur with a LARGE
>> brain is much preferred to the example you demonstrate.
> ==
> IF you are a licensed radio amateur , show us the courtesy to include
> your callsign ,like all others contributing to this NG.
>
> I have not come across a single licensed radio amateur , calling another
> radio amateur an i***t !
>
> What about 'trying' to show good manners.
>
>
> Frank GM0CSZ / KN6WH

Brother, I'd not show you the crack of my arse in a thong, don't ask ya
queer!

<wink>

Regards,
JS

5547. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 07:01:06 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3ktbkajj4@news.albasani.net>
Source record: 24769

Dave wrote:

>
> then you haven't been reading this group for long!
>
>

Ummm, what is long? Some women might consider six inches
long--yanno--it is all relative! LOL

Regards,
JS

5548. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 09:06:43 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <yCo7k.69241$8k.6480@newsfe18.ams2>
Source record: 24770
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Ian,

I'll have to do some experimenting with the 300 Ohm feeder and see what happens. The End Fed on 40m is very poor indeed. I would say unusable like it is.

The End Fed wire at the moment is resonate on 2. 682 MHz.

The funny thing is that when I cut the wire to bring the End Fed to resonate on 80m, no matter how much wire I cut off it doesn't really move from the 2.682 MHz. I have tried this with and with out the ribbon feeder being in place and with coax connected direct and the braid connected to the earth rod.

What would cause this?

I have no problem using the Analyser with my mobile and centre fed dipoles.

73 Andy

"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
> <dx90@blueyounder.co.uk> writes
>>
>>
>>
>>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>>news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>> Andy, is your endfed wire the one in your other thread of the 8th June
>>> (ie
>>> the 80 Meter End Fed, fed with coax at the far end)? If so, presumably
>>> the
>>> tuner is at the shack end. Or are you feeding it from the shack end.
>>>
>>>
>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>> <dx90@blueyounder.co.uk> writes
>>>
>>> --
>>
>>
>>Hi Ian,
>>
>>Yes its the same. The tuner is at the shack end (house) and I'm feeding

>>the
>>antenna with 50 Ohm RG-58 C/U coax at the far end of the garden. If I can
>>get it working well I will replace it with some RG-213 that I have here. I
>>put it back up yesterday and started experimenting again.
>>
>>The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon feeder.
>>This
>>is all I had left spare. One side is connected to the wire antenna and the
>>other side left, not connected. The coax is connected to the 300 Ohm at
>>the
>>bottom and the braid side is now connected to the unconnected side of the
>>300 Ohm and also to the earth ground rod.
>>On 80 the receive is up 2-4 S points compared with the 40m coax Centre Fed
>>Dipole. I have not had chance to get any actual reports on 80 yet. Maybe
>>this weekend.
>>
>>73 Andy
>
> OK, Andy. Noted.
>
> I don't know if you will really improve things by using the 15 foot of 300
> ohm feeder. It's a sort of a zepp, but with one side of the twin feeder
> earthed. I would try disconnecting the earthed ('unconnected') side from
> earth / coax braid. You can either leave it floating, or connect it to the
> coax inner. It will then be approximately a quarterwave on 20m, fed in
> parallel with the long wire.
>
> Don't read too much into the excellent SWR you're getting with the tuner.
> That's what the TX sees, but the tuner can't affect the SWR on the aerial
> feeder. If the coax SWR is sky high (and it can be if the impedance at
> aerial feed point is high), the coax losses will be much more that you
> would get compared with when it is matched correctly. You only get away
> with it by using the lowest-loss you can find, and keeping the coax as
> short as possible.
>
> I'm not surprised that 80m on the endfed is a bit better than the 40m
> dipole. But what's 40m like on the endfed? That's when the feed impedance
> (and coax SWR) will be very high, and where the RG-213 might perform
> better noticeably better than the RG-58.
>
> As I think I said before, although I am an advocate of simply using coax
> (regardless), after all these years I am considering in investing in
> something like a SG230 remote tuner for the far end of the coax.
> --
> Ian
>

5549. Re: Chapter 19A from "Reflections III" - Step 13 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 10:10:25 UTC
From: David J Windisch <davidjw@cinci.rr.com>
Message-ID: <485e250a$0$7063$4c368faf@roadrunner.com>
Source record: 24771

. . . . . and in real life, all this happens in a few hundreds of
nanoseconds from t=0, thank God aka the Intelligent Designer, so yclept by
the good government of Pennsylvania. Or was it the school people?
Whee ooooh. We see as through a glass, darkly.
W8FGX

Flame on. There's hell to pay ;o)

"Richard Clark" <kb7qhc@comcast.net> ET ALII wrote at nearly interminable
length news:i4uq54hirtlfcbblmv6k3j759q9tglla71@4ax.com...
> Step 13.
BIGSNIP . . . . . .

5550. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 10:11:22 UTC
From: atec77 <atec77NOSPAM@hotmail.com>
Message-ID: <g3l8gckov3@aioe.org>
Source record: 24772
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Andy wrote:
> Ian,
>
> I'll have to do some experimenting with the 300 Ohm feeder and see what
> happens. The End Fed on 40m is very poor indeed. I would say unusable like
> it is.
>
> The End Fed wire at the moment is resonate on 2. 682 MHz.
>
> The funny thing is that when I cut the wire to bring the End Fed to resonate
> on 80m, no matter how much wire I cut off it doesn't really move from the
> 2.682 MHz. I have tried this with and with out the ribbon feeder being in
> place and with coax connected direct and the braid connected to the earth
> rod.
>
> What would cause this?
>
> I have no problem using the Analyser with my mobile and centre fed dipoles.
>
> 73 Andy
>
>
> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
> news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
>> <dx90@blueyounder.co.uk> writes
>>>
>>>
>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>>> news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>>> Andy, is your endfed wire the one in your other thread of the 8th June
>>>> (ie
>>>> the 80 Meter End Fed, fed with coax at the far end)? If so, presumably
>>>> the
>>>> tuner is at the shack end. Or are you feeding it from the shack end.
>>>>
>>>>
>>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>>> <dx90@blueyounder.co.uk> writes
>>>>
>>>> --
>>>
>>> Hi Ian,

>>>
>>> Yes its the same. The tuner is at the shack end (house) and I'm feeding
>>> the
>>> antenna with 50 Ohm RG-58 C/U coax at the far end of the garden. If I can
>>> get it working well I will replace it with some RG-213 that I have here. I
>>> put it back up yesterday and started experimenting again.
>>>
>>> The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon feeder.
>>> This
>>> is all I had left spare. One side is connected to the wire antenna and the
>>> other side left, not connected. The coax is connected to the 300 Ohm at
>>> the
>>> bottom and the braid side is now connected to the unconnected side of the
>>> 300 Ohm and also to the earth ground rod.
>>> On 80 the receive is up 2-4 S points compared with the 40m coax Centre Fed
>>> Dipole. I have not had chance to get any actual reports on 80 yet. Maybe
>>> this weekend.
>>>
>>> 73 Andy
>> OK, Andy. Noted.
>>
>> I don't know if you will really improve things by using the 15 foot of 300
>> ohm feeder. It's a sort of a zepp, but with one side of the twin feeder
>> earthed. I would try disconnecting the earthed ('unconnected') side from
>> earth / coax braid. You can either leave it floating, or connect it to the
>> coax inner. It will then be approximately a quarterwave on 20m, fed in
>> parallel with the long wire.
>>
>> Don't read too much into the excellent SWR you're getting with the tuner.
>> That's what the TX sees, but the tuner can't affect the SWR on the aerial
>> feeder. If the coax SWR is sky high (and it can be if the impedance at
>> aerial feed point is high), the coax losses will be much more that you
>> would get compared with when it is matched correctly. You only get away
>> with it by using the lowest-loss you can find, and keeping the coax as
>> short as possible.
>>
>> I'm not surprised that 80m on the endfed is a bit better than the 40m
>> dipole. But what's 40m like on the endfed? That's when the feed impedance
>> (and coax SWR) will be very high, and where the RG-213 might perform
>> better noticeably better than the RG-58.
>>
>> As I think I said before, although I am an advocate of simply using coax
>> (regardless), after all these years I am considering in investing in
>> something like a SG230 remote tuner for the far end of the coax.
>> --
>> Ian
>>
>
>
adding a suitably cut wire counterpoise at +% for each band should

certainly assist things .

5551. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 10:14:36 UTC
From: XPye <xpye@none.com>
Message-ID: <485e262b$0$2081$6d4158fb@reader.xsnews.nl>
Source record: 24773

"Dave" <noone@nowhere.com> wrote us
>> For these loops, they are quoting a front-to-back ratio of 6dB. I was unaware that loops HAD a
>> front-to-back ratio.
>> --
>> Ian
>
> which side is the front? i wonder if art had anything with designing these?

The front is at the halfside where the gammamatch is attached. So you point the thing with its sides closest to the gammamatcher. 6 dB is a power increase of 4 times gentlemen ! The are available in three sizes. It stays on your mind, doesn't it ?

5552. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 10:26:25 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <T5SdndZEj-1ctMPVRVnyjQA@pipex.net>
Source record: 24774

> Conclusion:
> This test proves clearly, that the efficiency of the Roomcap Antenna
> equals that of large wire antennas,
> and hereby confirms the results that I obtained during my own tests
> during the last 3 years.
> Each operator confirms the logged reports.
>
> The physical explanation of this is, that generation of the EM waves
> is done by the dynamic E field, as explained
> in "Antennas and Physics". The dominating E field can be measured only
> in the near field region of the antenna,
> as in the far field a fixed relation between H and E field exists.
> The far field does not allow determination how the
> wave has been generated originally.
>
> Many thanks to the above mentioned OMs for there voluntary, free
> contribution in this antenna test.
>
> Felix, HB9ABX
==========

Felix , Since you are posting all this in a radio homebrew NG ,could you please give us all a free reference where to find the details of this miracle antenna , such that we can build one ourselves.

Frank GM0CSZ / KN6WH

5553. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 10:29:48 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <myl9$9RcmiXIFwEb@g3ohx.demon.co.uk>
Source record: 24777

In message <485e262b$0$2081$6d4158fb@reader.xsnews.nl>, XPye
<xpye@none.com> writes
>
>"Dave" <noone@nowhere.com> wrote us
>>> For these loops, they are quoting a front-to-back ratio of 6dB. I
>>>was unaware that loops HAD a
>>> front-to-back ratio.
>>> --
>>> Ian
>>
>> which side is the front? i wonder if art had anything with designing these?
>
>
> The front is at the halfside where the gammamatch is attached. So
>you point the
> thing with its sides closest to the gammamatcher. 6 dB is a power
>increase of 4 times
> gentlemen ! The are available in three sizes. It stays on your
>mind, doesn't it ?
>
Noted on the F/B. Thanks. You learn something new every day (unless you
try hard to avoid it).
--
Ian.

5554. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 10:46:31 UTC
From: Dave <noone@nowhere.com>
Message-ID: <b4q7k.3990$i5.1762@trndny07>
Source record: 24775

```
"XPye" <xpye@none.com> wrote in message
news:485e262b$0$2081$6d4158fb@reader.xsnews.nl...
>
> "Dave" <noone@nowhere.com> wrote us
>>> For these loops, they are quoting a front-to-back ratio of 6dB. I was
>>> unaware that loops HAD a front-to-back ratio.
>>> --
>>> Ian
>>
>> which side is the front? i wonder if art had anything with designing
>> these?
>
>
> The front is at the halfside where the gammamatch is attached. So you
> point the
> thing with its sides closest to the gammamatcher. 6 dB is a power
> increase of 4 times
> gentlemen ! The are available in three sizes. It stays on your mind,
> doesn't it ?
>

oh, so the gamma match is doing the radiating and the loop is shielding it
from the 'back'. NOW that makes more sense.
```

5555. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 10:55:50 UTC
From: Dave <noone@nowhere.com>
Message-ID: <Wcq7k.4001$7g.2620@trndny05>
Source record: 24776

"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
news:T5SdndZEj-1ctMPVRVnyjQA@pipex.net...
>> Conclusion:
>> This test proves clearly, that the efficiency of the Roomcap Antenna
>> equals that of large wire antennas,
>> and hereby confirms the results that I obtained during my own tests
>> during the last 3 years.
>> Each operator confirms the logged reports.
>>
>> The physical explanation of this is, that generation of the EM waves
>> is done by the dynamic E field, as explained
>> in "Antennas and Physics". The dominating E field can be measured only
>> in the near field region of the antenna,
>> as in the far field a fixed relation between H and E field exists.
>> The far field does not allow determination how the
>> wave has been generated originally.
>>
>> Many thanks to the above mentioned OMs for there voluntary, free
>> contribution in this antenna test.
>>
>> Felix, HB9ABX
> ======================================
> Felix , Since you are posting all this in a radio homebrew NG ,could you
> please give us all a free reference where to find the details of this
> miracle antenna , such that we can build one ourselves.
>
> Frank GM0CSZ / KN6WH
>
>

http://home.datacomm.ch/hb9abx/ant--abx-e.htm
As noted here you have to sign something and pay to get the construction
guide, you probably sign a non-disclosure agreement so you could be sued if
you published the plans:
http://home.datacomm.ch/hb9abx/kondition-e.htm

5556. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 11:23:33 UTC
From: Dave <noone@nowhere.com>
Message-ID: <VCq7k.2591$is1.904@trndny01>
Source record: 24778

"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
news:myl9$9RcmiXIFwEb@g3ohx.demon.co.uk...
> In message <485e262b$0$2081$6d4158fb@reader.xsnews.nl>, XPye
> <xpye@none.com> writes
>>
>>"Dave" <noone@nowhere.com> wrote us
>>>> For these loops, they are quoting a front-to-back ratio of 6dB. I was
>>>> unaware that loops HAD a
>>>> front-to-back ratio.
>>>> --
>>>> Ian
>>>
>>> which side is the front? i wonder if art had anything with designing
>>> these?
>>
>>
>> The front is at the halfside where the gammamatch is attached. So you
>> point the
>> thing with its sides closest to the gammamatcher. 6 dB is a power
>> increase of 4 times
>> gentlemen ! The are available in three sizes. It stays on your
>> mind, doesn't it ?
>>

6db f/b can also mean a signal DECREASE to 1/4 of the 'front' signal
strength in the 'back' direction. it doesn't mean that there is gain in one
direction, simply that more power is going one direction than the other. i
can build a small loop and add a small vertical very close to it and
generate probably 20-30db f/b ratio, but it's signal compared to a dipole or
even a 1/4 wave vertical will suck... those antennas have been documented
for many years, but no one bothers using them for transmitting, only for
transmitter hunting as receive antennas.

5557. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 11:45:03 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <bC9yzjW$sjXIFwQb@g3ohx.demon.co.uk>
Source record: 24781
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

In message <g3l8gckov3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
writes
>Andy wrote:
>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
>>><dx90@blueyounder.co.uk> writes
>>>
>>>
>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>>> news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>>> Andy, is your endfed wire the one in your other thread of the 8th
>>>>June (ie
>>>> the 80 Meter End Fed, fed with coax at the far end)? If so,
>>>>presumably the
>>>> tuner is at the shack end. Or are you feeding it from the shack end.
>>>>
>>>>
>>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>>> <dx90@blueyounder.co.uk> writes
>>>>
>>>> --
>>>
>>> Hi Ian,
>>>
>>> Yes its the same. The tuner is at the shack end (house) and I'm
>>>feeding the
>>> antenna with 50 Ohm RG-58 C/U coax at the far end of the garden. If I can
>>> get it working well I will replace it with some RG-213 that I have here. I
>>> put it back up yesterday and started experimenting again.
>>>
>>> The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon
>>>feeder. This
>>> is all I had left spare. One side is connected to the wire antenna and the
>>> other side left, not connected. The coax is connected to the 300
>>>Ohm at the
>>> bottom and the braid side is now connected to the unconnected side of the
>>> 300 Ohm and also to the earth ground rod.
>>> On 80 the receive is up 2-4 S points compared with the 40m coax Centre Fed
>>> Dipole. I have not had chance to get any actual reports on 80 yet. Maybe
>>> this weekend.
>>>
>>> 73 Andy

>>> OK, Andy. Noted.
>>>
>>> I don't know if you will really improve things by using the 15 foot
>>>of 300 ohm feeder. It's a sort of a zepp, but with one side of the
>>>feeder earthed. I would try disconnecting the earthed
>>>('unconnected') side from earth / coax braid. You can either leave
>>>it floating, or connect it to the coax inner. It will then be
>>>approximately a quarterwave on 20m, fed in parallel with the long wire.
>>>
>>> Don't read too much into the excellent SWR you're getting with the
>>>tuner. That's what the TX sees, but the tuner can't affect the SWR
>>>on the aerial feeder. If the coax SWR is sky high (and it can be if
>>>the impedance at aerial feed point is high), the coax losses will be
>>>much more that you would get compared with when it is matched
>>>correctly. You only get away with it by using the lowest-loss you
>>>can find, and keeping the coax as short as possible.
>>>
>>> I'm not surprised that 80m on the endfed is a bit better than the
>>>40m dipole. But what's 40m like on the endfed? That's when the feed
>>>impedance (and coax SWR) will be very high, and where the RG-213
>>>might perform better noticeably better than the RG-58.
>>>
>>> As I think I said before, although I am an advocate of simply using
>>>coax (regardless), after all these years I am considering in
>>>investing in something like a SG230 remote tuner for the far end of
>>>the coax.
>>> -- Ian
>>>
>>
>> Ian,
>> I'll have to do some experimenting with the 300 Ohm feeder and see
>>what happens. The End Fed on 40m is very poor indeed. I would say
>>unusable like it is.
>> The End Fed wire at the moment is resonate on 2. 682 MHz.
>> The funny thing is that when I cut the wire to bring the End Fed to
>>resonate on 80m, no matter how much wire I cut off it doesn't really
>>move from the 2.682 MHz. I have tried this with and with out the
>>ribbon feeder being in place and with coax connected direct and the
>>braid connected to the earth rod.
>> What would cause this?
>> I have no problem using the Analyser with my mobile and centre fed
>>dipoles.
>> 73 Andy

>adding a suitably cut wire counterpoise at +% for each band should
>certainly assist things .

I rather think that Andy can't add counterpoises. A decent earthing
system should work (although additional counterpoises certainly won't do
any harm).

Re the 2.682MHz resonance, this may be because the coax is completely mismatched at lots of frequencies, and what you're seeing this is more-or-less a spurious resonance of the coax itself. Do you still get it with the wire completely disconnected? Even with centre-fed dipoles, you often get some very unexpected resonances way off frequency (especially of you are doing a wideband frequency sweep of the return loss / SWR).

As I said previously, persuading an approximate halfwave endfed (which is what you have on 40m) to work with a coax feed is certainly not ideal, but you can usually get it to work fairly well (with all the provisos already discussed). My setup here is almost twice the size of what you have, so the wire feed impedance will be low on 160m and I high on 80m and 40m. 80m (corresponding to your 40m) is certainly lively enough. On 40m, the performance does not seem to be unduly poor compared with the signal reports swapped between others on the band.

So, Andy, I simply don't know why your 40m is so poor. Have you tried (temporarily) reducing the length to around 33 feet, so that it is a quarterwave on 40m? This should give a reasonable match for your coax (at least, nothing you can't tune out back in the shack). If this is more lively than the 64 feet, maybe you can try two wires in parallel. This can be discussed later if the 33 feet shows promise. If a multiband (and possibly compromise) aerial doesn't work well, it's a good idea to try something simple which you know SHOULD work. The problem may lie elsewhere.

Finally, can I ask you to follow the standard practice of bottom posting!
Cheers...
--
Ian

5558. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 11:48:35 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <0dSdnR3Q2POGocPVnZ2dnUVZ8vmdnZ2d@pipex.net>
Source record: 24779

Dave wrote:
> "Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
> news:T5SdndZEj-1ctMPVRVnyjQA@pipex.net...
>>> Conclusion:
>>> This test proves clearly, that the efficiency of the Roomcap Antenna
>>> equals that of large wire antennas,
>>> and hereby confirms the results that I obtained during my own tests
>>> during the last 3 years.
>>> Each operator confirms the logged reports.
>>>
>>> The physical explanation of this is, that generation of the EM waves
>>> is done by the dynamic E field, as explained
>>> in "Antennas and Physics". The dominating E field can be measured only
>>> in the near field region of the antenna,
>>> as in the far field a fixed relation between H and E field exists.
>>> The far field does not allow determination how the
>>> wave has been generated originally.
>>>
>>> Many thanks to the above mentioned OMs for there voluntary, free
>>> contribution in this antenna test.
>>>
>>> Felix, HB9ABX
>> ==
>> Felix , Since you are posting all this in a radio homebrew NG ,could you
>> please give us all a free reference where to find the details of this
>> miracle antenna , such that we can build one ourselves.
>>
>> Frank GM0CSZ / KN6WH
>>
>>
>
> http://home.datacomm.ch/hb9abx/ant--abx-e.htm
> As noted here you have to sign something and pay to get the construction
> guide, you probably sign a non-disclosure agreement so you could be sued if
> you published the plans:
> http://home.datacomm.ch/hb9abx/kondition-e.htm
==
Indeed ,he has tried that for the past 2-3 years via the Packet Radio
System . Not very much in the spirit of amateur radio , whereas for
most of his tests Felix uses radio amateurs trying to prove the
effectiveness of his 'invention'.

Frank GM0CSZ / KN6WH

5559. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 11:48:52 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <AyL0f+WkwjXIFwR6@g3ohx.demon.co.uk>
Source record: 24780

```
In message <VCq7k.2591$is1.904@trndny01>, Dave <noone@nowhere.com>
writes
>
>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>news:myl9$9RcmiXIFwEb@g3ohx.demon.co.uk...
>> In message <485e262b$0$2081$6d4158fb@reader.xsnews.nl>, XPye
>> <xpye@none.com> writes
>>>
>>>"Dave" <noone@nowhere.com> wrote us
>>>>> For these loops, they are quoting a front-to-back ratio of 6dB. I was
>>>>> unaware that loops HAD a
>>>>> front-to-back ratio.
>>>>> --
>>>>> Ian
>>>>
>>>> which side is the front? i wonder if art had anything with designing
>>>> these?
>>>
>>>
>>> The front is at the halfside where the gammamatch is attached. So you
>>> point the
>>> thing with its sides closest to the gammamatcher. 6 dB is a power
>>> increase of 4 times
>>> gentlemen ! The are available in three sizes. It stays on your
>>> mind, doesn't it ?
>>>
>
>6db f/b can also mean a signal DECREASE to 1/4 of the 'front' signal
>strength in the 'back' direction. it doesn't mean that there is gain in one
>direction, simply that more power is going one direction than the other. i
>can build a small loop and add a small vertical very close to it and
>generate probably 20-30db f/b ratio, but it's signal compared to a dipole or
>even a 1/4 wave vertical will suck... those antennas have been documented
>for many years, but no one bothers using them for transmitting, only for
>transmitter hunting as receive antennas.
>
>
Loop antennas are indeed used for transmitting, and many appear to work
remarkably well.
--
Ian
```

5560. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 12:15:25 UTC
From: XPye <xpye@none.com>
Message-ID: <485e41c4$0$7939$6d4158fb@reader.xsnews.nl>
Source record: 24782

"Dave" <noone@nowhere.com> schreef in bericht news:b4q7k.3990$i5.1762@trndny07...
>
> oh, so the gamma match is doing the radiating and the loop is shielding it from the 'back'. NOW that makes
> more sense.

mister. First you couldn't read the front-to-back ratio diagram. And now this stupid remark.
Better you stay away here with your lowlevel non constructive shill-mentality !

If you understanding is so little, don't bother us with it. Go to your mother or a shrink. Anything but go !

5561. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 12:57:20 UTC
From: Dave <noone@nowhere.com>
Message-ID: <Q_r7k.152$%l.23@trndny03>
Source record: 24783

"XPye" <xpye@none.com> wrote in message
news:485e41c4$0$7939$6d4158fb@reader.xsnews.nl...
>
> "Dave" <noone@nowhere.com> schreef in bericht
> news:b4q7k.3990$i5.1762@trndny07...
>>
>> oh, so the gamma match is doing the radiating and the loop is shielding
>> it from the 'back'. NOW that makes more sense.
>
> mister. First you couldn't read the front-to-back ratio diagram. And now
> this stupid remark.
> Better you stay away here with your lowlevel non constructive
> shill-mentality !
>
> If you understanding is so little, don't bother us with it. Go to your
> mother or a shrink.
> Anything but go !
>
>

now that is what i expect from someone who is trying to defend their exagerated claims... just go away, don't try to explain why or how you measured a f/b on a loop... you obviously observed something you can't explain so you now assert that anyone who doubts you must be crazy or doesn't understand. I understand snake oil claims when i see them. And yes, i do know that many people use loops for transmitting, i also know that many people who have their choice of antenna don't bother with them because they don't perform as well as other designs... but if all you can do is a small loop on your property, then its better than nothing.

5562. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 13:34:16 UTC
From: atec77 <atec77NOSPAM@hotmail.com>
Message-ID: <g3lkcpin1@aioe.org>
Source record: 24784
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

```
Ian Jackson wrote:
> In message <g3l8gc$kov$3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
> writes
>> Andy wrote:
>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>> message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>>>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
>>>> <dx90@blueyounder.co.uk> writes
>>>>
>>>>
>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>> message
>>>> news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>>>> Andy, is your endfed wire the one in your other thread of the 8th
>>>>> June (ie
>>>>> the 80 Meter End Fed, fed with coax at the far end)? If so,
>>>>> presumably the
>>>>> tuner is at the shack end. Or are you feeding it from the shack end.
>>>>>
>>>>>
>>>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>>>> <dx90@blueyounder.co.uk> writes
>>>>>
>>>>> --
>>>>
>>>> Hi Ian,
>>>>
>>>> Yes its the same. The tuner is at the shack end (house) and I'm
>>>> feeding the
>>>> antenna with 50 Ohm RG-58 C/U coax at the far end of the garden. If
>>>> I can
>>>> get it working well I will replace it with some RG-213 that I have
>>>> here. I
>>>> put it back up yesterday and started experimenting again.
>>>>
>>>> The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon
>>>> feeder. This
>>>> is all I had left spare. One side is connected to the wire antenna
>>>> and the
>>>> other side left, not connected. The coax is connected to the 300
>>>> Ohm at the
>>>> bottom and the braid side is now connected to the unconnected side
>>>> of the
```

>>>>> 300 Ohm and also to the earth ground rod.
>>>>> On 80 the receive is up 2-4 S points compared with the 40m coax
>>>>> Centre Fed
>>>>> Dipole. I have not had chance to get any actual reports on 80 yet.
>>>>> Maybe
>>>>> this weekend.
>>>>>
>>>>> 73 Andy
>>>> OK, Andy. Noted.
>>>>
>>>> I don't know if you will really improve things by using the 15 foot
>>>> of 300 ohm feeder. It's a sort of a zepp, but with one side of the
>>>> feeder earthed. I would try disconnecting the earthed
>>>> ('unconnected') side from earth / coax braid. You can either leave
>>>> it floating, or connect it to the coax inner. It will then be
>>>> approximately a quarterwave on 20m, fed in parallel with the long
>>>> wire.
>>>>
>>>> Don't read too much into the excellent SWR you're getting with the
>>>> tuner. That's what the TX sees, but the tuner can't affect the SWR
>>>> on the aerial feeder. If the coax SWR is sky high (and it can be if
>>>> the impedance at aerial feed point is high), the coax losses will
>>>> be much more that you would get compared with when it is matched
>>>> correctly. You only get away with it by using the lowest-loss you
>>>> can find, and keeping the coax as short as possible.
>>>>
>>>> I'm not surprised that 80m on the endfed is a bit better than the
>>>> 40m dipole. But what's 40m like on the endfed? That's when the feed
>>>> impedance (and coax SWR) will be very high, and where the RG-213
>>>> might perform better noticeably better than the RG-58.
>>>>
>>>> As I think I said before, although I am an advocate of simply using
>>>> coax (regardless), after all these years I am considering in
>>>> investing in something like a SG230 remote tuner for the far end of
>>>> the coax.
>>>> -- Ian
>>>>
>>>
>>> Ian,
>>> I'll have to do some experimenting with the 300 Ohm feeder and see
>>> what happens. The End Fed on 40m is very poor indeed. I would say
>>> unusable like it is.
>>> The End Fed wire at the moment is resonate on 2. 682 MHz.
>>> The funny thing is that when I cut the wire to bring the End Fed to
>>> resonate on 80m, no matter how much wire I cut off it doesn't really
>>> move from the 2.682 MHz. I have tried this with and with out the
>>> ribbon feeder being in place and with coax connected direct and the
>>> braid connected to the earth rod.
>>> What would cause this?
>>> I have no problem using the Analyser with my mobile and centre fed

>>> dipoles.
>>> 73 Andy
>
>> adding a suitably cut wire counterpoise at +% for each band should
>> certainly assist things .
>
> I rather think that Andy can't add counterpoises.
of course he can , he has a run of crap coax so when he replaces it
with some rg213 adding some multi strand suitably trimmed one be a
burden from the far coax connection back
A decent earthing
> system should work
maybe there is a reason to not have one , with more description a
balun of some sort may prove most useful
(although additional counterpoises certainly won't do
> any harm).
>
> Re the 2.682MHz resonance, this may be because the coax is completely
> mismatched at lots of frequencies, and what you're seeing this is
> more-or-less a spurious resonance of the coax itself.
rg 58cu ? is kinda crap :)
Do you still get
> it with the wire completely disconnected? Even with centre-fed dipoles,
> you often get some very unexpected resonances way off frequency
> (especially of you are doing a wideband frequency sweep of the return
> loss / SWR).
>
> As I said previously, persuading an approximate halfwave endfed (which
> is what you have on 40m) to work with a coax feed is certainly not
> ideal, but you can usually get it to work fairly well (with all the
> provisos already discussed). My setup here is almost twice the size of
> what you have, so the wire feed impedance will be low on 160m and I high
> on 80m and 40m. 80m (corresponding to your 40m) is certainly lively
> enough. On 40m, the performance does not seem to be unduly poor compared
> with the signal reports swapped between others on the band.
>
> So, Andy, I simply don't know why your 40m is so poor. Have you tried
> (temporarily) reducing the length to around 33 feet, so that it is a
> quarterwave on 40m? This should give a reasonable match for your coax
> (at least, nothing you can't tune out back in the shack). If this is
> more lively than the 64 feet, maybe you can try two wires in parallel.
> This can be discussed later if the 33 feet shows promise. If a multiband
> (and possibly compromise) aerial doesn't work well, it's a good idea to
> try something simple which you know SHOULD work. The problem may lie
> elsewhere.
>

Oh dear
> Finally, can I ask you to follow the standard practice of bottom posting!
> Cheers...

5563. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 14:26:03 UTC
From: ltdoc@yahoo.com
Message-ID: <33b50539-d1c7-4d91-a8e2-e0d2a746700b@c58g2000hsc.googlegroups.com>
Source record: 24785
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Oh, I think under the circumstances, that RG-58 isn't all that bad. May not have the lowest losses possible, but certainly not complete 'crap'. Replacing it with something 'better' is certainly an option, but not the first one I'd try.
Options.
Try all that you can think of and see what happens. If things are 'better' on one particular band doing it 'this' way, then I think I'd note that when using that particular band. Repeat for the other bands. Lots of work? Sure, but if it works, it works. Finding one antenna that does it all is almost impossible. Too many variables depending on each individual installation. But, if you get 'close', that's probably as good as you can expect, depending on the circumstances. Having the absolute 'best' antenna in the world is certainly nice! It isn't absolutely necessary. Everyone goes through this same sort of thingy. The results differ, but so do the circumstances.
Good luck.
- 'Doc

5564. Re: Why don't every American have this aerial ? It is beyond Big !

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 14:31:42 UTC
From: ltdoc@yahoo.com
Message-ID: <247b0a1c-00ce-4148-888c-f44c22460aa6@a1g2000hsb.googlegroups.com>
Source record: 24786

"Why don't every American have this aerial ? It is beyond Big!"
Yep, big... and expensive. Probably two good reasons why not all of us have one. Never used one so can't say if it's any good or not. I have used loops (big ones) made of wire and I like the results. A single loop, all by it's self, has no appreciable directivity. Certainly possible with another 'element', or something near it, but not just by it's self. Sorry 'bout that.
- 'Doc

5565. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 16:05:01 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <rn92j5-vh.ln1@mail.specsol.com>
Source record: 24787

John Smith <assemblywizard@gmail.com> wrote:
> jimp@specsol.spam.sux.com wrote:
> > John Smith <assemblywizard@gmail.com> wrote:
> >> jimp@specsol.spam.sux.com wrote:
> >>
> >>> ...
> >>> Low bandwidth my ass, a full USENET feed is gigabytes per day.
> >>>
> >>> Know nothing fool.
> >>>
> >>>
> >>>
> >>
> >> Perhaps a valid argument for those on dialup or with inadequate access
> >> to the net.
> >>
> >> Gigs ain't nothin', we move towards terabytes ... those thinking in gigs
> >> are destined to the path of the dinosaur ...
> >>
> > A full T1 line is 1.5 megabits/sec.
> >
> > The theoretical maximum bandwidth of DSL is 8 megabits/sec and you
> > will be lucky to get 6 megabits/sec.
> >
> > A full USENET feed, one way, is about 130 GB day.
> >
> > 130 Gbytes X 8 bits = 1 X 10^12 bits.
> >
> > 1 X 10^12 bits / 6 X 10^6 bit/sec = 1.6 X 10^5 seconds = 46 hours.
> >
> > So since there are only 24 hours in a day, you need the equivelant of
> > 2 full, good DSL connections just to handle the incoming feed.
> >
> > Add to the connections necessary for the outgoing feed.
> >
> > And to store 30 days worth is 4 terabytes of storage.
> >
> > As I said, know nothing fool.
> >
> > BTW, how you can read my post when you've plonked me so many times?
> >
> >

> Wow!!! If everyone was as you, you would be correct!

You mean if everyone could do simple arithmetic they would realize
you are a babbling idiot who can't put together a grammatical sentence?

> Unfortunately you either offer substandard ISP bandwidth, or you are an
> idiot--now let me guess???? :-)

Bandwidth doesn't come from ISP's, they lease it from the carriers.

Once again you show you know nothing.

> But hey, you add bytes of usage--maybe you will even find someone who
> cares or believes you!! Good going man! BTW--are you from a 3rd world
> country?

Can't do simple arithemetic, can you?

I notice you have zero facts to offer in rebuttal; just frothing
nonsense.

BTW, how you can read my post when you've plonked me so many times?

--
Jim Pennino

Remove .spam.sux to reply.

5566. Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 16:33:41 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <_9v7k.6$b%3.2@newsfe05.lga>
Source record: 24788

RICHARD:

I've known you for a long time to be tough but fair. I've envied your depth of knowledge in many areas of expertise. Which is why I entrusted you and others on this thread with my Chapter 19A for an honest peer review. I expected to receive a fair review from you that would fare well in proving my paper correct for those who don't yet understand, or don't believe the principles involved.

However, instead of receiving a fair critique of my paper you trashed it with an axe. Every criticism you made was not only negative, but clearly false. If I didn't know you better I would conclude from your comments that you don't have a clue concerning the operation of RF amplifiers.

Since you chose to denigrate my writing instead of giving it a fair critique, why did you broadcast it on the news group instead of discussing your position with me privately? Since you have broadcast it I have no choice but to defend my position by rebutting each and every one of your false statements on this thread for all to see.

Thus I'm repeating your comments with my responses to them to set the record straight.

Richard says:

Hi All,

This is simply a quick overview from the separate threads that will follow, each thread devoted to only one Step in the progression of measurements Steps offered by Walt Maxwell in his upcoming release of "Reflections III," Chapter 19A in particular.

I have been working off of three revisions of this work, and some quotes may not be accurate. I will leave reconciliation of those to others as this has been a long and exhaustive examination, and I don't perceive any substantive issues shifted along the way. Not all steps will be critiqued as not all contain response beyond my noting they contained simple reports of fact that did not merit challenging. A full article length version containing all discussion of this will be available.

The discussion threads follow immediately.

Walt says:

The numbered steps are quotes from Chapter 19A

Step 1.
Using a Kenwood TS-830S transceiver as the RF source, the tuning and

loading of the pi-network are adjusted to deliver all the available power into a 50 + j0-ohm load with the grid drive adjusted to deliver the maximum of 100 watts at 4 MHz, thus establishing the area of the RF power window at the input of the pi-network, resistance RLP at the plate, and the slope of the load line. The output source resistance of the amplifier in this condition will later be shown to be 50 ohms. In this condition the DC plate voltage is 800 v and plate current is 260 ma. DC input power is therefore 800 x 0.26 a = 208 w. Readings on the Bird 43 wattmeter indicate 100 watts forward and zero watts reflected. (100 watts is the maximum RF output power available at this drive level.) From here on the grid drive is left undisturbed, and the pi-network controls are left undisturbed until Step 10.

Richard says:
There are several points in response here:
1.The load specification (50 + j0-ohm) is for full output power, not some portion of it. This is a minor point.

Walt says: This is NOT a minor point. The output power at 100 watts was specified as the reference power, not the full output power the xmtr could produce.

2.Maximum power from a TS-830S can be as high as 120W, could be lower depending on finals' service life. This is a minor point.

Walt says: This is also NOT a minor point. The TS-830S used for the measurements is capable of producing more than 130 watts, but 100 watts was used to assure stability that could be compromised if running the xmtr at its full output.

3.Rated typical Plate Current for the 6146B is 220mA. Running more at higher voltage (typical is 750V) to obtain less power sounds like the amp is being strained to produce 100W.

Walt says: Rated plate current is irrelevant here. The plate voltage in this xmtr is inherently 800v when the plate current is 260 ma. Running more than 750v to obtain less power is an absurd and unwarranted statement. The amp was NOT being strained to produce 100 w, because its full output exceeds 130 w.

4."Available Power" is 208W. Efficiency and other considerations certainly lower this, but it would appear that efficiency has been red-lined at 48% by this step's assertions. The red-line at 48% efficiency may reveal the aforementioned strain.

Walt says: Available power is NOT 208w. 208w is the DC input power. The true available power was 100w because the grid drive was set to allow only 100w to be delivered with loading adjusted to deliver all the available power at that drive level. This condition is clearly stated in Step 1.

Step 2.
The amplifier is now powered down and the load resistance RL is measured across the input terminals of the resonant pi-network tank circuit (from plate to ground) with an HP-4815 Vector Impedance Meter. The resistance is found to be approximately 1400 ohms. Because the

amplifier was adjusted to deliver the maximum available power of 100 watts prior to the resistance measurement, resistance RLP looking into the plate (upstream from the network terminals) is also approximately 1400 ohms. Accordingly, a non-reactive 1400-ohm resistor is now connected across the input terminals of the pi-network tank circuit and source resistance ROS is measured looking rearward into the output terminals of the network. Resistance ROS was found to be 50 ohms.

Richard says:
Points in response:
1.This is actually two steps: one measurement made from the plate looking towards the load; one measurement made from the output jack looking towards plate.
2.The measurement at the plate without a powered tube unloads the Q of the plate tuning. Does this unloaded Q present a false reading of the transformed load resistance?

Walt says: No, it does not.

Richard continues:
3.The load line with 800 v / 0.26 a / 2 = 1539 Ohms.

Walt says: The above statement is false. The load line is not determined by the DC components-it is determined by the AC components using the Chaffee analysis procedure.

Richard continues:

4."Maximum Available Power" has not been established, only arrived at by inference. It could be more, it could be less. Being less is unlikely given the subsequent demonstrated power delivered to the load being 100W; but it is suspect that exactly 100W is all that could be obtained. The point, however, is that such attention to "Available Power" is an unnecessary elaboration to the point of taking these steps.

Walt says: Maximum available power was NOT arrived at by inference. It WAS established in Step 1 by setting the grid drive so that maximum available power with that setting was 100w. Richard's statement that attention to available power is an unnecessary elaboration is totally false, because a constant available power is required as a reference for all the measurements. It is clearly stated in one of my earlier statements that the xmtr was capable of delivering more than 130w.

Richard continues:

5.The measurement at the output towards the plate similarly unloads the plate tuning Q when the 50 Ohms is removed to make the measurement. Does this unloaded Q present a false reading of the transformed plate resistance?

Walt says: No, it does not. This method is standard procedure in making initial adjustments of the tank circuit of newly manufactured xmtrs prior to applying

the plate voltage.

Richard continues:
6.The measurements made in both directions confirm the capacity of an unloaded circuit to perform the transformations in a symmetric fashion (a good test), but you have not tested if the issue of loaded Q is a factor or not. If you were to replace the 1400 Ohm resistor at the plate tuning input (at the plate connection) with a 1000 Ohm resistor, would the 50 Ohms follow that shift? By how much?

Walt says: Yes it would. If this pi-network is adjusted such that a 1400-ohm resistor at the plate connection would yield 50 ohms at the output of the network a 1000-ohm resistor replacing the 1400-ohm, the resistance appearing at the output would be 35.71 ohms

Step 7.
Due to the 2.88:1 mismatch at the load, neglecting network losses and the small change in plate current resulting from the mismatch, approximately the same mismatch appears between RLP and ZL at the input of the pi-network. Consequently, the change in load impedance changed the network input resistance RL from 1400 ohms to complex ZL ~ 800 - j1000 ohms, measured with the Vector Impedance Meter using the method described in Step 2. To verify the impedance measurement of ZL the phase delay of the network was measured using an HP-8405 Vector Voltmeter and found to be 127°. Using this value of phase delay the input impedance ZL was calculated using two different methods; one yielding 792 - j1003 ohms, the other yielding 794.6 - j961.3 ohms, thus verifying the accuracy of the measurement. However, because grid voltage EC, grid drive Eg, and plate voltage EB are left unchanged, resistance RLP at the plate has remained at approximately 1400 ohms, leaving a mismatch between RLP and ZL at the input of the pi-network. As stated above, this value of ZL yields the substantially the same mismatch to plate resistance RLP as that between the output impedance of the pi-network and the 17.98 + j8.77-ohm load, i.e., 2.88:1. This mismatch at the network input results in less power delivered into the network, and thus to the load, a decrease in the area of the RF window at the network input, and a change in the slope of the loadline. (It must be remembered that the input and output mismatches contribute only to mismatch loss, which does not result in power delivered and then lost somewhere in dissipation. As we will see in Step 8, the mismatch at the input of the pi-network results only in a reduced delivery of source power proportional to the degree of mismatch.)

Richard says:
Points in response:
1.We enter into a key remark in the first sentence: neglecting network losses and the small change in plate current resulting from the mismatch. By this statement the subordinate thesis being offered: output source resistance of the RF power amplifier is non-dissipative is wholly invalidated.

Walt says: The last sentence above is totally false. The increase in plate current due to the mismatch causing the pi-network to be detuned does cause the increase in plate dissipation, but plate dissipation occurs only in the cathode-to-plate resistance, which is totally irrelevant to the output source resistance, which IS non-dissipative.

Richard says:

The observation that the plate current changes
(and presumably plate voltage has not, unconfirmed in the protocol)

Walt says: Not so. While the plate current increased to 290 ma. The voltage decreased to 760v, clearly stated in Step 9.

Richard continues:
through the agency of mismatch must necessarily admit that the plate resistance has also changed if only because it has been explicitly admitted to through the dismissed current change.
2.To whatever degree (as dictated by the phase of the mismatch), plate dissipation must also change. This is the common experience of literally thousands of Amateur radio operators and has been commented upon and reported for generations when through the unfortunate aspect of phase, it becomes a destructive dissipation.

Walt says: Of course the plate dissipation changed with the increase in plate current caused by the detuning of the network. But as said before, this plate dissipation is irrelevant to the output source resistance.

Richard continues:

Such reports often
attain dramatic legendary status, if only for the afflicted amplifier owner (who may enjoy comedic celebrity among his peers).
3.Moving on to subsequent sentences, the reported values of complex load resistance (792 - j1003 Ohms) seen from the plate looking through tuning towards the new, mismatched load confirms that the plate resistance must be impacted. If, as reported, the plate resistance remains at 1400 Ohms, then there is a mismatch which is admitted to in the text of the original. The final argument is based upon mismatch loss, which from the perspective of the load, is that amount of power not seen, but not lost by dissipation. That much is true from the perspective of the load. The same would be true if we replaced the plate tuning with a large resistor which would also reduce power to the load, so such an appeal has nothing to do with the argument of the subordinate thesis: output source resistance of the RF power amplifier is non-dissipative. The nature of this particular plate mismatch affirms the current indication, and rejects the conclusion of non-dissipation (which is characteristically, and artificially constrained to being exothermic when through phasing it could as easily be endothermic).

Walt says: Richard is totally off base in attempting to correlate the plate dissipation with the output source resistance at the output terminals of the network. They are totally unrelated.

Richard says:

4.A more careful protocol would allow for phase by lengthening the 13.5° length of coax to 103.5° (or more but well less than 180°) and carefully noting the new plate current. In fact, other lengths should be used to draw a more rigorous correlation.

Walt says: Richard ignores the fact stated later in my paper that I have already made measurements with several different lengths of coax that also verify the measurements reported here to be correct.

Step 8.
Readings on a Bird 43 power meter now indicate 95w forward and 20w reflected, meaning only 75 watts are now delivered by the source and absorbed in the mismatched load. The 20w reflected power remains in the coax, and adds to the 75 watts delivered by the source to establish the total forward power of 95w.

Richard continues:
Point in response:
The Bird 43 indications only reveal mismatch loss (unstated as 5W if we are to return to the concept of Available Power, which as a rhetorical point has been uncharacteristically discarded) which is only tangentially related to the subordinate thesis: output source resistance of the RF power amplifier is non-dissipative. Step 7 is sufficient to illustrate the thesis.

Walt says: The above paragraph is totally without merit, and only serves to confuse the reader.

Step 9.
We now compare the measured power delivered with the calculated power, using the power transmission coefficient, 1 - ?2. The calculated power delivered is: 100w ° (1 - ?2) = 76.6w, compared to the 75w indicated by the Bird wattmeter. However, because the new load impedance is less than the original 50 ohms, and also reactive, the amplifier is now overloaded and the pi-network is detuned from resonance. Consequently, the plate current has increased from 260 to 290 ma, plate voltage has dropped to 760 v, and DC input power has increased from 208 w to 220.4 w.

Richard says:
Points in response:
1.This is a surprising departure from reporting in the progression of the protocol. We now find current and voltage reports where formerly they were either dismissed or neglected. However, we will take these as they are reported here.

Walt says: Voltage and current were NOT dismissed or neglected. They were presented in Step 9 as the natural progression in explaining the test procedure.

Richard continues:

2.It appears that the calculated power and the reported power agree,
this is not directly expressed, but neither these remarks are not
stated as being in conflict. Given the editorialization that inhabits
the protocol in general, these remarks are remarkably dry and
unconnected.
3.Following, with the editorial comment that the amplifier is now
overloaded, the connotation is necessarily a rejection of the thesis:
output source resistance of the RF power amplifier is non-dissipative;
otherwise the condition giving rise to the overload would be of no
particular consequence nor interest.

Walt says: The amplifier was overloaded because the load impedance was less than that with the reference load of 50 + j0 ohms. Richard still fails to understand that the dissipation in the cathode-to-plate resistance is totally unrelated to the output source resistance, because the output source resistance is determined only by the voltage-current ratio appearing at the output terminals of the network.

Richard continues:

Rather, the cautionary should
have been the amplifier is not delivering its Maximum Available Power
(once again, having raised this topic early on, it is curiously
missing as a rhetorical observation). The dialectic seems to have
promoted the subordinate thesis while the data in the observations
have destroyed it.

Walt says: The last statement above is totally false.

4.The detuned state is an untested conjecture. Its inclusion adds
nothing without both a rigorous examination and explaining the
speculative correlation as causation.

Walt says: There is no speculation or untested conjecture here. The fact that the network was detuned by the mismatched load containing reactance is proven by the fact that retuning the network to resonance was by adjusting it to obtain the plate-current dip.

Step 10.
With the 17.98 + j8.77-ohm load still connected, the pi-network
loading and tuning are now re-adjusted to again deliver all available
power with drive level setting still left undisturbed. The
readjustment of the plate tuning capacitor has increased the
capacitive reactance in the pi-network by -8.77 ohms, canceling the
+8.77 ohms of inductive reactance in the load, returning the system to
resonance. The readjustment of the loading control capacitor has
decreased the output capacitive reactance, thus reducing the output
resistance from 50 to 17.98 ohms. Thus the network readjustments have
decreased the output impedance from 50 +j0 to 17.98 - j 8.77 ohms, the
conjugate of the load impedance, 17.98 + j8.77 ohms. The readjustments
have also returned the network input impedance ZL to 1400 + j0 ohms
(again equal to RLP), have returned the original area of the RF window
at the network input, and have returned the slope of the loadline to

its original value. For verification of the 1400-ohm network input resistance after the readjustment, ZL was again measured using the method described in Step 2, and found it to have returned to 1400 + j0 ohms.

Richard continues:
Points in response:
This step is fraught with leaps of faith substituting for sound, practical evidence.
1.This step consists of several steps. Rhetorically, what is the meaning of steps, to so much shift stylistically? This is not an isolated instance, so writing structure needs to be re-examined.
2.All Available Power, (a rhetorical shift from maximum) has not been established, much less shown. It is not denied that a greater power can be applied to the new load; but the actual amount of power is not reported (a reporting shift from earlier protocol).

Walt says: All the available power WAS ESTABLISHED AND SHOWN IN STEP 10, quoting: "With the 17.98 + j8.77-ohm load still connected, the pi-network loading and tuning are now re-adjusted to again deliver all available power with drive level setting still left undisturbed." All available power was initially set to be 100w determined by the drive level which was left undisturbed.

Richard continues:

3.The declaration of attaining a reactance of -j8.77 Ohms is unsubstantiated in reported measurements. This gives rise to the appearance of speculation serving the argument.

Walt says: No speculation, and the -j8.77 ohms is not unsubstantiated, because that reactance introduced into the network resulted in the network becoming resonant in that it canceled the +j8.77 ohms appearing in the load. No additional measurement is required to determine the existence of the -j8.77 ohms.

Richard continues:
4.Likewise, the declaration of lowering the output (terminal) Z to 17.98 Ohms is a remarkably precise value without any measurement evidenced.

Walt says: All available power is delivered when the load resistance is equal to the source resistance. The load resistance was 17.98 ohms. Because all available power was delivered into 17.98 ohms the output resistance is inherently 17.98 ohms.

Richard continues:
5.The verification measurement, a step of considerable substance, is rendered here as an footnote, clouding the earlier responses, 2 & 3 above, jarring against the lack of the actual measurements of -j8.77 Ohms and 17.98 Ohms. In a nutshell, the verification is shortchanged against the completeness of earlier measurements.

Walt says: Richard is really clutching at straws here in his attempt to discredit my measurements.

Richard continues:

6.The adjustment of the plate load does not reveal a conjugation.

Walt says: With the plate current again dipped at 206ma. now at resonance with the initially mismatched load, the same plate current obtained at resonance with the 50-ohm load, proves the match now existing at the network output is a conjugate match.

Step. 11
Bird 43 power meter readings following the readjustment procedure now indicate 130w forward and 29.5w reflected, indicating 100.5w delivered to the mismatched load.

Richard continues:
Points in response:
1. The cost of the variation in usage of the term Step now comes home to roost. This step is obviously simple reporting. However, it is reporting out of sequence, which is the purpose of offering Steps so that this can be avoided.
2. It also reveals the problems of precision offered where impedances are reported to 2 decimal places (exceeding the accuracy of equipment). Formerly, Maximum Available Power was explicitly defined (to one decimal place) as 100W, and now we find 100.5W applied to the newly matched load. The laws of precise reporting would suggest the earlier Maximum Available Power should have been specified at 100.0W (tenths of W precision); or consistent with its earlier 1% precision that this new reading should be offered as 101W (with appropriate promotion of the 0.5W).

Walt says: Picky picky picky.

Richard continues:

3. I would point out that the Bird 43 Power Meter's accuracy is 5% of full scale and that to this point no specification has been offered as to what actual equipment is being used as there are seven possible plug-ins available (where only three would be sensibly chosen here). This gives rise to the author conferring upon the reviewer the power to choose for him. I will arbitrarily infer from the information provided that two plug-ins are used: 100W and 250W. The 100W would be selected for the first power reading offered in Step 1 as this would give the greatest accuracy to that cardinal point. The 250W element for the 130W reading in Step 11. I presume that the 100W element would be used for the reverse power readings, as that would be the greatest advantage; unless, of course, the 50W element was available (this is the hazard of incomplete reporting).
4. A 29.5W reading is both an interpolation (there are no half Watt gradations), and subject to error. The proper reporting would allow for the interpolation but cite it as 29.5W ±5W (or nearly 17% of

reading).
5. A more substantial ±25W error inhabits the 130W reading due to the use of the 250W element. The proper reporting would allow for the interpolation but cite it as 130W ±25W (or nearly 19% of reading).
Given that these are two, separate measurements, we have to render the delivered power as:
(155W .. 105W) + (-34.5W .. -24.5W)
where the optimistic combination of all inaccuracies offer a spread of delivered power:
120.5W .. 80.5W
This is a huge variation of ±20W around what had been presumed to represent the Maximum Available Power of 100W (which, in itself could only have been reported as 95W .. 105W).
6. For the reader, there is a object lesson to be learned here in regard to RF power measurement accuracy where none is required (as I pointed out, the introduction of Maximum Available Power is an unnecessary elaboration to the subordinate thesis). That is, the greatest usage of the Bird (or any indicating instrument) would be found in returning the system to a cardinal reading point on its scale. This would collapse the nearly 20% error to less than one-tenth that value.... If it mattered at all (it doesn't).

Walt says: In the above unnecessary discourse Richard is only showing off his expertise as a metrologist.

Step 13.
It is thus evident that the amplifier has returned to delivering the original power, 100 watts into the previously mismatched complex-impedance load, now conjugately matched, the same as when it was delivering 100 watts into the 50-ohm non-reactive load. But the reflected power, 30.6 watts, remains in the coax, adding to the 100 watts delivered by the amplifier to establish the 130.6 watts of forward power, proving that it does not enter the amplifier to dissipate and heat the network or the tube.

Richard continues:
Points in response:
1. The power accounting is wholly lacking in accuracy implications as previously noted.

Walt says: Totally false. The only inaccuracies are in the measurement errors inherent in the measurement equipment that come with the territory. The large deviations in the precisions Richard alludes to are unrealistic.

Richard continues:
2. That 30.6W remains in the coax has been through the intervention of the amplifier operator's tuning.

Walt says: Totally false. The 30.6w remains in the coax because the reflected power was totally re-reflected because the non-dissipative source resistance reflected it. If the source resistance had been dissipative the reflected power would have been only 25w, not 30.6 watts, and the 25w would have been absorbed

in the source, which it was not.

Richard continues:

The reflection of power from the
original mismatch clearly impacted the dissipation of the finals
without such intervention. Intervention was a necessity of preventing
the untoward, catastrophic failure of the amplifier (in a general
sense for all possible load reflection angles).
3. The 30.6W remaining in the coax is a function of tuning that cast
the issues of dissipation out of the tube, and moved the line of
dissipation towards the load (actually, into the tuning elements of
the plate and the line itself). This is the whole raison d'etre of
tuning the grid/plate or matching the load.

Walt says: Although the reflected power caused the mismatch appearing at the input of the 13 line, the reflection of power itself did not affect the dissipation of the amp, because the reflected power never entered the network. It was simply the reactance in the load that detuned the network that increased the dissipation, as would be expected when the network is detuned from resonance.

I hope my responses have sufficiently explained why Richard's criticism is so
outrageously incorrect. I have no clue as to his motivation for discrediting my
writing to this extent, because it is totally unwarranted.

Walt, W2DU

5567. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 17:10:14 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <1de27b7a-b2d3-435a-8de1-7cec23568d37@34g2000hsf.googlegroups.com>
Source record: 24789

On Jun 22, 11:33 am, "Walter Maxwell" <w...@w2du.com> wrote:
> RICHARD:
>
> I've known you for a long time to be tough but fair. I've envied your depth of
> knowledge in many areas of expertise. Which is why I entrusted you and others on
> this thread with my Chapter 19A for an honest peer review. I expected to receive
> a fair review from you that would fare well in proving my paper correct for
> those who don't yet understand, or don't believe the principles involved.
>
> However, instead of receiving a fair critique of my paper you trashed it with an
> axe. Every criticism you made was not only negative, but clearly false. If I
> didn't know you better I would conclude from your comments that you don't have a
> clue concerning the operation of RF amplifiers.
>
> Since you chose to denigrate my writing instead of giving it a fair critique,
> why did you broadcast it on the news group instead of discussing your position
> with me privately? Since you have broadcast it I have no choice but to defend my
> position by rebutting each and every one of your false statements on this thread
> for all to see.
>
> Thus I'm repeating your comments with my responses to them to set the record
> straight.
>
> Richard says:
>
> Hi All,
>
> This is simply a quick overview from the separate threads that will
> follow, each thread devoted to only one Step in the progression of
> measurements Steps offered by Walt Maxwell in his upcoming release of
> "Reflections III," Chapter 19A in particular.
>
> I have been working off of three revisions of this work, and some
> quotes may not be accurate. I will leave reconciliation of those to
> others as this has been a long and exhaustive examination, and I don't
> perceive any substantive issues shifted along the way. Not all steps
> will be critiqued as not all contain response beyond my noting they
> contained simple reports of fact that did not merit challenging. A
> full article length version containing all discussion of this will be
> available.
>
> The discussion threads follow immediately.
>
> Walt says:

>
> The numbered steps are quotes from Chapter 19A
>
> Step 1.
> Using a Kenwood TS-830S transceiver as the RF source, the tuning and
> loading of the pi-network are adjusted to deliver all the available
> power into a 50 + j0-ohm load with the grid drive adjusted to deliver
> the maximum of 100 watts at 4 MHz, thus establishing the area of the
> RF power window at the input of the pi-network, resistance RLP at the
> plate, and the slope of the load line. The output source resistance of
> the amplifier in this condition will later be shown to be 50 ohms. In
> this condition the DC plate voltage is 800 v and plate current is 260
> ma. DC input power is therefore 800 x 0.26 a = 208 w. Readings on
> the Bird 43 wattmeter indicate 100 watts forward and zero watts
> reflected. (100 watts is the maximum RF output power available at this
> drive level.) From here on the grid drive is left undisturbed, and the
> pi-network controls are left undisturbed until Step 10.
>
> Richard says:
> There are several points in response here:
> 1.The load specification (50 + j0-ohm) is for full output power, not
> some portion of it. This is a minor point.
>
> Walt says: This is NOT a minor point. The output power at 100 watts was
> specified as the reference power, not the full output power the xmtr could
> produce.
>
> 2.Maximum power from a TS-830S can be as high as 120W, could be lower
> depending on finals' service life. This is a minor point.
>
> Walt says: This is also NOT a minor point. The TS-830S used for the measurements
> is capable of producing more than 130 watts, but 100 watts was used to assure
> stability that could be compromised if running the xmtr at its full output.
>
> 3.Rated typical Plate Current for the 6146B is 220mA. Running more at
> higher voltage (typical is 750V) to obtain less power sounds like the
> amp is being strained to produce 100W.
>
> Walt says: Rated plate current is irrelevant here. The plate voltage in this
> xmtr is inherently 800v when the plate current is 260 ma. Running more than 750v
> to obtain less power is an absurd and unwarranted statement. The amp was NOT
> being strained to produce 100 w, because its full output exceeds 130 w.
>
> 4."Available Power" is 208W. Efficiency and other considerations
> certainly lower this, but it would appear that efficiency has been
> red-lined at 48% by this step's assertions. The red-line at 48%
> efficiency may reveal the aforementioned strain.
>
> Walt says: Available power is NOT 208w. 208w is the DC input power. The true
> available power was 100w because the grid drive was set to allow only 100w to be

> delivered with loading adjusted to deliver all the available power at that drive
> level. This condition is clearly stated in Step 1.
>
> Step 2.
> The amplifier is now powered down and the load resistance RL is
> measured across the input terminals of the resonant pi-network tank
> circuit (from plate to ground) with an HP-4815 Vector Impedance Meter.
> The resistance is found to be approximately 1400 ohms. Because the
> amplifier was adjusted to deliver the maximum available power of 100
> watts prior to the resistance measurement, resistance RLP looking into
> the plate (upstream from the network terminals) is also approximately
> 1400 ohms. Accordingly, a non-reactive 1400-ohm resistor is now
> connected across the input terminals of the pi-network tank circuit
> and source resistance ROS is measured looking rearward into the output
> terminals of the network. Resistance ROS was found to be 50 ohms.
>
> Richard says:
> Points in response:
> 1.This is actually two steps: one measurement made from the plate
> looking towards the load; one measurement made from the output jack
> looking towards plate.
> 2.The measurement at the plate without a powered tube unloads the Q of
> the plate tuning. Does this unloaded Q present a false reading of the
> transformed load resistance?
>
> Walt says: No, it does not.
>
> Richard continues:
> 3.The load line with 800 v / 0.26 a / 2 = 1539 Ohms.
>
> Walt says: The above statement is false. The load line is not determined by the
> DC components-it is determined by the AC components using the Chaffee analysis
> procedure.
>
> Richard continues:
>
> 4."Maximum Available Power" has not been established, only arrived at
> by inference. It could be more, it could be less. Being less is
> unlikely given the subsequent demonstrated power delivered to the load
> being 100W; but it is suspect that exactly 100W is all that could be
> obtained. The point, however, is that such attention to "Available
> Power" is an unnecessary elaboration to the point of taking these
> steps.
>
> Walt says: Maximum available power was NOT arrived at by inference. It WAS
> established in Step 1 by setting the grid drive so that maximum available power
> with that setting was 100w. Richard's statement that attention to available
> power is an unnecessary elaboration is totally false, because a constant
> available power is required as a reference for all the measurements. It is
> clearly stated in one of my earlier statements that the xmtr was capable of

> delivering more than 130w.
>
> Richard continues:
>
> 5.The measurement at the output towards the plate similarly unloads
> the plate tuning Q when the 50 Ohms is removed to make the
> measurement. Does this unloaded Q present a false reading of the
> transformed plate resistance?
>
> Walt says: No, it does not. This method is standard procedure in making initial
> adjustments of the tank circuit of newly manufactured xmtrs prior to applying
> the plate voltage.
>
> Richard continues:
> 6.The measurements made in both directions confirm the capacity of an
> unloaded circuit to perform the transformations in a symmetric fashion
> (a good test), but you have not tested if the issue of loaded Q is a
> factor or not. If you were to replace the 1400 Ohm resistor at the
> plate tuning input (at the plate connection) with a 1000 Ohm resistor,
> would the 50 Ohms follow that shift? By how much?
>
> Walt says: Yes it would. If this pi-network is adjusted such that a 1400-ohm
> resistor at the plate connection would yield 50 ohms at the output of the
> network a 1000-ohm resistor replacing the 1400-ohm, the resistance appearing at
> the output would be 35.71 ohms
>
> Step 7.
> Due to the 2.88:1 mismatch at the load, neglecting network losses and
> the small change in plate current resulting from the mismatch,
> approximately the same mismatch appears between RLP and ZL at the
> input of the pi-network. Consequently, the change in load impedance
> changed the network input resistance RL from 1400 ohms to complex ZL ~
> 800 - j1000 ohms, measured with the Vector Impedance Meter using the
> method described in Step 2. To verify the impedance measurement of ZL
> the phase delay of the network was measured using an HP-8405 Vector
> Voltmeter and found to be 127°. Using this value of phase delay the
> input impedance ZL was calculated using two different methods; one
> yielding 792 - j1003 ohms, the other yielding 794.6 - j961.3 ohms,
> thus verifying the accuracy of the measurement. However, because grid
> voltage EC, grid drive Eg, and plate voltage EB are left unchanged,
> resistance RLP at the plate has remained at approximately 1400 ohms,
> leaving a mismatch between RLP and ZL at the input of the pi-network.
> As stated above, this value of ZL yields the substantially the same
> mismatch to plate resistance RLP as that between the output impedance
> of the pi-network and the 17.98 + j8.77-ohm load, i.e., 2.88:1. This
> mismatch at the network input results in less power delivered into the
> network, and thus to the load, a decrease in the area of the RF window
> at the network input, and a change in the slope of the loadline. (It
> must be remembered that the input and output mismatches contribute
> only to mismatch loss, which does not result in power delivered and

> then lost somewhere in dissipation. As we will see in Step 8, the
> mismatch at the input of the pi-network results only in a reduced
> delivery of source power proportional to the degree of mismatch.)
>
> Richard says:
> Points in response:
> 1.We enter into a key remark in the first sentence: neglecting
> network losses and the small change in plate current resulting from
> the mismatch. By this statement the subordinate thesis being offered:
> output source resistance of the RF power amplifier is non-dissipative
> is wholly invalidated.
>
> Walt says: The last sentence above is totally false. The increase in plate
> current due to the mismatch causing the pi-network to be detuned does cause the
> increase in plate dissipation, but plate dissipation occurs only in the
> cathode-to-plate resistance, which is totally irrelevant to the output source
> resistance, which IS non-dissipative.
>
> Richard says:
>
> The observation that the plate current changes
> (and presumably plate voltage has not, unconfirmed in the protocol)
>
> Walt says: Not so. While the plate current increased to 290 ma. The voltage
> decreased to 760v, clearly stated in Step 9.
>
> Richard continues:
> through the agency of mismatch must necessarily admit that the plate
> resistance has also changed if only because it has been explicitly
> admitted to through the dismissed current change.
> 2.To whatever degree (as dictated by the phase of the mismatch), plate
> dissipation must also change. This is the common experience of
> literally thousands of Amateur radio operators and has been commented
> upon and reported for generations when through the unfortunate aspect
> of phase, it becomes a destructive dissipation.
>
> Walt says: Of course the plate dissipation changed with the increase in plate
> current caused by the detuning of the network. But as said before, this plate
> dissipation is irrelevant to the output source resistance.
>
> Richard continues:
>
> Such reports often
> attain dramatic legendary status, if only for the afflicted amplifier
> owner (who may enjoy comedic celebrity among his peers).
> 3.Moving on to subsequent sentences, the reported values of complex
> load resistance (792 - j1003 Ohms) seen from the plate looking through
> tuning towards the new, mismatched load confirms that the plate
> resistance must be impacted. If, as reported, the plate resistance
> remains at 1400 Ohms, then there is a mismatch which is admitted to in

> the text of the original. The final argument is based upon mismatch
> loss, which from the perspective of the load, is that amount of power
> not seen, but not lost by dissipation. That much is true from the
> perspective of the load. The same would be true if we replaced the
> plate tuning with a large resistor which would also reduce power to
> the load, so such an appeal has nothing to do with the argument of the
> subordinate thesis: output source resistance of the RF power amplifier
> is non-dissipative. The nature of this particular plate mismatch
> affirms the current indication, and rejects the conclusion of
> non-dissipation (which is characteristically, and artificially
> constrained to being exothermic when through phasing it could as
> easily be endothermic).
>
> Walt says: Richard is totally off base in attempting to correlate the plate
> dissipation with the output source resistance at the output terminals of the
> network. They are totally unrelated.
>
> Richard says:
>
> 4.A more careful protocol would allow for phase by lengthening the
> 13.5° length of coax to 103.5° (or more but well less than 180°) and
> carefully noting the new plate current. In fact, other lengths should
> be used to draw a more rigorous correlation.
>
> Walt says: Richard ignores the fact stated later in my paper that I have already
> made measurements with several different lengths of coax that also verify the
> measurements reported here to be correct.
>
> Step 8.
> Readings on a Bird 43 power meter now indicate 95w forward and 20w
> reflected, meaning only 75 watts are now delivered by the source and
> absorbed in the mismatched load. The 20w reflected power remains in
> the coax, and adds to the 75 watts delivered by the source to
> establish the total forward power of 95w.
>
> Richard continues:
> Point in response:
> The Bird 43 indications only reveal mismatch loss (unstated as 5W if
> we are to return to the concept of Available Power, which as a
> rhetorical point has been uncharacteristically discarded) which is
> only tangentially related to the subordinate thesis: output source
> resistance of the RF power amplifier is non-dissipative. Step 7 is
> sufficient to illustrate the thesis.
>
> Walt says: The above paragraph is totally without merit, and only serves to
> confuse the reader.
>
> Step 9.
> We now compare the measured power delivered with the calculated power,
> using the power transmission coefficient, 1 - ?2. The calculated power

> delivered is: 100w × (1 - ?2) = 76.6w, compared to the 75w indicated
> by the Bird wattmeter. However, because the new load impedance is less
> than the original 50 ohms, and also reactive, the amplifier is now
> overloaded and the pi-network is detuned from resonance. Consequently,
> the plate current has increased from 260 to 290 ma, plate voltage has
> dropped to 760 v, and DC input power has increased from 208 w to 220.4
> w.
>
> Richard says:
> Points in response:
> 1.This is a surprising departure from reporting in the progression of
> the protocol. We now find current and voltage reports where formerly
> they were either dismissed or neglected. However, we will take these
> as they are reported here.
>
> Walt says: Voltage and current were NOT dismissed or neglected. They were
> presented in Step 9 as the natural progression in explaining the test procedure.
>
> Richard continues:
>
> 2.It appears that the calculated power and the reported power agree,
> this is not directly expressed, but neither these remarks are not
> stated as being in conflict. Given the editorialization that inhabits
> the protocol in general, these remarks are remarkably dry and
> unconnected.
> 3.Following, with the editorial comment that the amplifier is now
> overloaded, the connotation is necessarily a rejection of the thesis:
> output source resistance of the RF power amplifier is non-dissipative;
> otherwise the condition giving rise to the overload would be of no
> particular consequence nor interest.
>
> Walt says: The amplifier was overloaded because the load impedance was less than
> that with the reference load of 50 + j0 ohms. Richard still fails to understand
> that the dissipation in the cathode-to-plate resistance is totally unrelated to
> the output source resistance, because the output source resistance is determined
> only by the voltage-current ratio appearing at the output terminals of the
> network.
>
> Richard continues:
>
> Rather, the cautionary should
> have been the amplifier is not delivering its Maximum Available Power
> (once again, having raised this topic early on, it is curiously
> missing as a rhetorical observation). The dialectic seems to have
> promoted the subordinate thesis while the data in the observations
> have destroyed it.
>
> Walt says: The last statement above is totally false.
>
> 4.The detuned state is an untested conjecture. Its inclusion adds

> nothing without both a rigorous examination and explaining the
> speculative correlation as causation.
>
> Walt says: There is no speculation or untested conjecture here. The fact that
> the network was detuned by the mismatched load containing reactance is proven by
> the fact that retuning the network to resonance was by adjusting it to obtain
> the plate-current dip.
>
> Step 10.
> With the 17.98 + j8.77-ohm load still connected, the pi-network
> loading and tuning are now re-adjusted to again deliver all available
> power with drive level setting still left undisturbed. The
> readjustment of the plate tuning capacitor has increased the
> capacitive reactance in the pi-network by -8.77 ohms, canceling the
> +8.77 ohms of inductive reactance in the load, returning the system to
> resonance. The readjustment of the loading control capacitor has
> decreased the output capacitive reactance, thus reducing the output
> resistance from 50 to 17.98 ohms. Thus the network readjustments have
> decreased the output impedance from 50 +j0 to 17.98 - j 8.77 ohms, the
> conjugate of the load impedance, 17.98 + j8.77 ohms. The readjustments
> have also returned the network input impedance ZL to 1400 + j0 ohms
> (again equal to RLP), have returned the original area of the RF window
> at the network input, and have returned the slope of the loadline to
> its original value. For verification of the 1400-ohm network input
> resistance after the readjustment, ZL was again measured using the
> method described in Step 2, and found it to have returned to 1400 + j0
> ohms.
>
> Richard continues:
> Points in response:
> This step is fraught with leaps of faith substituting for sound,
> practical evidence.
> 1.This step consists of several steps. Rhetorically, what is the
> meaning of steps, to so much shift stylistically? This is not an
> isolated instance, so writing structure needs to be re-examined.
> 2.All Available Power, (a rhetorical shift from maximum) has not been
> established, much less shown. It is not denied that a greater power
> can be applied to the new load; but the actual amount of power is not
> reported (a reporting shift from earlier protocol).
>
> Walt says: All the available power WAS ESTABLISHED AND SHOWN IN STEP 10,
> quoting: "With the 17.98 + j8.77-ohm load still connected, the pi-network
> loading and tuning are now re-adjusted to again deliver all available power with
> drive level setting still left undisturbed." All available power was initially
> set to be 100w determined by the drive level which was left undisturbed.
>
> Richard continues:
>
> 3.The declaration of attaining a reactance of -j8.77 Ohms is
> unsubstantiated in reported measurements. This gives rise to the

> appearance of speculation serving the argument.
>
> Walt says: No speculation, and the -j8.77 ohms is not unsubstantiated, because
> that reactance introduced into the network resulted in the network becoming
> resonant in that it canceled the +j8.77 ohms appearing in the load. No
> additional measurement is required to determine the existence of the -j8.77
> ohms.
>
> Richard continues:
> 4.Likewise, the declaration of lowering the output (terminal) Z to
> 17.98 Ohms is a remarkably precise value without any measurement
> evidenced.
>
> Walt says: All available power is delivered when the load resistance is equal
> to the source resistance. The load resistance was 17.98 ohms. Because all
> available power was delivered into 17.98 ohms the output resistance is
> inherently 17.98 ohms.
>
> Richard continues:
> 5.The verification measurement, a step of considerable substance, is
> rendered here as an footnote, clouding the earlier responses, 2 & 3
> above, jarring against the lack of the actual measurements of -j8.77
> Ohms and 17.98 Ohms. In a nutshell, the verification is shortchanged
> against the completeness of earlier measurements.
>
> Walt says: Richard is really clutching at straws here in his attempt to
> discredit my measurements.
>
> Richard continues:
>
> 6.The adjustment of the plate load does not reveal a conjugation.
>
> Walt says: With the plate current again dipped at 206ma. now at resonance with
> the initially mismatched load, the same plate current obtained at resonance with
> the 50-ohm load, proves the match now existing at the network output is a
> conjugate match.
>
> Step. 11
> Bird 43 power meter readings following the readjustment procedure now
> indicate 130w forward and 29.5w reflected, indicating 100.5w
> delivered to the mismatched load.
>
> Richard continues:
> Points in response:
> 1. The cost of the variation in usage of the term Step now comes home
> to roost. This step is obviously simple reporting. However, it is
> reporting out of sequence, which is the purpose of offering Steps so
> that this can be avoided.
> 2. It also reveals the problems of precision offered where impedances
> are reported to 2 decimal places (exceeding the accuracy of

> equipment). Formerly, Maximum Available Power was explicitly defined
> (to one decimal place) as 100W, and now we find 100.5W applied to the
> newly matched load. The laws of precise reporting would suggest the
> earlier Maximum Available Power should have been specified at 100.0W
> (tenths of W precision); or consistent with its earlier 1% precision
> that this new reading should be offered as 101W (with appropriate
> promotion of the 0.5W).
>
> Walt says: Picky picky picky.
>
> Richard continues:
>
> 3. I would point out that the Bird 43 Power Meter's accuracy is 5% of
> full scale and that to this point no specification has been offered as
> to what actual equipment is being used as there are seven possible
> plug-ins available (where only three would be sensibly chosen here).
> This gives rise to the author conferring upon the reviewer the power
> to choose for him. I will arbitrarily infer from the information
> provided that two plug-ins are used: 100W and 250W. The 100W would be
> selected for the first power reading offered in Step 1 as this would
> give the greatest accuracy to that cardinal point. The 250W element
> for the 130W reading in Step 11. I presume that the 100W element
> would be used for the reverse power readings, as that would be the
> greatest advantage; unless, of course, the 50W element was available
> (this is the hazard of incomplete reporting).
> 4. A 29.5W reading is both an interpolation (there are no half Watt
> gradations), and subject to error. The proper reporting would allow
> for the interpolation but cite it as 29.5W ±5W (or nearly 17% of
> reading).
> 5. A more substantial ±25W error inhabits the 130W reading due to the
> use of the 250W element. The proper reporting would allow for the
> interpolation but cite it as 130W ±25W (or nearly 19% of reading).
> Given that these are two, separate measurements, we have to render the
> delivered power as:
> (155W .. 105W) + (-34.5W .. -24.5W)
> where the optimistic combination of all inaccuracies offer a spread of
> delivered power:
> 120.5W .. 80.5W
> This is a huge variation of ±20W around what had been presumed to
> represent the Maximum Available Power of 100W (which, in itself could
> only have been reported as 95W .. 105W).
> 6. For the reader, there is a object lesson to be learned here in
> regard to RF power measurement accuracy where none is required (as I
> pointed out, the introduction of Maximum Available Power is an
> unnecessary elaboration to the subordinate thesis). That is, the
> greatest usage of the Bird (or any indicating instrument) would be
> found in returning the system to a cardinal reading point on its
> scale. This would collapse the nearly 20% error to less than one-tenth
> that value.... If it mattered at all (it doesn't).
>

> Walt says: In the above unnecessary discourse Richard is only showing off his
> expertise as a metrologist.
>
> Step 13.
> It is thus evident that the amplifier has returned to delivering the
> original power, 100 watts into the previously mismatched
> complex-impedance load, now conjugately matched, the same as when it
> was delivering 100 watts into the 50-ohm non-reactive load. But the
> reflected power, 30.6 watts, remains in the coax, adding to the 100
> watts delivered by the amplifier to establish the 130.6 watts of
> forward power, proving that it does not enter the amplifier to
> dissipate and heat the network or the tube.
>
> Richard continues:
> Points in response:
> 1. The power accounting is wholly lacking in accuracy implications as
> previously noted.
>
> Walt says: Totally false. The only inaccuracies are in the measurement errors
> inherent in the measurement equipment that come with the territory. The large
> deviations in the precisions Richard alludes to are unrealistic.
>
> Richard continues:
> 2. That 30.6W remains in the coax has been through the intervention
> of the amplifier operator's tuning.
>
> Walt says: Totally false. The 30.6w remains in the coax because the reflected
> power was totally re-reflected because the non-dissipative source resistance
> reflected it. If the source resistance had been dissipative the reflected power
> would have been only 25w, not 30.6 watts, and the 25w would have been absorbed
> in the source, which it was not.
>
> Richard continues:
>
> The reflection of power from the
> original mismatch clearly impacted the dissipation of the finals
> without such intervention. Intervention was a necessity of preventing
> the untoward, catastrophic failure of the amplifier (in a general
> sense for all possible load reflection angles).
> 3. The 30.6W remaining in the coax is a function of tuning that cast
> the issues of dissipation out of the tube, and moved the line of
> disipation towards the load (actually, into the tuning elements of
> the plate and the line itself). This is the whole raison d'etre of
> tu
ning the grid/plate or matching the load.
>
> Walt says: Although the reflected power caused the mismatch appearing at the
> input of the 13° line, the reflection of power itself did not affect the
> dissipation of the amp, because the reflected power never entered the network.
> It was simply the reactance in the load that detuned the network that increased

> the dissipation, as would be expected when the network is detuned from
> resonance.
>
> I hope my responses have sufficiently explained why Richard's criticism is so
> outrageously incorrect. I have no clue as to his motivation for discrediting my
> writing to this extent, because it is totally unwarranted.
>
> Walt, W2DU

Walter, what you give out you eventually receive and the same goes for
Richard.
Oft times you level charges against others for the fun oif it and then
get annoyed if others do likewise.
You and Richard are well known with respect to attempts to slaughter
other peoples thoughts and ideas
and get indignant when retaliation occurrs or when others follow on in
the game.Both of you will never
be in a position to
declare all you thboughts are correct and most of those who oppose you
are not simply because you both over estimate your abilities and
position amoung your followers
You both started it so it is reasonable that you both would eventually
turn upon each other.
Obviously both you and your followers have given up trying to
suppress Cecil's thinking. Good for him.

5568. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 17:13:22 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <LKv7k.21000$aE7.16891@newsfe16.ams2>
Source record: 24790
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
news:bC9yzjW$sjXIFwQb@g3ohx.demon.co.uk...
> In message <g3l8gckov3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
> writes
>>Andy wrote:
>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>> message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>>>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
>>>> <dx90@blueyounder.co.uk> writes
>>>>>
>>>>>
>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>> message
>>>>> news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>>>>> Andy, is your endfed wire the one in your other thread of the 8th
>>>>>> June (ie
>>>>>> the 80 Meter End Fed, fed with coax at the far end)? If so,
>>>>>> presumably the
>>>>>> tuner is at the shack end. Or are you feeding it from the shack end.
>>>>>>
>>>>>>
>>>>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>>>>> <dx90@blueyounder.co.uk> writes
>>>>>>
>>>>>> --
>>>>>
>>>>> Hi Ian,
>>>>>
>>>>> Yes its the same. The tuner is at the shack end (house) and I'm
>>>>> feeding the
>>>>> antenna with 50 Ohm RG-58 C/U coax at the far end of the garden. If I
>>>>> can
>>>>> get it working well I will replace it with some RG-213 that I have
>>>>> here. I
>>>>> put it back up yesterday and started experimenting again.
>>>>>
>>>>> The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon
>>>>> feeder. This
>>>>> is all I had left spare. One side is connected to the wire antenna and
>>>>> the
>>>>> other side left, not connected. The coax is connected to the 300 Ohm
>>>>> at the
>>>>> bottom and the braid side is now connected to the unconnected side of

>>>>> the
>>>>> 300 Ohm and also to the earth ground rod.
>>>>> On 80 the receive is up 2-4 S points compared with the 40m coax Centre
>>>>> Fed
>>>>> Dipole. I have not had chance to get any actual reports on 80 yet.
>>>>> Maybe
>>>>> this weekend.
>>>>>
>>>>> 73 Andy
>>>> OK, Andy. Noted.
>>>>
>>>> I don't know if you will really improve things by using the 15 foot of
>>>> 300 ohm feeder. It's a sort of a zepp, but with one side of the feeder
>>>> earthed. I would try disconnecting the earthed ('unconnected') side
>>>> from earth / coax braid. You can either leave it floating, or connect
>>>> it to the coax inner. It will then be approximately a quarterwave on
>>>> 20m, fed in parallel with the long wire.
>>>>
>>>> Don't read too much into the excellent SWR you're getting with the
>>>> tuner. That's what the TX sees, but the tuner can't affect the SWR on
>>>> the aerial feeder. If the coax SWR is sky high (and it can be if the
>>>> impedance at aerial feed point is high), the coax losses will be much
>>>> more that you would get compared with when it is matched correctly.
>>>> You only get away with it by using the lowest-loss you can find, and
>>>> keeping the coax as short as possible.
>>>>
>>>> I'm not surprised that 80m on the endfed is a bit better than the 40m
>>>> dipole. But what's 40m like on the endfed? That's when the feed
>>>> impedance (and coax SWR) will be very high, and where the RG-213 might
>>>> perform better noticeably better than the RG-58.
>>>>
>>>> As I think I said before, although I am an advocate of simply using
>>>> coax (regardless), after all these years I am considering in investing
>>>> in something like a SG230 remote tuner for the far end of the coax.
>>>> -- Ian
>>>>
>>>
>>> Ian,
>>> I'll have to do some experimenting with the 300 Ohm feeder and see what
>>> happens. The End Fed on 40m is very poor indeed. I would say unusable
>>> like it is.
>>> The End Fed wire at the moment is resonate on 2. 682 MHz.
>>> The funny thing is that when I cut the wire to bring the End Fed to
>>> resonate on 80m, no matter how much wire I cut off it doesn't really
>>> move from the 2.682 MHz. I have tried this with and with out the ribbon
>>> feeder being in place and with coax connected direct and the braid
>>> connected to the earth rod.
>>> What would cause this?
>>> I have no problem using the Analyser with my mobile and centre fed
>>> dipoles.

>>> 73 Andy
>
>>adding a suitably cut wire counterpoise at +% for each band should
>>certainly assist things .
>
> I rather think that Andy can't add counterpoises. A decent earthing system
> should work (although additional counterpoises certainly won't do any
> harm).
>
> Re the 2.682MHz resonance, this may be because the coax is completely
> mismatched at lots of frequencies, and what you're seeing this is
> more-or-less a spurious resonance of the coax itself. Do you still get it
> with the wire completely disconnected? Even with centre-fed dipoles, you
> often get some very unexpected resonances way off frequency (especially of
> you are doing a wideband frequency sweep of the return loss / SWR).
>
> As I said previously, persuading an approximate halfwave endfed (which is
> what you have on 40m) to work with a coax feed is certainly not ideal, but
> you can usually get it to work fairly well (with all the provisos already
> discussed). My setup here is almost twice the size of what you have, so
> the wire feed impedance will be low on 160m and I high on 80m and 40m. 80m
> (corresponding to your 40m) is certainly lively enough. On 40m, the
> performance does not seem to be unduly poor compared with the signal
> reports swapped between others on the band.
>
> So, Andy, I simply don't know why your 40m is so poor. Have you tried
> (temporarily) reducing the length to around 33 feet, so that it is a
> quarterwave on 40m? This should give a reasonable match for your coax (at
> least, nothing you can't tune out back in the shack). If this is more
> lively than the 64 feet, maybe you can try two wires in parallel. This can
> be discussed later if the 33 feet shows promise. If a multiband (and
> possibly compromise) aerial doesn't work well, it's a good idea to try
> something simple which you know SHOULD work. The problem may lie
> elsewhere.
>
> Finally, can I ask you to follow the standard practice of bottom posting!
> Cheers...
> --
> Ian

I've have just connected the Analyser at the feed point on the End fed wire.
The frequency is now at 2.898 MHz without coax being in line. I have just
tried
to shorten the Antenna again to bring the frequency closer to the 80m band,
but
it will not adjust from this frequency.

What's confusing me is that the End fed wire should be longer than a 1/4
wave on 80 and the frequency that it ended up on, that is now 2.898 would be
about right for the length. So why won't that frequency change when I start
trimming the wire down in size?

It just isn't making any sense to me. The resonant frequency surely should change with the altered length.

73 Andy

5569. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 18:03:40 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <0uw7k.167012$TT4.36097@attbi_s22>
Source record: 24791

Could all of you experts who can count the angels on the head of a pin but obviously cannot read English, please take this to a relevant newsgroup? This is not an antenna issue, and doesn't belong anywhere in the same zip code with rec.radio.amateur. ANTENNA.

If your egos just absolutely demand publication, perhaps a new newsgroup with the name "dummy load" would suffice. and any of you could start it. Personally, I'll be very careful to avoid it.

W4ZCB

5570. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 18:35:35 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <hOf8QPN3tpXIFwWv@g3ohx.demon.co.uk>
Source record: 24792
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

In message <LKv7k.21000$aE7.16891@newsfe16.ams2>, Andy
<dx90@blueyounder.co.uk> writes
>
>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>news:bC9yzjW$sjXIFwQb@g3ohx.demon.co.uk...
>> In message <g3l8gckov3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
>> writes
>>>Andy wrote:
>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>> message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>>>>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
>>>>> <dx90@blueyounder.co.uk> writes
>>>>>
>>>>>
>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>> message
>>>>> news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>>>>> Andy, is your endfed wire the one in your other thread of the 8th
>>>>>> June (ie
>>>>>> the 80 Meter End Fed, fed with coax at the far end)? If so,
>>>>>> presumably the
>>>>>> tuner is at the shack end. Or are you feeding it from the shack end.
>>>>>>
>>>>>>
>>>>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>>>>> <dx90@blueyounder.co.uk> writes
>>>>>>
>>>>>> --
>>>>>
>>>>> Hi Ian,
>>>>>
>>>>> Yes its the same. The tuner is at the shack end (house) and I'm
>>>>> feeding the
>>>>> antenna with 50 Ohm RG-58 C/U coax at the far end of the garden. If I
>>>>> can
>>>>> get it working well I will replace it with some RG-213 that I have
>>>>> here. I
>>>>> put it back up yesterday and started experimenting again.
>>>>>
>>>>> The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon
>>>>> feeder. This
>>>>> is all I had left spare. One side is connected to the wire antenna and
>>>>> the

>>>>>> other side left, not connected. The coax is connected to the 300 Ohm
>>>>>> at the
>>>>>> bottom and the braid side is now connected to the unconnected side of
>>>>>> the
>>>>>> 300 Ohm and also to the earth ground rod.
>>>>>> On 80 the receive is up 2-4 S points compared with the 40m coax Centre
>>>>>> Fed
>>>>>> Dipole. I have not had chance to get any actual reports on 80 yet.
>>>>>> Maybe
>>>>>> this weekend.
>>>>>>
>>>>>> 73 Andy
>>>>> OK, Andy. Noted.
>>>>>
>>>>> I don't know if you will really improve things by using the 15 foot of
>>>>> 300 ohm feeder. It's a sort of a zepp, but with one side of the feeder
>>>>> earthed. I would try disconnecting the earthed ('unconnected') side
>>>>> from earth / coax braid. You can either leave it floating, or connect
>>>>> it to the coax inner. It will then be approximately a quarterwave on
>>>>> 20m, fed in parallel with the long wire.
>>>>>
>>>>> Don't read too much into the excellent SWR you're getting with the
>>>>> tuner. That's what the TX sees, but the tuner can't affect the SWR on
>>>>> the aerial feeder. If the coax SWR is sky high (and it can be if the
>>>>> impedance at aerial feed point is high), the coax losses will be much
>>>>> more that you would get compared with when it is matched correctly.
>>>>> You only get away with it by using the lowest-loss you can find, and
>>>>> keeping the coax as short as possible.
>>>>>
>>>>> I'm not surprised that 80m on the endfed is a bit better than the 40m
>>>>> dipole. But what's 40m like on the endfed? That's when the feed
>>>>> impedance (and coax SWR) will be very high, and where the RG-213 might
>>>>> perform better noticeably better than the RG-58.
>>>>>
>>>>> As I think I said before, although I am an advocate of simply using
>>>>> coax (regardless), after all these years I am considering in investing
>>>>> in something like a SG230 remote tuner for the far end of the coax.
>>>>> -- Ian
>>>>>
>>>>
>>>> Ian,
>>>> I'll have to do some experimenting with the 300 Ohm feeder and see what
>>>> happens. The End Fed on 40m is very poor indeed. I would say unusable
>>>> like it is.
>>>> The End Fed wire at the moment is resonate on 2. 682 MHz.
>>>> The funny thing is that when I cut the wire to bring the End Fed to
>>>> resonate on 80m, no matter how much wire I cut off it doesn't really
>>>> move from the 2.682 MHz. I have tried this with and with out the ribbon
>>>> feeder being in place and with coax connected direct and the braid
>>>> connected to the earth rod.

>>>> What would cause this?
>>>> I have no problem using the Analyser with my mobile and centre fed
>>>> dipoles.
>>>> 73 Andy
>>
>>>adding a suitably cut wire counterpoise at +% for each band should
>>>certainly assist things .
>>
>> I rather think that Andy can't add counterpoises. A decent earthing system
>> should work (although additional counterpoises certainly won't do any
>> harm).
>>
>> Re the 2.682MHz resonance, this may be because the coax is completely
>> mismatched at lots of frequencies, and what you're seeing this is
>> more-or-less a spurious resonance of the coax itself. Do you still get it
>> with the wire completely disconnected? Even with centre-fed dipoles, you
>> often get some very unexpected resonances way off frequency (especially of
>> you are doing a wideband frequency sweep of the return loss / SWR).
>>
>> As I said previously, persuading an approximate halfwave endfed (which is
>> what you have on 40m) to work with a coax feed is certainly not ideal, but
>> you can usually get it to work fairly well (with all the provisos already
>> discussed). My setup here is almost twice the size of what you have, so
>> the wire feed impedance will be low on 160m and I high on 80m and 40m. 80m
>> (corresponding to your 40m) is certainly lively enough. On 40m, the
>> performance does not seem to be unduly poor compared with the signal
>> reports swapped between others on the band.
>>
>> So, Andy, I simply don't know why your 40m is so poor. Have you tried
>> (temporarily) reducing the length to around 33 feet, so that it is a
>> quarterwave on 40m? This should give a reasonable match for your coax (at
>> least, nothing you can't tune out back in the shack). If this is more
>> lively than the 64 feet, maybe you can try two wires in parallel. This can
>> be discussed later if the 33 feet shows promise. If a multiband (and
>> possibly compromise) aerial doesn't work well, it's a good idea to try
>> something simple which you know SHOULD work. The problem may lie
>> elsewhere.
>>
>> Finally, can I ask you to follow the standard practice of bottom posting!
>> Cheers...
>> --
>> Ian
>
>I've have just connected the Analyser at the feed point on the End fed wire.
>The frequency is now at 2.898 MHz without coax being in line. I have just
>tried
>to shorten the Antenna again to bring the frequency closer to the 80m band,
>but
>it will not adjust from this frequency.

Ummmm...
Obviously something is wrong. It looks like your analyser is simply
telling lies. Could it have a spurious resonance at this frequency?
>
>What's confusing me is that the End fed wire should be longer than a 1/4
>wave on 80
>and the frequency that it ended up on, that is now 2.898 would be
>about right for the length.

A quarterwave on 80m is around 66 feet. Your 63 feet is actually a bit
on the short side. Being only 20 feet up may pull the resonance a bit
lower, but I doubt is could be anywhere as low as 2.898MHz.

>So why won't that frequency change when I start
>trimming the wire down in size?
>It just isn't making any sense to me. The resonant frequency surely should
>change with the altered length.
>
If shortening the aerial doesn't change the frequency, I don't think
your analyser is measuring the aerial. This is indeed a puzzle. As I
suggested before, you could go from the sublime to the ridiculous, and
try something like 33 feet, which should resonate at around 7MHz. If it
sticks at 2.898MHz, something is seriously amiss.

--
Ian

5571. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 18:43:22 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3m6gb$s2q$1@news.albasani.net>
Source record: 24793

Res wrote:
>
> ...
> 750G in laptop.. EH? you really have no clue do you, do you seriously
> think we are going to use shitty ide or shitty sata drives in our
> massive arrays?
>
>> to mention, unfordable if possible--NOT today)... pause before making
>> rash statements--you can answer your own questions.
>
> I think we all now see you for the wanka fool you are, you clearly have
> NFI on what hardware ISP's use. now... go and play on the road ya troll
>
>

BETTER HURRY UP!

I think I just heard your mother calling you for dinner, LOL.

Regards,
JS

5572. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 18:43:51 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <34x7k.19$wT2.17@newsfe02.lga>
Source record: 24794

Sorry if the posts offended you, Harold, but I'm flabbergasted that Richard had the gall to post his denigration of my paper in the newsgroup. With common sense he should have known to send his comments to me, not to broadcast them. I felt I had no choice but to put my rebuttal in the same place to defend myself from from his unwarrented comments.

Walt, W2DU

5573. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 18:44:53 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3m6j6$s2q$2@news.albasani.net>
Source record: 24795

jimp@specsol.spam.sux.com wrote:

> ...
> Can't do simple arithemetic, can you?
>
> I notice you have zero facts to offer in rebuttal; just frothing
> nonsense.

Interesting ... <yawn>

>
> BTW, how you can read my post when you've plonked me so many times?
>
>

Uh, just psychic I guess! <grin>

Regards,
JS

5574. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 19:05:25 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6c7m43F3dc3hvU1@mid.individual.net>
Source record: 24796

Walter Maxwell wrote:
> Sorry if the posts offended you, Harold, but I'm flabbergasted that
> Richard had the gall to post his denigration of my paper in the
> newsgroup.

I'd simply like to know -
1 - Who the fuck are you?
2 - What the fuck is chapter 19A?
3 - Why the fuck have you wasted so much
space on this antenna newsgroup with your
post asking for reviews and then getting
your panties wadded when someone "denigrates"
your stupid ass paper?

Fuck you and your fucking chapters.

Craig 'Lumpy' Lemke

www.n0eq.com

5575. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 19:25:03 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <s8l2j5-u04.ln1@mail.specsol.com>
Source record: 24797

John Smith <assemblywizard@gmail.com> wrote:
> jimp@specsol.spam.sux.com wrote:

> > ...
> > Can't do simple arithemetic, can you?
> >
> > I notice you have zero facts to offer in rebuttal; just frothing
> > nonsense.

> Interesting ... <yawn>

Yeah, I know, you wouldn't recognize a fact if it hit you in the
middle of your forehead.

> > BTW, how you can read my post when you've plonked me so many times?
> >
> >

> Uh, just psychic I guess! <grin>

Or you are:

A) A lier in addition to being a babbling arm waver.

B) Too clueless to know what "plonk" means or how to actually do it.

C) All of the above.

--
Jim Pennino

Remove .spam.sux to reply.

5576. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 19:35:03 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <gjl2j5-u04.ln1@mail.specsol.com>
Source record: 24798

Res <res@ausics.net> wrote:

> On Sat, 21 Jun 2008, John Smith wrote:

> > Res wrote:
> >
> >>
> >> and what do you propose we STORE it on? or do you rather ISP's only keep a
> >> couple weeks news? We have news going back 5 years in most groups.
> >> you do the maths since your huge brain is apparently better than us
> >> amateurs.
> >>
> >
> > The 750 gig hd in my laptop was unimaginable but a few short years ago (not

> 750G in laptop.. EH? you really have no clue do you, do you seriously think we
> are going to use shitty ide or shitty sata drives in our massive arrays?

You don't seriously think the babbling fool has the slightest idea what
"ide", "sata", or "massive array" mean do you?

--
Jim Pennino

Remove .spam.sux to reply.

5577. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 19:47:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <nc8t54dpeedhh1cel1l1f82fru1hk2l26n@4ax.com>
Source record: 24799

On Sun, 22 Jun 2008 12:33:41 -0400, "Walter Maxwell" <walt@w2du.com>
wrote:

>I've known you for a long time to be tough but fair. I've envied your depth of
>knowledge in many areas of expertise. Which is why I entrusted you and others on
>this thread with my Chapter 19A for an honest peer review. I expected to receive
>a fair review from you that would fare well in proving my paper correct for
>those who don't yet understand, or don't believe the principles involved.
>
>
>
>However, instead of receiving a fair critique of my paper you trashed it with an
>axe. Every criticism you made was not only negative, but clearly false. If I
>didn't know you better I would conclude from your comments that you don't have a
>clue concerning the operation of RF amplifiers.
>
>
>
>Since you chose to denigrate my writing instead of giving it a fair critique,
>why did you broadcast it on the news group instead of discussing your position
>with me privately? Since you have broadcast it I have no choice but to defend my
>position by rebutting each and every one of your false statements on this thread
>for all to see.
>
>
>
>Thus I'm repeating your comments with my responses to them to set the record
>straight.

Hi Walt,

I posted the Steps, contrary to the typical slap-dash past, as then
they've been ignored, speculated, and "interpreted" without direct
quotation for 130 postings from many authors before mine. The
material of Chapter 19A was thus in the public debate by invitation
long before I dipped my bucket into this well.

I posted each step individually to create separate, one topic threads
and to reduce the reading load of one 600 line submission.

Any issue of my not having backfilled missing knowledge to the Steps
is a comment on the Steps' original style, not the chapter's original
content. I am responsible for neither and I am doing the job of
editor revealing faults of ordering, and wholes in continuity. If
this is perceived as a personal slight, I am sorry.

Comparing my 9 posts as poison to the 130 others' treacle informs everyone that I have at least attended specific technical points that can be identified and correlated. In other words, I purposely and at some great effort and time have taken personal responsibility for explicit statements.

In any future correspondence, I will only respond to technical issues within those threads to maintain continuity of discussion.

73's
Richard Clark, KB7QHC

5578. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 19:59:43 UTC
From: "Harold E. Johnson" <W4ZCB@mchsi.com>
Message-ID: <Pay7k.221412$yE1.184489@attbi_s21>
Source record: 24800

"Walter Maxwell" <walt@w2du.com> wrote in message
news:34x7k.19$wT2.17@newsfe02.lga...
> Sorry if the posts offended you, Harold, but I'm flabbergasted that
> Richard had
> the gall to post his denigration of my paper in the newsgroup. With common
> sense
> he should have known to send his comments to me, not to broadcast them. I
> felt I
> had no choice but to put my rebuttal in the same place to defend myself
> from
> from his unwarrented comments.
>
> Walt, W2DU

Walter, I can delete posts as well as the next guy, the point is, I shouldn't need to. You started the whole thing by giving Cecil the push. You, he, and several other off topic posters have just close to ruined a newsgroup that used to be a useful source of information concerning antennas. Then there's always the rebuttal to the rebuttal ad nausium. I know that you are as convinced as Bruene is of the sanctity of your convictions, you should realize, that the vast majority of the rest of us don't really care which of you are right. We've successfully managed to load our rigs, work the world, and obtain some happiness without the knowledge you insist on imparting to us. Please don't common sense Richard. With common sense, you wouldn't have sent 19A to Cecil in the first place but your ego got in the way.

I'll not entertain the group with any more of this, I would hope that you take my earlier post to heart and get off the newsgroup unless you have something to post that contributes to the antenna sciences.

W4ZCB

5579. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 21:21:38 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <94604518-b1b7-4bde-8007-ea90c647cdbf@56g2000hsm.googlegroups.com>
Source record: 24701

On Jun 22, 1:43 pm, "Walter Maxwell" <w...@w2du.com> wrote:
> Sorry if the posts offended you, Harold, but I'm flabbergasted that Richard had
> the gall to post his denigration of my paper in the newsgroup. With common sense
> he should have known to send his comments to me, not to broadcast them. I felt I
> had no choice but to put my rebuttal in the same place to defend myself from
> from his unwarrented comments.
>
> Walt, W2DU

Walter, when I placed my page unwinantennas.com/ on this antenna
discussion group
you and Richard had the gall to attack me and my work just for the fun
of destruction.
My page which is on antennas by the way shows the path why antennas
can be any
shape ,size or configuration including variable elevation as long as
it is in equilibrium.
You and Richard took on the quest to crush the idea before it was
discussed fully while Richard denied
that the Gaussin progression could not be equal to Maxwells law., A
position he reversed himself on
a few months later without apology after discussion was succesfully
dissed. You as a expert book author chose gthe path of insults without
one iota of professional comment.
Shame on both of you. This group is for the discussion of antennas and
when I brought forward the
equilibrium matter forward I beat you to the punch by providing the
mathematical aproach first.
Neither of you discussed seriously what I proferred so neither of you
could find fault with it and Richard was particarly vicious
with his attacks and not once finding an error. You both destroyed the
idea of antenna discussion and debate on this newsgroup
because you both over estimate your own abilities while taking the
pagth of destruction. I worked hard at what I did and then shared it
with my fellow amateurs so all could enjoy. You Walt and Richard
deserve each other, as they say,what you sow so may you reap!. Some
day hams will be allowed to discuss or debate antenna matters without
fear of attack from you and your followers who provide nothing of
technical content to the discussion searching only for a "me too"
aproach. Maybe now that both of you have shown your true colours or
GALL as you call it other true hams will come back and discuss
antennas without being pushed aside. Wiered how you both take offense
of a tactic that you have practiced for years upon others with some
relish and now complain of the tone of debate or critism that do not

match your own position of chief adjudicater on the subject of
radiation.
Art Unwin
Unwinantennas.com/

5580. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 21:33:33 UTC
From: Albert <weus&co@elsewhere.com>
Message-ID: <M4GdnWo9tvWpWMPVnZ2dnUVZ_uSdnZ2d@posted.internode>
Source record: 24702
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
news:hOf8QPN3tpXIFwWv@g3ohx.demon.co.uk...
> In message <LKv7k.21000$aE7.16891@newsfe16.ams2>, Andy
> <dx90@blueyounder.co.uk> writes
>>
>>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>>news:bC9yzjW$sjXIFwQb@g3ohx.demon.co.uk...
>>> In message <g3l8gckov3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
>>> writes
>>>>Andy wrote:
>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>> message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>>>>>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
>>>>>> <dx90@blueyounder.co.uk> writes
>>>>>>
>>>>>>
>>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>>> message
>>>>>> news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>>>>>> Andy, is your endfed wire the one in your other thread of the 8th
>>>>>>> June (ie
>>>>>>> the 80 Meter End Fed, fed with coax at the far end)? If so,
>>>>>>> presumably the
>>>>>>> tuner is at the shack end. Or are you feeding it from the shack
>>>>>>> end.
>>>>>>>
>>>>>>>
>>>>>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>>>>>> <dx90@blueyounder.co.uk> writes
>>>>>>>
>>>>>>> --
>>>>>>
>>>>>> Hi Ian,
>>>>>>
>>>>>> Yes its the same. The tuner is at the shack end (house) and I'm
>>>>>> feeding the
>>>>>> antenna with 50 Ohm RG-58 C/U coax at the far end of the garden. If
>>>>>> I
>>>>>> can
>>>>>> get it working well I will replace it with some RG-213 that I have
>>>>>> here. I
>>>>>> put it back up yesterday and started experimenting again.
>>>>>>

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>>>>>>> feeder. This
>>>>>>> is all I had left spare. One side is connected to the wire antenna
>>>>>>> and
>>>>>>> the
>>>>>>> other side left, not connected. The coax is connected to the 300 Ohm
>>>>>>> at the
>>>>>>> bottom and the braid side is now connected to the unconnected side
>>>>>>> of
>>>>>>> the
>>>>>>> 300 Ohm and also to the earth ground rod.
>>>>>>> On 80 the receive is up 2-4 S points compared with the 40m coax
>>>>>>> Centre
>>>>>>> Fed
>>>>>>> Dipole. I have not had chance to get any actual reports on 80 yet.
>>>>>>> Maybe
>>>>>>> this weekend.
>>>>>>>
>>>>>>> 73 Andy
>>>>>> OK, Andy. Noted.
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> like 33 feet, which should resonate at around 7MHz. If it sticks at

> 2.898MHz, something is seriously amiss.
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> Ian

MFJ Analyser ????

Isolate the transmission line (coax) from the antenna, ie; UGLY BALUN, Line Isolator

analyser may have copted a nose full of RF from the braid of feedline, with such a mismatch

should build resonant antennas first, before inserting giant matcher, just to see how much of your RF is dissipated in the match box. TX and RX

5581. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 21:38:05 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <XCz7k.125060$M63.109284@newsfe13.ams2>
Source record: 24703
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

I haven't had time to try a 33" End fed to see if it would tune on 40m .But I did have time to connect a temp 60 feet of wire from the top of the ribbon feeder on the braid side to make a close 63 feet centre fed dipole fed with 300 Ohm feeder and the antenna resonates at 3.780 MHz with a 1.1:1 and the AT1KP backs this reading up. I haven't tried to lengthen or shorten the antenna yet. To see if it changes resonance, but I will do tomorrow.

It can't stay like that unfortunately.

So either my Analyser doesn't like to read End Fed antennas or there something else causing the funny readings. If the Analyser senses the change in frequency tomorrow when I start lengthening the antenna then it must be working OK or there is a fault with it and it can't read End Fed wires correctly. Is this even possible considering its reading everything else correct.

What do you think?

73 Andy

"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message news:hOf8QPN3tpXIFwWv@g3ohx.demon.co.uk...
> In message <LKv7k.21000$aE7.16891@newsfe16.ams2>, Andy
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>>news:bC9yzjW$sjXIFwQb@g3ohx.demon.co.uk...
>>> In message <g3l8gckov3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
>>> writes
>>>>Andy wrote:
>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>> message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>>>>>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
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5582. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 21:42:28 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <2Hz7k.125061$M63.50363@newsfe13.ams2>
Source record: 24704
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

Albert,

I will tomorrow see if I have a spare 21" of coax handy to make one.

73 Andy

"Albert" <weus&co@elsewhere.com> wrote in message
news:M4GdnWo9tvWpWMPVnZ2dnUVZ_uSdnZ2d@posted.internode...
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> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
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>>>> In message <g3l8gckov3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
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5583. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 21:53:59 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <8MPbQTQ3nsXIFwFR@g3ohx.demon.co.uk>
Source record: 24705
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

In message <M4GdnWo9tvWpWMPVnZ2dnUVZ_uSdnZ2d@posted.internode>, Albert
<weus&co@elsewhere.com> writes
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>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>news:hOf8QPN3tpXIFwWv@g3ohx.demon.co.uk...
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>>>>>>>> message
>>>>>>>> news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>>>>>>>> Andy, is your endfed wire the one in your other thread of the 8th
>>>>>>>>> June (ie
>>>>>>>>> the 80 Meter End Fed, fed with coax at the far end)? If so,
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>>>>>>>>>
>>>>>>>>>
>>>>>>>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>>>>>>>> <dx90@blueyounder.co.uk> writes
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>>>> (corresponding to your 40m) is certainly lively enough. On 40m, the
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>> like 33 feet, which should resonate at around 7MHz. If it sticks at
>> 2.898MHz, something is seriously amiss.
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>> --
>> Ian
>
>MFJ Analyser ????
>
>Isolate the transmission line (coax) from the antenna, ie; UGLY BALUN, Line
>Isolator
>
>analyser may have copted a nose full of RF from the braid of feedline,
>with such a mismatch
>
>should build resonant antennas first, before inserting giant matcher, just
>to see how much of your RF is dissipated in the match box. TX and RX
>
Unless I mis-read something, Andy says that he tried the analyser
directly on the antenna (at the antenna feedpoint) - so no coax was
involved in this particular test.

He seems to get a resonance at 2.898MHz, regardless of the length of the
antenna. Could this be because there is a strong (and permanent) RF
signal which is being picked up on the antenna, and is confusing the
analyser?
--
Ian

5584. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 21:56:52 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3mhr5$if9$1@news.albasani.net>
Source record: 24706

jimp@specsol.spam.sux.com wrote:
> John Smith <assemblywizard@gmail.com> wrote:
>> jimp@specsol.spam.sux.com wrote:
>
>>> ...
>>> Can't do simple arithemetic, can you?
>>>
>>> I notice you have zero facts to offer in rebuttal; just frothing
>>> nonsense.
>
>> Interesting ... <yawn>
>
> Yeah, I know, you wouldn't recognize a fact if it hit you in the
> middle of your forehead.
>
>>> BTW, how you can read my post when you've plonked me so many times?
>>>
>>>

>
>> Uh, just psychic I guess! <grin>
>
> Or you are:
>
> A) A lier in addition to being a babbling arm waver.
>
> B) Too clueless to know what "plonk" means or how to actually do it.
>
> C) All of the above.
>
>

I am sorry, I just didn't know who I was dealing with when this began
with you ...

You are the BIGGEST idiot I have ever seen, good going dude ... you make
quite a coffee table conversation piece around here.

Regards,
JS

5585. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 21:59:15 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3mhvk$if9$2@news.albasani.net>
Source record: 24707

jimp@specsol.spam.sux.com wrote:
> Res <res@ausics.net> wrote:
>
>> On Sat, 21 Jun 2008, John Smith wrote:
>
>>> Res wrote:
>>>
>>>> and what do you propose we STORE it on? or do you rather ISP's only keep a
>>>> couple weeks news? We have news going back 5 years in most groups.
>>>> you do the maths since your huge brain is apparently better than us
>>>> amateurs.
>>>>
>>> The 750 gig hd in my laptop was unimaginable but a few short years ago (not
>
>> 750G in laptop.. EH? you really have no clue do you, do you seriously think we
>> are going to use shitty ide or shitty sata drives in our massive arrays?
>
> You don't seriously think the babbling fool has the slightest idea what
> "ide", "sata", or "massive array" mean do you?
>
>

Massive is an interesting word, like in MASSIVE IDIOT--thanks for
providing such an excellent example. <grin>

Regards,
JS

5586. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 22:00:48 UTC
From: Albert <weus&co@elsewhere.com>
Message-ID: <9vudnRYfRZQKVsPVnZ2dnUVZ_gKdnZ2d@posted.internode>
Source record: 24708
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:XCz7k.125060$M63.109284@newsfe13.ams2...
>I haven't had time to try a 33" End fed to see if it would tune on 40m .But
>I did have time to connect a temp 60 feet of wire from the top of the
>ribbon feeder on the braid side to make a close 63 feet centre fed dipole
>fed with 300 Ohm feeder and the antenna resonates at 3.780 MHz with a 1.1:1
>and the AT1KP backs this reading up. I haven't tried to lengthen or shorten
>the antenna yet. To see if it changes resonance, but I will do tomorrow.
>
> It can't stay like that unfortunately.
>
> So either my Analyser doesn't like to read End Fed antennas or there
> something else causing the funny readings. If the Analyser senses the
> change in frequency tomorrow when I start lengthening the antenna then it
> must be working OK or there is a fault with it and it can't read End Fed
> wires correctly. Is this even possible considering its reading everything
> else correct.
>
> What do you think?
>
> 73 Andy
>
>
> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
> news:hOf8QPN3tpXIFwWv@g3ohx.demon.co.uk...
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>>>> In message <g3l8gckov3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
>>>> writes
>>>>>Andy wrote:
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yes tricky, have you done the ZO test on the RG-58 ? using the test gear
at the freqs you discribe, 10 turns rg-213 @ 10 " hence UGLY
less as you go up the band, or 12 x77 type ferrite beads
close proximity Stray RF, CONNECTED OR NOT and direct sunlight on the
meter face (summer for a period of time) are two sure ways to Kill a MFJ
analyser

5587. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 22:17:13 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <tsYfo+Qp9sXIFwFW@g3ohx.demon.co.uk>
Source record: 24709
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

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>>>>>> connected to the earth rod.
>>>>>> What would cause this?
>>>>>> I have no problem using the Analyser with my mobile and centre fed
>>>>>> dipoles.
>>>>>> 73 Andy
>>>>
>>>>>adding a suitably cut wire counterpoise at +% for each band should
>>>>>certainly assist things .
>>>>
>>>> I rather think that Andy can't add counterpoises. A decent earthing
>>>> system
>>>> should work (although additional counterpoises certainly won't do any
>>>> harm).
>>>>
>>>> Re the 2.682MHz resonance, this may be because the coax is completely
>>>> mismatched at lots of frequencies, and what you're seeing this is
>>>> more-or-less a spurious resonance of the coax itself. Do you still get
>>>> it
>>>> with the wire completely disconnected? Even with centre-fed dipoles, you
>>>> often get some very unexpected resonances way off frequency (especially
>>>> of
>>>> you are doing a wideband frequency sweep of the return loss / SWR).
>>>>
>>>> As I said previously, persuading an approximate halfwave endfed (which
>>>> is
>>>> what you have on 40m) to work with a coax feed is certainly not ideal,
>>>> but
>>>> you can usually get it to work fairly well (with all the provisos
>>>> already
>>>> discussed). My setup here is almost twice the size of what you have, so
>>>> the wire feed impedance will be low on 160m and I high on 80m and 40m.
>>>> 80m
>>>> (corresponding to your 40m) is certainly lively enough. On 40m, the

>>>> performance does not seem to be unduly poor compared with the signal
>>>> reports swapped between others on the band.
>>>>
>>>> So, Andy, I simply don't know why your 40m is so poor. Have you tried
>>>> (temporarily) reducing the length to around 33 feet, so that it is a
>>>> quarterwave on 40m? This should give a reasonable match for your coax
>>>> (at
>>>> least, nothing you can't tune out back in the shack). If this is more
>>>> lively than the 64 feet, maybe you can try two wires in parallel. This
>>>> can
>>>> be discussed later if the 33 feet shows promise. If a multiband (and
>>>> possibly compromise) aerial doesn't work well, it's a good idea to try
>>>> something simple which you know SHOULD work. The problem may lie
>>>> elsewhere.
>>>>
>>>> Finally, can I ask you to follow the standard practice of bottom
>>>> posting!
>>>> Cheers...
>>>> --
>>>> Ian
>>>
>>>I've have just connected the Analyser at the feed point on the End fed
>>>wire.
>>>The frequency is now at 2.898 MHz without coax being in line. I have just
>>>tried
>>>to shorten the Antenna again to bring the frequency closer to the 80m
>>>band,
>>>but
>>>it will not adjust from this frequency.
>>
>> Ummmm...
>> Obviously something is wrong. It looks like your analyser is simply
>> telling lies. Could it have a spurious resonance at this frequency?
>>>
>>>What's confusing me is that the End fed wire should be longer than a 1/4
>>>wave on 80
>>>and the frequency that it ended up on, that is now 2.898 would be
>>>about right for the length.
>>
>> A quarterwave on 80m is around 66 feet. Your 63 feet is actually a bit on
>> the short side. Being only 20 feet up may pull the resonance a bit lower,
>> but I doubt is could be anywhere as low as 2.898MHz.
>>
>>>So why won't that frequency change when I start
>>>trimming the wire down in size?
>>>It just isn't making any sense to me. The resonant frequency surely should
>>>change with the altered length.
>>>
>> If shortening the aerial doesn't change the frequency, I don't think your
>> analyser is measuring the aerial. This is indeed a puzzle. As I suggested

>> before, you could go from the sublime to the ridiculous, and try something
>> like 33 feet, which should resonate at around 7MHz. If it sticks at
>> 2.898MHz, something is seriously amiss.
>>
>> --
>> Ian

>I haven't had time to try a 33" End fed to see if it would tune on 40m .But
>I did have time to connect a temp 60 feet of wire from the top of the ribbon
>feeder on the braid side to make a close 63 feet centre fed dipole fed with
>300 Ohm feeder and the antenna resonates at 3.780 MHz with a 1.1:1 and the
>AT1KP backs this reading up. I haven't tried to lengthen or shorten the
>antenna yet. To see if it changes resonance, but I will do tomorrow.
>
>It can't stay like that unfortunately.
>
>So either my Analyser doesn't like to read End Fed antennas or there
>something else causing the funny readings. If the Analyser senses the change
>in frequency tomorrow when I start lengthening the antenna then it must be
>working OK or there is a fault with it and it can't read End Fed wires
>correctly. Is this even possible considering its reading everything else
>correct.
>
>What do you think?
>
>73 Andy
>
Andy, you've gone back to top posting, and this makes it very difficult
to follow the discussion. In newsgroups (unlike emails), you should
really post at the bottom. This is the established convention.

Anyway, it's interesting what you have found out with the dipole
configuration. Presumably, you still have the coax braid and one side of
300 ohm feeder earthed. If so, I would not have expected there to be
quite such a dramatic change of resonance. However, if your earth rods
are totally ineffective (or you have disconnected the earth), you might
expect things to change a lot when you add 'the other half of the
dipole'. If you actually have room to put up an appx 60 foot + 60 foot
dipole, why not consider a G5RV (which, I believe, you have already
tried) or a W3DZZ trap dipole? This would get rid of your earthing
problems.
--
Ian

5588. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 22:35:02 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <df03j5-q25.ln1@mail.specsol.com>
Source record: 24711

John Smith <assemblywizard@gmail.com> wrote:
> jimp@specsol.spam.sux.com wrote:
> > John Smith <assemblywizard@gmail.com> wrote:
> >> jimp@specsol.spam.sux.com wrote:
> >
> >>> ...
> >>> Can't do simple arithemetic, can you?
> >>>
> >>> I notice you have zero facts to offer in rebuttal; just frothing
> >>> nonsense.
> >
> >> Interesting ... <yawn>
> >
> > Yeah, I know, you wouldn't recognize a fact if it hit you in the
> > middle of your forehead.
> >
> >>> BTW, how you can read my post when you've plonked me so many times?
> >>>
> >>>

> >
> >> Uh, just psychic I guess! <grin>
> >
> > Or you are:
> >
> > A) A lier in addition to being a babbling arm waver.
> >
> > B) Too clueless to know what "plonk" means or how to actually do it.
> >
> > C) All of the above.
> >
> >

> I am sorry, I just didn't know who I was dealing with when this began
> with you ...

You wouldn't know who you were dealing with if you were staring in a
mirror talking to yourself.

--
Jim Pennino

Remove .spam.sux to reply.

5589. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 22:35:03 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <5h03j5-q25.ln1@mail.specsol.com>
Source record: 24710

John Smith <assemblywizard@gmail.com> wrote:
> jimp@specsol.spam.sux.com wrote:
> > Res <res@ausics.net> wrote:
> >
> >> On Sat, 21 Jun 2008, John Smith wrote:
> >
> >>> Res wrote:
> >>>
> >>>> and what do you propose we STORE it on? or do you rather ISP's only keep a
> >>>> couple weeks news? We have news going back 5 years in most groups.
> >>>> you do the maths since your huge brain is apparently better than us
> >>>> amateurs.
> >>>>
> >>> The 750 gig hd in my laptop was unimaginable but a few short years ago (not
> >
> >> 750G in laptop.. EH? you really have no clue do you, do you seriously think we
> >> are going to use shitty ide or shitty sata drives in our massive arrays?
> >
> > You don't seriously think the babbling fool has the slightest idea what
> > "ide", "sata", or "massive array" mean do you?
> >
> >

> Massive is an interesting word, like in MASSIVE IDIOT--thanks for
> providing such an excellent example. <grin>

The 7 year old next has more imaginative insults.

--
Jim Pennino

Remove .spam.sux to reply.

5590. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 23:12:45 UTC
From: Wayne <mygarbagecan@verizon.net>
Message-ID: <N%A7k.7426$qb7.5029@trndny08>
Source record: 24712

"Lumpy" <lumpy@digitalcartography.com> wrote in message
news:6c7m43F3dc3hvU1@mid.individual.net...
> Walter Maxwell wrote:
>> Sorry if the posts offended you, Harold, but I'm flabbergasted that
>> Richard had the gall to post his denigration of my paper in the
>> newsgroup.
>
> I'd simply like to know -
SNIP
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com
>
>
If you did a google on the author's name and perhaps the word "reflections",
you might get the answers to your questions. You might also discover that
it is related to antenna systems.

5591. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 23:33:39 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <1093612d-5253-49a3-8099-0937f81fea7e@p25g2000hsf.googlegroups.com>
Source record: 24713

On Jun 22, 6:12 pm, "Wayne" <mygarbage...@verizon.net> wrote:
> "Lumpy" <lu...@digitalcartography.com> wrote in message
>
> news:6c7m43F3dc3hvU1@mid.individual.net...> Walter Maxwell wrote:
> >> Sorry if the posts offended you, Harold, but I'm flabbergasted that
> >> Richard had the gall to post his denigration of my paper in the
> >> newsgroup.
>
> > I'd simply like to know -
> SNIP
>
> > Craig 'Lumpy' Lemke
>
> >www.n0eq.com
>
> If you did a google on the author's name and perhaps the word "reflections",
> you might get the answers to your questions. You might also discover that
> it is related to antenna systems.
Yup. That is correct. this is the third time he has published this
book in the hope of finally getting it right
but apparently it is discredited before publishing by the antenna
group! expert

5592. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 23:52:31 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <qBB7k.233$1V2.53@newsfe07.lga>
Source record: 24714

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:1093612d-5253-49a3-8099-0937f81fea7e@p25g2000hsf.googlegroups.com...
> On Jun 22, 6:12 pm, "Wayne" <mygarbage...@verizon.net> wrote:
> > "Lumpy" <lu...@digitalcartography.com> wrote in message
> >
> > news:6c7m43F3dc3hvU1@mid.individual.net...> Walter Maxwell wrote:
> > >> Sorry if the posts offended you, Harold, but I'm flabbergasted that
> > >> Richard had the gall to post his denigration of my paper in the
> > >> newsgroup.
> >
> > > I'd simply like to know -
> > SNIP
> >
> > > Craig 'Lumpy' Lemke
> >
> > >www.n0eq.com
> >
> > If you did a google on the author's name and perhaps the word "reflections",
> > you might get the answers to your questions. You might also discover that
> > it is related to antenna systems.
> Yup. That is correct. this is the third time he has published this
> book in the hope of finally getting it right
> but apparently it is discredited before publishing by the antenna
> group! expert

Art, I wish you'd get your facts straight before you post. To set the record straight the 1st edition of Reflections sold out at 10,000 copies, the 2nd edition at 3,000 copies, while the 3rd edition hasn't been published yet. Nothing about anything pertaining to Reflections has been discredited. Who told you it has been? If you'd like to look at a few of the chapters go to my web page at www.w2du.com.

Walt

5593. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-22 23:56:05 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6c8754F3fjqfsU1@mid.individual.net>
Source record: 24715

Wayne wrote:

> If you did a google on the author's name and perhaps the word
> "reflections", you might get the answers to your questions. You
> might also discover that it is related to antenna systems.

I don't care who the author thinks he is.

But if he posts to a public forum, asking for critique,
then getting pissed because someone
"had the gall to post his denigration of my paper"
then I guess he's just not as important as he,
and you, think he is.

Craig 'Lumpy' Lemke

www.n0eq.com

5594. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 00:01:40 UTC
From: Albert <weus&co@elsewhere.com>
Message-ID: <8dWdnaOiFNZiesPVnZ2dnUVZ_hSdnZ2d@posted.internode>
Source record: 24716
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

```
"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
news:8MPbQTQ3nsXIFwFR@g3ohx.demon.co.uk...
> In message <M4GdnWo9tvWpWMPVnZ2dnUVZ_uSdnZ2d@posted.internode>, Albert
> <weus&co@elsewhere.com> writes
>>
>>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>>news:hOf8QPN3tpXIFwWv@g3ohx.demon.co.uk...
>>> In message <LKv7k.21000$aE7.16891@newsfe16.ams2>, Andy
>>> <dx90@blueyounder.co.uk> writes
>>>>
>>>>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>>>>news:bC9yzjW$sjXIFwQb@g3ohx.demon.co.uk...
>>>>> In message <g3l8gc$kov$3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
>>>>> writes
>>>>>>Andy wrote:
>>>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>>>> message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>>>>>>>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
>>>>>>>> <dx90@blueyounder.co.uk> writes
>>>>>>>>
>>>>>>>>
>>>>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>>>>> message
>>>>>>>> news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>>>>>>>> Andy, is your endfed wire the one in your other thread of the 8th
>>>>>>>>> June (ie
>>>>>>>>> the 80 Meter End Fed, fed with coax at the far end)? If so,
>>>>>>>>> presumably the
>>>>>>>>> tuner is at the shack end. Or are you feeding it from the shack
>>>>>>>>> end.
>>>>>>>>>
>>>>>>>>>
>>>>>>>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>>>>>>>> <dx90@blueyounder.co.uk> writes
>>>>>>>>>
>>>>>>>>> --
>>>>>>>>
>>>>>>>> Hi Ian,
>>>>>>>>
>>>>>>>> Yes its the same. The tuner is at the shack end (house) and I'm
>>>>>>>> feeding the
>>>>>>>> antenna with 50 Ohm RG-58 C/U coax at the far end of the garden.
>>>>>>>> If
```

>>>>>>>>> I
>>>>>>>>> can
>>>>>>>>> get it working well I will replace it with some RG-213 that I have
>>>>>>>>> here. I
>>>>>>>>> put it back up yesterday and started experimenting again.
>>>>>>>>>
>>>>>>>>> The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon
>>>>>>>>> feeder. This
>>>>>>>>> is all I had left spare. One side is connected to the wire antenna
>>>>>>>>> and
>>>>>>>>> the
>>>>>>>>> other side left, not connected. The coax is connected to the 300
>>>>>>>>> Ohm
>>>>>>>>> at the
>>>>>>>>> bottom and the braid side is now connected to the unconnected side
>>>>>>>>> of
>>>>>>>>> the
>>>>>>>>> 300 Ohm and also to the earth ground rod.
>>>>>>>>> On 80 the receive is up 2-4 S points compared with the 40m coax
>>>>>>>>> Centre
>>>>>>>>> Fed
>>>>>>>>> Dipole. I have not had chance to get any actual reports on 80 yet.
>>>>>>>>> Maybe
>>>>>>>>> this weekend.
>>>>>>>>>
>>>>>>>>> 73 Andy
>>>>>>>> OK, Andy. Noted.
>>>>>>>>
>>>>>>>> I don't know if you will really improve things by using the 15 foot
>>>>>>>> of
>>>>>>>> 300 ohm feeder. It's a sort of a zepp, but with one side of the
>>>>>>>> feeder
>>>>>>>> earthed. I would try disconnecting the earthed ('unconnected') side
>>>>>>>> from earth / coax braid. You can either leave it floating, or
>>>>>>>> connect
>>>>>>>> it to the coax inner. It will then be approximately a quarterwave
>>>>>>>> on
>>>>>>>> 20m, fed in parallel with the long wire.
>>>>>>>>
>>>>>>>> Don't read too much into the excellent SWR you're getting with the
>>>>>>>> tuner. That's what the TX sees, but the tuner can't affect the SWR
>>>>>>>> on
>>>>>>>> the aerial feeder. If the coax SWR is sky high (and it can be if
>>>>>>>> the
>>>>>>>> impedance at aerial feed point is high), the coax losses will be
>>>>>>>> much
>>>>>>>> more that you would get compared with when it is matched
>>>>>>>> correctly.
>>>>>>>> You only get away with it by using the lowest-loss you can find,
>>>>>>>> and

>>>>>>>> keeping the coax as short as possible.
>>>>>>>>
>>>>>>>> I'm not surprised that 80m on the endfed is a bit better than the
>>>>>>>> 40m
>>>>>>>> dipole. But what's 40m like on the endfed? That's when the feed
>>>>>>>> impedance (and coax SWR) will be very high, and where the RG-213
>>>>>>>> might
>>>>>>>> perform better noticeably better than the RG-58.
>>>>>>>>
>>>>>>>> As I think I said before, although I am an advocate of simply using
>>>>>>>> coax (regardless), after all these years I am considering in
>>>>>>>> investing
>>>>>>>> in something like a SG230 remote tuner for the far end of the
>>>>>>>> coax.
>>>>>>>> -- Ian
>>>>>>>>
>>>>>>>>
>>>>>>>> Ian,
>>>>>>>> I'll have to do some experimenting with the 300 Ohm feeder and see
>>>>>>>> what
>>>>>>>> happens. The End Fed on 40m is very poor indeed. I would say
>>>>>>>> unusable
>>>>>>>> like it is.
>>>>>>>> The End Fed wire at the moment is resonate on 2. 682 MHz.
>>>>>>>> The funny thing is that when I cut the wire to bring the End Fed to
>>>>>>>> resonate on 80m, no matter how much wire I cut off it doesn't
>>>>>>>> really
>>>>>>>> move from the 2.682 MHz. I have tried this with and with out the
>>>>>>>> ribbon
>>>>>>>> feeder being in place and with coax connected direct and the braid
>>>>>>>> connected to the earth rod.
>>>>>>>> What would cause this?
>>>>>>>> I have no problem using the Analyser with my mobile and centre fed
>>>>>>>> dipoles.
>>>>>>>> 73 Andy
>>>>>>
>>>>>>>adding a suitably cut wire counterpoise at +% for each band should
>>>>>>>certainly assist things .
>>>>>>
>>>>>> I rather think that Andy can't add counterpoises. A decent earthing
>>>>>> system
>>>>>> should work (although additional counterpoises certainly won't do any
>>>>>> harm).
>>>>>>
>>>>>> Re the 2.682MHz resonance, this may be because the coax is completely
>>>>>> mismatched at lots of frequencies, and what you're seeing this is
>>>>>> more-or-less a spurious resonance of the coax itself. Do you still get
>>>>>> it
>>>>>> with the wire completely disconnected? Even with centre-fed dipoles,
>>>>>> you

>>>>> often get some very unexpected resonances way off frequency
>>>>> (especially
>>>>> of
>>>>> you are doing a wideband frequency sweep of the return loss / SWR).
>>>>>
>>>>> As I said previously, persuading an approximate halfwave endfed (which
>>>>> is
>>>>> what you have on 40m) to work with a coax feed is certainly not ideal,
>>>>> but
>>>>> you can usually get it to work fairly well (with all the provisos
>>>>> already
>>>>> discussed). My setup here is almost twice the size of what you have,
>>>>> so
>>>>> the wire feed impedance will be low on 160m and I high on 80m and 40m.
>>>>> 80m
>>>>> (corresponding to your 40m) is certainly lively enough. On 40m, the
>>>>> performance does not seem to be unduly poor compared with the signal
>>>>> reports swapped between others on the band.
>>>>>
>>>>> So, Andy, I simply don't know why your 40m is so poor. Have you tried
>>>>> (temporarily) reducing the length to around 33 feet, so that it is a
>>>>> quarterwave on 40m? This should give a reasonable match for your coax
>>>>> (at
>>>>> least, nothing you can't tune out back in the shack). If this is more
>>>>> lively than the 64 feet, maybe you can try two wires in parallel. This
>>>>> can
>>>>> be discussed later if the 33 feet shows promise. If a multiband (and
>>>>> possibly compromise) aerial doesn't work well, it's a good idea to try
>>>>> something simple which you know SHOULD work. The problem may lie
>>>>> elsewhere.
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>>>>> Finally, can I ask you to follow the standard practice of bottom
>>>>> posting!
>>>>> Cheers...
>>>>> --
>>>>> Ian
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>>>>I've have just connected the Analyser at the feed point on the End fed
>>>>wire.
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>>>>just
>>>>tried
>>>>to shorten the Antenna again to bring the frequency closer to the 80m
>>>>band,
>>>>but
>>>>it will not adjust from this frequency.
>>>
>>> Ummmm...
>>> Obviously something is wrong. It looks like your analyser is simply
>>> telling lies. Could it have a spurious resonance at this frequency?

>>>>
>>>>What's confusing me is that the End fed wire should be longer than a 1/4
>>>>wave on 80
>>>>and the frequency that it ended up on, that is now 2.898 would be
>>>>about right for the length.
>>>
>>> A quarterwave on 80m is around 66 feet. Your 63 feet is actually a bit
>>> on
>>> the short side. Being only 20 feet up may pull the resonance a bit
>>> lower,
>>> but I doubt is could be anywhere as low as 2.898MHz.
>>>
>>>>So why won't that frequency change when I start
>>>>trimming the wire down in size?
>>>>It just isn't making any sense to me. The resonant frequency surely
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>>>>change with the altered length.
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>>> If shortening the aerial doesn't change the frequency, I don't think
>>> your
>>> analyser is measuring the aerial. This is indeed a puzzle. As I
>>> suggested
>>> before, you could go from the sublime to the ridiculous, and try
>>> something
>>> like 33 feet, which should resonate at around 7MHz. If it sticks at
>>> 2.898MHz, something is seriously amiss.
>>>
>>> --
>>> Ian
>>
>>MFJ Analyser ????
>>
>>Isolate the transmission line (coax) from the antenna, ie; UGLY BALUN,
>>Line
>>Isolator
>>
>>analyser may have copted a nose full of RF from the braid of feedline,
>>with such a mismatch
>>
>>should build resonant antennas first, before inserting giant matcher, just
>>to see how much of your RF is dissipated in the match box. TX and RX
>>
> Unless I mis-read something, Andy says that he tried the analyser directly
> on the antenna (at the antenna feedpoint) - so no coax was involved in
> this particular test.
>
> He seems to get a resonance at 2.898MHz, regardless of the length of the
> antenna. Could this be because there is a strong (and permanent) RF signal
> which is being picked up on the antenna, and is confusing the analyser?
> --

> Ian

Yes , could be a product of a Broadcast station ?
ok on the NO COAX, unless damage has been done.

tricky, will keep you off the streets, and out of the pubs Andy,
or perhaps in the pubs full as a boot if you do not get some answers soon
good luck

5595. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 00:08:23 UTC
From: atec77 <atec77NOSPAM@hotmail.com>
Message-ID: <g3mphp$3ij$1@aioe.org>
Source record: 24717
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

```
Ian Jackson wrote:
> In message <M4GdnWo9tvWpWMPVnZ2dnUVZ_uSdnZ2d@posted.internode>, Albert
> <weus&co@elsewhere.com> writes
>>
>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>> news:hOf8QPN3tpXIFwWv@g3ohx.demon.co.uk...
>>> In message <LKv7k.21000$aE7.16891@newsfe16.ams2>, Andy
>>> <dx90@blueyounder.co.uk> writes
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>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>>>> news:bC9yzjW$sjXIFwQb@g3ohx.demon.co.uk...
>>>>> In message <g3l8gc$kov$3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
>>>>> writes
>>>>>> Andy wrote:
>>>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>>>> message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>>>>>>>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
>>>>>>>> <dx90@blueyounder.co.uk> writes
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>>>>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
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>>>>>>>>> Andy, is your endfed wire the one in your other thread of the 8th
>>>>>>>>> June (ie
>>>>>>>>> the 80 Meter End Fed, fed with coax at the far end)? If so,
>>>>>>>>> presumably the
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>>>>>>>>> end.
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>>>>>>>> feeding the
>>>>>>>> antenna with 50 Ohm RG-58 C/U coax at the far end of the
>>>>>>>> garden. If
>>>>>>>> I
```

>>>>>>>>> can
>>>>>>>>> get it working well I will replace it with some RG-213 that I have
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>>>>>>>>> put it back up yesterday and started experimenting again.
>>>>>>>>>
>>>>>>>>> The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon
>>>>>>>>> feeder. This
>>>>>>>>> is all I had left spare. One side is connected to the wire antenna
>>>>>>>>> and
>>>>>>>>> the
>>>>>>>>> other side left, not connected. The coax is connected to the
>>>>>>>>> 300 Ohm
>>>>>>>>> at the
>>>>>>>>> bottom and the braid side is now connected to the unconnected side
>>>>>>>>> of
>>>>>>>>> the
>>>>>>>>> 300 Ohm and also to the earth ground rod.
>>>>>>>>> On 80 the receive is up 2-4 S points compared with the 40m coax
>>>>>>>>> Centre
>>>>>>>>> Fed
>>>>>>>>> Dipole. I have not had chance to get any actual reports on 80 yet.
>>>>>>>>> Maybe
>>>>>>>>> this weekend.
>>>>>>>>>
>>>>>>>>> 73 Andy
>>>>>>>> OK, Andy. Noted.
>>>>>>>>
>>>>>>>> I don't know if you will really improve things by using the 15 foot
>>>>>>>> of
>>>>>>>> 300 ohm feeder. It's a sort of a zepp, but with one side of the
>>>>>>>> feeder
>>>>>>>> earthed. I would try disconnecting the earthed ('unconnected') side
>>>>>>>> from earth / coax braid. You can either leave it floating, or
>>>>>>>> connect
>>>>>>>> it to the coax inner. It will then be approximately a
>>>>>>>> quarterwave on
>>>>>>>> 20m, fed in parallel with the long wire.
>>>>>>>>
>>>>>>>> Don't read too much into the excellent SWR you're getting with the
>>>>>>>> tuner. That's what the TX sees, but the tuner can't affect the SWR
>>>>>>>> on
>>>>>>>> the aerial feeder. If the coax SWR is sky high (and it can be
>>>>>>>> if the
>>>>>>>> impedance at aerial feed point is high), the coax losses will be
>>>>>>>> much
>>>>>>>> more that you would get compared with when it is matched
>>>>>>>> correctly.
>>>>>>>> You only get away with it by using the lowest-loss you can
>>>>>>>> find, and
>>>>>>>> keeping the coax as short as possible.

>>>>>>>>
>>>>>>>> I'm not surprised that 80m on the endfed is a bit better than
>>>>>>>> the 40m
>>>>>>>> dipole. But what's 40m like on the endfed? That's when the feed
>>>>>>>> impedance (and coax SWR) will be very high, and where the RG-213
>>>>>>>> might
>>>>>>>> perform better noticeably better than the RG-58.
>>>>>>>>
>>>>>>>> As I think I said before, although I am an advocate of simply using
>>>>>>>> coax (regardless), after all these years I am considering in
>>>>>>>> investing
>>>>>>>> in something like a SG230 remote tuner for the far end of the
>>>>>>>> coax.
>>>>>>>> -- Ian
>>>>>>>>
>>>>>>>
>>>>>>> Ian,
>>>>>>> I'll have to do some experimenting with the 300 Ohm feeder and see
>>>>>>> what
>>>>>>> happens. The End Fed on 40m is very poor indeed. I would say
>>>>>>> unusable
>>>>>>> like it is.
>>>>>>> The End Fed wire at the moment is resonate on 2. 682 MHz.
>>>>>>> The funny thing is that when I cut the wire to bring the End Fed to
>>>>>>> resonate on 80m, no matter how much wire I cut off it doesn't
>>>>>>> really
>>>>>>> move from the 2.682 MHz. I have tried this with and with out the
>>>>>>> ribbon
>>>>>>> feeder being in place and with coax connected direct and the braid
>>>>>>> connected to the earth rod.
>>>>>>> What would cause this?
>>>>>>> I have no problem using the Analyser with my mobile and centre fed
>>>>>>> dipoles.
>>>>>>> 73 Andy
>>>>>
>>>>>> adding a suitably cut wire counterpoise at +% for each band should
>>>>>> certainly assist things .
>>>>>
>>>>> I rather think that Andy can't add counterpoises. A decent earthing
>>>>> system
>>>>> should work (although additional counterpoises certainly won't do any
>>>>> harm).
>>>>>
>>>>> Re the 2.682MHz resonance, this may be because the coax is completely
>>>>> mismatched at lots of frequencies, and what you're seeing this is
>>>>> more-or-less a spurious resonance of the coax itself. Do you still get
>>>>> it
>>>>> with the wire completely disconnected? Even with centre-fed
>>>>> dipoles, you
>>>>> often get some very unexpected resonances way off frequency

>>>>> (especially
>>>>> of
>>>>> you are doing a wideband frequency sweep of the return loss / SWR).
>>>>>
>>>>> As I said previously, persuading an approximate halfwave endfed (which
>>>>> is
>>>>> what you have on 40m) to work with a coax feed is certainly not ideal,
>>>>> but
>>>>> you can usually get it to work fairly well (with all the provisos
>>>>> already
>>>>> discussed). My setup here is almost twice the size of what you
>>>>> have, so
>>>>> the wire feed impedance will be low on 160m and I high on 80m and 40m.
>>>>> 80m
>>>>> (corresponding to your 40m) is certainly lively enough. On 40m, the
>>>>> performance does not seem to be unduly poor compared with the signal
>>>>> reports swapped between others on the band.
>>>>>
>>>>> So, Andy, I simply don't know why your 40m is so poor. Have you tried
>>>>> (temporarily) reducing the length to around 33 feet, so that it is a
>>>>> quarterwave on 40m? This should give a reasonable match for your coax
>>>>> (at
>>>>> least, nothing you can't tune out back in the shack). If this is more
>>>>> lively than the 64 feet, maybe you can try two wires in parallel. This
>>>>> can
>>>>> be discussed later if the 33 feet shows promise. If a multiband (and
>>>>> possibly compromise) aerial doesn't work well, it's a good idea to try
>>>>> something simple which you know SHOULD work. The problem may lie
>>>>> elsewhere.
>>>>>
>>>>> Finally, can I ask you to follow the standard practice of bottom
>>>>> posting!
>>>>> Cheers...
>>>>> --
>>>>> Ian
>>>>
>>>> I've have just connected the Analyser at the feed point on the End fed
>>>> wire.
>>>> The frequency is now at 2.898 MHz without coax being in line. I have
>>>> just
>>>> tried
>>>> to shorten the Antenna again to bring the frequency closer to the 80m
>>>> band,
>>>> but
>>>> it will not adjust from this frequency.
>>>
>>> Ummmm...
>>> Obviously something is wrong. It looks like your analyser is simply
>>> telling lies. Could it have a spurious resonance at this frequency?
>>>>

>>>> What's confusing me is that the End fed wire should be longer than a
>>>> 1/4
>>>> wave on 80
>>>> and the frequency that it ended up on, that is now 2.898 would be
>>>> about right for the length.
>>>
>>> A quarterwave on 80m is around 66 feet. Your 63 feet is actually a
>>> bit on
>>> the short side. Being only 20 feet up may pull the resonance a bit
>>> lower,
>>> but I doubt is could be anywhere as low as 2.898MHz.
>>>
>>>> So why won't that frequency change when I start
>>>> trimming the wire down in size?
>>>> It just isn't making any sense to me. The resonant frequency surely
>>>> should
>>>> change with the altered length.
>>>>
>>> If shortening the aerial doesn't change the frequency, I don't think
>>> your
>>> analyser is measuring the aerial. This is indeed a puzzle. As I
>>> suggested
>>> before, you could go from the sublime to the ridiculous, and try
>>> something
>>> like 33 feet, which should resonate at around 7MHz. If it sticks at
>>> 2.898MHz, something is seriously amiss.
>>>
>>> --
>>> Ian
>>
>> MFJ Analyser ????
>>
>> Isolate the transmission line (coax) from the antenna, ie; UGLY BALUN,
>> Line
>> Isolator
>>
>> analyser may have copted a nose full of RF from the braid of feedline,
>> with such a mismatch
>>
>> should build resonant antennas first, before inserting giant matcher,
>> just
>> to see how much of your RF is dissipated in the match box. TX and RX
>>
> Unless I mis-read something, Andy says that he tried the analyser
> directly on the antenna (at the antenna feedpoint) - so no coax was
> involved in this particular test.
>
> He seems to get a resonance at 2.898MHz, regardless of the length of the
> antenna. Could this be because there is a strong (and permanent) RF
> signal which is being picked up on the antenna, and is confusing the

> analyser?
or a faulty fitting , time to check things with a multimeter to
eliminate a short

5596. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 00:29:30 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3mqpa$4rd$1@news.albasani.net>
Source record: 24718

Res wrote:

>
> The best way to deal with that troll is ignore it, oh and of course if
> you have root to your news server, you add his nntp providor into
> cleanfeed and send his service providor a notice of such and why ;)
>
>

Excellent advice. Consider yourself ignored ...

P.S. providor = provider, just for your future reference ...

Regards,
JS

5597. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 00:32:09 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3mqu9$4rd$2@news.albasani.net>
Source record: 24719

jimp@specsol.spam.sux.com wrote:

> ...
> You wouldn't know who you were dealing with if you were staring in a
> mirror talking to yourself.
>
>

I don't believe I have ever seen another with more examples of how to be
an idiot at his/her disposal, amazing ... I suppose your demonstration
of being a troll is adequate--however, I have seen better.

Regards,
JS

5598. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 00:33:46 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3mr1a$4rd$3@news.albasani.net>
Source record: 24720

jimp@specsol.spam.sux.com wrote:

> ...
>> Massive is an interesting word, like in MASSIVE IDIOT--thanks for
>> providing such an excellent example. <grin>
>
> The 7 year old next has more imaginative insults.
>
>

Sorry you took that the wrong way, I was giving you a complement. <grin>

Regards,
JS

5599. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 00:45:02 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <a083j5-tgo.ln1@mail.specsol.com>
Source record: 24721

John Smith <assemblywizard@gmail.com> wrote:
> jimp@specsol.spam.sux.com wrote:

> > ...
> >> Massive is an interesting word, like in MASSIVE IDIOT--thanks for
> >> providing such an excellent example. <grin>
> >
> > The 7 year old next has more imaginative insults.
> >
> >

> Sorry you took that the wrong way, I was giving you a complement. <grin>

Do you go through a lot of keyboards sitting there grinning and drooling
on them?

--
Jim Pennino

Remove .spam.sux to reply.

5600. Re: BIG Brothers' attack on USENET--i.e. our forum here ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 00:45:03 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <3483j5-tgo.ln1@mail.specsol.com>
Source record: 24722

John Smith <assemblywizard@gmail.com> wrote:
> jimp@specsol.spam.sux.com wrote:

> > ...
> > You wouldn't know who you were dealing with if you were staring in a
> > mirror talking to yourself.
> >
> >

> I don't believe I have ever seen another with more examples of how to be
> an idiot at his/her disposal, amazing ... I suppose your demonstration
> of being a troll is adequate--however, I have seen better.

You shouldn't be using big words whose meaning you don't know, like
"troll".

--
Jim Pennino

Remove .spam.sux to reply.

5601. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 01:26:10 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <53f6c085-47af-4de0-9c7b-c8d7b844a231@l42g2000hsc.googlegroups.com>
Source record: 24723

On Jun 22, 6:52 pm, "Walter Maxwell" <w...@w2du.com> wrote:
> "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> news:1093612d-5253-49a3-8099-0937f81fea7e@p25g2000hsf.googlegroups.com...
>
>
>
> > On Jun 22, 6:12 pm, "Wayne" <mygarbage...@verizon.net> wrote:
> > > "Lumpy" <lu...@digitalcartography.com> wrote in message
>
> > >news:6c7m43F3dc3hvU1@mid.individual.net...> Walter Maxwell wrote:
> > > > >> Sorry if the posts offended you, Harold, but I'm flabbergasted that
> > > > >> Richard had the gall to post his denigration of my paper in the
> > > > >> newsgroup.
>
> > > > > I'd simply like to know -
> > > SNIP
>
> > > > > Craig 'Lumpy' Lemke
>
> > > > >www.n0eq.com
>
> > > > If you did a google on the author's name and perhaps the word "reflections",
> > > > you might get the answers to your questions. You might also discover that
> > > > it is related to antenna systems.
> > Yup. That is correct. this is the third time he has published this
> > book in the hope of finally getting it right
> > but apparently it is discredited before publishing by the antenna
> > group! expert
>
> Art, I wish you'd get your facts straight before you post. To set the record
> straight the 1st edition of Reflections sold out at 10,000 copies, the 2nd
> edition at 3,000 copies, while the 3rd edition hasn't been published yet.
> Nothing about anything pertaining to Reflections has been discredited. Who told
> you it has been? If you'd like to look at a few of the chapters go to my web
> page atwww.w2du.com.
>
> Walt

I have your book and I don't think much of it. With respect to facts
Richard lied about the mathematical connection between Gauss and
Maxwell. Most of you believed him without checking the facts and I was
dissed. Then a doctor Davis came aboard and showed you where you were
wrong but now everybody was committed and dissed him also. Yes, I was

discredited on a lie , which he admitted to after I was victimised by all. Now he has discredited your book and you on the basis of what you call" lies". I got no apologies and neither did Dr Davis
and the lie you were part of goes on to this day. You ask for facts you got them and they are still in the archives. You are calling the kettle black. Get back to antennas and stop promoting yourself and your third book which you claim is now right.You at least got some reasons as to why your postings were dissed, for my troubles I got nothing.It is evident that the majority of this newsgro0up do not like the move under way to change the subject of antennas so why not try to get along with your fellow posters
or move on?

5602. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 01:48:17 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <c41e6ceb-2307-4010-8c55-97ad02bb8ff4@p25g2000hsf.googlegroups.com>
Source record: 24724

On Jun 22, 8:26 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Jun 22, 6:52 pm, "Walter Maxwell" <w...@w2du.com> wrote:
>
>
>
> > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
>
> >news:1093612d-5253-49a3-8099-0937f81fea7e@p25g2000hsf.googlegroups.com...
>
> > > On Jun 22, 6:12 pm, "Wayne" <mygarbage...@verizon.net> wrote:
> > > > "Lumpy" <lu...@digitalcartography.com> wrote in message
>
> > > >news:6c7m43F3dc3hvU1@mid.individual.net...> Walter Maxwell wrote:
> > > > >> Sorry if the posts offended you, Harold, but I'm flabbergasted that
> > > > >> Richard had the gall to post his denigration of my paper in the
> > > > >> newsgroup.
>
> > > > > I'd simply like to know -
> > > > SNIP
>
> > > > > Craig 'Lumpy' Lemke
>
> > > > >www.n0eq.com
>
> > > > If you did a google on the author's name and perhaps the word "reflections",
> > > > you might get the answers to your questions. You might also discover that
> > > > it is related to antenna systems.
> > > Yup. That is correct. this is the third time he has published this
> > > book in the hope of finally getting it right
> > > but apparently it is discredited before publishing by the antenna
> > > group! expert
>
> > Art, I wish you'd get your facts straight before you post. To set the record
> > straight the 1st edition of Reflections sold out at 10,000 copies, the 2nd
> > edition at 3,000 copies, while the 3rd edition hasn't been published yet.
> > Nothing about anything pertaining to Reflections has been discredited. Who told
> > you it has been? If you'd like to look at a few of the chapters go to my web
> > page atwww.w2du.com.
>
> > Walt
>
> I have your book and I don't think much of it. With respect to facts
> Richard lied about the mathematical connection between Gauss and
> Maxwell. Most of you believed him without checking the facts and I was

> dissed. Then a doctor Davis came aboard and showed you where you were
> wrong but now everybody was committed and dissed him also. Yes, I was
> discredited on a lie , which he admitted to after I was victimised by
> all. Now he has discredited your book and you on the basis of what you
> call" lies". I got no apologies and neither did Dr Davis
> and the lie you were part of goes on to this day. You ask for facts
> you got them and they are still in the archives. You are calling the
> kettle black. Get back to antennas and stop promoting yourself and
> your third book which you claim is now right.You at least got some
> reasons as to why your postings were dissed, for my troubles I got
> nothing.It is evident that the majority of this newsgro0up do not like
> the move under way to change the subject of antennas so why not try to
> get along with your fellow posters
> or move on?

By the way Walt you never came forward with the math to prove me wrong preffering a hatchet job instead of doing the math. You never apologised either
on continuing what I am sure you knew was a lie because of your continual position
of being superior in mathematics. The position you took makes you an accessory in the lie
because you knew it was a lie. You and your book have been dissed even if you can prove that Richard lied again
but after the fact it is difficult to put things right. Instead of telling me to read your page why not read
unwinantennas,com/ and the antenna group archives plus your own history on postings to refresh yourself on the "facts" that you wish for.
If you wish to make a rebuttal on the Gauss/Maxwell question be my guest and point out why you disagreed even in the face of Richard stating that he lied or are you committed to deeply now to reverse course instead of revealing the truth because it may hurt?

5603. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 02:47:09 UTC
From: Walter Maxwell <walt@w2du.com>
Message-ID: <89E7k.740$b%3.140@newsfe05.lga>
Source record: 24725

> By the way Walt you never came forward with the math to prove me wrong
> preffering a hatchet job instead of doing the math. You never
> apologised either
> on continuing what I am sure you knew was a lie because of your
> continual position
> of being superior in mathematics. The position you took makes you an
> accessory in the lie
> because you knew it was a lie. You and your book have been dissed even
> if you can prove that Richard lied again
> but after the fact it is difficult to put things right. Instead of
> telling me to read your page why not read
> unwinantennas,com/ and the antenna group archives plus your own
> history on postings to refresh yourself on the "facts" that you wish
> for.
> If you wish to make a rebuttal on the Gauss/Maxwell question be my
> guest and point out why you disagreed even in the face of Richard
> stating that he lied or are you committed to deeply now to reverse
> course instead of revealing the truth because it may hurt?

Art, I'm not a constant participant on the newsgroup, I've missed it a lot of the time. So I don't know a Dr. Davis, nor do I know anything about a lie. And what position do you think I took that would make me an accessory to a lie that I know nothing about? I read quite some time ago that there was a discussion concerning Gauss and Maxwell, but I didn't get into it, so I don't even know who were discussing them. So how could I be in a position to make a rebuttal on the Gauss/Maxwell question? You say I disagreed in the face of Richard stating that he lied? Sorry Art, you have me confused with someone else, because I know nothing about what you're talking about.

Walt, W2DU

5604. Re: Chapter 19A from "Reflections III" - Step 13 response

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 02:48:56 UTC
From: gb <w9nogbspam@arrlspamno.net>
Message-ID: <aeadnYbYnZe7ksLVnZ2dnUVZ_jidnZ2d@comcast.com>
Source record: 24726

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:i4uq54hirtlfcbblmv6k3j759q9tglla71@4ax.com...
> Step 13.
> It is thus evident that the amplifier has returned to delivering the
> original power, 100 watts into the previously mismatched
> complex-impedance load, now conjugately matched, the same as when it
> was delivering 100 watts into the 50-ohm non-reactive load. But the
> reflected power, 30.6 watts, remains in the coax, adding to the 100
> watts delivered by the amplifier to establish the 130.6 watts of
> forward power, proving that it does not enter the amplifier to
> dissipate and heat the network or the tube.
>
> Points in response:
> 1. The power accounting is wholly lacking in accuracy implications as
> previously noted.
> 2. That 30.6W remains in the coax has been through the intervention
> of the amplifier operator's tuning. The reflection of power from the
> original mismatch clearly impacted the dissipation of the finals
> without such intervention. Intervention was a necessity of preventing
> the untoward, catastrophic failure of the amplifier (in a general
> sense for all possible load reflection angles).
> 3. The 30.6W remaining in the coax is a function of tuning that cast
> the issues of dissipation out of the tube, and moved the line of
> dissipation towards the load (actually, into the tuning elements of
> the plate and the line itself). This is the whole raison d'etre of
> tuning the grid/plate or matching the load.
>
> 73's
> Richard Clark, KB7QHC

Who the hell is richard clark, and who cares?

5605. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 04:28:18 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <0d4cb10e-4931-4c04-8c17-47d937c6f50b@l42g2000hsc.googlegroups.com>
Source record: 24727

On Jun 22, 9:47 pm, "Walter Maxwell" <w...@w2du.com> wrote:
> > By the way Walt you never came forward with the math to prove me wrong
> > preffering a hatchet job instead of doing the math. You never
> > apologised either
> > on continuing what I am sure you knew was a lie because of your
> > continual position
> > of being superior in mathematics. The position you took makes you an
> > accessory in the lie
> > because you knew it was a lie. You and your book have been dissed even
> > if you can prove that Richard lied again
> > but after the fact it is difficult to put things right. Instead of
> > telling me to read your page why not read
> > unwinantennas,com/ and the antenna group archives plus your own
> > history on postings to refresh yourself on the "facts" that you wish
> > for.
> > If you wish to make a rebuttal on the Gauss/Maxwell question be my
> > guest and point out why you disagreed even in the face of Richard
> > stating that he lied or are you committed to deeply now to reverse
> > course instead of revealing the truth because it may hurt?
>
> Art, I'm not a constant participant on the newsgroup, I've missed it a lot of
> the time. So I don't know a Dr. Davis, nor do I know anything about a lie. And
> what position do you think I took that would make me an accessory to a lie that
> I know nothing about? I read quite some time ago that there was a discussion
> concerning Gauss and Maxwell, but I didn't get into it, so I don't even know
> who were discussing them. So how could I be in a position to make a rebuttal on
> the Gauss/Maxwell question? You say I disagreed in the face of Richard stating
> that he lied? Sorry Art, you have me confused with someone else, because I know
> nothing about what you're talking about.
>
> Walt, W2DU

Yet you joined in Walter in the party and the destruction of the
theme of what I was offering!
You are now saying you joined in without being aware of what was
happening? You knew then that Richard was a lier but it wasn't you
that was being harmed so it was o.k. Now it is you that is in the pot
and you are indignant because of his !supposed lies as well as being
surprised.
I don't accept your excuses of not being aware of what was going on
when you mimiced an englishmans banter when you rediculed what I was
offering regarding Gauss's law of statics choosing now to saying you
were unaware. Richard has ridiculed your position and your book now
but you are fortunate, he gave the reasons why and you have yet to

defend your positions with conviction even tho you are convinced he is lier. Now you realise how I felt where no reasoning was offerred for rebuttal only thrown missiles.You were aware of the lie and did nothing to correct it. I suggest you review all the postings that you made because they are still there.You can't run and you can';t hide as the truth is still there
prefering to jab at the heart. You know who you are and I know what you are

5606. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 04:33:37 UTC
From: richardharrison@webtv.net
Message-ID: <10169-485F27A1-407@storefull-3255.bay.webtv.net>
Source record: 24728

Cecil, W5DXP wrote:
"If we monitored only forward current or forward power at the antenna feedpoint, could we still adjust the tuner?"

Yes because a conjugate match delivers all available power (a maximum) and a conjugate match also exists at every pair of terminals between the transmitter and the antenna if the tuner and line are essentially lossless.

Best regards, Richard Harrison, KB5WZI

5607. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 05:05:02 UTC
From: jimp@specsol.spam.sux.com
Message-ID: <j5n3j5-0s4.ln1@mail.specsol.com>
Source record: 24729

Walter Maxwell <walt@w2du.com> wrote:

> > By the way Walt you never came forward with the math to prove me wrong
> > preffering a hatchet job instead of doing the math. You never
> > apologised either
> > on continuing what I am sure you knew was a lie because of your
> > continual position
> > of being superior in mathematics. The position you took makes you an
> > accessory in the lie
> > because you knew it was a lie. You and your book have been dissed even
> > if you can prove that Richard lied again
> > but after the fact it is difficult to put things right. Instead of
> > telling me to read your page why not read
> > unwinantennas,com/ and the antenna group archives plus your own
> > history on postings to refresh yourself on the "facts" that you wish
> > for.
> > If you wish to make a rebuttal on the Gauss/Maxwell question be my
> > guest and point out why you disagreed even in the face of Richard
> > stating that he lied or are you committed to deeply now to reverse
> > course instead of revealing the truth because it may hurt?

> Art, I'm not a constant participant on the newsgroup, I've missed it a lot of
> the time. So I don't know a Dr. Davis, nor do I know anything about a lie. And
> what position do you think I took that would make me an accessory to a lie that
> I know nothing about? I read quite some time ago that there was a discussion
> concerning Gauss and Maxwell, but I didn't get into it, so I don't even know
> who were discussing them. So how could I be in a position to make a rebuttal on
> the Gauss/Maxwell question? You say I disagreed in the face of Richard stating
> that he lied? Sorry Art, you have me confused with someone else, because I know
> nothing about what you're talking about.

That's OK, neither does Art.

Expect a bunch of babbling, incoherent nonsense in reply from him.

--
Jim Pennino

Remove .spam.sux to reply.

5608. feeding an 80 meter loop question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 06:28:55 UTC
From: VK3XL <VK3XL.2a50e09@radiobanter.com>
Message-ID: <VK3XL.2a50e09@radiobanter.com>
Source record: 24730

Hello all, I am planning to erect an 80 meter full wave loop antenna in the back yard. The articals I have read so far all seem to feed the antenna at a corner with either 450 ohm open wire line or feed direct with 50 ohm coax. Due to the layout of my yard it would be preferable that I feed the antenna at the mid point of one side of the antenna with 450 ohm open wire line to a tuner (4:1 balun included in the line and coax to the tuner). Is there any disadvantage in feeding the loop mid way along one leg rather than at a corner?

any assistance greatly appreciated
Mike
VK3XL

--
VK3XL

5609. Re: feeding an 80 meter loop question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 08:23:39 UTC
From: ltdoc@yahoo.com
Message-ID: <51dfb9c7-006a-4f35-b323-8a8479ed481a@34g2000hsf.googlegroups.com>
Source record: 24731

Mike,
Is there a disadvantage? Not really, but maybe. Depending on the shape of the loop, it can/will change it's radiation pattern and polarization. That may not be of any importance at all, won't know till you try it.
- 'Doc

5610. Re: feeding an 80 meter loop question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 09:28:26 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <acdfa956-7702-451a-a115-1998b1aecdd4@i76g2000hsf.googlegroups.com>
Source record: 24732

On 23 jun, 08:28, VK3XL <VK3XL.2a50...@radiobanter.com> wrote:
> Hello all, I am planning to erect an 80 meter full wave loop antenna in
> the back yard. The articals I have read so far all seem to feed the
> antenna at a corner with either 450 ohm open wire line or feed direct
> with 50 ohm coax. Due to the layout of my yard it would be preferable
> that I feed the antenna at the mid point of one side of the antenna
> with 450 ohm open wire line to a tuner (4:1 balun included in the line
> and coax to the tuner). Is there any disadvantage in feeding the loop
> mid way along one leg rather than at a corner?
>
> any assistance greatly appreciated
> Mike
> VK3XL
>
> --
> VK3XL

Hello Mike,

Nothing to worry about. Feeding at a corner or feeding in the middle
of the edge/leg has insignificant influence on radiation pattern (it
will be very good for NVIS operation).

The input impedance remains low (<<450 Ohm). Feeding with coax is
possible. Add a common mode choke to reduce influence of cable on
radiation pattern and local noise pick up. I assume that your loop is
almost square (so occupies large area).

Best regards,

Wim
PA3DJS
www.tetech.nl
the mail address is valid when you remove abc.

5611. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 10:26:53 UTC
From: nm5k@wt.net
Message-ID: <3f92d81a-146d-45fe-afc0-f07e3e405959@w7g2000hsa.googlegroups.com>
Source record: 24733

On Jun 22, 8:48 pm, Art Unwin <ArthurUn...@gmail.com> wrote:

>
> > I have your book and I don't think much of it. With respect to facts
> > Richard lied about the mathematical connection between Gauss and
> > Maxwell. Most of you believed him without checking the facts and I was
> > dissed. Then a doctor Davis came aboard and showed you where you were
> > wrong but now everybody was committed and dissed him also. Yes, I was
> > discredited on a lie , which he admitted to after I was victimised by
> > all. Now he has discredited your book and you on the basis of what you
> > call" lies". I got no apologies and neither did Dr Davis
> > and the lie you were part of goes on to this day. You ask for facts
> > you got them and they are still in the archives. You are calling the
> > kettle black. Get back to antennas and stop promoting yourself and
> > your third book which you claim is now right.You at least got some
> > reasons as to why your postings were dissed, for my troubles I got
> > nothing.It is evident that the majority of this newsgro0up do not like
> > the move under way to change the subject of antennas so why not try to
> > get along with your fellow posters
> > or move on?
>
> By the way Walt you never came forward with the math to prove me wrong
> preffering a hatchet job instead of doing the math.

Who cares.. You never gave any math to prove you are right.

>You never
> apologised either

Who cares... It's not his job to suck up to whiny little twits..

> on continuing what I am sure you knew was a lie because of your
> continual position
> of being superior in mathematics.

I take this as an admission that your math may even be worse
than mine is? :/

> The position you took makes you an
> accessory in the lie
> because you knew it was a lie.

But does he really care if it was or not?
I suspect he had better things to worry about.

>You and your book have been dissed even
> if you can prove that Richard lied again

This statement makes a lot of sense.. Almost
as much as a page full of your blabber about
equilibrium...

> but after the fact it is difficult to put things right. Instead of
> telling me to read your page why not read
> unwinantennas,com/ and the antenna group archives plus your own
> history on postings to refresh yourself on the "facts" that you wish
> for.

I suspect he has little time to waste on sub par physics, and
thus sub par antennas..

> If you wish to make a rebuttal on the Gauss/Maxwell question be my
> guest and point out why you disagreed even in the face of Richard
> stating that he lied or are you committed to deeply now to reverse
> course instead of revealing the truth because it may hurt?

Hey whiny one. I'm your huckleberry!!! I'm fairly bored at times.
I can keep you busy until next Christmas if you really feel the
need for discussion. I don't need any help from the others.
I'll brown your food just from shear logic, and I won't even need
no stinking math to do it.
IE: I'd still like to hear about how a "static" particle can move,
twist, and do the universal tango. And don't tell me that Gauss
or equilibrium had anything to do with it.
Doktor Davis.. Thats a laugh.. I remember everything about
that adventure, and Art, *you* are the liar about that case.
I've seen bumps on a persons ass that were more useful
than Doktor Davis was to your case.
Rather than answer a few pertinent questions posed to him,
he did the duck and run, and has never been heard from since.

Frankly, I kind of surprised at all the whining here.
I don't think Walters post, or articles, or even books are
out of the topic range of this group.
And neither do I consider Richard Clarks posts either.
For some reason they have a difference of opinion,
and I think they should work it out to hopefully come
to a conclusion.
They can do it in private, or right here. I could care less.
I haven't kept up with whatever led up to all this, so
I'm not taking sides at all. Both may have valid points.

Some of the comments seem a bit strong to me..
I find some of the comments to Walter as pretty tacky.
To me, the posts *are* on topic. A heck of a lot
closer than worries about the demise of Usenet,
perpetual motion theories, tennis shoes, touchtone
mikes, BIG BROTHER, etc, ad nausium..
Some of you all need to chill down and relax..
Go drink some vodka. That will help calm the nerves.
Works for me.. I like it with grapefruit juice...

But thats just my 29 cents worth.

5612. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 10:43:07 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <VrL7k.90702$1B6.38502@newsfe21.ams2>
Source record: 24734
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

```
"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
news:tsYfo+Qp9sXIFwFW@g3ohx.demon.co.uk...
> In message <XCz7k.125060$M63.109284@newsfe13.ams2>, Andy
> <dx90@blueyounder.co.uk> writes
>>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>>news:hOf8QPN3tpXIFwWv@g3ohx.demon.co.uk...
>>> In message <LKv7k.21000$aE7.16891@newsfe16.ams2>, Andy
>>> <dx90@blueyounder.co.uk> writes
>>>>
>>>>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>>>>news:bC9yzjW$sjXIFwQb@g3ohx.demon.co.uk...
>>>>> In message <g3l8gc$kov$3@aioe.org>, atec77 <atec77NOSPAM@hotmail.com>
>>>>> writes
>>>>>>Andy wrote:
>>>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>>>> message news:aqiyJALE18WIFwKt@g3ohx.demon.co.uk...
>>>>>>>> In message <YbO6k.17849$7m7.13223@newsfe30.ams2>, Andy
>>>>>>>> <dx90@blueyounder.co.uk> writes
>>>>>>>>
>>>>>>>>
>>>>>>>> "Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in
>>>>>>>> message
>>>>>>>> news:KXnmWRTTh3WIFw7e@g3ohx.demon.co.uk...
>>>>>>>>> Andy, is your endfed wire the one in your other thread of the 8th
>>>>>>>>> June (ie
>>>>>>>>> the 80 Meter End Fed, fed with coax at the far end)? If so,
>>>>>>>>> presumably the
>>>>>>>>> tuner is at the shack end. Or are you feeding it from the shack
>>>>>>>>> end.
>>>>>>>>>
>>>>>>>>>
>>>>>>>>> In message <RiK6k.30765$GF6.18406@newsfe27.ams2>, Andy
>>>>>>>>> <dx90@blueyounder.co.uk> writes
>>>>>>>>>
>>>>>>>>> --
>>>>>>>>
>>>>>>>> Hi Ian,
>>>>>>>>
>>>>>>>> Yes its the same. The tuner is at the shack end (house) and I'm
>>>>>>>> feeding the
>>>>>>>> antenna with 50 Ohm RG-58 C/U coax at the far end of the garden.
>>>>>>>> If
>>>>>>>> I
```

>>>>>>>>> can
>>>>>>>>> get it working well I will replace it with some RG-213 that I have
>>>>>>>>> here. I
>>>>>>>>> put it back up yesterday and started experimenting again.
>>>>>>>>>
>>>>>>>>> The End Fed at the moment has 15 feet of 300 Ohm slotted ribbon
>>>>>>>>> feeder. This
>>>>>>>>> is all I had left spare. One side is connected to the wire antenna
>>>>>>>>> and
>>>>>>>>> the
>>>>>>>>> other side left, not connected. The coax is connected to the 300
>>>>>>>>> Ohm
>>>>>>>>> at the
>>>>>>>>> bottom and the braid side is now connected to the unconnected side
>>>>>>>>> of
>>>>>>>>> the
>>>>>>>>> 300 Ohm and also to the earth ground rod.
>>>>>>>>> On 80 the receive is up 2-4 S points compared with the 40m coax
>>>>>>>>> Centre
>>>>>>>>> Fed
>>>>>>>>> Dipole. I have not had chance to get any actual reports on 80 yet.
>>>>>>>>> Maybe
>>>>>>>>> this weekend.
>>>>>>>>>
>>>>>>>>> 73 Andy
>>>>>>>> OK, Andy. Noted.
>>>>>>>>
>>>>>>>> I don't know if you will really improve things by using the 15 foot
>>>>>>>> of
>>>>>>>> 300 ohm feeder. It's a sort of a zepp, but with one side of the
>>>>>>>> feeder
>>>>>>>> earthed. I would try disconnecting the earthed ('unconnected') side
>>>>>>>> from earth / coax braid. You can either leave it floating, or
>>>>>>>> connect
>>>>>>>> it to the coax inner. It will then be approximately a quarterwave
>>>>>>>> on
>>>>>>>> 20m, fed in parallel with the long wire.
>>>>>>>>
>>>>>>>> Don't read too much into the excellent SWR you're getting with the
>>>>>>>> tuner. That's what the TX sees, but the tuner can't affect the SWR
>>>>>>>> on
>>>>>>>> the aerial feeder. If the coax SWR is sky high (and it can be if
>>>>>>>> the
>>>>>>>> impedance at aerial feed point is high), the coax losses will be
>>>>>>>> much
>>>>>>>> more that you would get compared with when it is matched
>>>>>>>> correctly.
>>>>>>>> You only get away with it by using the lowest-loss you can find,
>>>>>>>> and
>>>>>>>> keeping the coax as short as possible.

>>>>>>>>
>>>>>>>> I'm not surprised that 80m on the endfed is a bit better than the
>>>>>>>> 40m
>>>>>>>> dipole. But what's 40m like on the endfed? That's when the feed
>>>>>>>> impedance (and coax SWR) will be very high, and where the RG-213
>>>>>>>> might
>>>>>>>> perform better noticeably better than the RG-58.
>>>>>>>>
>>>>>>>> As I think I said before, although I am an advocate of simply using
>>>>>>>> coax (regardless), after all these years I am considering in
>>>>>>>> investing
>>>>>>>> in something like a SG230 remote tuner for the far end of the
>>>>>>>> coax.
>>>>>>>> -- Ian
>>>>>>>>
>>>>>>>
>>>>>>> Ian,
>>>>>>> I'll have to do some experimenting with the 300 Ohm feeder and see
>>>>>>> what
>>>>>>> happens. The End Fed on 40m is very poor indeed. I would say
>>>>>>> unusable
>>>>>>> like it is.
>>>>>>> The End Fed wire at the moment is resonate on 2. 682 MHz.
>>>>>>> The funny thing is that when I cut the wire to bring the End Fed to
>>>>>>> resonate on 80m, no matter how much wire I cut off it doesn't
>>>>>>> really
>>>>>>> move from the 2.682 MHz. I have tried this with and with out the
>>>>>>> ribbon
>>>>>>> feeder being in place and with coax connected direct and the braid
>>>>>>> connected to the earth rod.
>>>>>>> What would cause this?
>>>>>>> I have no problem using the Analyser with my mobile and centre fed
>>>>>>> dipoles.
>>>>>>> 73 Andy
>>>>>
>>>>>>adding a suitably cut wire counterpoise at +% for each band should
>>>>>>certainly assist things .
>>>>>
>>>>> I rather think that Andy can't add counterpoises. A decent earthing
>>>>> system
>>>>> should work (although additional counterpoises certainly won't do any
>>>>> harm).
>>>>>
>>>>> Re the 2.682MHz resonance, this may be because the coax is completely
>>>>> mismatched at lots of frequencies, and what you're seeing this is
>>>>> more-or-less a spurious resonance of the coax itself. Do you still get
>>>>> it
>>>>> with the wire completely disconnected? Even with centre-fed dipoles,
>>>>> you
>>>>> often get some very unexpected resonances way off frequency

>>>>> (especially
>>>>> of
>>>>> you are doing a wideband frequency sweep of the return loss / SWR).
>>>>>
>>>>> As I said previously, persuading an approximate halfwave endfed (which
>>>>> is
>>>>> what you have on 40m) to work with a coax feed is certainly not ideal,
>>>>> but
>>>>> you can usually get it to work fairly well (with all the provisos
>>>>> already
>>>>> discussed). My setup here is almost twice the size of what you have,
>>>>> so
>>>>> the wire feed impedance will be low on 160m and I high on 80m and 40m.
>>>>> 80m
>>>>> (corresponding to your 40m) is certainly lively enough. On 40m, the
>>>>> performance does not seem to be unduly poor compared with the signal
>>>>> reports swapped between others on the band.
>>>>>
>>>>> So, Andy, I simply don't know why your 40m is so poor. Have you tried
>>>>> (temporarily) reducing the length to around 33 feet, so that it is a
>>>>> quarterwave on 40m? This should give a reasonable match for your coax
>>>>> (at
>>>>> least, nothing you can't tune out back in the shack). If this is more
>>>>> lively than the 64 feet, maybe you can try two wires in parallel. This
>>>>> can
>>>>> be discussed later if the 33 feet shows promise. If a multiband (and
>>>>> possibly compromise) aerial doesn't work well, it's a good idea to try
>>>>> something simple which you know SHOULD work. The problem may lie
>>>>> elsewhere.
>>>>>
>>>>> Finally, can I ask you to follow the standard practice of bottom
>>>>> posting!
>>>>> Cheers...
>>>>> --
>>>>> Ian
>>>>
>>>>I've have just connected the Analyser at the feed point on the End fed
>>>>wire.
>>>>The frequency is now at 2.898 MHz without coax being in line. I have
>>>>just
>>>>tried
>>>>to shorten the Antenna again to bring the frequency closer to the 80m
>>>>band,
>>>>but
>>>>it will not adjust from this frequency.
>>>
>>> Ummmm...
>>> Obviously something is wrong. It looks like your analyser is simply
>>> telling lies. Could it have a spurious resonance at this frequency?
>>>>

>>>>What's confusing me is that the End fed wire should be longer than a 1/4
>>>>wave on 80
>>>>and the frequency that it ended up on, that is now 2.898 would be
>>>>about right for the length.
>>>
>>> A quarterwave on 80m is around 66 feet. Your 63 feet is actually a bit
>>> on
>>> the short side. Being only 20 feet up may pull the resonance a bit
>>> lower,
>>> but I doubt is could be anywhere as low as 2.898MHz.
>>>
>>>>So why won't that frequency change when I start
>>>>trimming the wire down in size?
>>>>It just isn't making any sense to me. The resonant frequency surely
>>>>should
>>>>change with the altered length.
>>>>
>>> If shortening the aerial doesn't change the frequency, I don't think
>>> your
>>> analyser is measuring the aerial. This is indeed a puzzle. As I
>>> suggested
>>> before, you could go from the sublime to the ridiculous, and try
>>> something
>>> like 33 feet, which should resonate at around 7MHz. If it sticks at
>>> 2.898MHz, something is seriously amiss.
>>>
>>> --
>>> Ian
>
>>I haven't had time to try a 33" End fed to see if it would tune on 40m
>>.But
>>I did have time to connect a temp 60 feet of wire from the top of the
>>ribbon
>>feeder on the braid side to make a close 63 feet centre fed dipole fed
>>with
>>300 Ohm feeder and the antenna resonates at 3.780 MHz with a 1.1:1 and the
>>AT1KP backs this reading up. I haven't tried to lengthen or shorten the
>>antenna yet. To see if it changes resonance, but I will do tomorrow.
>>
>>It can't stay like that unfortunately.
>>
>>So either my Analyser doesn't like to read End Fed antennas or there
>>something else causing the funny readings. If the Analyser senses the
>>change
>>in frequency tomorrow when I start lengthening the antenna then it must be
>>working OK or there is a fault with it and it can't read End Fed wires
>>correctly. Is this even possible considering its reading everything else
>>correct.
>>
>>What do you think?

>>
>>73 Andy
>>
> Andy, you've gone back to top posting, and this makes it very difficult to
> follow the discussion. In newsgroups (unlike emails), you should really
> post at the bottom. This is the established convention.
>
> Anyway, it's interesting what you have found out with the dipole
> configuration. Presumably, you still have the coax braid and one side of
> 300 ohm feeder earthed. If so, I would not have expected there to be quite
> such a dramatic change of resonance. However, if your earth rods are
> totally ineffective (or you have disconnected the earth), you might expect
> things to change a lot when you add 'the other half of the dipole'. If you
> actually have room to put up an appx 60 foot + 60 foot dipole, why not
> consider a G5RV (which, I believe, you have already tried) or a W3DZZ trap
> dipole? This would get rid of your earthing problems.
> --
> Ian

How I got the extra 60 feet + up was to bring it back on itself towards the house in a shape of the letter V. The wire is very low to the floor and in every ones way. I have no idea how it radiates in this shape. It can only be like this as a temp solution.
I really need to understand why the End Fed wire is behaving the way it does. I think the Analyser is working OK or it wouldn't be able to tune a Centre Fed Dipole. I hope

When the earth rod was connected to the End Fed wire as a ground, there was a definite 2 S points up on received signal compared to it being disconnected. So it must be doing something.

I had a listen around 2 - 3.5 MHz for any strong signals and I can't find any that might cause me problems.

I would have expected the frequency to change when altering the length of the wire.

73 Andy.

5613. Ham Radio License Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 11:21:28 UTC
From: Webmaster <webmaster@oaklanesoftware.com>
Message-ID: <YGL7k.1843$%q.192@newsfe24.lga>
Source record: 24735

Test Preparation Software

Pass your ham radio license test with ease. Our test preparation software serves as a training aid to help amateurs and prospective amateurs pass the VEC's administered test. When you can consistently pass the test given by our test preparation software, you will almost certainly pass an actual test.

Our ham radio license test preparation software uses the latest officially released VEC's approved question pools. The program breaks the test into different sub-element. Integrated into the software are illustrations and Part 97 rules pertaining to the current question. The program tracks the progress of the tests taken. Once you have mastered each sub-element you are ready for the official test.

Visit our web site at http://www.hamradiolicense.net for more information.

5614. Re: feeding an 80 meter loop question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 12:38:20 UTC
From: n4lq <n4lq@insightbb.com>
Message-ID: <nNydnUoadqWrBMLVnZ2dnUVZ_s_inZ2d@insightbb.com>
Source record: 24736

When used on higher bands the radiation pattern will vary depending on where
the loop is fed. There are too many variables to predict this without
computer modeling. You would be better off using 300 ohm line instead of
450. 300 ohm would more closely match the impedance of the loop on higher
bands and result in lower swr excursions but either type of feeder will work
great. The obvious advantage to corner feed is less sagging but your feeder
is lightweight.
73

--
Steve
"VK3XL" <VK3XL.2a50e09@radiobanter.com> wrote in message
news:VK3XL.2a50e09@radiobanter.com...
>
> Hello all, I am planning to erect an 80 meter full wave loop antenna in
> the back yard. The articals I have read so far all seem to feed the
> antenna at a corner with either 450 ohm open wire line or feed direct
> with 50 ohm coax. Due to the layout of my yard it would be preferable
> that I feed the antenna at the mid point of one side of the antenna
> with 450 ohm open wire line to a tuner (4:1 balun included in the line
> and coax to the tuner). Is there any disadvantage in feeding the loop
> mid way along one leg rather than at a corner?
>
> any assistance greatly appreciated
> Mike
> VK3XL
>
>
>
>
> --
> VK3XL

5615. Re: Ham Radio License Software

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 12:41:48 UTC
From: gwatts <gwatts@frontiernet.net>
Message-ID: <gSM7k.2985$5y2.349@fe113.usenetserver.com>
Source record: 24737

Res wrote:
> If your going to spam us, you should perhaps tell them what country it
> is for... this is after all an international newsgroup

Well, he says

>> ...VEC's...

and

>> ...Part 97 rules pertaining to the current question...

so careful observation will indicate the country he's talking about.

Or you could just ignore it.

5616. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 13:23:40 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <wtN7k.9543$xZ.7486@nlpi070.nbdc.sbc.com>
Source record: 24738

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "If we monitored only forward current or forward power at the antenna
> feedpoint, could we still adjust the tuner?"
>
> Yes because a conjugate match delivers all available power (a maximum)
> and a conjugate match also exists at every pair of terminals between the
> transmitter and the antenna if the tuner and line are essentially
> lossless.

I made an interesting assertion on a related thread over
on QRZ Q&A.

"A CONJUGATE MATCH TO A MISMATCHED LOAD GUARANTEES MAXIMUM
POWER REFLECTED FROM THE LOAD!"

The maximum available power is delivered to a mismatched load
when a conjugate match exists. It follows that is also the
point where the incident power is maximum and the mismatched
load will be reflecting the maximum amount of incident power.

Apparently, one could adjust an antenna tuner for a conjugate
match by monitoring the reflected power at the *output* of the
tuner and adjusting for a maximum. :-)
--
73, Cecil http://www.w5dxp.com

5617. airmax 87 90 95 shoes,shox tl oz nz shoes for sale

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 13:36:50 UTC
From: "www.urbanhotsale.net" <cnshoes88@yahoo.com.cn>
Message-ID: <32cd1acb-0de7-442e-a9f1-8cb885859f3a@u6g2000prc.googlegroups.com>
Source record: 24739

Discount Coach Sandals, Dior Sandals, Prada Sandals, Chanel Sandals,
Versace Sandals, Crocs Sandals, Women's Sandals Men's Slippers From
China Discount, Prada Sunglasses, Discount, D&G Sunglasses, Discount,
Fendi Sunglasses,Discount,Burberry Sunglasses Discount, Chanel
Sunglasses
Discount, LVSunglasses Discount, Dior Sunglasses Discount, (G U C C
I) Sunglasses Discount, ArmaniSunglasses Discount, Versace
SunglassesDiscount, A&F Sunglasses Discount, LV Sunglasses

For more AAA quality products pls visit:
http://groups.google.com/group/uk.local.london/browse_thread/thread/2e796d0e7f63cfc1

5618. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 13:56:31 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <JcRW0gLPu6XIFwCi@g3ohx.demon.co.uk>
Source record: 24741
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

In message <VrL7k.90702$1B6.38502@newsfe21.ams2>, Andy
<dx90@blueyounder.co.uk> writes
>
>"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message
>news:tsYfo+Qp9sXIFwFW@g3ohx.demon.co.uk...

>> Anyway, it's interesting what you have found out with the dipole
>> configuration. Presumably, you still have the coax braid and one side of
>> 300 ohm feeder earthed. If so, I would not have expected there to be quite
>> such a dramatic change of resonance. However, if your earth rods are
>> totally ineffective (or you have disconnected the earth), you might expect
>> things to change a lot when you add 'the other half of the dipole'. If you
>> actually have room to put up an appx 60 foot + 60 foot dipole, why not
>> consider a G5RV (which, I believe, you have already tried) or a W3DZZ trap
>> dipole? This would get rid of your earthing problems.
>> --
>> Ian
>
>
>How I got the extra 60 feet + up was to bring it back on itself towards the
>house in a shape of the letter V. The wire is very low to the floor and in
>every ones way. I have no idea how it radiates in this shape. It can only be
>like this as a temp solution.
>I really need to understand why the End Fed wire is behaving the way it
>does. I think the Analyser is working OK or it wouldn't be able to tune a
>Centre Fed Dipole. I hope
>
>When the earth rod was connected to the End Fed wire as a ground, there was
>a definite 2 S points up on received signal compared to it being
>disconnected. So it must be doing something.

True.
>
>I had a listen around 2 - 3.5 MHz for any strong signals and I can't find
>any that might cause me problems.

Noted.
>
>I would have expected the frequency to change when altering the length of
>the wire.
>
>73 Andy.
>
What you have done is essentially to add a counterpoise / radial which

is appx a quarterwave long. This is really the other half of the dipole. The higher it is up in the air, the more it will radiate. Note that, as it is at the top end of the 15 feet of 300 ohm feeder, the feeder will act like a transformer, and couple RF into 'counterpoise'. The 'counterpoise' will be more lively than if it were connected to the braid at the far end of the coax.

As the 'counterpoise' is coming back under the actual aerial wire (albeit at an angle) the radiation will tend to oppose that from the aerial. This will reduce the overall radiation, so the greater the separation, the better.

[Of course, if the counterpoise can be run in the opposite direction from the aerial wire, the radiation doesn't cancel, and you might as well erect the counterpoise as high as possible. What you will have, of course, is a 'normal' dipole.]

I still think all of this points to the fact that your earth rods are making very poor contact with the ground. If you have a fantastic earth connection, counterpoises and radials have little effect. With an absolutely lousy ground contact (and poor ground conductivity), they can make a great difference. With the single wire (and no counterpoise), the analyser will need a good earth connection. Without it, it's going to read rubbish, which may explain why a change of wire length makes no difference.

I think I would concentrate on improving the ground connection a bit more (more earth rods, or maybe some wires buried in the ground?). My inverted-L aerial feed is at the fence at the end of my back garden. The earthing system (at the fence) consists of three old bits of galvanized water pipe (about 6 foot long), and each about 6 feet apart. In addition to that, the wooden fence posts are mounted into 'Metposts'
http://www.metpost.co.uk/
each of which is about around 2.5 foot long, with only about 6 inches above the ground. The length of the fence is 70 feet, so there about Metposts. Most of these are also connected to my earthing system. I did once try adding a counterpoise for 80m, but it had no effect. [My soil, by the way, is mainly clay and flints. That which is not, is old bricks.]

When you've done as much as is reasonable with you earth system, all you can do is to add counterpoises etc.

If you really cannot get an efficient earth/counterpoise system, you will probably be better concentrating your efforts on dipoles (even if you have to use bent or compressed versions). At least you know where you are with a dipole.
--
Ian

5619. Re: feeding an 80 meter loop question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 13:57:26 UTC
From: Frank <ve6cb@spamfree.telus.net>
Message-ID: <aZN7k.810$yg7.80@edtnps82>
Source record: 24740

"VK3XL" <VK3XL.2a50e09@radiobanter.com> wrote in message
news:VK3XL.2a50e09@radiobanter.com...
>
> Hello all, I am planning to erect an 80 meter full wave loop antenna in
> the back yard. The articals I have read so far all seem to feed the
> antenna at a corner with either 450 ohm open wire line or feed direct
> with 50 ohm coax. Due to the layout of my yard it would be preferable
> that I feed the antenna at the mid point of one side of the antenna
> with 450 ohm open wire line to a tuner (4:1 balun included in the line
> and coax to the tuner). Is there any disadvantage in feeding the loop
> mid way along one leg rather than at a corner?

For a loop, 20 m per side, 10 m above an average ground, the input
impedance is about 100 ohms (at 3.825 MHz). Feeding at the
corner, or the center, makes no difference to the input impedance.
The radiation pattern will rotate by 45 degrees. Very good high
angle radiation. At a 30 degree elevation angle the pattern is
like a dipole, with nulls about 4 dB deep, and max gain - 4 dbi.

73,

Frank
(VE6CB)

5620. Re: feeding an 80 meter loop question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 14:01:20 UTC
From: Edwin Johnson <edwinljohnson@bellsouth.net>
Message-ID: <Q0O7k.12997$s77.12915@bignews3.bellsouth.net>
Source record: 24742

On 2008-06-23, VK3XL <VK3XL.2a50e09@radiobanter.com> wrote:
>
> with 50 ohm coax. Due to the layout of my yard it would be preferable
> that I feed the antenna at the mid point of one side of the antenna
> with 450 ohm open wire line to a tuner (4:1 balun included in the line
> and coax to the tuner). Is there any disadvantage in feeding the loop
> mid way along one leg rather than at a corner?

Your radiation pattern will probably change somewhat, perhaps to the better for what directions you desire. If you can model the antenna with software, this will give you somewhat of an indication.

Just for information, I have a horizontal 80m delta loop fed with 450 ohm ladder line which goes to a ferrite bead balun (W2DU style, built from a kit from Wireman) to go from balanced to unbalanced and a short (less than 6' coax) into the house to the tuner, an MFJ 941E. It tunes all bands 80m up through 10m very well and performs excellently. Not the greatest DX antenna, of course, but serves me well. Notice, this is a delta (three cornered) loop and not four sides, due to yard size and tree locations. I feed my loop about mid-side for convenience of feedline house entry.

73 ...Edwin, KD5ZLB
--
_____
"Once you have flown, you will walk the earth with your eyes
turned skyward, for there you have been, there you long to
return."-da Vinci http://bellsouthpwp2.net/e/d/edwinljohnson

5621. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 15:07:40 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <53bc56a1-b3d4-434c-ab51-4fb57597e337@j22g2000hsf.googlegroups.com>
Source record: 24743

On Jun 23, 5:26 am, n...@wt.net wrote:
> On Jun 22, 8:48 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>
>
>
>
> > > I have your book and I don't think much of it. With respect to facts
> > > Richard lied about the mathematical connection between Gauss and
> > > Maxwell. Most of you believed him without checking the facts and I was
> > > dissed. Then a doctor Davis came aboard and showed you where you were
> > > wrong but now everybody was committed and dissed him also. Yes, I was
> > > discredited on a lie , which he admitted to after I was victimised by
> > > all. Now he has discredited your book and you on the basis of what you
> > > call" lies". I got no apologies and neither did Dr Davis
> > > and the lie you were part of goes on to this day. You ask for facts
> > > you got them and they are still in the archives. You are calling the
> > > kettle black. Get back to antennas and stop promoting yourself and
> > > your third book which you claim is now right.You at least got some
> > > reasons as to why your postings were dissed, for my troubles I got
> > > nothing.It is evident that the majority of this newsgro0up do not like
> > > the move under way to change the subject of antennas so why not try to
> > > get along with your fellow posters
> > > or move on?
>
> > By the way Walt you never came forward with the math to prove me wrong
> > preffering a hatchet job instead of doing the math.
>
> Who cares.. You never gave any math to prove you are right.
>
> >You never
> > apologised either
>
> Who cares... It's not his job to suck up to whiny little twits..
>
> > on continuing what I am sure you knew was a lie because of your
> > continual position
> > of being superior in mathematics.
>
> I take this as an admission that your math may even be worse
> than mine is? :/
>
> > The position you took makes you an
> > accessory in the lie

> > because you knew it was a lie.
>
> But does he really care if it was or not?
> I suspect he had better things to worry about.
>
> >You and your book have been dissed even
> > if you can prove that Richard lied again
>
> This statement makes a lot of sense.. Almost
> as much as a page full of your blabber about
> equilibrium...
>
> > but after the fact it is difficult to put things right. Instead of
> > telling me to read your page why not read
> > unwinantennas,com/ and the antenna group archives plus your own
> > history on postings to refresh yourself on the "facts" that you wish
> > for.
>
> I suspect he has little time to waste on sub par physics, and
> thus sub par antennas..
>
> > If you wish to make a rebuttal on the Gauss/Maxwell question be my
> > guest and point out why you disagreed even in the face of Richard
> > stating that he lied or are you committed to deeply now to reverse
> > course instead of revealing the truth because it may hurt?
>
> Hey whiny one. I'm your huckleberry!!! I'm fairly bored at times.
> I can keep you busy until next Christmas if you really feel the
> need for discussion. I don't need any help from the others.
> I'll brown your food just from shear logic, and I won't even need
> no stinking math to do it.
> IE: I'd still like to hear about how a "static" particle can move,
> twist, and do the universal tango. And don't tell me that Gauss
> or equilibrium had anything to do with it.
> Doktor Davis.. Thats a laugh.. I remember everything about
> that adventure, and Art, *you* are the liar about that case.
> I've seen bumps on a persons ass that were more useful
> than Doktor Davis was to your case.
> Rather than answer a few pertinent questions posed to him,
> he did the duck and run, and has never been heard from since.
>
> Frankly, I kind of surprised at all the whining here.
> I don't think Walters post, or articles, or even books are
> out of the topic range of this group.
> And neither do I consider Richard Clarks posts either.
> For some reason they have a difference of opinion,
> and I think they should work it out to hopefully come
> to a conclusion.
> They can do it in private, or right here. I could care less.
> I haven't kept up with whatever led up to all this, so

> I'm not taking sides at all. Both may have valid points.
>
> Some of the comments seem a bit strong to me..
> I find some of the comments to Walter as pretty tacky.
> To me, the posts *are* on topic. A heck of a lot
> closer than worries about the demise of Usenet,
> perpetual motion theories, tennis shoes, touchtone
> mikes, BIG BROTHER, etc, ad nausium..
> Some of you all need to chill down and relax..
> Go drink some vodka. That will help calm the nerves.
> Works for me.. I like it with grapefruit juice...
> But thats just my 29 cents worth.

I understand your frausteration with antenna discussions but it is
extremely hard to communicate the mathematical side of antennas for
anybody who did not reach the high school graduation point, especially
when you refuse to try to find out the meaning of equilibrium.
I just finished a explanation of my antenna work on Eham so you have a
chance to get up to speed on the subject rather than the spewing
remarks that reflect your fraustration especially when other more
experienced people are doing the same.
Regards
Art
unwinantennas.com/

5622. Re: feeding an 80 meter loop question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 15:41:58 UTC
From: Mike Luther <mike.luther@ziplog.com>
Message-ID: <485fc441$0$4077$bbae4d71@news.suddenlink.net>
Source record: 24744

Suggestion ..

VK3XL wrote:
> Hello all, I am planning to erect an 80 meter full wave loop antenna in
> the back yard. The articals I have read so far all seem to feed the
> antenna at a corner with either 450 ohm open wire line or feed direct
> with 50 ohm coax. Due to the layout of my yard it would be preferable
> that I feed the antenna at the mid point of one side of the antenna
> with 450 ohm open wire line to a tuner (4:1 balun included in the line
> and coax to the tuner). Is there any disadvantage in feeding the loop
> mid way along one leg rather than at a corner?
>
> any assistance greatly appreciated
> Mike
> VK3XL

I used a three element 4-square 'loop' for years here. If your loop can or will be a vertical loop, even though the lower side of the square will be parallel to the earth and low to it, I can offer you suggestions.

Do *NOT attempt to feed it in horizontal polarization. You may go up midway on either side of the vertical wire elements. On one of them. all you have to do is attach the braid of the coax to the center point of the wire loop. Then, feed the loop with a gamma match segment made from, say six inch balanced line insulators which bind to the wire of the loop at the far end to the gamma line and through a variable capacitor to the center of the coax.

You tune the gamma match for proper SWR and so on and away you go with a really decent feed line operation to your rig. You can swing the coax to either the center support pole for it all, or move it perpendicular to the loop away from it in any direction off the the rig site. I believe you will be VERY pleased with the performance of the loop for DX purposes as the angle will favor vertical polarization, but you do not need ground support wires like in a vertical.

There are a number of references on how to more or less figure out the length of the gamma section.

Then, after you figure out the general value of the capacitor you need, you can pull off another stunt! You can use another chunk of your coax cable as a substitute for that capacitor! It has so much capacity for so many inches or feet. OK, you use the outer braid for one lead of you 'capacitor' and the inner wire for the other. You start with a little longer than needed or too much capacitance, then start snipping off the coax at the free end of this contraption to lower the capacitance until it is just right.

At the free end, be sure to leave an inch or so of complete coax insulation at the tip away out from the remaining braid. Then wrap it if you like with tape to keep out the water and so on. Zippee! Fixed very durable capacitor for this gamma feed device.

I've used this coax into capacitor technique for decades now on gamma matched verticals and so on. Never a problem ever with it.

The trick for getting low angle performance from large wire devices like loops on 40 and 80 is to get them to really be in vertical mode. And not dependent on the ground below for RF current return like in verticals that are ground plane devices.

But to do that you'll have to make the loop in a vertical mode, which, unless you choose to use loading coils to fudge the vertical height at the tips of the wire so you can keep the feed point balanced and a little lower, will require some kind of high support for the 66 foot or so vertical side of the loop at two ends of it.

I can assure you the fixed wire quads on 40 meters built this way have a VERY good signal and beam operation from personal experience. And their DX performance goes WAY up hotter if you feed them in vertical mode rather than in horizontal more the simple way down close to the ground.

--

--> Sleep well; OS2's still awake! ;)

Mike Luther

5623. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 18:00:54 UTC
From: nm5k@wt.net
Message-ID: <ca8a5854-9f1a-405e-95a3-b4b3cfb62c7a@r66g2000hsg.googlegroups.com>
Source record: 24745

On Jun 23, 10:07 am, Art Unwin <ArthurUn...@gmail.com> wrote:

>
> I understand your frausteration with antenna discussions but it is
> extremely hard to communicate the mathematical side of antennas for
> anybody who did not reach the high school graduation point, especially
> when you refuse to try to find out the meaning of equilibrium.

Why would I need to know any math? You don't use or provide any
to inspect.
I know what equilibrium means to normal people. But you won't
provide any explanation for how you apply the term to antennas.

> I just finished a explanation of my antenna work on Eham so you have a
> chance to get up to speed on the subject rather than the spewing
> remarks that reflect your fraustration especially when other more
> experienced people are doing the same.

Yea, I checked it out.. What a hoot.. One ham invites you to provide
an on air test to check the performance of your antenna, but as
usual you ducked out with:
"I have no wish to get on the air to have a qso with you.
I have made antennas of all types using this aproach over the years
and presently have a 160 antenna made from multi interlaced wires to
make the antenna short physically."

You forgot to mention that you are either too lazy, or
basically too chicken @#$% to fire up the old rig and try it.
Pathetic...

Another requested plans so he could make one for himself.
You replied with:
"I will be happy to do so. But first the background.Antennas are
based
on Maxwells laws and the equations use the term root L.C."
But then had no further mention of providing any plans.

I also saw one thread where you were corrupting the mind of
some newby ham with your irrational drivel..
Shame on the mess...

Show me one place where you use math to explain your design.
You can't because you don't use any.
So explain to me how this would fraustrate me, whatever that
means. If anyone around here is fraustrated, it would be you.

5624. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 18:10:04 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <e2efa886-ba57-4c05-838a-a3b0cc972de7@l42g2000hsc.googlegroups.com>
Source record: 24746

On Jun 23, 10:07 am, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Jun 23, 5:26 am, n...@wt.net wrote:
>
>
>
> > On Jun 22, 8:48 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
> > > > I have your book and I don't think much of it. With respect to facts
> > > > Richard lied about the mathematical connection between Gauss and
> > > > Maxwell. Most of you believed him without checking the facts and I was
> > > > dissed. Then a doctor Davis came aboard and showed you where you were
> > > > wrong but now everybody was committed and dissed him also. Yes, I was
> > > > discredited on a lie , which he admitted to after I was victimised by
> > > > all. Now he has discredited your book and you on the basis of what you
> > > > call" lies". I got no apologies and neither did Dr Davis
> > > > and the lie you were part of goes on to this day. You ask for facts
> > > > you got them and they are still in the archives. You are calling the
> > > > kettle black. Get back to antennas and stop promoting yourself and
> > > > your third book which you claim is now right.You at least got some
> > > > reasons as to why your postings were dissed, for my troubles I got
> > > > nothing.It is evident that the majority of this newsgro0up do not like
> > > > the move under way to change the subject of antennas so why not try to
> > > > get along with your fellow posters
> > > > or move on?
>
> > > By the way Walt you never came forward with the math to prove me wrong
> > > preffering a hatchet job instead of doing the math.
>
> > Who cares.. You never gave any math to prove you are right.
>
> > >You never
> > > apologised either
>
> > Who cares... It's not his job to suck up to whiny little twits..
>
> > > on continuing what I am sure you knew was a lie because of your
> > > continual position
> > > of being superior in mathematics.
>
> > I take this as an admission that your math may even be worse
> > than mine is? :/
>
> > > The position you took makes you an
> > > accessory in the lie

> > > because you knew it was a lie.
>
> > But does he really care if it was or not?
> > I suspect he had better things to worry about.
>
> > >You and your book have been dissed even
> > > if you can prove that Richard lied again
>
> > This statement makes a lot of sense.. Almost
> > as much as a page full of your blabber about
> > equilibrium...
>
> > > but after the fact it is difficult to put things right. Instead of
> > > telling me to read your page why not read
> > > unwinantennas,com/ and the antenna group archives plus your own
> > > history on postings to refresh yourself on the "facts" that you wish
> > > for.
>
> > I suspect he has little time to waste on sub par physics, and
> > thus sub par antennas..
>
> > > If you wish to make a rebuttal on the Gauss/Maxwell question be my
> > > guest and point out why you disagreed even in the face of Richard
> > > stating that he lied or are you committed to deeply now to reverse
> > > course instead of revealing the truth because it may hurt?
>
> > Hey whiny one. I'm your huckleberry!!! I'm fairly bored at times.
> > I can keep you busy until next Christmas if you really feel the
> > need for discussion. I don't need any help from the others.
> > I'll brown your food just from shear logic, and I won't even need
> > no stinking math to do it.
> > IE: I'd still like to hear about how a "static" particle can move,
> > twist, and do the universal tango. And don't tell me that Gauss
> > or equilibrium had anything to do with it.
> > Doktor Davis.. Thats a laugh.. I remember everything about
> > that adventure, and Art, *you* are the liar about that case.
> > I've seen bumps on a persons ass that were more useful
> > than Doktor Davis was to your case.
> > Rather than answer a few pertinent questions posed to him,
> > he did the duck and run, and has never been heard from since.
>
> > Frankly, I kind of surprised at all the whining here.
> > I don't think Walters post, or articles, or even books are
> > out of the topic range of this group.
> > And neither do I consider Richard Clarks posts either.
> > For some reason they have a difference of opinion,
> > and I think they should work it out to hopefully come
> > to a conclusion.
> > They can do it in private, or right here. I could care less.
> > I haven't kept up with whatever led up to all this, so

> > I'm not taking sides at all. Both may have valid points.
>
> > Some of the comments seem a bit strong to me..
> > I find some of the comments to Walter as pretty tacky.
> > To me, the posts *are* on topic. A heck of a lot
> > closer than worries about the demise of Usenet,
> > perpetual motion theories, tennis shoes, touchtone
> > mikes, BIG BROTHER, etc, ad nausium..
> > Some of you all need to chill down and relax..
> > Go drink some vodka. That will help calm the nerves.
> > Works for me.. I like it with grapefruit juice...
> > But thats just my 29 cents worth.
>
> I understand your frausteration with antenna discussions but it is
> extremely hard to communicate the mathematical side of antennas for
> anybody who did not reach the high school graduation point, especially
> when you refuse to try to find out the meaning of equilibrium.
> I just finished a explanation of my antenna work on Eham so you have a
> chance to get up to speed on the subject rather than the spewing
> remarks that reflect your fraustration especially when other more
> experienced people are doing the same.
> Regards
> Art
> unwinantennas.com/

I dislike the way you slandered John E Davis ! He has only made a few
posts on this newsgroup which are readily obtainable.
He posted on this newsgroup purely to provide the equality of
mathematics of Maxwell and Gauss for which he is qaulified with a
doctrate from MIT working on astral matters for NASA. He made several
attempts to explain the math even in the face of caustic comments from
this group. After he had supplied the mathematics he then left the
newsgroup. He did not cut and run. He did what he set out to do and he
did it extremely well.
Since that time, months,Richard admitted that what Davis said was
true. No. He said of course it was true. Others that followed Richard
in that lie have never recanted preffering to continually to pljunge
the knife. I suggest you recover John's posts on the mathematics and
apologize

5625. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 20:40:37 UTC
From: nm5k@wt.net
Message-ID: <3b6a7237-9c44-4369-b209-29c1ba8bfc63@e53g2000hsa.googlegroups.com>
Source record: 24747

On Jun 23, 1:10 pm, Art Unwin <ArthurUn...@gmail.com> wrote:

>
> I dislike the way you slandered John E Davis !
I'll send you a quarter and you can call someone
who gives a @#$%..

>He has only made a few
> posts on this newsgroup which are readily obtainable.

I'm well aware of his posts. I've retrieved them for others
at least once or twice.

> He posted on this newsgroup purely to provide the equality of
> mathematics of Maxwell and Gauss for which he is qaulified with a
> doctrate from MIT working on astral matters for NASA.

I don't care if he's Navin R. Johnson, he was still useless to
your cause.

>He made several
> attempts to explain the math even in the face of caustic comments from
> this group. After he had supplied the mathematics he then left the
> newsgroup.

I don't recall him giving out any math at all.

>He did not cut and run. He did what he set out to do and he
> did it extremely well.

Then why couldn't he answer the simple questions posed to him?
He did what he set out to do, which was to cover his ass, and
he did it extremely well.

> Since that time, months,Richard admitted that what Davis said was
> true. No. He said of course it was true.

I'd have to let Richard speak for himself. I recall no such thing.

>Others that followed Richard
> in that lie have never recanted preffering to continually to pljunge
> the knife. I suggest you recover John's posts on the mathematics and
> apologize

You are not in a position to suggest anything. You can't even get
off your rear to fire up a rig and test an antenna when requested
to do so. If this were not the case, you would know your antenna is a
pseudo dummy load from prior experience, and we wouldn't be having

this usenet QSO.

5626. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 22:57:44 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <ffe5b427-1f22-4113-a396-e5b07b89ea67@25g2000hsx.googlegroups.com>
Source record: 24748

On Jun 23, 8:23 am, Cecil Moore <nos...@w5dxp.com> wrote:
> Richard Harrison wrote:
> > Cecil, W5DXP wrote:
> > "If we monitored only forward current or forward power at the antenna
> > feedpoint, could we still adjust the tuner?"
>
> > Yes because a conjugate match delivers all available power (a maximum)
> > and a conjugate match also exists at every pair of terminals between the
> > transmitter and the antenna if the tuner and line are essentially
> > lossless.
>
> I made an interesting assertion on a related thread over
> on QRZ Q&A.
>
> "A CONJUGATE MATCH TO A MISMATCHED LOAD GUARANTEES MAXIMUM
> POWER REFLECTED FROM THE LOAD!"
>
> The maximum available power is delivered to a mismatched load
> when a conjugate match exists. It follows that is also the
> point where the incident power is maximum and the mismatched
> load will be reflecting the maximum amount of incident power.
>
> Apparently, one could adjust an antenna tuner for a conjugate
> match by monitoring the reflected power at the *output* of the
> tuner and adjusting for a maximum. :-)
> --
> 73, Cecil http://www.w5dxp.com

Maxwells law states for efficiency the antenna sysystem must be in
equilibrium.
Equilibrium means that the antenna or antenna system must be a
parallel system because it represents
a full wave length.The transmitter adds a parallel circuit to the
system but it does put stress on the output if the antenna is not in
equilibrium.
It is thus better to keep the stresses away from the transmitter and
contain them in a separate tuner where excess power can slosh
backwards and forwards in the tank circuit, this helps to prevent
expence damage to the finals If you want the antenna system to finish
at the antenna feed point area then you place the tuner at that point,
where it is still part of a antenna system because it allows the
antenna only the power it needs for saturation and where the excess is
circulated in the tuner. If you want the antenna to operate without
the tuner then the antenna will resort to a system where with the

inclusion of a ground system and feed system will act as a heat sink in the absence of equilibrium at the antenna. When you want the antenna to radiate the energy it is supplied then it must be in equilibrium where the distributed loads provide a tank circuit for efficient radiation without saturation overkill. Remember that what radiats is a full wave length of wire wether it is all on the antenna or the antenna spreads the excess to the tuner and the feed system. You cant stop the radiation you just try to ensure the excess doesn't create damage when it turns into heat

5627. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 23:03:45 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <zuednQkehsBktv3VnZ2dnUVZ8q2dnZ2d@bt.com>
Source record: 24749

<nm5k@wt.net> wrote in message
news:3b6a7237-9c44-4369-b209-29c1ba8bfc63@e53g2000hsa.googlegroups.com...
> On Jun 23, 1:10 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
>>
>> I dislike the way you slandered John E Davis !
> I'll send you a quarter and you can call someone
> who gives a @#$%..
>
>>He has only made a few
>> posts on this newsgroup which are readily obtainable.
>
> I'm well aware of his posts. I've retrieved them for others
> at least once or twice.
>
>> He posted on this newsgroup purely to provide the equality of
>> mathematics of Maxwell and Gauss for which he is qaulified with a
>> doctrate from MIT working on astral matters for NASA.
>
> I don't care if he's Navin R. Johnson, he was still useless to
> your cause.
>
>>He made several
>> attempts to explain the math even in the face of caustic comments from
>> this group. After he had supplied the mathematics he then left the
>> newsgroup.
>
> I don't recall him giving out any math at all.
>
>>He did not cut and run. He did what he set out to do and he
>> did it extremely well.
>
> Then why couldn't he answer the simple questions posed to him?
> He did what he set out to do, which was to cover his ass, and
> he did it extremely well.
>
>> Since that time, months,Richard admitted that what Davis said was
>> true. No. He said of course it was true.
>
> I'd have to let Richard speak for himself. I recall no such thing.
>
>>Others that followed Richard
>> in that lie have never recanted preffering to continually to pljunge
>> the knife. I suggest you recover John's posts on the mathematics and

>> apologize
>
> You are not in a position to suggest anything. You can't even get
> off your rear to fire up a rig and test an antenna when requested
> to do so. If this were not the case, you would know your antenna is a
> pseudo dummy load from prior experience, and we wouldn't be having
> this usenet QSO.
>
>
Not that this is particularly relevant, but while training to be a Marine Radio Officer many years ago in central London, a message was received from the coast station at Dover requesting that we cease test transmissions on 480 kHz as we were causing interference to maritime coast station operations. The transmitter was running less than 80 watts CW into a fully screened dummy load at the time! This is a distance of around 70 miles as the crow flies.

Art's antenna apparently contains what would be several wavelengths of helically wound conductor at any HF amateur frequency (I recall seeing a figure of 2000 feet mentioned). I see no reason why it wouldn't radiate considerably better than a dummy load in an earthed screened box. If lack of real estate means you have to use miniature antennas, it doesn't matter what you use if it gets a signal out.

As I see it, Art is claiming that his antenna is a no tune, all band antenna which is very compact and efficient for it's size. Experience suggests to m that the radiation efficiency is nowhere near as good as a full sized resonant or beam antenna and I doubt that new physical principles are involved. Experience also suggests that the sheer amount of wire in the antenna will present an acceptable match to most transmitters at HF frequencies and above. Dummy load or not, if it is radiating even a quite modest signal at low horizontal angles, it will suit many urban dwellers and give relatively good DX performance for its size.

It really doesn't matter what the maths are or whether exotic new physics is involved. If you stick a couple of thousand feet of wire up in the air (even wound in a coil) the system is going to put out a signal.

This forum often degenerates into meaningless discussions as to the exact meaning of a word, phrase, or measurement and specifications used. While this might be necessary for a rigorous scientific analysis, the clue is in the name rec.radio.amateur.antenna.

Don't get bogged down in meaningless minor theoretical details. Does it do what is claimed? Yes or no. Job done.

Regards

Mike G0ULI

5628. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 23:22:10 UTC
From: Tom Donaly <dtdonaly@sbcglobal.net>
Message-ID: <QeW7k.9602$xZ.4555@nlpi070.nbdc.sbc.com>
Source record: 24750

Art Unwin wrote:

> Maxwells law states for efficiency the antenna sysystem must be in
> equilibrium.
>

None of the laws named after Maxwell state any such thing.
73,
Tom Donaly, KA6RUH

5629. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-23 23:34:30 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <bc2eae09-2467-4d8f-8efa-05d3d1180ea2@t54g2000hsg.googlegroups.com>
Source record: 24651

On Jun 23, 6:03 pm, "Mike Kaliski" <michael.kali...@tesco.net> wrote:
> <n...@wt.net> wrote in message
>
> news:3b6a7237-9c44-4369-b209-29c1ba8bfc63@e53g2000hsa.googlegroups.com...
>
> > On Jun 23, 1:10 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
>
> >> I dislike the way you slandered John E Davis !
> > I'll send you a quarter and you can call someone
> > who gives a @#$%..
>
> >>He has only made a few
> >> posts on this newsgroup which are readily obtainable.
>
> > I'm well aware of his posts. I've retrieved them for others
> > at least once or twice.
>
> >> He posted on this newsgroup purely to provide the equality of
> >> mathematics of Maxwell and Gauss for which he is qaulified with a
> >> doctrate from MIT working on astral matters for NASA.
>
> > I don't care if he's Navin R. Johnson, he was still useless to
> > your cause.
>
> >>He made several
> >> attempts to explain the math even in the face of caustic comments from
> >> this group. After he had supplied the mathematics he then left the
> >> newsgroup.
>
> > I don't recall him giving out any math at all.
>
> >>He did not cut and run. He did what he set out to do and he
> >> did it extremely well.
>
> > Then why couldn't he answer the simple questions posed to him?
> > He did what he set out to do, which was to cover his ass, and
> > he did it extremely well.
>
> >> Since that time, months,Richard admitted that what Davis said was
> >> true. No. He said of course it was true.
>
> > I'd have to let Richard speak for himself. I recall no such thing.
>
> >>Others that followed Richard

> >> in that lie have never recanted preffering to continually to pljunge
> >> the knife. I suggest you recover John's posts on the mathematics and
> >> apologize
>
> > You are not in a position to suggest anything. You can't even get
> > off your rear to fire up a rig and test an antenna when requested
> > to do so. If this were not the case, you would know your antenna is a
> > pseudo dummy load from prior experience, and we wouldn't be having
> > this usenet QSO.
>
> Not that this is particularly relevant, but while training to be a Marine
> Radio Officer many years ago in central London, a message was received from
> the coast station at Dover requesting that we cease test transmissions on
> 480 kHz as we were causing interference to maritime coast station
> operations. The transmitter was running less than 80 watts CW into a fully
> screened dummy load at the time! This is a distance of around 70 miles as
> the crow flies.
>
> Art's antenna apparently contains what would be several wavelengths of
> helically wound conductor at any HF amateur frequency (I recall seeing a
> figure of 2000 feet mentioned). I see no reason why it wouldn't radiate
> considerably better than a dummy load in an earthed screened box. If lack of
> real estate means you have to use miniature antennas, it doesn't matter what
> you use if it gets a signal out.
>
> As I see it, Art is claiming that his antenna is a no tune, all band antenna
> which is very compact and efficient for it's size. Experience suggests to m
> that the radiation efficiency is nowhere near as good as a full sized
> resonant or beam antenna and I doubt that new physical principles are
> involved. Experience also suggests that the sheer amount of wire in the
> antenna will present an acceptable match to most transmitters at HF
> frequencies and above. Dummy load or not, if it is radiating even a quite
> modest signal at low horizontal angles, it will suit many urban dwellers and
> give relatively good DX performance for its size.
>
> It really doesn't matter what the maths are or whether exotic new physics is
> involved. If you stick a couple of thousand feet of wire up in the air (even
> wound in a coil) the system is going to put out a signal.
>
> This forum often degenerates into meaningless discussions as to the exact
> meaning of a word, phrase, or measurement and specifications used. While
> this might be necessary for a rigorous scientific analysis, the clue is in
> the name rec.radio.amateur.antenna.
>
> Don't get bogged down in meaningless minor theoretical details. Does it do
> what is claimed? Yes or no. Job done.
>
> Regards
>
> Mike G0ULI

I am in full agreement except it needs clarification regards the tuning portion. Yes it has a reasonable impedance at scource for all frequencies and thus will radiate on all frequencies. For amateur use they would want to choose a wavelength as the basis for equilibrium because of gain and bandwidth effects. So for a spot frequency it is better to jumper to the wavelength of the frequency of choice. I by choice have several jumpers while at the same time using a variometer to accommodate frequencies that do not exactly match the jumper positions.Computer programs show that you can obtain gains with multiples of wave length similar to a helix where the windings must continue back to the feed point so that external lumped loads are cancelled to bring the array into equilibrium, which means that multiple wavelength unit can be used to advantage., I still haven't found out why Maxwell did not emphasize the equilibrium status when all that provided formulas for his work all emphasised Newtons laws. I do know that he wrote a paper on equilibrium in his later years but I have found no evidence he went back to add it to his prior law(possibly he wanted to place his own mark on the formulae that he garnished from others) One last thing I want to emphasise.
For TOTAL gain it matters little if you use a yagi or a non planar arrangement the difference comes into play where the need is for a maximum gain of a particular polarity where equilibrium comes to the fore.
Regards
Art
Unwinantennas.com/

5630. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 00:01:11 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <55f6c92d-1ef2-469c-a735-cc04bed3b096@f36g2000hsa.googlegroups.com>
Source record: 24652

On Jun 23, 6:22 pm, "Tom Donaly" <dtdon...@sbcglobal.net> wrote:
> Art Unwin wrote:
> > Maxwells law states for efficiency the antenna sysystem must be in
> > equilibrium.
>
> >
>
> None of the laws named after Maxwell state any such thing.
> 73,
> Tom Donaly, KA6RUH

Exactly.
But he garnished laws for his use that were all based on equilibrium
as stated by
other masters as the basis of their findings.
I gave one sample of this by mathematics and the use of Gauss's
theorem to show that Maxwell encompassed the effects of equilibrium
without the verbalisation. Another point I would make about
equilibrium that its very existance defines the lack of moving charge
on the innards of a conductor to achieve Newtons law of action and
reaction where skin depth comes into being as part and parcel of that
concept.. Another point where proof comes into place is that the
computer programs show that for maximum polarisation of any kind and
antenne is not verticle or at right angles to the earth because of
vector values that are encompased by equilibrium. So yes, the premise
of equilibrium is firmly planted in Maxwells laws because of its
content in other laws that he mathematically, which was his interest,
manipulated regardess of their origins.
If one used the Gaussian extension that I used in place of Maxwells
laws it can be readily seen that radiation is created by the movement
of particles, evidence that Maxwell could not and did not supply thus
leaving a void for Einstein that forced him away from classical
physics.
So yes, Maxwell made a huge error by not mentioning the requirement of
equilibrium per Newtons laws.

5631. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 01:43:31 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <6cb1qoF38perbU1@mid.individual.net>
Source record: 24653

Mike Kaliski wrote:
> ...it doesn't matter what you use if it gets a signal out.

That's been my theory since my earliest
experiments with transmitting.

But that theory seem to get lost on the
pseudo-intellectuals who claim "Oh you
can't do that, it doesn't fit my
understanding of how it should work".

I work QRP SSB into a random wire or a
horribly mismatched non-symmetrical dipole,
almost exclusively. I have hams on some lists
tell me they think I'm lying when I claim to
make contacts because I "broke the laws of physics".

Ham radio! Talk to the world!
Or skip the talk part and just go
tell other hams how much you "know".

Craig 'Lumpy' Lemke

www.n0eq.com

5632. interesting format for a new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 01:52:19 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <d37f49fd-c56e-44e8-bba3-2e26dd914a14@f36g2000hsa.googlegroups.com>
Source record: 24654

When reviewing the shield of coax I see that the circulating strands
follow the same principle
that I advocate for small full wave antennas. Each turn on the
shielding has a compensating return
turn which cancels the added inductance while the wire crosses over
each other to cancel the added capacitances.
If one got a short length of say 2 inch diameter sheathing they could
attach the wires into one complete circuit
for an antenna. One could dip the sheathing into some sort of
insulation if they so which but actually the wires each act as
insulated wire (electricity preferrs not to turn at right angles if it
can go straight) so that is really not necessary . If you feel the
need to experiment on a mobile whip that does not require a ground
plane then here is one that is full wavelength and really small
compared to a Bug catcher ! Give it a try and take it to the next club
meeting.
Art
unwinantennas.com/

5633. Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 02:18:18 UTC
From: Nick <nick.adams95@yahoo.com>
Message-ID: <c8cc7c9f-cbe5-4d74-a2a2-96a5b7efadc0@w1g2000prd.googlegroups.com>
Source record: 24655
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

Hi All,

I keep reading on various websites and in various documents that HF verticals should have a "line isolator" (a choke/current balun) located near the antenna's feedpoint to prevent coax feedline re-radiation, disruption of the antenna's radiation pattern, sub-optimal vertical performance, and RFI in the shack. My question is this: just how important is a choke balun when using a ground-mounted HF (for 40M) quarter-wave vertical antenna with 32 quarter-wave buried radials? And if it is important, why wouldn't the choke be placed at the shack's input, so that the coax's outer shield could act as another radial? (I had always assumed that a vertical didn't need a balun at all, and that only dipoles used them. Am I wrong about this?).

Thanks!

Nick

5634. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 02:42:54 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <cfbafac9-2fa2-47cb-910c-d19b3c60fe35@m45g2000hsb.googlegroups.com>
Source record: 24656

On Jun 23, 8:43 pm, "Lumpy" <lu...@digitalcartography.com> wrote:
> Mike Kaliski wrote:
> > ...it doesn't matter what you use if it gets a signal out.
>
> That's been my theory since my earliest
> experiments with transmitting.
>
> But that theory seem to get lost on the
> pseudo-intellectuals who claim "Oh you
> can't do that, it doesn't fit my
> understanding of how it should work".
>
> I work QRP SSB into a random wire or a
> horribly mismatched non-symmetrical dipole,
> almost exclusively. I have hams on some lists
> tell me they think I'm lying when I claim to
> make contacts because I "broke the laws of physics".
>
> Ham radio! Talk to the world!
> Or skip the talk part and just go
> tell other hams how much you "know".
>
> Craig 'Lumpy' Lemke
>
> www.n0eq.com

Hi Lumpy you are a blast of fresh air!
On this group a common remark is
"I wish you would check out the facts first"
This is in other words is the expert telling you that you must agree
with him.
This is really the basis of this actual thread where a book writer is
angry
because people publicly disagree with him and his writings. Read my
book it is authoritative,
no I don't need to read other peoples pages or work! or "I don't
recall that"
which parallels cover for lies in Congress and in talk groups.
I have been a big gun with a 80 foot long multi element yagi but now
the talking side lags
behind the design of small antennas so all can enjoy"I was always told
that you must supply the math first
before you make a claim. Now I find that when the math is supplied
they state they don';t understand

or are convinced that one plus one is three! There is no way a ham
(self perceived expert) on this group
will accept that all is not known and I am the one who knows it all.
Which is why they dissed that Doctor from MIT and NASA
who provided some mathematical data that they disagreed with. Ofcourse
one and one equals three, the majority on this newsgroup agrees on
that so you MUST be wrong. On top of that we are the experts no less!

5635. Re: feeding an 80 meter loop question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 03:44:25 UTC
From: VK3XL <VK3XL.2a65f86@radiobanter.com>
Message-ID: <VK3XL.2a65f86@radiobanter.com>
Source record: 24658

Thanks all who have replied to my question. I am glad to hear that there are no serious detrimental effects of feeding the antenna mid way along one side rather than at a corner. I should have mentioned that I am intending to make a horizontal loop antenna rather than a vertical. Another interesting point came out of this, a delta loop may provide a better fit in the space available when the tree locations are taken into account. Again thanks for the info

73 de Mike VK3XL

--
VK3XL

5636. Article throws "more light" on wave and particles ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 04:50:32 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3puel$hg2$1@news.albasani.net>
Source record: 24657

http://technology.newscientist.com/article/dn14172-fastestever-flashgun-captures-image-of-light-wave.html?DCMP=ILC-hmts&nsref=news1_head_dn14172

Watch for line wrapping ...

Regards,
JS

5637. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 08:37:51 UTC
From: amitecltd@gmail.com
Message-ID: <8131ec9c-ad3a-456e-977a-a5bcb94817f6@x19g2000prg.googlegroups.com>
Source record: 24659
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Jun 24, 7:18 am, Nick <nick.adam...@yahoo.com> wrote:
> Hi All,
>
> I keep reading on various websites and in various documents that HF
> verticals should have a "line isolator" (a choke/current balun)
> located near the antenna's feedpoint to prevent coax feedline re-
> radiation, disruption of the antenna's radiation pattern, sub-optimal
> vertical performance, and RFI in the shack. My question is this: just
> how important is a choke balun when using a ground-mounted HF (for
> 40M) quarter-wave vertical antenna with 32 quarter-wave buried
> radials? And if it is important, why wouldn't the choke be placed at
> the shack's input, so that the coax's outer shield could act as
> another radial? (I had always assumed that a vertical didn't need a
> balun at all, and that only dipoles used them. Am I wrong about
> this?).
>
> Thanks!
>
> Nick

I think line isolator is slightly different from balun. Here line
isolator would be necessary for lightening protection etc and hence
better kept at antenna base. Balun is for converting a balanced
structure like dipole antenna to unbalanced structure like coax. Since
monopole antenna is unbalanced structure it does not need balun at its
input.

Amit

5638. Re: Rebuttal to Richard Clark's comments on my Chapter 19A

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 10:15:11 UTC
From: nm5k@wt.net
Message-ID: <983dc63d-ca9d-4a3f-952e-7919ea7612fd@26g2000hsk.googlegroups.com>
Source record: 24660

On Jun 23, 6:03 pm, "Mike Kaliski" <michael.kali...@tesco.net> wrote:

>
> Don't get bogged down in meaningless minor theoretical details. Does it do
> what is claimed? Yes or no. Job done.
>
> Regards
>
> Mike G0ULI

Thats the whole problem. If he just offered the design as what it is,
instead of what he fantasies it to be, I would have no problem.
It's no secret that almost anything will radiate to some degree.
Many people have made QSO's using nothing but dummy loads.
I have no problem with this.
Why? Because they didn't build a dummy load, and then proclaim
it as some new breakthrough in science.
It Art designed and built this antenna, and offered it to the public
as is, without all the pseudo science bafflegab, he would never
hear from me.
I wouldn't even care that he never actually tests the antenna.
But nope.. Art doesn't play the game that way.
He uses a modeling program to conjer up all kinds of weird
designs, and then uses the optimizer programs to try to get
maximum gain, or whatever he is trying to find.
He cooks up a particular design, decides he likes it, and
then reveals it to the world as some exotic new design,
which uses exotic theory, which only Art and some obscure
doktor from MIT can understand.
He can not explain these designs using known theory, so
he cooks up page after page after page of nothing but
pure unadulterated bafflegab to try to explain how they
might work.
This is the problem as I see it.
Heck, I might not even have a problem with that alone, he
wasn't so insistent that his "theory" is indeed fact.
I check all his pages and he provides NO math at all.
But he continues to whine about math.
I have read the Doktor Davis thread several times since
it was posted, and he provides NO math to explain Arts
design. And he did duck and run when it was suggested
that he was misreading the data. Instead of giving an answer
one way or the other, he vanished, never to be heard from
again.
Art refuses to do real world tests. He refuses to actually

try the antenna on the air to do comparisons with a
known antenna such as a dipole even when invited to
do so by other hams.
He'll always offer some lame excuse as to why he refuses
to do so. Either that, or he reverses the invitation to make
it appear as an attack on poor old Art, the man who
the phrase "woe is me" was apparently written for.
.
I've told him several times to just build the thing and let
the chips fall where they may.
He seems to build a few, but he never gets to testing
how the chips may fall.
He sent one to a ham on this group, and we never heard
a peep since. If it was the "miracle whip" it was made out
to be, seems to me the word would be out by now.

Well, excuse the @#$% out of me if I don't fall in line
and do the goose step along side of him in an orderly
military manner. :/

5639. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 11:39:06 UTC
From: Jeff <jeff@local.host>
Message-ID: <4860e08b$0$1348$834e42db@reader.greatnowhere.com>
Source record: 24661
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

<amitecltd@gmail.com> wrote in message
news:8131ec9c-ad3a-456e-977a-a5bcb94817f6@x19g2000prg.googlegroups.com...
On Jun 24, 7:18 am, Nick <nick.adam...@yahoo.com> wrote:
> Hi All,
>
> I keep reading on various websites and in various documents that HF
> verticals should have a "line isolator" (a choke/current balun)
> located near the antenna's feedpoint to prevent coax feedline re-
> radiation, disruption of the antenna's radiation pattern, sub-optimal
> vertical performance, and RFI in the shack. My question is this: just
> how important is a choke balun when using a ground-mounted HF (for
> 40M) quarter-wave vertical antenna with 32 quarter-wave buried
> radials? And if it is important, why wouldn't the choke be placed at
> the shack's input, so that the coax's outer shield could act as
> another radial? (I had always assumed that a vertical didn't need a
> balun at all, and that only dipoles used them. Am I wrong about
> this?).
>
> Thanks!
>
> Nick

>I think line isolator is slightly different from balun. Here line
>isolator would be necessary for lightening protection etc and hence
>better kept at antenna base. Balun is for converting a balanced
>structure like dipole antenna to unbalanced structure like coax. Since
>monopole antenna is unbalanced structure it does not need balun at its
>input.

A "line isolator" (a choke/current balun) will provide no lightening
protection.

What is being talked about is a choke to prevent currents from flowing on
the outer of the coax.
It is not a balun in the purest sense, but it does stop unbalanced currents
from flowing on the coax.

The problem with an HF vertical is that the ground plane will never be
anywhere near prefect, so it will
not be possible to feed with coax without some current flowing on the outer.

I guess the only problem with putting the choke at the antenna base will be
pickup onto the outer as is
crosses the groundpalne. so I can see the idea of putting the choke at the
edge of the GP might be better.

I guess it either suck it and see, or try to simulate it with NEC.

73
Jeff

5640. Re: What effect does a tuner have at the antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 13:05:56 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <Ui68k.69622$102.13074@bgtnsc05-news.ops.worldnet.att.net>
Source record: 24662

Art Unwin wrote:

>> Art Unwin wrote:
>>> Maxwells law states for efficiency the antenna sysystem must be in
>>> equilibrium.

> So yes, Maxwell made a huge error by not mentioning the requirement of
> equilibrium per Newtons laws.

Well, Art is right again. All possibilities covered.

73,
Gene
W4SZ

5641. Re: interesting format for a new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 13:21:00 UTC
From: Gene Fuller <W4SZzzzzzz@att.net>
Message-ID: <0x68k.136618$SV4.126985@bgtnsc04-news.ops.worldnet.att.net>
Source record: 24663

Art Unwin wrote:
> When reviewing the shield of coax I see that the circulating strands
> follow the same principle
> that I advocate for small full wave antennas. Each turn on the
> shielding has a compensating return
> turn which cancels the added inductance while the wire crosses over
> each other to cancel the added capacitances.
> If one got a short length of say 2 inch diameter sheathing they could
> attach the wires into one complete circuit
> for an antenna. One could dip the sheathing into some sort of
> insulation if they so which but actually the wires each act as
> insulated wire (electricity preferrs not to turn at right angles if it
> can go straight) so that is really not necessary .

Does this mean that if one places his finger on a live wire while making
sure to keep said finger at right angles to the wire that no shock will
be delivered? Do ordinary electricians know about this protective strategy?

73,
Gene
W4SZ

5642. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 13:21:02 UTC
From: John Fields <jfields@austininstruments.com>
Message-ID: <i8q1641nj99b2kmcjpoloqfbretcad4eqe@4ax.com>
Source record: 24664
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Mon, 23 Jun 2008 19:18:18 -0700 (PDT), Nick
<nick.adams95@yahoo.com> wrote:

>Hi All,
>
> I keep reading on various websites and in various documents that HF
>verticals should have a "line isolator" (a choke/current balun)
>located near the antenna's feedpoint to prevent coax feedline re-
>radiation, disruption of the antenna's radiation pattern, sub-optimal
>vertical performance, and RFI in the shack. My question is this: just
>how important is a choke balun when using a ground-mounted HF (for
>40M) quarter-wave vertical antenna with 32 quarter-wave buried
>radials? And if it is important, why wouldn't the choke be placed at
>the shack's input, so that the coax's outer shield could act as
>another radial? (I had always assumed that a vertical didn't need a
>balun at all, and that only dipoles used them. Am I wrong about
>this?).

No.

http://www.electronics-tutorials.com/antennas/antenna-basics.htm

JF

5643. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 13:43:15 UTC
From: Leon <leon355@btinternet.com>
Message-ID: <f46ad999-8f7a-4177-8c2b-42f7cc267982@f36g2000hsa.googlegroups.com>
Source record: 24665
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On 24 Jun, 03:18, Nick <nick.adam...@yahoo.com> wrote:
> Hi All,
>
> I keep reading on various websites and in various documents that HF
> verticals should have a "line isolator" (a choke/current balun)
> located near the antenna's feedpoint to prevent coax feedline re-
> radiation, disruption of the antenna's radiation pattern, sub-optimal
> vertical performance, and RFI in the shack. My question is this: just
> how important is a choke balun when using a ground-mounted HF (for
> 40M) quarter-wave vertical antenna with 32 quarter-wave buried
> radials? And if it is important, why wouldn't the choke be placed at
> the shack's input, so that the coax's outer shield could act as
> another radial? (I had always assumed that a vertical didn't need a
> balun at all, and that only dipoles used them. Am I wrong about
> this?).
>
> Thanks!
>
> Nick

A balun isn't required.

Leon

5644. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 15:01:35 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <y1uIOzFPxQYIFw+m@g3ohx.demon.co.uk>
Source record: 24666
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

In message <4860e08b$0$1348$834e42db@reader.greatnowhere.com>, Jeff
<jeff@local.host> writes
>
><amitecltd@gmail.com> wrote in message
>news:8131ec9c-ad3a-456e-977a-a5bcb94817f6@x19g2000prg.googlegroups.com...
>On Jun 24, 7:18 am, Nick <nick.adam...@yahoo.com> wrote:
>> Hi All,
>>
>> I keep reading on various websites and in various documents that HF
>> verticals should have a "line isolator" (a choke/current balun)
>> located near the antenna's feedpoint to prevent coax feedline re-
>> radiation, disruption of the antenna's radiation pattern, sub-optimal
>> vertical performance, and RFI in the shack. My question is this: just
>> how important is a choke balun when using a ground-mounted HF (for
>> 40M) quarter-wave vertical antenna with 32 quarter-wave buried
>> radials? And if it is important, why wouldn't the choke be placed at
>> the shack's input, so that the coax's outer shield could act as
>> another radial? (I had always assumed that a vertical didn't need a
>> balun at all, and that only dipoles used them. Am I wrong about
>> this?).
>>
>> Thanks!
>>
>> Nick
>
>>I think line isolator is slightly different from balun. Here line
>>isolator would be necessary for lightening protection etc and hence
>>better kept at antenna base. Balun is for converting a balanced
>>structure like dipole antenna to unbalanced structure like coax. Since
>>monopole antenna is unbalanced structure it does not need balun at its
>>input.
>
>A "line isolator" (a choke/current balun) will provide no lightening
>protection.
>
>What is being talked about is a choke to prevent currents from flowing on
>the outer of the coax.
>It is not a balun in the purest sense, but it does stop unbalanced currents
>from flowing on the coax.
>
It's not a balun in ANY sense of the word. Some of the manufacturers of
the 9:1 isolation/semi-matching transformers (essentially for listening
only) persist in calling these 'baluns'. But baluns they ain't.

Unfortunately, 'balun' has become a generic word for many types of RF
transformer (especially those wound on ferrite). It's a bit like calling
all vacuum cleaners 'Hoovers' - which is what we do, at least in the UK.
>
>
--
Ian

5645. Re: interesting format for a new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 15:05:08 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <06587fbb-8961-47ea-ba23-20a2da7a0f1a@d45g2000hsc.googlegroups.com>
Source record: 24667

On Jun 24, 8:21 am, Gene Fuller <W4SZzzz...@att.net> wrote:
> Art Unwin wrote:
> > When reviewing the shield of coax I see that the circulating strands
> > follow the same principle
> > that I advocate for small full wave antennas. Each turn on the
> > shielding has a compensating return
> > turn which cancels the added inductance while the wire crosses over
> > each other to cancel the added capacitances.
> > If one got a short length of say 2 inch diameter sheathing they could
> > attach the wires into one complete circuit
> > for an antenna. One could dip the sheathing into some sort of
> > insulation if they so which but actually the wires each act as
> > insulated wire (electricity preferrs not to turn at right angles if it
> > can go straight) so that is really not necessary .
>
> Does this mean that if one places his finger on a live wire while making
> sure to keep said finger at right angles to the wire that no shock will
> be delivered? Do ordinary electricians know about this protective strategy?
>
> 73,
> Gene
> W4SZ

There are a plethoria of papers presented to the IEEE to prove that
the wires in
braiding act like insulated wires. I am well aware that hams
perpetuate "old wives tales"
regarding this and many other things. Sorry but you can't ignore the
facts tho free speech
is still available for the spreading of misinformation otherwise
known as lies

5646. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 15:09:32 UTC
From: Ian Jackson <ianREMOVETHISjackson@g3ohx.demon.co.uk>
Message-ID: <FFWFCJGs4QYIFwaf@g3ohx.demon.co.uk>
Source record: 24668
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

In message
<f46ad999-8f7a-4177-8c2b-42f7cc267982@f36g2000hsa.googlegroups.com>,
Leon <leon355@btinternet.com> writes
>On 24 Jun, 03:18, Nick <nick.adam...@yahoo.com> wrote:
>> Hi All,
>>
>> ï¿½ I keep reading on various websites and in various documents that HF
>> verticals should have a "line isolator" (a choke/current balun)
>> located near the antenna's feedpoint to prevent coax feedline re-
>> radiation, disruption of the antenna's radiation pattern, sub-optimal
>> vertical performance, and RFI in the shack. ï¿½My question is this: just
>> how important is a choke balun when using a ground-mounted HF (for
>> 40M) quarter-wave vertical antenna with 32 quarter-wave buried
>> radials? ï¿½And if it is important, why wouldn't the choke be placed at
>> the shack's input, so that the coax's outer shield could act as
>> another radial? (I had always assumed that a vertical didn't need a
>> balun at all, and that only dipoles used them. ï¿½Am I wrong about
>> this?).
>>
>> Thanks!
>>
>> Nick
>
>A balun isn't required.
>
>Leon

With this type of antenna, it certainly is not common practice to
choke/isolate the coax, especially the coax braid can be grounded at the
antenna feedpoint and in the shack, and possibly at some intermediate
points along its length. It wouldn't do any harm to use one, but it
probably wouldn't do very much.
--
Ian

5647. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 16:10:31 UTC
From: Nick <nick.adams95@yahoo.com>
Message-ID: <945d0f95-75e4-4089-9be1-38b8e1f943ab@r66g2000hsg.googlegroups.com>
Source record: 24669
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Jun 24, 8:09 am, Ian Jackson
<ianREMOVETHISjack...@g3ohx.demon.co.uk> wrote:
> In message
> <f46ad999-8f7a-4177-8c2b-42f7cc267...@f36g2000hsa.googlegroups.com>,
> Leon <leon...@btinternet.com> writes
>
>
>
>
>
> >On 24 Jun, 03:18, Nick <nick.adam...@yahoo.com> wrote:
> >> Hi All,
>
> >> I keep reading on various websites and in various documents that HF
> >> verticals should have a "line isolator" (a choke/current balun)
> >> located near the antenna's feedpoint to prevent coax feedline re-
> >> radiation, disruption of the antenna's radiation pattern, sub-optimal
> >> vertical performance, and RFI in the shack. My question is this: just
> >> how important is a choke balun when using a ground-mounted HF (for
> >> 40M) quarter-wave vertical antenna with 32 quarter-wave buried
> >> radials? And if it is important, why wouldn't the choke be placed at
> >> the shack's input, so that the coax's outer shield could act as
> >> another radial? (I had always assumed that a vertical didn't need a
> >> balun at all, and that only dipoles used them. Am I wrong about
> >> this?).
>
> >> Thanks!
>
> >> Nick
>
> >A balun isn't required.
>
> >Leon
>
> With this type of antenna, it certainly is not common practice to
> choke/isolate the coax, especially the coax braid can be grounded at the
> antenna feedpoint and in the shack, and possibly at some intermediate
> points along its length. It wouldn't do any harm to use one, but it
> probably wouldn't do very much.
> --
> Ian- Hide quoted text -
>
> - Show quoted text -

Thanks for all the great responses guys! That is exactly what I had thought, that since the outer coax braid is grounded at the antenna, and at the shack, and (in my case) at the center with a lightening protector, then I just couldn't figure out why some antenna companies, such as reliable DX engineering with their DXE-VFCC H05-A Vertical Feedline Current Choke, strongly recommend such a line isolator for verticals. A direct quote from DX Engineering's Website:

"2/5 kW Vertical Feedline Current Choke
If your antenna SWR is already low and you wish to reduce feedline radiation and improve reception, a Feedline Current Choke is recommended. Adding a DX Engineering Feedline Current Choke at the base of a vertical antenna will substantially reduce unwanted feedline radiation (RFI), reducing the need for improved station grounding.

When quarter-wave antennas are constructed over a good radial system, they have a feedpoint impedance of about 36 ohms. When they are constructed over less than a good radial-system there is a loss introduced into the feed system that adds to the 36-ohm figure. This improves the SWR but there is a loss in the efficiency of the antenna, signals transmitted and received have a higher take-off angle and often there is current introduced on to the feedline.

With a ground-mounted quarter-wave vertical, regardless of the radial situation, but especially with poor radial systems, the feedline can become part of the radial system, causing RFI and poor antenna performance. By using a VFCC at the feedpoint, the feedline is effectively de-coupled from the antenna system, preventing interaction with the radial system, improving antenna efficiency. You may notice improved bandwidth as well.

The Advantages of Using a VFCC:
Prevents unwanted RFI by eliminating feedline current and radiation
All power goes to the antenna, improving efficiency
Reduces noise or unwanted signals picked-up by the feedline
Overcome a less than optimal ground system
Bracket isolates the VFCC case from ground for best de-coupling"

-Nick

5648. Re: Mopokyp&#65533;r&#65533;n lainaaminen

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 17:32:11 UTC
From: Mauno Sundstr&#65533;m <sundstrom@reaktor.net>
Message-ID: <MBU2k.14538$_03.3156@148.29.37.172>
Source record: 24670

Nyt on maamme tiedotusmonopoleissa tullut tavaksi ved&#65533;tt&#65533;&#65533; esiin sellaisia tietoja, ett&#65533; riisin- ja viljanhinnan nousu johtuisi siit&#65533;, ett&#65533; niit&#65533; k&#65533;ytet&#65533;&#65533;n el&#65533;inrehuina lihantuotantoon.. .Haloo kuka on n&#65533;hnyt "riisirehua"? Veikkaan ett&#65533; kyseess&#65533; on maailman harvinaisin sbesiaalirehupussukka, jota tuskin kukaan on edes n&#65533;hnyt! Jos toi on jo harvinaista niin metanolibensa riisist&#65533; on varmaan jos mahdollista harvinaisempaa. Eli t&#65533;mm&#65533;iset eiv&#65533;t taatusti ole hinnankorotuksen takana. Vaan USA:n s&#65533;&#65533;nn&#65533;stelyriisitilanne johtuu ydinaavikoitumisen jo kolmena vuona pilaaaman sadon kylm&#65533;st&#65533; faktasta!

Suomen kohdalla esitet&#65533;&#65533;&#65533;n samoja biopolttoainesyit&#65533; my&#65533;s. Mik&#65533; on toki my&#65533;s silkkaa ved&#65533;tyst&#65533;. Jokin aika sitten tosin maahamme suuniteltiin bioetanolitehtaita, joita ei noussut. My&#65533;s esim. viljasta maassamme povattiin varsin kohtalaista biopolttoainetta. Kauraa pidettiin varteenotettavana valmiina biopellettin&#65533;. Ainoa mainittava haitta oli viljan paakkuuntuminen poltinp&#65533;&#65533;h&#65533;n kakkuna, jota piti kuulema puhdistella. Varsin pian v&#65533;hin &#65533;&#65533;nin maahamme tehtiin ehk&#65533; historiamme tarkimmin salattu laki. M&#65533;&#65533;r&#65533;ys joka kielsi KAIKEN viljaenergian polttamisen! Tosiaan koko bioenergiahaaveilut lopetettiin kuin maan nielem&#65533;n&#65533;, vaikkei asian totuutta kerrottu kansalle miss&#65533;&#65533;n. Ydinaavikoitumisen viedess&#65533; -40% sadantakadollaan vuodesta toiseen ruuan p&#65533;yd&#65533;st&#65533;mme ei j&#65533;&#65533;nyt vaihtoehtoa. Mutta reaalia t&#65533;st&#65533; ei maatalouspoliittisesta huijaussyyst&#65533; ikin&#65533; tunnustettu. My&#65533;s ydinvoiman kuivamien ja kasvuhaittojen peltojemme totuus pimitettiin mehil&#65533;iskatojen vastaavan syyn lailla. Mutta sain vaan selville tapani mukaan! Joka tapauksessa h&#65533;mm&#65533;stytt&#65533;v&#65533;&#65533;, ett&#65533; meill&#65533; nyt on lakim&#65533;&#65533;r&#65533;yksi&#65533; joita lis&#65533;kseni tuskin moni on tutusti edes kuullut.(

5649. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 18:38:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <l0f26494l18brb87v7qp74b17g4frefbrb@4ax.com>
Source record: 24671
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Tue, 24 Jun 2008 09:10:31 -0700 (PDT), Nick
<nick.adams95@yahoo.com> wrote:

Hi Nick,

In response to the ad-copy, I would make some points:

>When quarter-wave antennas are constructed over a good radial system,
>they have a feedpoint impedance of about 36 ohms. When they are
>constructed over less than a good radial-system there is a loss
>introduced into the feed system that adds to the 36-ohm figure. This
>improves the SWR but there is a loss in the efficiency of the antenna,
This is good, as far as it gets to this point, but...

>signals transmitted and received have a higher take-off angle and
>often there is current introduced on to the feedline.

Take-off angle is dictated to the quality of ground 5 to 10
wavelengths AWAY (and further) from the antenna.

You could, if you so choose, build 120 radials out 20 wavelengths to
achieve their implied claim of radials contributing to lower take-off
angles.

>With a ground-mounted quarter-wave vertical, regardless of the radial
>situation, but especially with poor radial systems, the feedline can
>become part of the radial system, causing RFI and poor antenna
>performance.

For a transmitter, it is unlikely that the listener could tell the
difference between operating into that "poor radial system" and adding
the a vfcc.

>By using a VFCC at the feedpoint, the feedline is
>effectively de-coupled from the antenna system, preventing interaction
>with the radial system, improving antenna efficiency. You may notice
>improved bandwidth as well.

This contains a contradiction when it gets to the "improved
bandwidth." Presuming that means wider, it then means more loss. More
loss would come from NOT using the vfcc (or why buy one?).

>The Advantages of Using a VFCC:
>Prevents unwanted RFI by eliminating feedline current and radiation
>All power goes to the antenna, improving efficiency

Uh-huh. Again, will the listener be able to tell? A radiating feedline might boost their gain - who knows?

>Reduces noise or unwanted signals picked-up by the feedline
>Overcome a less than optimal ground system
>Bracket isolates the VFCC case from ground for best de-coupling"

The noise pickup is the more likely benefit (along with the remote ground - tied into the service ground as required by code). House noise can travel down the outer portion of the shield to then develop across the load of the antenna, and then wrap around to travel back inside the coax to the receiver. A choke will snub this path and the remote ground will lower the resistance. The divider action suppresses local noise.

The same benefit can be obtained from a $25 purchase of bulk ferrite beads (about 50 of them) which are fitted over a one foot length of RG-58 (or the distal end of your feedline).

73's
Richard Clark, KB7QHC

5650. Re: Article throws "more light" on wave and particles ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 18:59:02 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g3rg5pkkl1@news.albasani.net>
Source record: 24672

John Smith wrote:
> http://technology.newscientist.com/article/dn14172-fastestever-flashgun-captures-image-of-light-wave.html?DCMP=ILC-hmts&nsref=news1_head_dn14172
>
>
> Watch for line wrapping ...
>
> Regards,
> JS

After an exhausting search of the net for the possibility "they" have taken a picture of the two-slit/double-slit experiment with this new technique, I have drawn a blank. However, should be interesting when someone finally gets around to it ...

Regards,
JS

5651. Re: Article throws "more light" on wave and particles ...

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 19:19:13 UTC
From: Ed Cregger <ecregger@bellsouff.net>
Message-ID: <1Lb8k.12647$PZ6.9559@bignews5.bellsouth.net>
Source record: 24673

"John Smith" <assemblywizard@gmail.com> wrote in message
news:g3rg5pkkl1@news.albasani.net...
> John Smith wrote:
>> http://technology.newscientist.com/article/dn14172-fastestever-flashgun-captures-image-of-light-wave.html?DCMP=ILC-hmts&nsref=news1_head_dn14172
>> Watch for line wrapping ...
>>
>> Regards,
>> JS
>
> After an exhausting search of the net for the possibility "they" have
> taken a picture of the two-slit/double-slit experiment with this new
> technique, I have drawn a blank. However, should be interesting when
> someone finally gets around to it ...
>
> Regards,
> JS

Worry not, it will be on the Science Channel in six months or so.

Ed, NM2K

5652. Re: 80 Meter End Fed Eire

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 19:39:13 UTC
From: M0WYM <Sansspam@peartreegreen.org>
Message-ID: <g3rih1$p0a$1@news.albasani.net>
Source record: 24674

Andy wrote:
> Charlie,
>
> Yes the software is Windows only, on my CD.
> No you don't need to connect it to the computer to use it, but you can do if
> you want to.
>
> 73 Andy
>

Andy,

That's what I suspected.

Thanks,

Charlie.

--
M0WYM
www.radiowymsey.org

Wymsey - Ten years Old!
www.wymsey.co.uk

5653. Re: interesting format for a new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 21:25:14 UTC
From: Dave <noone@nowhere.com>
Message-ID: <_Cd8k.33$0b.13@trndny04>
Source record: 24675

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:06587fbb-8961-47ea-ba23-20a2da7a0f1a@d45g2000hsc.googlegroups.com...
> On Jun 24, 8:21 am, Gene Fuller <W4SZzzz...@att.net> wrote:
>> Art Unwin wrote:
>> > When reviewing the shield of coax I see that the circulating strands
>> > follow the same principle
>> > that I advocate for small full wave antennas. Each turn on the
>> > shielding has a compensating return
>> > turn which cancels the added inductance while the wire crosses over
>> > each other to cancel the added capacitances.
>> > If one got a short length of say 2 inch diameter sheathing they could
>> > attach the wires into one complete circuit
>> > for an antenna. One could dip the sheathing into some sort of
>> > insulation if they so which but actually the wires each act as
>> > insulated wire (electricity preferrs not to turn at right angles if it
>> > can go straight) so that is really not necessary .
>>
>> Does this mean that if one places his finger on a live wire while making
>> sure to keep said finger at right angles to the wire that no shock will
>> be delivered? Do ordinary electricians know about this protective
>> strategy?
>>
>> 73,
>> Gene
>> W4SZ
>
> There are a plethoria of papers presented to the IEEE to prove that
> the wires in
> braiding act like insulated wires. I am well aware that hams
> perpetuate "old wives tales"
> regarding this and many other things. Sorry but you can't ignore the
> facts tho free speech
> is still available for the spreading of misinformation otherwise
> known as lies

and art is an excellent example of that.

5654. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 22:25:34 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <xve8k.10663$jl5.4015@flpi148.ffdc.sbc.com>
Source record: 24676
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

Jeff wrote:
> I guess the only problem with putting the choke at the antenna base will be
> pickup onto the outer as is
> crosses the groundpalne. so I can see the idea of putting the choke at the
> edge of the GP might be better.

Get the best of both worlds. Put one choke at the antenna
base and one more 1/4WL down the feedline which will be
close to your "edge of the GP".
--
73, Cecil http://www.w5dxp.com

5655. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 22:30:03 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Kze8k.10664$jI5.3215@flpi148.ffdc.sbc.com>
Source record: 24677
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

Nick wrote:
> Thanks for all the great responses guys! That is exactly what I
> had thought, that since the outer coax braid is grounded at the
> antenna, and at the shack, and (in my case) at the center with a
> lightening protector, then I just couldn't figure out why some antenna
> companies, such as reliable DX engineering with their DXE-VFCC H05-A
> Vertical Feedline Current Choke, strongly recommend such a line
> isolator for verticals.

Nick, think about it. If you ground the feedline at exactly a
common-mode standing wave voltage node, the ground accomplishes
absolutely nothing. You certainly don't want to use "plumber's
delight" techniques in your ground system.
--
73, Cecil http://www.w5dxp.com

5656. Re: interesting format for a new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 22:58:07 UTC
From: Jim Lux <james.p.lux@jpl.nasa.gov>
Message-ID: <g3ru5v$9uq$1@news.jpl.nasa.gov>
Source record: 24678

Dave wrote:
> "Art Unwin" <ArthurUnwin@gmail.com> wrote in message
> news:06587fbb-8961-47ea-ba23-20a2da7a0f1a@d45g2000hsc.googlegroups.com...
>> On Jun 24, 8:21 am, Gene Fuller <W4SZzzz...@att.net> wrote:
>>> Art Unwin wrote:
>>>> When reviewing the shield of coax I see that the circulating strands
>>>> follow the same principle
>>>> that I advocate for small full wave antennas. Each turn on the
>>>> shielding has a compensating return
>>>> turn which cancels the added inductance while the wire crosses over
>>>> each other to cancel the added capacitances.
>>>> If one got a short length of say 2 inch diameter sheathing they could
>>>> attach the wires into one complete circuit
>>>> for an antenna. One could dip the sheathing into some sort of
>>>> insulation if they so which but actually the wires each act as
>>>> insulated wire (electricity preferrs not to turn at right angles if it
>>>> can go straight) so that is really not necessary .
>>> Does this mean that if one places his finger on a live wire while making
>>> sure to keep said finger at right angles to the wire that no shock will
>>> be delivered? Do ordinary electricians know about this protective
>>> strategy?
>>>
>>> 73,
>>> Gene
>>> W4SZ
>> There are a plethoria of papers presented to the IEEE to prove that
>> the wires in
>> braiding act like insulated wires.

Any specific citations? I've got some papers on Litz wire, but haven't found any on braided wire where the component wires are uninsulated.

There's a paper in 1916 Proceedings of IRE by Kennelly, et al., "Skin-Effect Measurements of Conductors, at Radio Frequencies up to 100,000 Cycles per Second" But that's litz wire, not bare strands

W.A. Johnson, et al., published "Static modeling of periodic structures with application to braided shields" in the APS Symposium 2004, but they assume perfect conductors.

H. Haase and J. Nitsch published "High frequency model for the transfer impedance based on a generalized transmission-line theory" in IEEE Intl symposium on EMC in 2001. They model the braiding, but make the thin wire approximation for the wires, and take limited account of the proximity effect (like skin effect, except effect of a wire on an

adjacent conductor)

There's a host of papers in IEEE Trans on EMC, but none of them seem to make the assumption that the wires are insulated.

in fact, a paper such as the 2003 one by Tiedemann in IEEE Trans EMC, v45, #3, "Current Flow in Coaxial Braided Cable Shields" makes the comment in it's conclusion: "The interactions between the single braid wires are very complicated"

However, Tiedemann DOES say that the shield is better modeled by insulated wires than as a uniform tube, at least as far as shielding effectiveness... (he looked at 3 kinds of RG-58 from DC to 500 MHz)

FWIW, Tiedemann is probably hot stuff on this topic.. His PhD dissertation was "Schirmwirkung Koaxialer Geflectsstrukturen", TU Dresden, 2001

5657. Re: interesting format for a new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-24 23:45:10 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <eaf45bb0-5104-431e-beb5-498d52394ada@x35g2000hsb.googlegroups.com>
Source record: 24679

On Jun 24, 5:58 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
> Dave wrote:
> > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
> >news:06587fbb-8961-47ea-ba23-20a2da7a0f1a@d45g2000hsc.googlegroups.com...
> >> On Jun 24, 8:21 am, Gene Fuller <W4SZzzz...@att.net> wrote:
> >>> Art Unwin wrote:
> >>>> When reviewing the shield of coax I see that the circulating strands
> >>>> follow the same principle
> >>>> that I advocate for small full wave antennas. Each turn on the
> >>>> shielding has a compensating return
> >>>> turn which cancels the added inductance while the wire crosses over
> >>>> each other to cancel the added capacitances.
> >>>> If one got a short length of say 2 inch diameter sheathing they could
> >>>> attach the wires into one complete circuit
> >>>> for an antenna. One could dip the sheathing into some sort of
> >>>> insulation if they so which but actually the wires each act as
> >>>> insulated wire (electricity preferrs not to turn at right angles if it
> >>>> can go straight) so that is really not necessary .
> >>> Does this mean that if one places his finger on a live wire while making
> >>> sure to keep said finger at right angles to the wire that no shock will
> >>> be delivered? Do ordinary electricians know about this protective
> >>> strategy?
>
> >>> 73,
> >>> Gene
> >>> W4SZ
> >> There are a plethoria of papers presented to the IEEE to prove that
> >> the wires in
> >> braiding act like insulated wires.
>
> Any specific citations? I've got some papers on Litz wire, but haven't
> found any on braided wire where the component wires are uninsulated.
>
> There's a paper in 1916 Proceedings of IRE by Kennelly, et al.,
> "Skin-Effect Measurements of Conductors, at Radio Frequencies up to
> 100,000 Cycles per Second" But that's litz wire, not bare strands
>
> W.A. Johnson, et al., published "Static modeling of periodic structures
> with application to braided shields" in the APS Symposium 2004, but they
> assume perfect conductors.
>
> H. Haase and J. Nitsch published "High frequency model for the transfer
> impedance based on a generalized transmission-line theory" in IEEE Intl
> symposium on EMC in 2001. They model the braiding, but make the thin

> wire approximation for the wires, and take limited account of the
> proximity effect (like skin effect, except effect of a wire on an
> adjacent conductor)
>
> There's a host of papers in IEEE Trans on EMC, but none of them seem to
> make the assumption that the wires are insulated.
>
> in fact, a paper such as the 2003 one by Tiedemann in IEEE Trans EMC,
> v45, #3, "Current Flow in Coaxial Braided Cable Shields" makes the
> comment in it's conclusion: "The interactions between the single braid
> wires are very complicated"
>
> However, Tiedemann DOES say that the shield is better modeled by
> insulated wires than as a uniform tube, at least as far as shielding
> effectiveness... (he looked at 3 kinds of RG-58 from DC to 500 MHz)
>
> FWIW, Tiedemann is probably hot stuff on this topic.. His PhD
> dissertation was "Schirmwirkung Koaxialer Geflectsstrukturen", TU
> Dresden, 2001

Jim, I put into google "insulated wire coax IEEE" as near as I can
remember
The abstract stated that the wire acted like they were insulated!
Came across another one that gave the same comment.
I would point out that I am referring to an abstract only as I am not
privy to the whole report
Would appreciate any clarification
Regards
Art

5658. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 00:41:31 UTC
From: Nick <nick.adams95@yahoo.com>
Message-ID: <73143938-db92-4555-8b0d-911334c96d42@y22g2000prd.googlegroups.com>
Source record: 24680
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Jun 24, 3:30 pm, Cecil Moore <nos...@w5dxp.com> wrote:
> Nick wrote:
> > Thanks for all the great responses guys! That is exactly what I
> > had thought, that since the outer coax braid is grounded at the
> > antenna, and at the shack, and (in my case) at the center with a
> > lightening protector, then I just couldn't figure out why some antenna
> > companies, such as reliable DX engineering with their DXE-VFCC H05-A
> > Vertical Feedline Current Choke, strongly recommend such a line
> > isolator for verticals.
>
> Nick, think about it. If you ground the feedline at exactly a
> common-mode standing wave voltage node, the ground accomplishes
> absolutely nothing. You certainly don't want to use "plumber's
> delight" techniques in your ground system.
> --
> 73, Cecil http://www.w5dxp.com

Thanks Richard and Cecil.
Cecil, I understand what you are saying, but still why not use the
outer shield of the coax as one of the radials, and simply choke off
the coax just before it enters the shack? I also don't want to add
what may be a useless choke at the antenna's feedpoint, since that
would decrease the antenna system's efficiency due to the choke's
resistive losses...

Thanks!

-Nick

5659. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 01:16:53 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <in6364ple4ve8us16nqbv6o6rn9k1ta595@4ax.com>
Source record: 24681
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Tue, 24 Jun 2008 17:41:31 -0700 (PDT), Nick
<nick.adams95@yahoo.com> wrote:

>I also don't want to add
>what may be a useless choke at the antenna's feedpoint, since that
>would decrease the antenna system's efficiency due to the choke's
>resistive losses...

Hi Nick,

A choke at the feedpoint does NOT add loss.

The Choke (which may be resistive insofar as the bulk material's property) is in the Common Mode circuit. The load is in the Differential Mode circuit. You want a very, very high Z (or R, it makes no difference) in the Common Mode circuit. The choke is entirely transparent to the Differential Mode circuit.

If you don't understand the difference between the two modes (and it is not a common topic outside of electronics design) then, no doubt, others will fill in (or simply go to wikipedia).

73's
Richard Clark, KB7QHC

5660. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 01:39:16 UTC
From: Jim Thompson <To-Email-Use-The-Envelope-Icon@My-Web-Site.com>
Message-ID: <vc83641jlcklr3i0sej49u71fk0usnj8n8@4ax.com>
Source record: 24682
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Tue, 24 Jun 2008 17:41:31 -0700 (PDT), Nick
<nick.adams95@yahoo.com> wrote:

>On Jun 24, 3:30 pm, Cecil Moore <nos...@w5dxp.com> wrote:
>> Nick wrote:
>> >   Thanks for all the great responses guys! That is exactly what I
>> > had thought, that since the outer coax braid is grounded at the
>> > antenna, and at the shack, and (in my case) at the center with a
>> > lightening protector, then I just couldn't figure out why some antenna
>> > companies, such as reliable DX engineering with their DXE-VFCC H05-A
>> > Vertical Feedline Current Choke, strongly recommend such a line
>> > isolator for verticals.
>>
>> Nick, think about it. If you ground the feedline at exactly a
>> common-mode standing wave voltage node, the ground accomplishes
>> absolutely nothing. You certainly don't want to use "plumber's
>> delight" techniques in your ground system.
>> --
>> 73, Cecil http://www.w5dxp.com
>
>
> Thanks Richard and Cecil.
> Cecil, I understand what you are saying, but still why not use the
>outer shield of the coax as one of the radials, and simply choke off
>the coax just before it enters the shack? I also don't want to add
>what may be a useless choke at the antenna's feedpoint, since that
>would decrease the antenna system's efficiency due to the choke's
>resistive losses...
>
>Thanks!
>
>-Nick

When I was into 2-meters 40+ years ago, I preferred gamma-matched
verticals.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona 85048 Skype: Contacts Only	
Voice:(480)460-2350 Fax: Available upon request	Brass Rat
E-mail Icon at http://www.analog-innovations.com	1962

| |
| America: Land of the Free, Because of the Brave |
| |
| Due to excessive spam, googlegroups, UAR & AIOE are blocked! |

5661. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 05:12:55 UTC
From: Nick <nick.adams95@yahoo.com>
Message-ID: <05d5783d-a032-4cca-b47d-ae4c6f313d0f@i18g2000prn.googlegroups.com>
Source record: 24683
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Jun 24, 6:16 pm, Richard Clark <kb7...@comcast.net> wrote:
> On Tue, 24 Jun 2008 17:41:31 -0700 (PDT), Nick
>
> <nick.adam...@yahoo.com> wrote:
> >I also don't want to add
> >what may be a useless choke at the antenna's feedpoint, since that
> >would decrease the antenna system's efficiency due to the choke's
> >resistive losses...
>
> Hi Nick,
>
> A choke at the feedpoint does NOT add loss.
>
> The Choke (which may be resistive insofar as the bulk material's
> property) is in the Common Mode circuit. The load is in the
> Differential Mode circuit. You want a very, very high Z (or R, it
> makes no difference) in the Common Mode circuit. The choke is
> entirely transparent to the Differential Mode circuit.
>
> If you don't understand the difference between the two modes (and it
> is not a common topic outside of electronics design) then, no doubt,
> others will fill in (or simply go to wikipedia).
>
> 73's
> Richard Clark, KB7QHC

Thanks for the further info Richard! I guess I don't really fully
understand why the pure resistive losses in the coax choke wouldn't
affect the efficiency of the monopole. If I understand you correctly
(and I may not!), then even if we increase the impedance of the coax
choke to insane levels, such as by making it 1000 feet long and
winding it on a six inch diameter PVC form, then the huge losses
normally inherent in such a long run of coax would not be seen at all
by the vertical because it is wound on the PVC form? (I'm not arguing
with you at all, I just really want to know).

73,

-Nick

5662. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 06:15:29 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tdn364ti7gfin1nhei0m8lst7nnrn91eqo@4ax.com>
Source record: 24684
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Tue, 24 Jun 2008 22:12:55 -0700 (PDT), Nick
<nick.adams95@yahoo.com> wrote:

> Thanks for the further info Richard! I guess I don't really fully
>understand why the pure resistive losses in the coax choke wouldn't
>affect the efficiency of the monopole. If I understand you correctly
>(and I may not!), then even if we increase the impedance of the coax
>choke to insane levels, such as by making it 1000 feet long and
>winding it on a six inch diameter PVC form, then the huge losses
>normally inherent in such a long run of coax would not be seen at all
>by the vertical because it is wound on the PVC form? (I'm not arguing
>with you at all, I just really want to know).
>
>73,
>
>-Nick

Hi Nick,

Well, no argument perceived. 1000 feet would come with its own loss. This is published in dB attenuation/100 feet for almost any type and grade of coax in the market (and those that are no longer made). This is truly Differential Mode loss.

Winding too much into a coil would not necessarily achieve the results expected due to self-resonance (it could act like a shorted choke, and not very useful). You can achieve astonishingly high Zs with a coiled transmission line with very little effort (roughly 8-12 turns on a liter pop bottle - empty of course - for HF). It will peak at some frequency and provide adequate isolation in nearby bands; however, the ferrite chokes can be made to cover a decade of frequency - or much more (3-30 MHz), if you care to really go whole hog (3MHz-3GHz) with 1000 Ohms of Z (principally R) without too much effort either (more cost than effort I should add).

One proviso should be observed: Whatever problems find their way onto the shield of the coax (Common Mode circuit) can arrive over the air. If they do, they can induce themselves into the below the choke point as easily as at the antenna. The solution here is to repeat the choke construction 1/4 wavelength from the feedpoint (a second choke, that is). If you are choking a wide band, you might try distributing the ferrite beads over a greater length of coax than the 1 foot it would normally inhabit. I have a 20 foot ferrite choking section that I can insert, inline, into my feeds. It has one bead every 3 or 4 inches. I wouldn't advise this as replacing the feedpoint choke, but rather the

second choke some short distance away.

Note that I made a distinction about interference coming in "over the air." This is not the only way as most home based interference comes into the receiver by conduction - sharing a poor ground. Most folks who swear that chokes don't work (or at least theirs don't so none do), are suffering from ground loops. A choke can help, but not nearly as well as combining it with conventional grounding solutions. Poor advice abounds in this topic too.

73's
Richard Clark, KB7QHC

5663. 08 new burberry chanel coach crocs sunglasses shox r3 r4 r5 nz tl sneakers

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 07:17:37 UTC
From: mynicesneakers8@yahoo.com.cn
Message-ID: <062c88f7-6290-431c-826d-88395a2f6a6d@q24g2000prf.googlegroups.com>
Source record: 24685

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jerseys
shox r2 r3 r4 r5 r6 tn tl1 tl3, sandals, nhl jerseys, mlb jerseys,
nba
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shirts Designer
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bape hoodies at:www.efootjoy.com Designer
Hoodies NFL NHL NBA MLB Jersey throwback jersey ,super bowl
jersey ,pro bowl jersey,boy
jersey,discounted jersey,customize jersey authentic jersey,
jersey,stitched jersey,reebok
jerseys,football jerey,basketball jersey,youth jersey,adult
jerseys,kids jersey, hockey
jersey,Mitchell Ness jersey,custom football jersey,allstar
jersey,official jersey ,
classics jersey , retired jersey ,autographejersey, lady
jersey ,baby jersey,vintage
jersey,throw back jersey,womens jersey at:www.efootjoy.com

5664. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 07:39:15 UTC
From: Jeff <jeff@local.host>
Message-ID: <4861f669$0$1349$834e42db@reader.greatnowhere.com>
Source record: 24686
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

> I guess I don't really fully
>understand why the pure resistive losses in the coax choke wouldn't
>affect the efficiency of the monopole.

A simple way to think of it is: Ferrite beads over the outer of a coax has
no effect on the signals flowing 'normally'
up and down 'inside' it. The beads only effect signals that are flowing on
the outer (treating it like a piece of wire rather
than a coax transmission line). I know that this is not quite the full story
but it is a simple explanation of the situation
under discussion.

Jeff

5665. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 14:00:39 UTC
From: wazzzzup <wazzzzup@wazzzzup.com>
Message-ID: <g3tj2g$1405$1@otis.netspace.net.au>
Source record: 24687
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

It may once have been an established convention to bottom post - these days many people don't bother unless there is a specific need to reference particular comments in multiple parts of a posting. May be irritating for some, but build a bridge and get over it.
A more serious PITA is people not trimming the unnecessary parts from their responses when there is no requirement to include it. If people really want to have a look at how the discussion plays out, then they can go back and look through it, post by post. Much more of a PITA to have people include a couple of hundred lines of text - or more - and then reply with a couple of words......
As to the actual topic of the post, yes, the analyser might be picking up a strong local transmission that is confusing it - having said that, at my current QTH, I am pretty close to a number of MW broadcast sites with high TX levels and I have not experienced any of the problems or issues as outlined by Andy.

me

"Ian Jackson" <ianREMOVETHISjackson@g3ohx.demon.co.uk> wrote in message news:tsYfo+Qp9sXIFwFW@g3ohx.demon.co.uk...
> Andy, you've gone back to top posting, and this makes it very difficult to
> follow the discussion. In newsgroups (unlike emails), you should really
> post at the bottom. This is the established convention.
>
> Anyway, it's interesting what you have found out with the dipole
> configuration. Presumably, you still have the coax braid and one side of
> 300 ohm feeder earthed. If so, I would not have expected there to be quite
> such a dramatic change of resonance. However, if your earth rods are
> totally ineffective (or you have disconnected the earth), you might expect
> things to change a lot when you add 'the other half of the dipole'. If you
> actually have room to put up an appx 60 foot + 60 foot dipole, why not
> consider a G5RV (which, I believe, you have already tried) or a W3DZZ trap
> dipole? This would get rid of your earthing problems.
> --
> Ian

5666. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 14:09:35 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <Cks8k.28693$ZE5.17160@nlpi061.nbdc.sbc.com>
Source record: 24688
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

Nick wrote:
> Cecil, I understand what you are saying, but still why not use the
> outer shield of the coax as one of the radials, and simply choke off
> the coax just before it enters the shack? I also don't want to add
> what may be a useless choke at the antenna's feedpoint, since that
> would decrease the antenna system's efficiency due to the choke's
> resistive losses...

Unless the coax is up and in the clear, common-mode power is
probably wasted whether you choke or not.

If your choke at the shack happens to be placed at a common-
mode voltage-maximum/current-minimum, it will be ineffective.
One reason for placing a choke at the antenna feedpoint is
that is probably the maximum current point where the choke
has a good chance of being most effective.
--
73, Cecil http://www.w5dxp.com

5667. Re: interesting format for a new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 14:36:39 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <0974fa69-4958-463b-adef-1555fa4518c7@z66g2000hsc.googlegroups.com>
Source record: 24689

On Jun 24, 6:45 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Jun 24, 5:58 pm, Jim Lux <james.p....@jpl.nasa.gov> wrote:
>
>
>
> > Dave wrote:
> > > "Art Unwin" <ArthurUn...@gmail.com> wrote in message
> > >news:06587fbb-8961-47ea-ba23-20a2da7a0f1a@d45g2000hsc.googlegroups.com...
> > >> On Jun 24, 8:21 am, Gene Fuller <W4SZzzz...@att.net> wrote:
> > >>> Art Unwin wrote:
> > >>>> When reviewing the shield of coax I see that the circulating strands
> > >>>> follow the same principle
> > >>>> that I advocate for small full wave antennas. Each turn on the
> > >>>> shielding has a compensating return
> > >>>> turn which cancels the added inductance while the wire crosses over
> > >>>> each other to cancel the added capacitances.
> > >>>> If one got a short length of say 2 inch diameter sheathing they could
> > >>>> attach the wires into one complete circuit
> > >>>> for an antenna. One could dip the sheathing into some sort of
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> > >>> 73,
> > >>> Gene
> > >>> W4SZ
> > >> There are a plethoria of papers presented to the IEEE to prove that
> > >> the wires in
> > >> braiding act like insulated wires.
>
> > Any specific citations? I've got some papers on Litz wire, but haven't
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> > There's a paper in 1916 Proceedings of IRE by Kennelly, et al.,
> > "Skin-Effect Measurements of Conductors, at Radio Frequencies up to
> > 100,000 Cycles per Second" But that's litz wire, not bare strands
>
> > W.A. Johnson, et al., published "Static modeling of periodic structures
> > with application to braided shields" in the APS Symposium 2004, but they
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> > H. Haase and J. Nitsch published "High frequency model for the transfer
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> > symposium on EMC in 2001. They model the braiding, but make the thin
> > wire approximation for the wires, and take limited account of the
> > proximity effect (like skin effect, except effect of a wire on an
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> > in fact, a paper such as the 2003 one by Tiedemann in IEEE Trans EMC,
> > v45, #3, "Current Flow in Coaxial Braided Cable Shields" makes the
> > comment in it's conclusion: "The interactions between the single braid
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> > However, Tiedemann DOES say that the shield is better modeled by
> > insulated wires than as a uniform tube, at least as far as shielding
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> > FWIW, Tiedemann is probably hot stuff on this topic.. His PhD
> > dissertation was "Schirmwirkung Koaxialer Geflectsstrukturen", TU
> > Dresden, 2001
>
> Jim, I put into google "insulated wire coax IEEE" as near as I can
> remember
> The abstract stated that the wire acted like they were insulated!
> Came across another one that gave the same comment.
> I would point out that I am referring to an abstract only as I am not
> privy to the whole report
> Would appreciate any clarification
> Regards
> Art

The article I was refering to is the Tiederman article
and it is available in full on the web

5668. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 15:04:47 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g3tmqf$1j38$1@f04n12.cac.psu.edu>
Source record: 24690
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

Nick wrote:

> Thanks for all the great responses guys! That is exactly what I
> had thought, that since the outer coax braid is grounded at the
> antenna, and at the shack, and (in my case) at the center with a
> lightening protector,

Wad is dis? Is that something to protect your coax from becoming too light?

Jes kiddin'!

then I just couldn't figure out why some antenna
> companies, such as reliable DX engineering with their DXE-VFCC H05-A
> Vertical Feedline Current Choke, strongly recommend such a line
> isolator for verticals.

Since they make them, they're happy to sell them to you.

A direct quote from DX Engineering's Website:

> "2/5 kW Vertical Feedline Current Choke
> If your antenna SWR is already low and you wish to reduce feedline
> radiation and improve reception, a Feedline Current Choke is
> recommended.

I am really at a loss as to how this isolator improves reception.

> Adding a DX Engineering Feedline Current Choke at the
> base of a vertical antenna will substantially reduce unwanted feedline
> radiation (RFI), reducing the need for improved station grounding.

Am I a hopeless noob, or are there a lot of things wrong here?
Feedline radiation = RFI. and almost a lure toward poor station grounding?

> When quarter-wave antennas are constructed over a good radial system,
> they have a feedpoint impedance of about 36 ohms. When they are
> constructed over less than a good radial-system there is a loss
> introduced into the feed system that adds to the 36-ohm figure. This
> improves the SWR but there is a loss in the efficiency of the antenna,
> signals transmitted and received have a higher take-off angle and
> often there is current introduced on to the feedline.

Are there tests showing this somewhere?

Anyway, you are probably best served by placing as many radials as you
can handle - but more than 4. I just went till my knees and back said
"no more", then came back the next day and laid more. Have as good a

grounding system as you can get, and good lightning protection. IMO, if that isolator is helping any, it is just trying to mitigate a problem that should be taken care of elsewhere.

- 73 de Mike N3LI -

5669. Re: interesting format for a new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 15:21:05 UTC
From: Michael Coslo <mjc5@psu.edu>
Message-ID: <g3tnp1$1j3a$1@f04n12.cac.psu.edu>
Source record: 24691

Art Unwin wrote:

> The article I was refering to is the Tiederman article
> and it is available in full on the web

ieeexplore.ieee.org/iel5/15/27480/01223622.pdf

is the specific link.

Were there others?

- 73 de Mike N3LI -

5670. Re: Does a HF vertical antenna need a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 16:01:15 UTC
From: Nick <nick.adams95@yahoo.com>
Message-ID: <2c1c416b-48c2-4d70-bfc9-4d01bb88b160@t12g2000prg.googlegroups.com>
Source record: 24692
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.design

On Jun 25, 8:04 am, Michael Coslo <m...@psu.edu> wrote:
> Nick wrote:
> > Thanks for all the great responses guys! That is exactly what I
> > had thought, that since the outer coax braid is grounded at the
> > antenna, and at the shack, and (in my case) at the center with a
> > lightening protector,
>
> Wad is dis? Is that something to protect your coax from becoming too light?
>
> Jes kiddin'!
>
> then I just couldn't figure out why some antenna
>
> > companies, such as reliable DX engineering with their DXE-VFCC H05-A
> > Vertical Feedline Current Choke, strongly recommend such a line
> > isolator for verticals.
>
> Since they make them, they're happy to sell them to you.
>
> A direct quote from DX Engineering's Website:
>
> > "2/5 kW Vertical Feedline Current Choke
> > If your antenna SWR is already low and you wish to reduce feedline
> > radiation and improve reception, a Feedline Current Choke is
> > recommended.
>
> I am really at a loss as to how this isolator improves reception.
>
> > Adding a DX Engineering Feedline Current Choke at the
> > base of a vertical antenna will substantially reduce unwanted feedline
> > radiation (RFI), reducing the need for improved station grounding.
>
> Am I a hopeless noob, or are there a lot of things wrong here?
> Feedline radiation = RFI. and almost a lure toward poor station grounding?
>
> > When quarter-wave antennas are constructed over a good radial system,
> > they have a feedpoint impedance of about 36 ohms. When they are
> > constructed over less than a good radial-system there is a loss
> > introduced into the feed system that adds to the 36-ohm figure. This
> > improves the SWR but there is a loss in the efficiency of the antenna,
> > signals transmitted and received have a higher take-off angle and
> > often there is current introduced on to the feedline.
>

> Are there tests showing this somewhere?
>
> Anyway, you are probably best served by placing as many radials as you
> can handle - but more than 4. I just went till my knees and back said
> "no more", then came back the next day and laid more. Have as good a
> grounding system as you can get, and good lightning protection. IMO, if
> that isolator is helping any, it is just trying to mitigate a problem
> that should be taken care of elsewhere.
>
>   - 73 de Mike N3LI -

Thanks again guys. I'll have to study common versus diff mode
currents on coax cable again to gain a better understanding of the
situation! And as was stated by many, a good radial field should
mitigate the situation anyway.

73,

-Nick

5671. Transmission line choke - re:Richard Clark

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 16:17:18 UTC
From: John KD5YI <groups2_dot_jocjo@xoxy.net>
Message-ID: <icu8k.2$BR.0@trnddc06>
Source record: 24693

In another thread, Richard said:

"You can achieve astonishingly high Zs with a coiled
transmission line with very little effort (roughly 8-12 turns on a
liter pop bottle - empty of course - for HF)."

The key is "...empty of course...". What if one were to fill the bottle with relatively pure water to keep dissipation factor low? Water's dielectric constant is about 80. This would increase the stray capacitance, thus reducing the required turns to achieve resonance. Would this increase the Q due to lower loss in the inductance?

Just curious.

John

5672. Re: Transmission line choke - re:Richard Clark

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 17:06:56 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <50236256-4cb2-4b46-88e7-85581129c8d8@i36g2000prf.googlegroups.com>
Source record: 24694

On Jun 25, 9:17 am, "John KD5YI" <groups2_dot_jo...@xoxy.net> wrote:
> In another thread, Richard said:
>
> "You can achieve astonishingly high Zs with a coiled
> transmission line with very little effort (roughly 8-12 turns on a
> liter pop bottle - empty of course - for HF)."
>
> The key is "...empty of course...". What if one were to fill the bottle with
> relatively pure water to keep dissipation factor low? Water's dielectric
> constant is about 80. This would increase the stray capacitance, thus
> reducing the required turns to achieve resonance. Would this increase the Q
> due to lower loss in the inductance?
>
> Just curious.
>
> John

Very unlikely. It won't increase the effective shunt capacitance all
that much since it's not between the turns, and it's not likely you'll
have pure enough water to have low loss in the water.

You can wind a coil that's self-resonant and achieve a high impedance
over a fairly broad range of frequencies (that is, across all of an HF
band), or you can use just a few turns (that is, a coil whose self
resonance is considerably higher than the operating frequency) and put
a tuning capacitor across the coil and tune it to a specific
frequency. That can be nice at lower frequencies where it takes a
long piece of line to make a self-resonant coil. In that case, the
impedance at resonance will be high, but the bandwidth will be
relatively small; it can use a lot less coax though. There are
programs and web sites that predict the self-resonant frequency of
solenoid coils, though with the coax jacket, expect the actual self-
resonance to be slightly lower than the same coil without the jacket.

Cheers,
Tom

5673. Re: Transmission line choke - re:Richard Clark

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 17:54:38 UTC
From: Jerry <jerrymartes@verizon.net>
Message-ID: <yDv8k.12$x65.9@trnddc01>
Source record: 24695

"K7ITM" <k7itm@msn.com> wrote in message
news:50236256-4cb2-4b46-88e7-85581129c8d8@i36g2000prf.googlegroups.com...
> On Jun 25, 9:17 am, "John KD5YI" <groups2_dot_jo...@xoxy.net> wrote:
>> In another thread, Richard said:
>>
>> "You can achieve astonishingly high Zs with a coiled
>> transmission line with very little effort (roughly 8-12 turns on a
>> liter pop bottle - empty of course - for HF)."
>>
>> The key is "...empty of course...". What if one were to fill the bottle
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>> relatively pure water to keep dissipation factor low? Water's dielectric
>> constant is about 80. This would increase the stray capacitance, thus
>> reducing the required turns to achieve resonance. Would this increase the
>> Q
>> due to lower loss in the inductance?
>>
>> Just curious.
>>
>> John
>
> Very unlikely. It won't increase the effective shunt capacitance all
> that much since it's not between the turns, and it's not likely you'll
> have pure enough water to have low loss in the water.
>
> You can wind a coil that's self-resonant and achieve a high impedance
> over a fairly broad range of frequencies (that is, across all of an HF
> band), or you can use just a few turns (that is, a coil whose self
> resonance is considerably higher than the operating frequency) and put
> a tuning capacitor across the coil and tune it to a specific
> frequency. That can be nice at lower frequencies where it takes a
> long piece of line to make a self-resonant coil. In that case, the
> impedance at resonance will be high, but the bandwidth will be
> relatively small; it can use a lot less coax though. There are
> programs and web sites that predict the self-resonant frequency of
> solenoid coils, though with the coax jacket, expect the actual self-
> resonance to be slightly lower than the same coil without the jacket.
>
> Cheers,
> Tom

Hi Tom

What do you suppose would happen if the bottle had some steel wool in it
and (maybe) have a few less turns?

Jerry KD6JDJ

5674. Re: Serial Port BASIC?

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 18:47:56 UTC
From: Aslak Backman <backman@towers.net>
Message-ID: <1214419676_6651@news-in1.superfeed.net>
Source record: 24696

Kun katsoo n�it�keskeisimpi� nettilinjo, niin alkuun n�ytt�� silt�, ett� t��ll� palloilee l�hinn� "ruinruinit, muiden mollaajat, ja ostetut ydinlobbarit". Eli suoraan sanottuna yht� tyhj�n kansa pelailevia palloilijoita. Mutta siten huomaa miksi ihmiset t�nne niin mielell��n tulee viisaukasia silti lukemaan?

Jos osut talous-, yhteiskunta- ja poliittiselle sektorille huomaat, miten siel� toimii my�s porukoissa suoranaisia "kassamangneetteja". Olen avoimesti kiitellyt mm Rauno Kankaan miten kristalloisin. ..no hei vaikka "eettist� asennekoulutustyyli��n". Kaveri jos kuka on ollut oiva esimerkki siit� miten nettiammattilaisen tulisi k�ytt�yty�. Aina asiallisena, kaikesta "oskukarstasta" huolimatta tied�t saavasi tukun paikoin jopa el�m�� suurempaa osviittaa ja paikoin jopa nerokasta osviittaa siit� miten maailma makaa kritiikkiin asti. Oivan ja loisteliaan materiaalin saat t��lt� ilmaiseksi, neuvoja on tuohtumaton j�m�k�n asiallinen. Hienoa, juuri t�t� tuhannet t��lt� haluaa.

No tottakai ei finetti tyyli ole j�tt�nyt kylm�ksi, vaan h�nen vision��risyytt��n sitten kopioidaan my�s muutamissa muissa osastoissa, ja hyv� niin. Tietysti kopio on kopio, mutta tusinan verran t��lt� l�ytyy sellaisia kirjoittelijoita, joista heijastuu Raunon oivallinen esimerkkijatkumo. Ja jopa kyky kampittaa my�s Raunoon liittyv�t pakolliset h�irik�ainekset. Joita voidaan mainita yhteisnimill��n, "Oskut, ydinklingonit ja vastaavat". Er�s henkil� jonka sattuneesti haluan ilmoittaa t�ss� on nimimerkki NEO. H�n ei toki ole talous-, poliittis-, yhteiskuntasektoreilla tietysti esikuvansa luokkaa, ei toki. Mutta kampittaa kyll� muutamilla sektoreillaan my�s suvereeneill� erikoisaloillaan. Ja totta kai taitojensa h�ikimi� ns. "ydinklingoneita ja SUPO-sotkijoita on toisinaan niin suuret parvet kintereill��n, ettei rahanjaolla tunnu TVO/Posivalla olevan rajoja h�irikk�sahureittensa palkkaamisiin. Mutta siin� NEO on kyll� kykyis� Raunon rinnalla toki, ett� ammattiviisautta, viile�� asiallisuutta ja ennenkaikkea loputtoman ammattitaitoista materiaalia saamme saavikaupalla k�ytt��mme!

Suuri yleis� nauttii ja nettioperaattorit kiitt�� valtaisien hittim��rien aina vaan jaksaessa yll�tt��. Netti el�� kiistatta vain muutaman t�llaisen "gurun" �lyn neuvokkuudella. Kansanmassat saa mit� haluaa. Ja operaattorien maireat ilmeet kertovat valtaisien suosikkim��rien alati pit�v�n systremit hengiss�. Ennenkaikkea koko t�m� kaikki yhdess� n�kyy aivan k�sitt�m�tt�m�sti kumuloituvine kansan ymm�rryskykykasvuina. Nyt on massoilla kanava k�yt�ss�, jossa ei iso raha pyki. Ei valtiomoinoliitit kuki seinill�. Vaan asiafaktan kiinisaanti on huomattu iloisesti jopa laajasti rajojemme ulkopuolelle asti. Kuten hyvin tied�mme asiallista kritiiki� ei valtiomonopolit salli. Ei SUPO/TVO/kuin edes hallitusmokailijat eduskunnan

helsinkil�is�kyj� my�ten. Nettien palstat pursuaa JUURI t�st�, ett� on maamme ehdottomasti viimeinen vapaamman tiedon periferia sitke�sti. Jopa niin sitke�sti, ett� SUPO/NSA/STUK/ TVO/Posiva/Fortum /GTK ja monet , monet muut uhkailevat aivan h�rskisti tappaa koko kanavan! Heid�n edustamansa valtiorappiollinen m�d�nn�isyys kun ei kansan viisastuessa ja tietoa saadessa en�� totuuksia sied�. Sis�ministeri�n tuhatp�isen poliisisikailukulttuurin uhka on jo pitk��n ollut nettituhoa hautomassa. Saa vaan n�hd� kest��k� systeemimme nimenomaan Suomessa totuuden puhujia?

5675. Re: Transmission line choke - re:Richard Clark

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 19:16:36 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <q96564l9tmvnrsv27o8entuh32tn3nhrpe@4ax.com>
Source record: 24697

On Wed, 25 Jun 2008 16:17:18 GMT, "John KD5YI"
<groups2_dot_jocjo@xoxy.net> wrote:

>In another thread, Richard said:
>
>"You can achieve astonishingly high Zs with a coiled
>transmission line with very little effort (roughly 8-12 turns on a
>liter pop bottle - empty of course - for HF)."
>
>The key is "...empty of course...". What if one were to fill the bottle with
>relatively pure water to keep dissipation factor low? Water's dielectric
>constant is about 80. This would increase the stray capacitance, thus
>reducing the required turns to achieve resonance. Would this increase the Q
>due to lower loss in the inductance?
>
>Just curious.
>
>John
GASP!
Did you just invent a water-tuned variable inductor?

John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

5676. Re: interesting format for a new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-25 22:51:03 UTC
From: Dave <noone@nowhere.com>
Message-ID: <rZz8k.55$tb.51@trndny08>
Source record: 24698

"Michael Coslo" <mjc5@psu.edu> wrote in message
news:g3tnp1$1j3a$1@f04n12.cac.psu.edu...
> Art Unwin wrote:
>
>> The article I was refering to is the Tiederman article
>> and it is available in full on the web
>
> ieeexplore.ieee.org/iel5/15/27480/01223622.pdf
>
> is the specific link.
>
> Were there others?
>
>
> - 73 de Mike N3LI -
>

art gets his info from reading abstracts... that figures. by the way, that
abstract doesn't say:

> >> the wires in
> >> braiding act like insulated wires.

as art states, what it says is "the standard braid of the shield used had
the same properties as a braid made with insulated wires." these are not
equivalent statements. indeed a simple resistance test would instantly tell
the difference. without knowing the range of frequencies and 'properties'
that were measured in the braid you can't just make a blanket statement that
"the wires in the braiding act like insulated wires". try reading some full
journal articles and whole books art, not just the dust jackets.

5677. Re: PALSTAR AT1KP Meter 1200 Watt Antenna Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 00:01:28 UTC
From: Brad <google@vk2qq.com>
Message-ID: <5c74d86f-230d-4807-b747-f1c3a7bec988@w4g2000prd.googlegroups.com>
Source record: 24699
Cross-posted to: aus.radio.amateur.misc,rec.radio.amateur.antenna

On Jun 26, 12:09 am, Walt Davidson <g3...@despammed.com> wrote:
> On Thu, 26 Jun 2008 00:00:39 +1000, "wazzzzup" <wazzz...@wazzzzup.com>
> wrote:
>
> [drivel snipped]
>
> Kill-filed for top-posting.
>
> 73 de G3NYY
>
> --
> Walt Davidson Email: g3nyy @despammed.com

Kill-filed for being a wanker.

5678. Re: Transmission line choke - re:Richard Clark

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 05:09:08 UTC
From: K7ITM <k7itm@msn.com>
Message-ID: <76983df1-3745-4e52-a095-78eeef6bf56d@q24g2000prf.googlegroups.com>
Source record: 24700

On Jun 25, 10:54 am, "Jerry" <jerrymar...@verizon.net> wrote:
> "K7ITM" <k7...@msn.com> wrote in message
>
> news:50236256-4cb2-4b46-88e7-85581129c8d8@i36g2000prf.googlegroups.com...
>
>
>
> > On Jun 25, 9:17 am, "John KD5YI" <groups2_dot_jo...@xoxy.net> wrote:
> >> In another thread, Richard said:
>
> >> "You can achieve astonishingly high Zs with a coiled
> >> transmission line with very little effort (roughly 8-12 turns on a
> >> liter pop bottle - empty of course - for HF)."
>
> >> The key is "...empty of course...". What if one were to fill the bottle
> >> with
> >> relatively pure water to keep dissipation factor low? Water's dielectric
> >> constant is about 80. This would increase the stray capacitance, thus
> >> reducing the required turns to achieve resonance. Would this increase the
> >> Q
> >> due to lower loss in the inductance?
>
> >> Just curious.
>
> >> John
>
> > Very unlikely. It won't increase the effective shunt capacitance all
> > that much since it's not between the turns, and it's not likely you'll
> > have pure enough water to have low loss in the water.
>
> > You can wind a coil that's self-resonant and achieve a high impedance
> > over a fairly broad range of frequencies (that is, across all of an HF
> > band), or you can use just a few turns (that is, a coil whose self
> > resonance is considerably higher than the operating frequency) and put
> > a tuning capacitor across the coil and tune it to a specific
> > frequency. That can be nice at lower frequencies where it takes a
> > long piece of line to make a self-resonant coil. In that case, the
> > impedance at resonance will be high, but the bandwidth will be
> > relatively small; it can use a lot less coax though. There are
> > programs and web sites that predict the self-resonant frequency of
> > solenoid coils, though with the coax jacket, expect the actual self-
> > resonance to be slightly lower than the same coil without the jacket.
>
> > Cheers,

> > Tom
>
> Hi Tom
>
> What do you suppose would happen if the bottle had some steel wool in it
> and (maybe) have a few less turns?
>
> Jerry KD6JDJ

Well, shoot, if you put enough (common-mode) current in the coil, you might be able to get the steel wool to catch on fire...

Honestly, I've had good enough experiences just using "air core" coils of line as chokes, and in rare cases where I had a lot of RF to get rid of putting a resonating capacitor across the coil, that I haven't ever found it worth worrying about putting things into the coil as a 'core'. At this point I should perhaps ask, is the choke intended to be dissipative, or reflective? Should it be just a high impedance so very little current is allowed at that point, or should it look like a resistive load? My ideal is high impedances at enough points along conductors that aren't supposed to be radiating that the currents on those conductors remain low.

Cheers,
Tom

5679. Naruto 405, One Piece 504, Bleach 327

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 10:53:03 UTC
From: mangaboy001 <mangaboy001@yahoo.com>
Message-ID: <12d5c05f-c505-4edf-9e35-10e30b93d5eb@y22g2000prd.googlegroups.com>
Source record: 24601

Naruto 405, One Piece 504, Bleach 327

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http://english1.isoshu.com/?recommid=1023

http://emanga1.isoshu.com/?recommid=1023

5680. Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 12:35:31 UTC
From: amdx <amdx@knology.net>
Message-ID: <b27fd$48638d20$18d6b40c$2959@KNOLOGY.NET>
Source record: 24602

I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
I calculated the focus as F=D*2 / 16d where D =diameter and d=depth
F=18 inches Ok so far.
How do you find beamwidth? I think the 35" dimensiom would have a tighter
pattern than the 20 ", but how do you calculate,

Second, The feed antenna, There can be different feeds.
A simple monopole, dipole, biquad, patch, yagi, helix.
How does the feed antenna affect the gain of the dish, if at all?
Yea, it my be difficult to light the yagi or helix, so if you like throw
those out.
Thank You,
Mike

5681. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 14:37:57 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <fu97649hdveqsgj8ncl4lrtp7t4kj1vl8h@4ax.com>
Source record: 24603

On Thu, 26 Jun 2008 07:35:31 -0500, "amdx" <amdx@knology.net> wrote:

>I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
>I calculated the focus as F=D*2 / 16d where D =diameter and d=depth
> F=18 inches Ok so far.
>How do you find beamwidth? I think the 35" dimensiom would have a tighter
>pattern than the 20 ", but how do you calculate,
>
>Second, The feed antenna, There can be different feeds.
>A simple monopole, dipole, biquad, patch, yagi, helix.
>How does the feed antenna affect the gain of the dish, if at all?
>Yea, it my be difficult to light the yagi or helix, so if you like throw
>those out.
> Thank You,
> Mike
>
You have a neat gadget here!
If you place a lamp (flashlight?) at the focus you can measure the
beam on a wall wth a tape measure.

Put a microphone at the focus and you can hear things you would not
believe...

Old ARRL antenna books, and authors like John Krause will be needed
to answer all of your questions.

John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

5682. Re: Transmission line choke - re:Richard Clark

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 14:45:02 UTC
From: John KD5YI <groups2_dot_jocjo@xoxy.net>
Message-ID: <OXN8k.47$BR.40@trnddc06>
Source record: 24604

"K7ITM" <k7itm@msn.com> wrote in message
news:50236256-4cb2-4b46-88e7-85581129c8d8@i36g2000prf.googlegroups.com...
> On Jun 25, 9:17 am, "John KD5YI" <groups2_dot_jo...@xoxy.net> wrote:
>> In another thread, Richard said:
>>
>> "You can achieve astonishingly high Zs with a coiled
>> transmission line with very little effort (roughly 8-12 turns on a
>> liter pop bottle - empty of course - for HF)."
>>
>> The key is "...empty of course...". What if one were to fill the bottle
>> with
>> relatively pure water to keep dissipation factor low? Water's dielectric
>> constant is about 80. This would increase the stray capacitance, thus
>> reducing the required turns to achieve resonance. Would this increase the
>> Q
>> due to lower loss in the inductance?
>>
>> Just curious.
>>
>> John
>
> Very unlikely. It won't increase the effective shunt capacitance all
> that much since it's not between the turns, and it's not likely you'll
> have pure enough water to have low loss in the water.
>
> You can wind a coil that's self-resonant and achieve a high impedance
> over a fairly broad range of frequencies (that is, across all of an HF
> band), or you can use just a few turns (that is, a coil whose self
> resonance is considerably higher than the operating frequency) and put
> a tuning capacitor across the coil and tune it to a specific
> frequency. That can be nice at lower frequencies where it takes a
> long piece of line to make a self-resonant coil. In that case, the
> impedance at resonance will be high, but the bandwidth will be
> relatively small; it can use a lot less coax though. There are
> programs and web sites that predict the self-resonant frequency of
> solenoid coils, though with the coax jacket, expect the actual self-
> resonance to be slightly lower than the same coil without the jacket.
>
> Cheers,
> Tom

I found 6 feet of RG58 and an empty plastic water bottle of about 2.7 inches
diameter. I got 8 close-wound turns of the coax on the bottle. I used my
Boonton Megacycle Meter to measure the self-resonant frequency of 43.8 MHz

with the bottle void of water. I then filled the bottle with distilled water. The new frequency was 24.1 MHz. Wow! This is an increase of about 3.3 times in the stray capacitance. Even with the dielectric constant in the center increasing 80 times, I didn't expect such a dramatic change.

The real question of Q remains unanswered. This was a quick test to see if there may be enough change to warrant further study. But, it occurs to me that the weight of the water would be entirely prohibitive if one wanted to hang the water coil from an antenna.

Is there any place this might be used where the weight would not be a problem? Does this warrant a closer look to measure Q?

John

5683. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 15:33:37 UTC
From: amdx <amdx@knology.net>
Message-ID: <e734f$4863b3c9$4501396f$29988@KNOLOGY.NET>
Source record: 24605

"John Ferrell" <johnferrell@sprintmail.com> wrote in message
news:fu97649hdveqsgj8ncl4lrtp7t4kj1vl8h@4ax.com...
> On Thu, 26 Jun 2008 07:35:31 -0500, "amdx" <amdx@knology.net> wrote:
>
>>I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
>>I calculated the focus as F=D*2 / 16d where D =diameter and d=depth
>> F=18 inches Ok so far.
>>How do you find beamwidth? I think the 35" dimensiom would have a tighter
>>pattern than the 20 ", but how do you calculate,
>>
>>Second, The feed antenna, There can be different feeds.
>>A simple monopole, dipole, biquad, patch, yagi, helix.
>>How does the feed antenna affect the gain of the dish, if at all?
>>Yea, it my be difficult to light the yagi or helix, so if you like throw
>>those out.
>> Thank You,
>> Mike
>>
> You have a neat gadget here!
> If you place a lamp (flashlight?) at the focus you can measure the
> beam on a wall wth a tape measure.

It grey, won't reflect light very well. Basically I wanted to know how the
beamwidth changed with the larger width dimension vs the smaller height
dimension

> Put a microphone at the focus and you can hear things you would not
> believe...

I already experienced the reflection. I had a radio playing on my right
side, I was moving the dish and got an increase in volume in my left ear. I
moved the dish back
to play around with the effect. Neat!

> Old ARRL antenna books, and authors like John Krause will be needed
> to answer all of your questions.
>
> John Ferrell W8CCW
> Beware of the dopeler effect (pronounced dope-ler).
> That's where bad ideas seem good if they come at you
> fast enough.

5684. Re: Transmission line choke - re:Richard Clark

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 17:35:20 UTC
From: John KD5YI <groups2_dot_jocjo@xoxy.net>
Message-ID: <srQ8k.68$WJ.30@trnddc04>
Source record: 24606

"John Ferrell" <johnferrell@sprintmail.com> wrote in message
news:q96564l9tmvnrsv27o8entuh32tn3nhrpe@4ax.com...
> On Wed, 25 Jun 2008 16:17:18 GMT, "John KD5YI"
> <groups2_dot_jocjo@xoxy.net> wrote:
>
>>In another thread, Richard said:
>>
>>"You can achieve astonishingly high Zs with a coiled
>>transmission line with very little effort (roughly 8-12 turns on a
>>liter pop bottle - empty of course - for HF)."
>>
>>The key is "...empty of course...". What if one were to fill the bottle
>>with
>>relatively pure water to keep dissipation factor low? Water's dielectric
>>constant is about 80. This would increase the stray capacitance, thus
>>reducing the required turns to achieve resonance. Would this increase the
>>Q
>>due to lower loss in the inductance?
>>
>>Just curious.
>>
>>John
> ***GASP!***
> Did you just invent a water-tuned variable inductor?
>
> John Ferrell W8CCW
> Beware of the dopeler effect (pronounced dope-ler).
> That's where bad ideas seem good if they come at you
> fast enough.

Well, yeah - unintentionally, I guess. See my reply to Tom.

John

5685. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 18:49:39 UTC
From: Dale Parfitt <parinc1@verizon.net>
Message-ID: <7xR8k.35$wR.10@trnddc07>
Source record: 24607

"amdx" <amdx@knology.net> wrote in message
news:b27fd$48638d20$18d6b40c$2959@KNOLOGY.NET...
>I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
> I calculated the focus as F=D*2 / 16d where D =diameter and d=depth
> F=18 inches Ok so far.
> How do you find beamwidth? I think the 35" dimensiom would have a tighter
> pattern than the 20 ", but how do you calculate,
>
> Second, The feed antenna, There can be different feeds.
> A simple monopole, dipole, biquad, patch, yagi, helix.
> How does the feed antenna affect the gain of the dish, if at all?
> Yea, it my be difficult to light the yagi or helix, so if you like throw
> those out.
> Thank You,
> Mike

The DirecTV dishes are not prime focus, bu rather offset. If it came with
the original horn mount, use it.
You can use:
http://www.w1ghz.cx/software/hdl_3b4.zip
to find the focal length,. Your formula assumes prime focus.

The gain of the dish is not a function of the feed, but the system gain is
because one must take into account surface illumination, feed efficiency
etc.

The subject of feeds for dishes is complex if you really want to optimize
G/T etc. Paul W1GHZ has a teriffic on-line text about parabolic surfaces and
feeds:
http://www.w1ghz.org/antbook/preface.htm

Dale W4OP

5686. Re: feeding an 80 meter loop question

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 19:23:42 UTC
From: "pdrahn@coinet.com" <co_farmer@yahoo.com>
Message-ID: <83ba5f92-f4c6-4b61-9d9e-2e9835d0421a@t12g2000prg.googlegroups.com>
Source record: 24608

On Jun 23, 8:44 pm, VK3XL <VK3XL.2a65...@radiobanter.com> wrote:
> Thanks all who have replied to my question. I am glad to hear that there
> are no serious detrimental effects of feeding the antenna mid way along
> one side rather than at a corner. I should have mentioned that I am
> intending to make a horizontal loop antenna rather than a vertical.
> Another interesting point came out of this, a delta loop may provide a
> better fit in the space available when the tree locations are taken
> into account. Again thanks for the info
>
> 73 de Mike VK3XL
>
> --
> VK3XL

Hi, Mike.
I have been using a 160 meter, horizontal, almost square loop since January. It is suspended from four 36 foot push-up masts at about 33 feet. It is fed at a corner with 125 ft. of home made 600 ohm feed line. Works on all bands with an antenna tuner. Even made a couple of local 6 meter contacts.

The challenge is to get each of the 4 wire legs under the same tension. The connection of the antenna wire to the corner insulators must be able to move so you can get it all evened up. Once up, the back stay at the top of each mast, along with the 90 degree antenna wire make for a very stable installation. The fierce winds we sometimes have in Central Oregon hardly move the antenna wire.

I made the corner connectors out of a circular piece of brass by milling a circular slot about 1 inch away from the center of the circle. Then cut the circle into 4 sectors. I machined 4 brass covers to fit over the slot after the antenna wire is placed in the slot. The covers are held by 4 small socket head cap screws. Anti-seize compound protects the threads from rust. A hole is drilled in the back of each brass corner piece to connect to the ceramic insulator. I cut lengths of heavy copper wire and after putting it through the insulator and brass corner piece, pounded the ends flat. The heavy wire was formed into a loop with overlapping ends. The heavy wire ends were then drilled to accept a small machine screw and nut to hold the ends of the copper wire loop.

The top of each push up mast has a pulley and 1/4 inch rope to pull up the antenna corner. Several trial runs were made get it all up in the air and get the tension pretty much equal.

I think you will like your antenna a lot. Good luck with it.

73's Paul, KD7HB

5687. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 19:40:36 UTC
From: Wimpie <wimabctel@tetech.nl>
Message-ID: <5eef3ff4-fbd0-4c34-8f1d-2d89ff149861@m44g2000hsc.googlegroups.com>
Source record: 24609

On 26 jun, 14:35, "amdx" <a...@knology.net> wrote:
> I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
> I calculated the focus as F=D*2 / 16d where D =diameter and d=depth
> F=18 inches Ok so far.
> How do you find beamwidth? I think the 35" dimensiom would have a tighter
> pattern than the 20 ", but how do you calculate,
>
> Second, The feed antenna, There can be different feeds.
> A simple monopole, dipole, biquad, patch, yagi, helix.
> How does the feed antenna affect the gain of the dish, if at all?
> Yea, it my be difficult to light the yagi or helix, so if you like throw
> those out.
> Thank You,
> Mike

Hello Mike,

In case of uniform illumination, gain is maximum, side lobes are
maximum also and beam width is about 60*lambda/diameter (degrees).

You will certainly not reach this, for several reasons. The beam width
will be more, it can be twice as high (depending on the illuminator).

The maximum gain that you can obtain with a certain aperture antenna
is about 4*pi*A/lambda^2. In reality it will be less:

When you want uniform illumination, you will have "spill over" (part
of the radiated power will not reach the dish). To get most power onto
the dish, you must accept that the edges of the dish do receive less
power flux density.

In addition, the phase center of your illuminator will change versus
off-main beam direction. This causes phase differences so a non-planar
field. Also polarization may change for off-beam directions.

Other things are deviation from optimal parabolic shape, non correctly
positioned illuminator, etc. This will all reduce maximum gain.

Hope this helps a bit.

Best regards,

Wim
PA3DJS
www.tetech.nl

5688. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 21:49:24 UTC
From: amdx <amdx@knology.net>
Message-ID: <db916$48640ee3$18d66097$22172@KNOLOGY.NET>
Source record: 24610

> "amdx" <amdx@knology.net> wrote in message
> news:b27fd$48638d20$18d6b40c$2959@KNOLOGY.NET...
>>I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
>> I calculated the focus as F=D*2 / 16d where D =diameter and d=depth
>> F=18 inches Ok so far.
>> How do you find beamwidth? I think the 35" dimensiom would have a tighter
>> pattern than the 20 ", but how do you calculate,
>>
>> Thank You,
>> Mike
>
> The DirecTV dishes are not prime focus, but rather offset. If it came with
> the original horn mount, use it.

Yes, it is an offset feed and it did come with the mount and feed (LNA?)
Actually it came with two LNAs, but they didn't match each other. I don't
remember what junk pile this came from and don't have any info about it's
working condition.
I did measure the distance from the front of feed to the dish center and
it is 18" as calculated, however as I said I don't know if this worked as I
got it.

> You can use:
> http://www.w1ghz.cx/software/hdl_3b4.zip
> to find the focal length,. Your formula assumes prime focus.

This link doesn't look right.

> The gain of the dish is not a function of the feed, but the system gain is
> because one must take into account surface illumination, feed efficiency
> etc.

So I could use a biquad or patch as the feed antenna without much
difference?

> The subject of feeds for dishes is complex if you really want to optimize
> G/T etc. Paul W1GHZ has a teriffic on-line text about parabolic surfaces
> and feeds:
> http://www.w1ghz.org/antbook/preface.htm
>
> Dale W4OP

I'll look at the w1ghz link.
I was suprised this dish is made of plastic. Does the EM wave reflect off
of the plastic or does the plastic have a coating?
Thanks, Mike

5689. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-26 22:19:50 UTC
From: amdx <amdx@knology.net>
Message-ID: <bde6c$486412fc$4501396f$11600@KNOLOGY.NET>
Source record: 24611

"Dale Parfitt" <parinc1@verizon.net> wrote in message
news:7xR8k.35$wR.10@trnddc07...
>
> "amdx" <amdx@knology.net> wrote in message
> news:b27fd$48638d20$18d6b40c$2959@KNOLOGY.NET...
>>I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
>> I calculated the focus as F=D*2 / 16d where D =diameter and d=depth
>> F=18 inches Ok so far.
>> How do you find beamwidth? I think the 35" dimension would have a tighter
>> pattern than the 20 ", but how do you calculate,
>>
>> Second, The feed antenna, There can be different feeds.
>> A simple monopole, dipole, biquad, patch, yagi, helix.
>> How does the feed antenna affect the gain of the dish, if at all?
>> Yea, it my be difficult to light the yagi or helix, so if you like throw
>> those out.
>> Thank You,
>> Mike
>
> The DirecTV dishes are not prime focus, bu rather offset. If it came with
> the original horn mount, use it.

Hey I just found the dish I have it's at
http://www.solidsignal.com/satellite/directv_dish_antenna_types.asp
Last dish on the right side of the page, it's called the International
Satellite Dish.
International 36". I note from the picture the feeds don't match, when I got
the dish
the position of the two feeds were reversed.
What can you glean fron this?
Thanks, Mike

5690. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 07:01:46 UTC
From: Highland Ham <abcgm0csz.kn6whxyz@dsl.pipex.com>
Message-ID: <GqWdne3O5qkyFvvVnZ2dneKdnZydnZ2d@pipex.net>
Source record: 24630

amdx wrote:
>> "amdx" <amdx@knology.net> wrote in message
>> news:b27fd$48638d20$18d6b40c$2959@KNOLOGY.NET...
>>> I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
==========
> I was suprised this dish is made of plastic. Does the EM wave reflect off
> of the plastic or does the plastic have a coating?
==========
It is possibly an aluminium foil reflector sandwiched between 2 layers
of plastic.
I have a 1 metre dia sat dish with the aluminium foil sandwiched between
2 layers of fibre glass/epoxy.

Frank GM0CSZ / KN6WH

5691. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 12:34:07 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <jfn964pvjmsa7k9hdvjl3cl0m3rsoed5h4@4ax.com>
Source record: 24612

>
> It grey, won't reflect light very well. Basically I wanted to know how the
>beamwidth changed with the larger width dimension vs the smaller height
>dimension
>
Tape aluminum foil to it tobetter reflect light...
John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

5692. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 14:00:27 UTC
From: amdx <amdx@knology.net>
Message-ID: <65cd$4864f28a$18d6b40c$10544@KNOLOGY.NET>
Source record: 24613

"Wimpie" <wimabctel@tetech.nl> wrote in message
news:5eef3ff4-fbd0-4c34-8f1d-2d89ff149861@m44g2000hsc.googlegroups.com...
> On 26 jun, 14:35, "amdx" <a...@knology.net> wrote:
>> I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
>> I calculated the focus as F=D*2 / 16d where D =diameter and d=depth
>> F=18 inches Ok so far.
>> How do you find beamwidth? I think the 35" dimensiom would have a tighter
>> pattern than the 20 ", but how do you calculate,
>>
>> Second, The feed antenna, There can be different feeds.
>> A simple monopole, dipole, biquad, patch, yagi, helix.
>> How does the feed antenna affect the gain of the dish, if at all?
>> Yea, it my be difficult to light the yagi or helix, so if you like throw
>> those out.
>> Thank You,
>> Mike
>
> Hello Mike,
>
> In case of uniform illumination, gain is maximum, side lobes are
> maximum also and beam width is about 60*lambda/diameter (degrees).

My dish is 35" wide x 20"tall
So if Lambda=4.89" Then 60 x 4.89 / 35 = 8.38*
and 60 x 4.89 / 20 = 14.67*
Then my beamwidth will be taller than it is wide.

> You will certainly not reach this, for several reasons. The beam width
> will be more, it can be twice as high (depending on the illuminator).

Yes. it's always something.

> The maximum gain that you can obtain with a certain aperture antenna
> is about 4*pi*A/lambda^2. In reality it will be less:

I was going to attempt this but I don't know how to calculate the area (A)
of my non circular dish. Any help there?

Thanks, Mike

5693. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 15:33:38 UTC
From: Cecil Moore <nospam@w5dxp.com>
Message-ID: <lL79k.11536$uE5.8334@flpi144.ffdc.sbc.com>
Source record: 24614

amdx wrote:
> I was going to attempt this but I don't know how to calculate the area (A)
> of my non circular dish. Any help there?

Calculus? Graphic solution?
--
73, Cecil http://www.w5dxp.com

5694. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 16:47:56 UTC
From: Frank <frank599@nospam.telus.net>
Message-ID: <0R89k.658$7%6.42@edtnps82>
Source record: 24615

Area = PI*a*b, as defined below.

http://en.wikipedia.org/wiki/Ellipse

Frank

"Cecil Moore" <nospam@w5dxp.com> wrote in message
news:lL79k.11536$uE5.8334@flpi144.ffdc.sbc.com...
> amdx wrote:
>> I was going to attempt this but I don't know how to calculate the area
>> (A)
>> of my non circular dish. Any help there?
>
> Calculus? Graphic solution?
> --
> 73, Cecil http://www.w5dxp.com

5695. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 17:15:38 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <29e27fba-7c31-4416-a78c-4bd705300190@z24g2000prf.googlegroups.com>
Source record: 24616

amdx wrote:
> I have a Directv dish 35 inches wide x 20 inches tall 4inches deep.
> I calculated the focus as F=D*2 / 16d where D =diameter and d=depth
> F=18 inches Ok so far.
> How do you find beamwidth? I think the 35" dimensiom would have a tighter
> pattern than the 20 ", but how do you calculate,
>
> Second, The feed antenna, There can be different feeds.
> A simple monopole, dipole, biquad, patch, yagi, helix.
> How does the feed antenna affect the gain of the dish, if at all?
> Yea, it my be difficult to light the yagi or helix, so if you like throw
> those out.
> Thank You,
> Mike

Some guys at the local club were trying to use a TV dish like yours.
They eventually decided it was easier to build a dish from scratch.
The old TVRO dishes can be useful and there are plenty of them around
that can be had just for the asking.

Jimmie

5696. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 17:47:36 UTC
From: amdx <amdx@knology.net>
Message-ID: <7d92f$486526ca$18d6b40c$24119@KNOLOGY.NET>
Source record: 24617

"Frank" <frank599@nospam.telus.net> wrote in message
news:0R89k.658$7%6.42@edtnps82...
> Area = PI*a*b, as defined below.
>
> http://en.wikipedia.org/wiki/Ellipse
>
> Frank
Thanks Frank,
From the wiki "The area enclosed by an ellipse is ?ab, where (as before) a
and b are the ellipse's semimajor and semiminor axes."
Now back to, why did I want to now that.
Mike

5697. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 18:33:23 UTC
From: amdx <amdx@knology.net>
Message-ID: <2a4f0$48652f68$18d6b40c$14219@KNOLOGY.NET>
Source record: 24618

>
> Some guys at the local club were trying to use a TV dish like yours.
> They eventually decided it was easier to build a dish from scratch.
> The old TVRO dishes can be useful and there are plenty of them around
> that can be had just for the asking.
>
> Jimmie
I don't know why it would be easier to build one, but yes, I ask and got
three different dishes, so I stopped asking.
Mike

5698. Need help with first HF antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 19:20:20 UTC
From: Keith <none@yahoo.com>
Message-ID: <g43eheuhf1@aioe.org>
Source record: 24619

Finally upgraded to General this winter, and found a Ten-Tec Triton IV (my first HF rig) and I need some antenna help.

I need something simple that will give decent performance, and keep XYL happy.

Some ideas I've come across:

1. A random loop strung in a few trees, fed with ladder line to ground level, with a balun and lightning arrestor, into buried coax 50' or so to the house and into the shack. This setup is the most aesthetically pleasing, and coax will be easy to run in the house. How much will the transition to coax hurt me here? Would I need a 1:1 or 4:1 balun? Some other ratio?

2. Same random loop, fed with ladder line all the way into the shack. Would probably give better performance, but running the ladder line in the house will be more difficult, and the XYL is less likely to approve of a wire in the air vs buried.

3. A dipole in one of the above configurations.

4. A random long wire strung around the yard, end-fed with coax and a balun.

I will be using an antenna tuner in the shack with any of these configurations, and will be running a max of 100W for the foreseeable future. How much do I have to worry about the wire touching the trees at these power levels?

Thanks for any help you can give - I know these questions have probably been asked a million times before :)

--
Keith

5699. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 20:53:18 UTC
From: Jerry <jerrymartes@verizon.net>
Message-ID: <2rc9k.26$HY.21@trnddc01>
Source record: 24620

"amdx" <amdx@knology.net> wrote in message
news:2a4f0$48652f68$18d6b40c$14219@KNOLOGY.NET...
>
>>
>> Some guys at the local club were trying to use a TV dish like yours.
>> They eventually decided it was easier to build a dish from scratch.
>> The old TVRO dishes can be useful and there are plenty of them around
>> that can be had just for the asking.
>>
>> Jimmie
> I don't know why it would be easier to build one, but yes, I ask and got
> three different dishes, so I stopped asking.
> Mike

Hi Mike I missed the post where you said why you wanted the dishes and
what you intend to use them for. What do you intend to use the dishes for?

Jerry KD6JDJ

5700. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-27 21:40:52 UTC
From: amdx <amdx@knology.net>
Message-ID: <69129$48655de5$18d6b40c$519@KNOLOGY.NET>
Source record: 24621

"Jerry" <jerrymartes@verizon.net> wrote in message
news:2rc9k.26$HY.21@trnddc01...
>
> "amdx" <amdx@knology.net> wrote in message
> news:2a4f0$48652f68$18d6b40c$14219@KNOLOGY.NET...
>>
>>>
>>> Some guys at the local club were trying to use a TV dish like yours.
>>> They eventually decided it was easier to build a dish from scratch.
>>> The old TVRO dishes can be useful and there are plenty of them around
>>> that can be had just for the asking.
>>>
>>> Jimmie
>> I don't know why it would be easier to build one, but yes, I ask and got
>> three different dishes, so I stopped asking.
>> Mike
>
> Hi Mike I missed the post where you said why you wanted the dishes and
> what you intend to use them for. What do you intend to use the dishes
> for?
>
> Jerry KD6JDJ
I didn't say.

Oh, ok. I want to increase the strength of a wifi signal.
Mike

5701. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 00:54:59 UTC
From: Owen Duffy <none@no.where>
Message-ID: <Xns9ACB6F08BE9F5nonenowhere@61.9.191.5>
Source record: 24622

"amdx" <amdx@knology.net> wrote in
news:69129$48655de5$18d6b40c$519@KNOLOGY.NET:

...
> I didn't say.
>
> Oh, ok. I want to increase the strength of a wifi signal.

Gee, getting relevant information from you is a chore, and you seem to delight in supplying a partial picture.

Now, what frequency WiFi?

If you are thinking of 2.4GHz, you must already have worked out a feed solution that efficiently illuminates the small dish, a considerable challenge.

While you are obsessing about calculating the area of an elipse, you haven't had a look at the disk from the distant end, have you? It is probably very close to circular in cross section when viewed from afar in the direction of the beam.

When you have worked through some of this, you might see why offset feed dishes made for Ku band aren't widely used by informed people at 2.4GHz. Of course, there will always be the 'innovaters' with a USB wireless stick pointing at a garbage tin lid or wok... but that says it all, doesn't it!

Owen

5702. Re: Need help with first HF antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 01:55:24 UTC
From: ltdoc@yahoo.com
Message-ID: <21b1dbd9-0085-448b-968f-2450d029fff8@s50g2000hsb.googlegroups.com>
Source record: 24623

Keith,
Nothing wrong with any of your suggestions, but why not start out very simple, as in a dipole. It will at the very least give you something to make comparisons against. When your better half sort of gets used to the idea of wire hanging in the air, then you can make changes. You might even ask her what color of wire she thinks would be 'best'. No, it won't make any difference except that it shows that you respect her opinion... sort of. (If she reads that last part, you are up that proverbial creek!)
- 'Doc

5703. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 02:07:48 UTC
From: amdx <amdx@knology.net>
Message-ID: <30976$48659cf5$18d6b40c$5483@KNOLOGY.NET>
Source record: 24624

>
> Gee, getting relevant information from you is a chore, and you seem to
> delight in supplying a partial picture.
>
> Now, what frequency WiFi?
>
> If you are thinking of 2.4GHz, you must already have worked out a feed
> solution that efficiently illuminates the small dish, a considerable
> challenge.
>
> While you are obsessing about calculating the area of an elipse, you
> haven't had a look at the disk from the distant end, have you? It is
> probably very close to circular in cross section when viewed from afar in
> the direction of the beam.
>
> When you have worked through some of this, you might see why offset feed
> dishes made for Ku band aren't widely used by informed people at 2.4GHz.
> Of course, there will always be the 'innovaters' with a USB wireless
> stick pointing at a garbage tin lid or wok... but that says it all,
> doesn't it!
>
> Owen
Thanks, Owen
Mike

5704. Re: Parabolic Dish Questions

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 02:24:15 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g447c7dvt1@news.albasani.net>
Source record: 24625

amdx wrote:

> ...
> I didn't say.
>
> Oh, ok. I want to increase the strength of a wifi signal.
> Mike

You will probably find a lot of help if you "nose" around your local college (computer/physics/engineering instructors can point you to the best minds.) The youngsters are all into stretching wifi distances to the max.

Here is a page to get you started:

http://www.engadget.com/2005/11/15/how-to-build-a-wifi-biquad-dish-antenna/

After experimenting with many different antennas at the feed point, I kept the biquad in the original plans. Your dish is larger than the one I use (mine is identical to the one on the page--my feed is slightly modified ...)

Regards,
JS

5705. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 02:43:06 UTC
From: wa2rqy <rlucch2098@aol.com>
Message-ID: <35397149-fe86-43f9-a041-d6a44c21a1ba@8g2000hse.googlegroups.com>
Source record: 24626

On Jun 17, 4:04 pm, "Andy" <d...@blueyounder.co.uk> wrote:
> Thanks for all your suggestions. When this wet weather clears I will try
> them all out and see where I end up..
>
> 73 Andy
>
> "Highland Ham" <abcgm0csz.kn6wh...@dsl.pipex.com> wrote in message
>
> news:KeSdnforyuuNd8vVnZ2dnUVZ8tzinZ2d@pipex.net...
>
> > Andy wrote:
> >> Hi,
>
> >> I have a 40 meter centre feed dipole cut for 40 and feed direct with 50
> >> Ohm coax. The house end is connected to the centre of the coax and the
> >> pole end is connected to the braid. Seems to work best this way round.
> >> The antenna is fixed tight to the house and the other end is tight to the
> >> metal pole in a straight-line, diagonal across the garden, both ends are
> >> insulated. The garden is about 64 feet give or take a couple of feet.
>
> >> I cannot drop the ends down because of the house and metal pole at the
> >> end of the garden being so close. I can only feed the antenna with coax.
> >> The neighbours are OK with coax but not the ribbon feeder hanging down
> >> and I don't want to upset them if I can help it.
>
> >> My question. What are my options to enable me to operate 80 and 40m on
> >> this same antenna wire?
> > ==
> > 300 Ohms ribbon twin feeder is hardly more visible than coax feeder .
> > You don't have to use the 'wide' 450 Ohms ribbon type.
> > 300 Ohms ribbon has an approx velocity factor of 0.8 ,so if you make half
> > the dipole + the feeder (roughly) an electrical 1/4 -3/4 -etc wavelength
> > at 80 meters ,you will be home and dry with an appropriate matching unit
> > or a choke balun in combination with a 'coax-in ,coax-out' matching box.
>
> > Frank GM0CSZ / KN6WH

I just put up a 66' center fed zep, fed with 450 ohm ribbon line.
This line goes to just outside my radio room where it terminates into
a 4:1 Home-made (off the www) balun, coax feeds into the house to a
Nye tuner. Easily tunes 80 to 10 mtrs & works good.
Many good ways, this is just one!
GL.....
Rich WA2RQY/4

5706. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 03:09:38 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <oqab6414m23shj1bujl33hlcm00q4q98o5@4ax.com>
Source record: 24627

On Sun, 22 Jun 2008 10:55:50 GMT, "Dave" <noone@nowhere.com> wrote:

>
>"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
>news:T5SdndZEj-1ctMPVRVnyjQA@pipex.net...
>>> Conclusion:
>>> This test proves clearly, that the efficiency of the Roomcap Antenna
>>> equals that of large wire antennas,
>>> and hereby confirms the results that I obtained during my own tests
>>> during the last 3 years.
>>> Each operator confirms the logged reports.
>>>
>>> The physical explanation of this is, that generation of the EM waves
>>> is done by the dynamic E field, as explained
>>> in "Antennas and Physics". The dominating E field can be measured only
>>> in the near field region of the antenna,
>>> as in the far field a fixed relation between H and E field exists.
>>> The far field does not allow determination how the
>>> wave has been generated originally.
>>>
>>> Many thanks to the above mentioned OMs for there voluntary, free
>>> contribution in this antenna test.
>>>
>>> Felix, HB9ABX
>> ==
>> Felix , Since you are posting all this in a radio homebrew NG ,could you
>> please give us all a free reference where to find the details of this
>> miracle antenna , such that we can build one ourselves.
>>
>> Frank GM0CSZ / KN6WH
>>
>>
>
>http://home.datacomm.ch/hb9abx/ant--abx-e.htm
>As noted here you have to sign something and pay to get the construction
>guide, you probably sign a non-disclosure agreement so you could be sued if
>you published the plans:
>http://home.datacomm.ch/hb9abx/kondition-e.htm
>
>
worse than that, he doesn't tell you what you agree to until you sign
it and receive the antenna.
--
73 for now

Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

5707. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 10:44:17 UTC
From: JIMMIE <JIMMIEDEE123@yahoo.com>
Message-ID: <21396b46-2480-4576-ad50-eaa814444e38@w34g2000prm.googlegroups.com>
Source record: 24628

Buck wrote:
> On Sun, 22 Jun 2008 10:55:50 GMT, "Dave" <noone@nowhere.com> wrote:
>
> >
> >"Highland Ham" <abcgm0csz.kn6whxyz@dsl.pipex.com> wrote in message
> >news:T5SdndZEj-1ctMPVRVnyjQA@pipex.net...
> >>> Conclusion:
> >>> This test proves clearly, that the efficiency of the Roomcap Antenna
> >>> equals that of large wire antennas,
> >>> and hereby confirms the results that I obtained during my own tests
> >>> during the last 3 years.
> >>> Each operator confirms the logged reports.
> >>>
> >>> The physical explanation of this is, that generation of the EM waves
> >>> is done by the dynamic E field, as explained
> >>> in "Antennas and Physics". The dominating E field can be measured only
> >>> in the near field region of the antenna,
> >>> as in the far field a fixed relation between H and E field exists.
> >>> The far field does not allow determination how the
> >>> wave has been generated originally.
> >>>
> >>> Many thanks to the above mentioned OMs for there voluntary, free
> >>> contribution in this antenna test.
> >>>
> >>> Felix, HB9ABX
> >> ==
> >> Felix , Since you are posting all this in a radio homebrew NG ,could you
> >> please give us all a free reference where to find the details of this
> >> miracle antenna , such that we can build one ourselves.
> >>
> >> Frank GM0CSZ / KN6WH
> >>
> >>
> >
> >http://home.datacomm.ch/hb9abx/ant--abx-e.htm
> >As noted here you have to sign something and pay to get the construction
> >guide, you probably sign a non-disclosure agreement so you could be sued if
> >you published the plans:
> >http://home.datacomm.ch/hb9abx/kondition-e.htm
> >
> >
> worse than that, he doesn't tell you what you agree to until you sign
> it and receive the antenna.
> --

> 73 for now
> Buck, N4PGW
>
> www.lumpuckeroo.com
>
> "Small - broadband - efficient: pick any two."

The fact that its constuction secrets are not all over the internet speaks volumes. If this were truly a decent antenna there is no way the genie could be kept in the bottle.

Jimmie

5708. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 14:22:09 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g45he8$s45$1@news.albasani.net>
Source record: 24629

JIMMIE wrote:

> ...
> The fact that its constuction secrets are not all over the internet
> speaks volumes. If this were truly a decent antenna there is no way
> the genie could be kept in the bottle.
>
>
> Jimmie

I would have to go with you on this one.

If this design/performance was good many large companies and commercial interests would have already picked up on it. Indeed, if this were half of what it claimed, there would be no need to market it to individual amateurs or use marketing tactics which smack of such secrecy, mystery and magic--the money from larger users would just make these ideas laughable.

It seems obvious, if it is marketed like snake-oil, if it comes in a snake-oil-bottle, if it has the color of snake-oil and ultimately ends tasting of snake-oil ... it is most likely snake oil--i.e., a lame duck. (Not even to mention that a partner and I have built a couple! LOL)

However, Barnum and Bailey would be proud!

Regards,
JS

5709. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 19:38:10 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <c0b466e2-4f08-4db6-9ac5-178ff6aa65fe@m73g2000hsh.googlegroups.com>
Source record: 24631

On Jun 28, 9:22 am, John Smith <assemblywiz...@gmail.com> wrote:
> JIMMIE wrote:
> > ...
> > The fact that its constuction secrets are not all over the internet
> > speaks volumes. If this were truly a decent antenna there is no way
> > the genie could be kept in the bottle.
>
> > Jimmie
>
> I would have to go with you on this one.
>
> If this design/performance was good many large companies and commercial
> interests would have already picked up on it. Indeed, if this were half
> of what it claimed, there would be no need to market it to individual
> amateurs or use marketing tactics which smack of such secrecy, mystery
> and magic--the money from larger users would just make these ideas
> laughable.
>
> It seems obvious, if it is marketed like snake-oil, if it comes in a
> snake-oil-bottle, if it has the color of snake-oil and ultimately ends
> tasting of snake-oil ... it is most likely snake oil--i.e., a lame duck.
> (Not even to mention that a partner and I have built a couple! LOL)
>
> However, Barnum and Bailey would be proud!
>
> Regards,
> JS

JS
I have read thru the thread and find nothing that would suggest that
the original poster
cannot do what he states he has done.
By comparing Gaussian law with Maxwell the requirement of his antenna
calls for a system in equilibrium which can be any size ,shape or
elevation. Such a design goes back more than ten years on this
newsgroup when I stated that radiation came in pulses. have described
such as an antenna as one having only distributed loads and where
external lumped loads are imposed during manufacture they must be
cancelled to maintain equilibrium. All of the masters work and
mathematics are based around the requirement of equilibrium law of
Newton i.e addition of all vectors equal zero which is the basis for
no moving charge within a conductor in equilibrium.(this is descibed
in many books or can be googled by inserting current carrying radiator
equilibrium or similar words Root LC in Maxwells equation is

strictly for distributed loads in equilibrium unless the mathematics have changed in the last 150 yearsand does not include lumped loads as part of the laws of other masters from whom he got the mathematics from. If you obtained a helix antenna and lengthened the open end of the helix by continuing the rotation to the starting point ie cancelling the lumped loads you have such an antenna that is not straight and is in a state of equilibrium which provides gain.
Experts, get on Eznec and prove it for yourself, don't just be a talking head !
There are plenty of programs that can simulate such a arrangement without difficulty to simulate a small antenna with full wave dimensions that can provide gains described in his experiments. I have not seen his antenna and suspect that the addition of chokes are supplied because he has not fully cancelled lumped load and thus is trying to prevent feed line radiation which in a lot of cases is not considered a hindrence.
If the wire used is a wavelength long then you can't stop it radiating with respect to its unit length if it is in equilibrium. Period. It is easy to debunk an antenna without reason. It is a lot harder to find error in the mathematics involved which supports such antennas especially when it can easily be proved in practice and checked by anybody. Make it worth my while and I will be happy to prove it $1000dollar bvet was suggested in the past but with no takers. I only ask for conpensation for my costs.

5710. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 19:49:18 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <dc7c819c-ff13-4b83-a213-f5ed98b4c01f@y38g2000hsy.googlegroups.com>
Source record: 24632

On Jun 28, 2:38 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Jun 28, 9:22 am, John Smith <assemblywiz...@gmail.com> wrote:
>
>
>
> > JIMMIE wrote:
> > > ...
> > > The fact that its constuction secrets are not all over the internet
> > > speaks volumes. If this were truly a decent antenna there is no way
> > > the genie could be kept in the bottle.
>
> > > Jimmie
>
> > I would have to go with you on this one.
>
> > If this design/performance was good many large companies and commercial
> > interests would have already picked up on it. Indeed, if this were half
> > of what it claimed, there would be no need to market it to individual
> > amateurs or use marketing tactics which smack of such secrecy, mystery
> > and magic--the money from larger users would just make these ideas
> > laughable.
>
> > It seems obvious, if it is marketed like snake-oil, if it comes in a
> > snake-oil-bottle, if it has the color of snake-oil and ultimately ends
> > tasting of snake-oil ... it is most likely snake oil--i.e., a lame duck.
> > (Not even to mention that a partner and I have built a couple! LOL)
>
> > However, Barnum and Bailey would be proud!
>
> > Regards,
> > JS
>
> JS
> I have read thru the thread and find nothing that would suggest that
> the original poster
> cannot do what he states he has done.
> By comparing Gaussian law with Maxwell the requirement of his antenna
> calls for a system in equilibrium which can be any size ,shape or
> elevation. Such a design goes back more than ten years on this
> newsgroup when I stated that radiation came in pulses. have described
> such as an antenna as one having only distributed loads and where
> external lumped loads are imposed during manufacture they must be
> cancelled to maintain equilibrium. All of the masters work and
> mathematics are based around the requirement of equilibrium law of

> Newton i.e addition of all vectors equal zero which is the basis for
> no moving charge within a conductor in equilibrium.(this is descibed
> in many books or can be googled by inserting current carrying radiator
> equilibrium or similar words Root LC in Maxwells equation is
> strictly for distributed loads in equilibrium unless the mathematics
> have changed in the last 150 yearsand does not include lumped loads as
> part of the laws of other masters from whom he got the mathematics
> from. If you obtained a helix antenna and lengthened the open end of
> the helix by continuing the rotation to the starting point ie
> cancelling the lumped loads you have such an antenna that is not
> straight and is in a state of equilibrium which provides gain.
> Experts, get on Eznec and prove it for yourself, don't just be a
> talking head !
> There are plenty of programs that can simulate such a arrangement
> without difficulty to simulate a small antenna with full wave
> dimensions that can provide gains described in his experiments. I have
> not seen his antenna and suspect that the addition of chokes are
> supplied because he has not fully cancelled lumped load and thus is
> trying to prevent feed line radiation which in a lot of cases is not
> considered a hindrence.
> If the wire used is a wavelength long then you can't stop it radiating
> with respect to its unit length if it is in equilibrium. Period. It
> is easy to debunk an antenna without reason. It is a lot harder to
> find error in the mathematics involved which supports such antennas
> especially when it can easily be proved in practice and checked by
> anybody. Make it worth my while and I will be happy to prove it
> $1000dollar bvet was suggested in the past but with no takers. I only
> ask for conpensation for my costs.

By the way, on my page

unwinantennas.com/

I describe how to make an antenna even smaller than that made by the
threads initial poster
I also supplied SWR measurements for frequencies between 2 and 100
Mhz. The wire I used was a random length and the results should be
duplicated with a couple of wavelengths for the lowest frequency.
Isolated spot frequencies can be attained by the use of a jumper. Such
antennas can also be made in small sheet form and other configurations
Wire used for such antennas do not have to be made of wire with
mechanical thickness since no external mechanical stresses are
involved.
Nuff said. I'm gone !

5711. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 21:01:57 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g468rp$f8f$1@news.albasani.net>
Source record: 24633

Art Unwin wrote:

> ...
> By the way, on my page
>
> unwinantennas.com/
>
> I describe how to make an antenna even smaller than that made by the
> threads initial poster
> I also supplied SWR measurements for frequencies between 2 and 100
> Mhz. The wire I used was a random length and the results should be
> duplicated with a couple of wavelengths for the lowest frequency.
> Isolated spot frequencies can be attained by the use of a jumper. Such
> antennas can also be made in small sheet form and other configurations
> Wire used for such antennas do not have to be made of wire with
> mechanical thickness since no external mechanical stresses are
> involved.
> Nuff said. I'm gone !

My point can be summed up quickly; where is this antenna being used in
the commercial sector--it has certainly been around to have gained
interest there, if deserved.

That is all folks ...

Regards,
JS

5712. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 21:34:31 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <e3cb0730-262e-4e8a-9326-8003d93b4310@x41g2000hsb.googlegroups.com>
Source record: 24634

On Jun 28, 4:01 pm, John Smith <assemblywiz...@gmail.com> wrote:
> Art Unwin wrote:
> > ...
> > By the way, on my page
>
> > unwinantennas.com/
>
> > I describe how to make an antenna even smaller than that made by the
> > threads initial poster
> > I also supplied SWR measurements for frequencies between 2 and 100
> > Mhz. The wire I used was a random length and the results should be
> > duplicated with a couple of wavelengths for the lowest frequency.
> > Isolated spot frequencies can be attained by the use of a jumper. Such
> > antennas can also be made in small sheet form and other configurations
> > Wire used for such antennas do not have to be made of wire with
> > mechanical thickness since no external mechanical stresses are
> > involved.
> > Nuff said. I'm gone !
>
> My point can be summed up quickly; where is this antenna being used in
> the commercial sector--it has certainly been around to have gained
> interest there, if deserved.
>
> That is all folks ...
>
> Regards,
> JS

Because they don't know about it nor does the ARRL
Ham radio is not what it used to be. As the older ones die off the cb
talking heads have gained the majority.
That is why you get the same answers on antennas on this group as you
would get from any woman doing her shopping at the mall.
CB hams are only interested in gain or how loud their heckling voices
can be heard over the voices of others but antennas are a lot more
than that for those really interesred in a hobby rather than bar room
talk. Gates left before he graduated in college to make a lot of money
WRT did the same thing by not graduating from high school yet the
group here give his heckling space because they have nothing better to
offer. Not one person has given good reason why the quoted antenna
cannot work as stated, not one. By mathematics or actually making one
since heckling is regarded as a suitable replacement for true
knowledge now in the present hobby of ham radio. Ham radio is no
longer on the cusp of invention and the world has moved on without

them.Would you allow your children to listen to ham radio at will or look at porn on the computer? The words and conduct now are the same and civility has flown out of the window!

5713. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-28 23:49:52 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g46imm$3sn$1@news.albasani.net>
Source record: 24635

Art Unwin wrote:

> Because they don't know about it nor does the ARRL
> Ham radio is not what it used to be. As the older ones die off the cb
> talking heads have gained the majority.
> That is why you get the same answers on antennas on this group as you
> would get from any woman doing her shopping at the mall.
> CB hams are only interested in gain or how loud their heckling voices
> can be heard over the voices of others but antennas are a lot more
> than that for those really interesred in a hobby rather than bar room
> talk.

The "protectionism/good-ole-boys-club/religious-devotion-to-arrl/etc. of the old hams have lead us here to this stale/dysfunctional/non-progressive/etc. end(s.) The "cb hams" you refer to are, in all actuality, "appliance user hams." We now reap what has been sown for decades. We always needed good minds, what we got were brass pounders! :-(

>> Gates left before he graduated in college to make a lot of money
> WRT did the same thing by not graduating from high school yet the
> group here give his heckling space because they have nothing better to
> offer.

College or an "education" has never given anyone what the vast majority think it does. You are either born with the gray matter (IQ) to think for yourself and be notable amongst the unwashed, or you are not. Education simply gives a great mind something to do with itself.

>> Not one person has given good reason why the quoted antenna
> cannot work as stated, not one. By mathematics or actually making one
> since heckling is regarded as a suitable replacement for true
> knowledge now in the present hobby of ham radio.

The proof is in the pudding, a buddy and I have built a couple of them (he bought the stupid plans, I DIDN'T!), there are much better designs. And, these designs have been found by industry. See what designs are incorporated into cell phones and towers, in rfid devices, remote tire pressure gauges on cars, wifi devices, remote controls, etc.

>> Ham radio is no
> longer on the cusp of invention and the world has moved on without
> them.Would you allow your children to listen to ham radio at will or
> look at porn on the computer? The words and conduct now are the same
> and civility has flown out of the window!

This is a sign of the times--gays marrying, breakup of the family,
foster homes, inferior schools, corrupt politicians, etc. The true
cause(s) of the problem(s) you state are too numerous to mention.
Non-civil hams are only a symptom, not the disease ... and the diseases
too numerous to mention themselves ...

Regards,
JS

5714. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 01:35:52 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <efff68ae-186a-4537-86de-5a72b3d07f7b@y21g2000hsf.googlegroups.com>
Source record: 24636

On Jun 28, 6:49 pm, John Smith <assemblywiz...@gmail.com> wrote:
> Art Unwin wrote:
> > Because they don't know about it nor does the ARRL
> > Ham radio is not what it used to be. As the older ones die off the cb
> > talking heads have gained the majority.
> > That is why you get the same answers on antennas on this group as you
> > would get from any woman doing her shopping at the mall.
> > CB hams are only interested in gain or how loud their heckling voices
> > can be heard over the voices of others but antennas are a lot more
> > than that for those really interesred in a hobby rather than bar room
> > talk.
>
> The "protectionism/good-ole-boys-club/religious-devotion-to-arrl/etc. of
> the old hams have lead us here to this
> stale/dysfunctional/non-progressive/etc. end(s.) The "cb hams" you
> refer to are, in all actuality, "appliance user hams." We now reap what
> has been sown for decades. We always needed good minds, what we got
> were brass pounders! :-(
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> >> Gates left before he graduated in college to make a lot of money
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> think it does. You are either born with the gray matter (IQ) to think
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> Education simply gives a great mind something to do with itself.
>
> >> Not one person has given good reason why the quoted antenna
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> > since heckling is regarded as a suitable replacement for true
> > knowledge now in the present hobby of ham radio.
>
> The proof is in the pudding, a buddy and I have built a couple of them
> (he bought the stupid plans, I DIDN'T!), there are much better designs.
> And, these designs have been found by industry. See what designs are
> incorporated into cell phones and towers, in rfid devices, remote tire
> pressure gauges on cars, wifi devices, remote controls, etc.
>
> >> Ham radio is no
> > longer on the cusp of invention and the world has moved on without
> > them.Would you allow your children to listen to ham radio at will or
> > look at porn on the computer? The words and conduct now are the same

> > and civility has flown out of the window!
>
> This is a sign of the times--gays marrying, breakup of the family,
> foster homes, inferior schools, corrupt politicians, etc. The true
> cause(s) of the problem(s) you state are too numerous to mention.
> Non-civil hams are only a symptom, not the disease ... and the diseases
> too numerous to mention themselves ...
>
> Regards,
> JS

John you have it down pat! The bands will be taken over by industry or
the military.
There is no way hams will be allowed to keep the bands after it is
seen what they have done to the
hobby. If you have to prevent your children from listening eventually
it will be taken away just like smoking
in the presence of others
Hams will still be able to use their radio but they wont be allowed to
transmit where it affects others.
Just like singing in the shower It just stays in the hamshack
Art
unwinantennas.com/
where they can practice their free speech rights without offending
others.

5715. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 02:02:19 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g46qeuqkj1@news.albasani.net>
Source record: 24637

Art Unwin wrote:

> John you have it down pat! The bands will be taken over by industry or
> the military.
> There is no way hams will be allowed to keep the bands after it is
> seen what they have done to the
> hobby. If you have to prevent your children from listening eventually
> it will be taken away just like smoking
> in the presence of others
> Hams will still be able to use their radio but they wont be allowed to
> transmit where it affects others.
> Just like singing in the shower It just stays in the hamshack
> Art
> unwinantennas.com/
> where they can practice their free speech rights without offending
> others.

Actually, I still hold hope that something can be done or will happen to
halt these trends ... but the future scares me--just call me paranoid ...

Regards,
JS

5716. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 03:53:11 UTC
From: Buck <usenet01@lumpuckeroo.com>
Message-ID: <otrd64tmpmlf8ugj685jmobpv4k6qte7eh@4ax.com>
Source record: 24638

On Sat, 28 Jun 2008 14:34:31 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:
Not one person has given good reason why the quoted antenna
>cannot work as stated, not one. By mathematics or actually making one
>since heckling is regarded as a suitable replacement for true
>knowledge now in the present hobby of ham radio.

First of all Felix has placed his project into such a 'top secret'
status that even the contract to which one agrees is secret until
after it is agreed to. When I told Felix I might buy his plans (IIRC
they were only $35.00 at the time) but, I would need to first see the
agreement, he cut off communications with me.

I'll ask Felix again, what are the terms of agreement, or why are they
secret until we paid for the plans?

Because of his secrecy of his agreement, I can only speculate that he
is looking for marks, suckers, or fools to buy his antenna plans.
Only a fool would sign a check and turn it over to a stranger to fill
in as he desires.

Personally, I would love for Felix's antenna design to perform
according to his claims. I would be proud to have his ugly pole on
top of my car as I drive down the road working DX if it works as
claimed. ("ugly pole" is not meant to be derogatory, see my car to
understand.)

And Art, the fact is that only Felix has the obligation of proof. As
I see it, this is the issue:
Felix has made certain claims to a product which he is selling. The
evidence he is using to back up his claims doesn't hold up to the
standards set to establish such claims. He may have tried, as in he
tested his antenna against a loop, but there were discrepancies in his
test that would skew the results.

I think everyone knows that at one time, according to the laws of
aerodynamics, a bumble bee could not fly. The laws have been changed
so the Bumble-bee can now fly. Currently, I believe the general rules
of antenna theory say that a properly made 1/4 wave ground plane will
outperform a ground plane less than 1/10th wavelength in size. (I am
sure some of the EEs here can prove this mathematically or offer some
specific scientific law, but I am not trying to go there.) Felix
claims to have an antenna that can defy this rule, therefore, the
burden of proof lies on him, not the EEs in the group.

I will not say that there is not a design that can break the general rule I stated above, but the evidence Felix is offering is sketchy at best.

--
73 for now
Buck, N4PGW

www.lumpuckeroo.com

"Small - broadband - efficient: pick any two."

5717. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 05:49:41 UTC
From: <>
Message-ID: <ca8e64t684fp30301h45hu0hb18024fos1@4ax.com>
Source record: 24639

On Sat, 28 Jun 2008 12:49:18 -0700 (PDT), Art Unwin
<ArthurUnwin@gmail.com> wrote:

>By the way, on my page
>
>unwinantennas.com/
>
>I describe how to make an antenna even smaller than that made by the
>threads initial poster

No such description is to be found on your page,
just utter nonsense.

>I also supplied SWR measurements for frequencies between 2 and 100

No, you did not provide measurements, you just depict a few graphs
which you faked.

>Mhz. The wire I used was a random length and the results should be
>duplicated with a couple of wavelengths for the lowest frequency.
>Isolated spot frequencies can be attained by the use of a jumper. Such
>antennas can also be made in small sheet form and other configurations

Show one (1) single working prototype.

>Wire used for such antennas do not have to be made of wire

Interesting statement.
aahahahaaaa....

> with
>mechanical thickness since no external mechanical stresses are
>involved.

Yes, sure.

>Nuff said. I'm gone !
If you only were.
Go to hell.

w.

5718. wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 10:18:51 UTC
From: Andrea <fuffa2k5@gmail.com>
Message-ID: <fkJ9k.107115$FR.361657@twister1.libero.it>
Source record: 24640

Hi guys,
Does enyone know if exist is a wireless rotator?
I cannot run the control cable between the control box and the rotator.
Any advice is very appreciated.

Thanks

Andrea.

5719. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 11:40:50 UTC
From: ltdoc@yahoo.com
Message-ID: <76140d81-2f86-4093-a00e-bcb310725fdd@26g2000hsk.googlegroups.com>
Source record: 24641

Andrea,
I'm not aware of any, but don't see why it wouldn't be possible.
'Bluetooth'?
I'm sure there will be problems with it, but...
- 'Doc

5720. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 12:20:15 UTC
From: Bob Bob <bob3bob3@suddenlink.net>
Message-ID: <v8bkj5-dkp.ln1@p400bob.personal.cox.net>
Source record: 24642

Hi Andrea

I have never seen one. You could of course use a wireless based terminal server RS232 thing. Many of these boxes also have I/O ports to turn things on and off with and some of these even have analog inputs. Cyclades make them but so do a lot of other manufacturers. They are commonly used to extend regular RS232 over an unwired distance. They normally map a local PC virtual serial port to the remote one but you can also just "join" a local RS232 port to the remote one. Kind of like a long serial cable! I would suspect that analog to analog wireless boxes would also be available but havent checked.

Your biggest issue then will be powering the whole system remotely. If you are running separate power wires from the control position there is no reason you couldnt piggy back control signals onto it. In fact with some thought you could put everything onto one piece of coax!

Cheers Bob VK2YQA

Andrea wrote:
> Hi guys,
> Does enyone know if exist is a wireless rotator?
> I cannot run the control cable between the control box and the rotator.
> Any advice is very appreciated.
>
> Thanks
>
> Andrea.
>
>

5721. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 16:47:47 UTC
From: dplatt@radagast.org
Message-ID: <juqkj5-9fj.ln1@radagast.org>
Source record: 24645

>First of all Felix has placed his project into such a 'top secret'
>status that even the contract to which one agrees is secret until
>after it is agreed to.

I think it's very questionable whether any such "secret contract"
would be enforceable, at least here in the U.S.

One of the crucial elements in a contract is the "meeting of the
minds". That is, the parties who are taking part in the contract must
be in agreement as to what it is that is being agreed to.

Terms which are kept secret from one party to the contract until after
the contract was signed would almost certainly be held to be invalid
and unenforceable.

Felix *could* have a legal and binding contract with buyers of his
antenna which has strict terms that require nondisclosure, forbid
reverse engineering, or insist that buyers do The Dance in public on
alternate Thursdays. However, in order to be enforceable, all of the
terms have to be presented to the buyer *before* the contract is
agreed to.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

5722. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 16:52:15 UTC
From: dplatt@radagast.org
Message-ID: <v6rkj5-9fj.ln1@radagast.org>
Source record: 24644

>Does enyone know if exist is a wireless rotator?
>I cannot run the control cable between the control box and the rotator.
>Any advice is very appreciated.

I haven't seen a commercial rotator with wireless control.

I'm sure it would be possible to adapt a standard rotator system
(rotator module plus control box) to incorporate wireless control.
There are plenty of wireless-control modules available on the market
which can be used to operate small relays - a two-channel wireless
control module could drive a couple of relays which take the place of
the clockwise / counterclockwise directional switches in an existing
rotator controller.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

5723. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 16:54:41 UTC
From: Jerry <jerrymartes@verizon.net>
Message-ID: <l7P9k.231$bn3.123@trnddc07>
Source record: 24643

"Andrea" <fuffa2k5@gmail.com> wrote in message
news:fkJ9k.107115$FR.361657@twister1.libero.it...
> Hi guys,
> Does enyone know if exist is a wireless rotator?
> I cannot run the control cable between the control box and the rotator.
> Any advice is very appreciated.
>
> Thanks
>
> Andrea.

Hi Andrea

Since there is power at the rotator, I assume there are power lines there.
I think you can figure a way to rotate thru an X-10 device.

Jerry

5724. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 17:40:08 UTC
From: Andrea <fuffa2k5@gmail.com>
Message-ID: <YNP9k.107292$FR.361840@twister1.libero.it>
Source record: 24646

Thanks for all the comments.
But the problem is how to get the control signal of the position back to the shack.

Andrea.

"Jerry" <jerrymartes@verizon.net> ha scritto nel messaggio
news:l7P9k.231$bn3.123@trnddc07...
>
> "Andrea" <fuffa2k5@gmail.com> wrote in message
> news:fkJ9k.107115$FR.361657@twister1.libero.it...
>> Hi guys,
>> Does enyone know if exist is a wireless rotator?
>> I cannot run the control cable between the control box and the rotator.
>> Any advice is very appreciated.
>>
>> Thanks
>>
>> Andrea.
>
> Hi Andrea
>
> Since there is power at the rotator, I assume there are power lines
> there. I think you can figure a way to rotate thru an X-10 device.
>
> Jerry
>

5725. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 18:11:04 UTC
From: Jerry <jerrymartes@verizon.net>
Message-ID: <YeQ9k.100$Ae3.45@trnddc05>
Source record: 24647

Hi Andrea

If the power for the rotator is related to the AC system that powers your house, you dont need "wireless". There is a common connection already available to you, X-10.

Jerry KD6JDJ

"Andrea" <fuffa2k5@gmail.com> wrote in message news:YNP9k.107292$FR.361840@twister1.libero.it...
> Thanks for all the comments.
> But the problem is how to get the control signal of the position back to
> the shack.
>
> Andrea.
>
> "Jerry" <jerrymartes@verizon.net> ha scritto nel messaggio
> news:l7P9k.231$bn3.123@trnddc07...
>>
>> "Andrea" <fuffa2k5@gmail.com> wrote in message
>> news:fkJ9k.107115$FR.361657@twister1.libero.it...
>>> Hi guys,
>>> Does enyone know if exist is a wireless rotator?
>>> I cannot run the control cable between the control box and the rotator.
>>> Any advice is very appreciated.
>>>
>>> Thanks
>>>
>>> Andrea.
>>
>> Hi Andrea
>>
>> Since there is power at the rotator, I assume there are power lines
>> there. I think you can figure a way to rotate thru an X-10 device.
>>
>> Jerry
>>
>
>

5726. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 19:14:28 UTC
From: Art Unwin <ArthurUnwin@gmail.com>
Message-ID: <ef801ff0-760f-46d3-a2e6-a7ef1fd1fa6f@y38g2000hsy.googlegroups.com>
Source record: 24648

On Jun 29, 11:47 am, dpl...@radagast.org (Dave Platt) wrote:
> >First of all Felix has placed his project into such a 'top secret'
> >status that even the contract to which one agrees is secret until
> >after it is agreed to.
>
> I think it's very questionable whether any such "secret contract"
> would be enforceable, at least here in the U.S.
>
> One of the crucial elements in a contract is the "meeting of the
> minds". That is, the parties who are taking part in the contract must
> be in agreement as to what it is that is being agreed to.
>
> Terms which are kept secret from one party to the contract until after
> the contract was signed would almost certainly be held to be invalid
> and unenforceable.
>
> Felix *could* have a legal and binding contract with buyers of his
> antenna which has strict terms that require nondisclosure, forbid
> reverse engineering, or insist that buyers do The Dance in public on
> alternate Thursdays. However, in order to be enforceable, all of the
> terms have to be presented to the buyer *before* the contract is
> agreed to.
>
> --
> Dave Platt <dpl...@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

I totally agree.He really should supply a graph of frequency versus
SWR then buyers would know what they are getting.
Hams are not interested in how it works on ly the extent of
frequencies and the external size of the antenna
Isn't this what Rhode Island did. Now if the wire is one wavelength
such that radiation cannot occur from the feed line that would be a
welcome addition.Albiet a balanced to unbanced windings would be handy
for when coax is used.
Either way the antenna seems awefull long compared to what it could
be.
Art

5727. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 19:21:23 UTC
From: John Ferrell <johnferrell@sprintmail.com>
Message-ID: <iunf64tmfnrpka3bpl07qpd23ksp4j856f@4ax.com>
Source record: 24649

On Sun, 29 Jun 2008 10:18:51 GMT, "Andrea" <fuffa2k5@gmail.com> wrote:

>Hi guys,
>Does enyone know if exist is a wireless rotator?
>I cannot run the control cable between the control box and the rotator.
>Any advice is very appreciated.
>
>Thanks
>
>Andrea.
>
Channel Master makes a remote controlled rotator that works with an IR
remote like TV sets use. It is not a heavy duty unit and it is not
expensive either.

John Ferrell W8CCW
Beware of the dopeler effect (pronounced dope-ler).
That's where bad ideas seem good if they come at you
fast enough.

5728. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 20:08:38 UTC
From: Dave <noone@nowhere.com>
Message-ID: <aZR9k.61$9W.7@trndny04>
Source record: 24650

"Art Unwin" <ArthurUnwin@gmail.com> wrote in message
news:ef801ff0-760f-46d3-a2e6-a7ef1fd1fa6f@y38g2000hsy.googlegroups.com...
> On Jun 29, 11:47 am, dpl...@radagast.org (Dave Platt) wrote:
>> >First of all Felix has placed his project into such a 'top secret'
>> >status that even the contract to which one agrees is secret until
>> >after it is agreed to.
>>
>> I think it's very questionable whether any such "secret contract"
>> would be enforceable, at least here in the U.S.
>>
>> One of the crucial elements in a contract is the "meeting of the
>> minds". That is, the parties who are taking part in the contract must
>> be in agreement as to what it is that is being agreed to.
>>
>> Terms which are kept secret from one party to the contract until after
>> the contract was signed would almost certainly be held to be invalid
>> and unenforceable.
>>
>> Felix *could* have a legal and binding contract with buyers of his
>> antenna which has strict terms that require nondisclosure, forbid
>> reverse engineering, or insist that buyers do The Dance in public on
>> alternate Thursdays. However, in order to be enforceable, all of the
>> terms have to be presented to the buyer *before* the contract is
>> agreed to.
>>
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>> Dave Platt <dpl...@radagast.org> AE6EO
>> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
>> I do _not_ wish to receive unsolicited commercial email, and I will
>> boycott any company which has the gall to send me such ads!
>
> I totally agree.He really should supply a graph of frequency versus
> SWR then buyers would know what they are getting.

> Art

the only time a graph of swr vs frequency is important is for a dummy load.
it is not a measure of antenna performance.

5729. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 20:49:31 UTC
From: Andrea <fuffa2k5@gmail.com>
Message-ID: <vzS9k.17690$Ca.14375@twister2.libero.it>
Source record: 24551

Yes, but how I can see the position of my antenna?
Maybe I'm missing something, but with the X10 I can move the antenna but I
cannot "see" the position.

Andrea.

"Jerry" <jerrymartes@verizon.net> ha scritto nel messaggio
news:YeQ9k.100$Ae3.45@trnddc05...
>
> Hi Andrea
>
> If the power for the rotator is related to the AC system that powers your
> house, you dont need "wireless". There is a common connection already
> available to you, X-10.
>
> Jerry KD6JDJ
>
>
> "Andrea" <fuffa2k5@gmail.com> wrote in message
> news:YNP9k.107292$FR.361840@twister1.libero.it...
>> Thanks for all the comments.
>> But the problem is how to get the control signal of the position back to
>> the shack.
>>
>> Andrea.
>>
>> "Jerry" <jerrymartes@verizon.net> ha scritto nel messaggio
>> news:l7P9k.231$bn3.123@trnddc07...
>>>
>>> "Andrea" <fuffa2k5@gmail.com> wrote in message
>>> news:fkJ9k.107115$FR.361657@twister1.libero.it...
>>>> Hi guys,
>>>> Does enyone know if exist is a wireless rotator?
>>>> I cannot run the control cable between the control box and the rotator.
>>>> Any advice is very appreciated.
>>>>
>>>> Thanks
>>>>
>>>> Andrea.
>>>
>>> Hi Andrea
>>>
>>> Since there is power at the rotator, I assume there are power lines
>>> there. I think you can figure a way to rotate thru an X-10 device.
>>>

```
>>> Jerry
>>>
>>
>>
>
>
```

5730. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 21:30:03 UTC
From: dplatt@radagast.org
Message-ID: <rfblj5-mlo.ln1@radagast.org>
Source record: 24552

In article <vzS9k.17690$Ca.14375@twister2.libero.it>,
Andrea <fuffa2k5@gmail.com> wrote:

>Yes, but how I can see the position of my antenna?
>Maybe I'm missing something, but with the X10 I can move the antenna but I
>cannot "see" the position.

For a lot of the simpler rotator designs (e.g. most TV antenna rotator systems I've seen) there isn't actually any positional feedback at all between the rotator and the control box. The connection is entirely one-directional (controller to rotator).

With these rotators, the position is deduced, rather than measured. The rotator turns at a fairly constant speed when energized in either direction, and its rotation is limited by clutch-stops in both directions. When it's first installed you rotate it in one direction for long enough for it to hit the (e.g.) clockwise stop, then manually align the mast so that it's pointing due north (usually) and tighten the U-bolts.

Thereafter, when you tell the controller to rotate the antenna, the rotator turns the antenna, and a separate motor-gear arrangement turns an indicator on the controller - presumably, at the same rate, so that the indicator shows you something close to the actual antenna position.

The indicator and the antenna can drift out of alignment over time, so it's necessary to resynchronize them occasionally... usually by rotating the antenna for long enough that it hits the end-stop (and is thus pointing north) and then manually adjusting the indicator position on the controller box.

I think that you have two basic choices for your design approach:

- Do a wireless version of this simple arrangement... have your wireless controller (X-10 or whatever) turn the rotator motors on and off, *and* turn on and off a motor- or logic-driven position indicator which deflects at the same angular rate that the rotator moves. Occasionally re-synchronize the antenna and indicator.

- Use a rotator which has a true positional readout (e.g. a potentiometer which can deliver a variable DC voltage, like the Yaesu TailTwister types), plus a bidirectional radio link of some sort. You'd need a couple of bits of control information going from the controller to the rotator (to run the relays), and some sort of analog-proportional coming back down.

The former is probably going to be easier to achieve.

--
Dave Platt <dplatt@radagast.org> AE6EO
Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

5731. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-29 22:21:11 UTC
From: Jerry <jerrymartes@verizon.net>
Message-ID: <rVT9k.125$4a3.60@trnddc04>
Source record: 24553

Hi Andrea , You can do yourself a favor by learning X-10. The technology
allows a limitless number of channels. You can, if you want to, control
the rotation with X-10, and also send positoon back thru your AC lines.

Jerry KD6JDJ

"Andrea" <fuffa2k5@gmail.com> wrote in message
news:vzS9k.17690$Ca.14375@twister2.libero.it...
> Yes, but how I can see the position of my antenna?
> Maybe I'm missing something, but with the X10 I can move the antenna but I
> cannot "see" the position.
>
> Andrea.
>
> "Jerry" <jerrymartes@verizon.net> ha scritto nel messaggio
> news:YeQ9k.100$Ae3.45@trnddc05...
>>
>> Hi Andrea
>>
>> If the power for the rotator is related to the AC system that powers
>> your house, you dont need "wireless". There is a common connection
>> already available to you, X-10.
>>
>> Jerry KD6JDJ
>>
>>
>> "Andrea" <fuffa2k5@gmail.com> wrote in message
>> news:YNP9k.107292$FR.361840@twister1.libero.it...
>>> Thanks for all the comments.
>>> But the problem is how to get the control signal of the position back to
>>> the shack.
>>>
>>> Andrea.
>>>
>>> "Jerry" <jerrymartes@verizon.net> ha scritto nel messaggio
>>> news:l7P9k.231$bn3.123@trnddc07...
>>>>
>>>> "Andrea" <fuffa2k5@gmail.com> wrote in message
>>>> news:fkJ9k.107115$FR.361657@twister1.libero.it...
>>>>> Hi guys,
>>>>> Does enyone know if exist is a wireless rotator?
>>>>> I cannot run the control cable between the control box and the
>>>>> rotator.
>>>>> Any advice is very appreciated.
>>>>>

>>>>> Thanks
>>>>>
>>>>> Andrea.
>>>>
>>>> Hi Andrea
>>>>
>>>> Since there is power at the rotator, I assume there are power lines
>>>> there. I think you can figure a way to rotate thru an X-10 device.
>>>>
>>>> Jerry
>>>>
>>>
>>>
>>
>>
>
>

5732. TO download latest songs and images!

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 08:57:09 UTC
From: billu <billukumar123@gmail.com>
Message-ID: <bbd58493-5925-4f83-90c1-eaa00ee69a26@w8g2000prd.googlegroups.com>
Source record: 24554

TO download latest songs and images!
our tamil actress are beautiful eg. nanthara and nametha is
very great in their carrier.
nanthra is comes under homely later she change galamarly.nametha
always sexy..............
want more !!
click my profile!
****
http://trichysathya.blogspot.com
****

5733. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 13:42:52 UTC
From: Andy <dx90@blueyounder.co.uk>
Message-ID: <np5ak.140557$Ek2.23826@newsfe17.ams2>
Source record: 24555

Hi all,

I have now tried all sorts of combinations and the best that I have found to work best in such a small place is a 40m centre fed dipole, fed direct with 40 feet of 50 Ohm RG58 c/u then into a Ugly Balun made of RG58 c/u then into RG213 back to the ATU. This is just how it all worked out, come the end.
I then made a couple of 40 meter traps for 80m.
The 40 meter section of the dipole barely fits the garden with no room to spare. The traps and the added lengths of wire are dropped down and tied back slightly to keep it away from the mounting pole, It is still kept at a right angle to the main part of the antenna.
I have a 1.1:1 - 1.3:1 on the main frequency that I want to use on 40m and 80m without using the ATU.
It seems to work very well for what it is.
Thanks all for your help.

73 Andy

"wa2rqy" <rlucch2098@aol.com> wrote in message
news:35397149-fe86-43f9-a041-d6a44c21a1ba@8g2000hse.googlegroups.com...
> On Jun 17, 4:04 pm, "Andy" <d...@blueyounder.co.uk> wrote:
>> Thanks for all your suggestions. When this wet weather clears I will try
>> them all out and see where I end up..
>>
>> 73 Andy
>>
>> "Highland Ham" <abcgm0csz.kn6wh...@dsl.pipex.com> wrote in message
>>
>> news:KeSdnforyuuNd8vVnZ2dnUVZ8tzinZ2d@pipex.net...
>>
>> > Andy wrote:
>> >> Hi,
>>
>> >> I have a 40 meter centre feed dipole cut for 40 and feed direct with
>> >> 50
>> >> Ohm coax. The house end is connected to the centre of the coax and the
>> >> pole end is connected to the braid. Seems to work best this way round.
>> >> The antenna is fixed tight to the house and the other end is tight to
>> >> the
>> >> metal pole in a straight-line, diagonal across the garden, both ends
>> >> are
>> >> insulated. The garden is about 64 feet give or take a couple of feet.
>>
>> >> I cannot drop the ends down because of the house and metal pole at the
>> >> end of the garden being so close. I can only feed the antenna with

>> >> coax.
>> >> The neighbours are OK with coax but not the ribbon feeder hanging down
>> >> and I don't want to upset them if I can help it.
>>
>> >> My question. What are my options to enable me to operate 80 and 40m on
>> >> this same antenna wire?
>> > ==
>> > 300 Ohms ribbon twin feeder is hardly more visible than coax feeder .
>> > You don't have to use the 'wide' 450 Ohms ribbon type.
>> > 300 Ohms ribbon has an approx velocity factor of 0.8 ,so if you make
>> > half
>> > the dipole + the feeder (roughly) an electrical 1/4 -3/4 -etc
>> > wavelength
>> > at 80 meters ,you will be home and dry with an appropriate matching
>> > unit
>> > or a choke balun in combination with a 'coax-in ,coax-out' matching
>> > box.
>>
>> > Frank GM0CSZ / KN6WH
>
> I just put up a 66' center fed zep, fed with 450 ohm ribbon line.
> This line goes to just outside my radio room where it terminates into
> a 4:1 Home-made (off the www) balun, coax feeds into the house to a
> Nye tuner. Easily tunes 80 to 10 mtrs & works good.
> Many good ways, this is just one!
> GL.....
> Rich WA2RQY/4
>

5734. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 14:28:49 UTC
From: ltdoc@yahoo.com
Message-ID: <ca22c18d-2c46-4940-a311-041129c39157@79g2000hsk.googlegroups.com>
Source record: 24556

Then I would have to say that you have done the best that you can do with the resources you have available, and that's good! May not be the 'best' of all possible antennas, but if it works well enough, so what?
- 'Doc

(Now that you've got yours working... wanna work on mine??)

5735. Re: RoomCap Antenna - last results

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 15:33:57 UTC
From: nm5k@wt.net
Message-ID: <70be0fc1-7800-46df-91ed-73c24aec42fd@25g2000hsx.googlegroups.com>
Source record: 24557

On Jun 29, 2:14 pm, Art Unwin <ArthurUn...@gmail.com> wrote:
> On Jun 29, 11:47 am, dpl...@radagast.org (Dave Platt) wrote:
>
>
>
> > >First of all Felix has placed his project into such a 'top secret'
> > >status that even the contract to which one agrees is secret until
> > >after it is agreed to.
>
> > I think it's very questionable whether any such "secret contract"
> > would be enforceable, at least here in the U.S.
>
> > One of the crucial elements in a contract is the "meeting of the
> > minds". That is, the parties who are taking part in the contract must
> > be in agreement as to what it is that is being agreed to.
>
> > Terms which are kept secret from one party to the contract until after
> > the contract was signed would almost certainly be held to be invalid
> > and unenforceable.
>
> > Felix *could* have a legal and binding contract with buyers of his
> > antenna which has strict terms that require nondisclosure, forbid
> > reverse engineering, or insist that buyers do The Dance in public on
> > alternate Thursdays. However, in order to be enforceable, all of the
> > terms have to be presented to the buyer *before* the contract is
> > agreed to.
>
> > --
> > Dave Platt <dpl...@radagast.org> AE6EO
> > Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> > I do _not_ wish to receive unsolicited commercial email, and I will
> > boycott any company which has the gall to send me such ads!
>
> I totally agree.He really should supply a graph of frequency versus
> SWR then buyers would know what they are getting.

Boy, that would really tell a buyer all he needs to know about
the antenna/dummy load in question.. :/

> Hams are not interested in how it works on ly the extent of
> frequencies and the external size of the antenna

Hummm.. This is an interesting comment from a person who
tries to build the smallest antennas he can, and constantly
harps on the perceived wide bandwidth of said devices.. :/

> Isn't this what Rhode Island did.

How did Rhode Island get involved?
Yes, Rhode Island is a small state. You could even call it puny
compared to the one I live in, but I think they do have enough
room for a full size dipole or loop.. :/
Maybe even a beverage or two..

>Now if the wire is one wavelength
> such that radiation cannot occur from the feed line that would be a
> welcome addition.

Prey tell.. How will the use of a 1 wavelength element eliminate
feed line radiation?

>Albiet a balanced to unbanced windings would be handy
> for when coax is used.

Prey tell why? Would the omission of balanced to unbalanced
windings lead to a disturbance in the force?
How would you explain the obvious success of decoupled verticals
using no "windings" at all?

> Either way the antenna seems awefull long compared to what it could
> be.

He may be trying to avoid dummy load performance from a device
intended to radiate.
I'm sure he'll be happy to let you corner the market in that respect
to avoid any future patent infringements.

5736. Loop antenna success story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 16:33:55 UTC
From: Michael <micoder@sbcglobal.net>
Message-ID: <TV7ak.176850$qk1.9829@fe02.news.easynews.com>
Source record: 24558

I live in town, three blocks from a failing transformer. At night you can see it arcing continuously. This produces an S8 noise level on my Icom 718. The power company has been completely uncooperative now for 6 months of my complaining.

Even though I was warned that a loop antenna would not help with a noise source this close, I put up a 75 meter full wave loop anyway. I was desperate.

It was certainly not as easy as putting up my dipole between a couple of trees. I had to add an aluminum mast to my garage.

My loop is tied to three trees and an aluminum mast at 35 feet. My noise level on 75 meters went from S8 to S0.

This antenna is fed out of an old Tentec tuner model 229. It then feeds 25 feet of RG213. It then transitions through a Radio Works remote balun hung from the house into 60 feet of ladder line. The antenna is fed at a corner. The other three corners our outfitted with small pulleys to "float" the wire and compensate for tree movement. The wire is hung loosely to accommodate winds.

All my regular local operators say that my signal went from 20-30 over with my dipole to 40 over with the loop. I realize this does not make sense, because the dipole was radiating all 1000 watts of energy too. I can't figure it out. However, I will not argue with success.

I put up this antenna in hopes of reducing receiver noise. It sure did.

5737. Re: Loop antenna success story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 16:56:00 UTC
From: Tehrasha Darkon <darkon@netins.net>
Message-ID: <pan.2008.06.30.16.56.05@netins.net>
Source record: 24559

On Mon, 30 Jun 2008 16:33:55 +0000, Michael wrote:

> I live in town, three blocks from a failing transformer. At night you
> can see it arcing continuously. This produces an S8 noise level on my
> Icom 718. The power company has been completely uncooperative now for 6
> months of my complaining.

If you have a transformer that you can SEE arcing, and the power company
is not responding to it. You have a much bigger problem than S8 noise!

5738. Re: Loop antenna success story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 17:02:59 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g4b3k8$r32$1@news.albasani.net>
Source record: 24560

Michael wrote:
> I live in town, three blocks from a failing transformer. At night you
> can see it arcing continuously. This produces an S8 noise level on my
> Icom 718. The power company has been completely uncooperative now for 6
> months of my complaining.
> ...

Wonderful, can you just imagine all the citizens attempting to listen to
SW/AM radio? (lines/noise in broadcast TV, etc.) Seems like you need to
write a nice letter to the editor and let your fellow citizens in on
that xfrmr. If nothing else, those in your area will know why their
favorite radio programs are no longer possible to hear ...

Regards,
JS

5739. Re: Loop antenna success story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 17:05:25 UTC
From: Bert Hyman <bert@iphouse.com>
Message-ID: <Xns9ACD7AFD91D84VeebleFetzer@127.0.0.1>
Source record: 24561

micoder@sbcglobal.net (Michael) wrote in
news:TV7ak.176850$qk1.9829@fe02.news.easynews.com:

> I live in town, three blocks from a failing transformer. At night
> you can see it arcing continuously. This produces an S8 noise level
> on my Icom 718. The power company has been completely uncooperative
> now for 6 months of my complaining.

If that's really the case and you have any sort of record of your
dealings with the power company, the FCC would like to hear from you.

--
Bert Hyman | St. Paul, MN | bert@iphouse.com

5740. Re: Need help with first HF antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 17:26:24 UTC
From: Thierry <...>
Message-ID: <1214846787_2415@vo.lu>
Source record: 24562

Hi OM,

Look at these articles, some can be useful.
http://www.astrosurf.com/luxorion/menu-qsl.htm

Thierry
ON4SKY, LX4SKY

"Keith" <none@yahoo.com> a ï¿½crit dans le message de
news:g43eheuhf1@aioe.org...
> Finally upgraded to General this winter, and found a Ten-Tec Triton IV (my
> first HF rig) and I need some antenna help.
>
> I need something simple that will give decent performance, and keep XYL
> happy.
>
> Some ideas I've come across:
>
> 1. A random loop strung in a few trees, fed with ladder line to ground
> level, with a balun and lightning arrestor, into buried coax 50' or so to
> the house and into the shack. This setup is the most aesthetically
> pleasing, and coax will be easy to run in the house. How much will the
> transition to coax hurt me here? Would I need a 1:1 or 4:1 balun? Some
> other ratio?
>
> 2. Same random loop, fed with ladder line all the way into the shack.
> Would probably give better performance, but running the ladder line in the
> house will be more difficult, and the XYL is less likely to approve of a
> wire in the air vs buried.
>
> 3. A dipole in one of the above configurations.
>
> 4. A random long wire strung around the yard, end-fed with coax and a
> balun.
>
> I will be using an antenna tuner in the shack with any of these
> configurations, and will be running a max of 100W for the foreseeable
> future. How much do I have to worry about the wire touching the trees at
> these power levels?
>
> Thanks for any help you can give - I know these questions have probably
> been asked a million times before :)
>
> --
> Keith

>

5741. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 17:33:36 UTC
From: Thierry <...>
Message-ID: <1214847214_2417@vo.lu>
Source record: 24563

"Andrea" <fuffa2k5@gmail.com> a ï¿½crit dans le message de
news:fkJ9k.107115$FR.361657@twister1.libero.it...
> Hi guys,
> Does enyone know if exist is a wireless rotator?
> I cannot run the control cable between the control box and the rotator.
> Any advice is very appreciated.
>
> Thanks
>
> Andrea.
>
Not sure, but I heard that in the past that President of Nokia, also ham
radio, had the project or did it, to control remotely his antenna system
(not usre that it is using a GSM).
Try maybe to contact Nokia.

thierry

5742. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 17:33:51 UTC
From: Thierry <...>
Message-ID: <1214847278_2419@vo.lu>
Source record: 24564

"Andrea" <fuffa2k5@gmail.com> a ï¿½crit dans le message de
news:fkJ9k.107115$FR.361657@twister1.libero.it...
> Hi guys,
> Does enyone know if exist is a wireless rotator?
> I cannot run the control cable between the control box and the rotator.
> Any advice is very appreciated.
>
> Thanks
>
> Andrea.
>
Not sure, but I heard that in the past that President of Nokia, also ham
radio, had the project or did it, to control remotely his antenna system
(not usre that it is using a GSM).
Try maybe to contact Nokia.

thierry

5743. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 17:34:40 UTC
From: Thierry <...>
Message-ID: <1214847279_2421@vo.lu>
Source record: 24565

"Andrea" <fuffa2k5@gmail.com> a ï¿½crit dans le message de
news:fkJ9k.107115$FR.361657@twister1.libero.it...
> Hi guys,
> Does enyone know if exist is a wireless rotator?
> I cannot run the control cable between the control box and the rotator.
> Any advice is very appreciated.
>
> Thanks
>
> Andrea.
>
Not sure, but I heard that in the past that President of Nokia, also ham
radio, had the project or did it, to control remotely his antenna system
(not usre that it is using a GSM).
Try maybe to contact Nokia.

thierry

5744. Re: Loop antenna success story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 17:40:53 UTC
From: "cybrinjn@gmail.com" <cybrinjn@gmail.com>
Message-ID: <f3828fae-1149-4f8e-bc10-defbd8140db6@j22g2000hsf.googlegroups.com>
Source record: 24566
Body handling: HTML body converted to readable text

On Jun 30, 1:05 pm, Bert Hyman wrote:
> mico...@sbcglobal.net (Michael) wrote
innews:TV7ak.176850$qk1.9829@fe02.news.easynews.com:
>
> > I live in town, three blocks from a failing transformer. At night
> > you can see it arcing continuously. This produces an S8 noise level
> > on my Icom 718. The power company has been completely uncooperative
> > now for 6 months of my complaining.
>
> If that's really the case and you have any sort of record of your
> dealings with the power company, the FCC would like to hear from you.
>
> --
> Bert Hyman | St. Paul, MN | b...@iphouse.com

Better yet, report a potential fire hazard to your local fire
department. You'll get action, and fast. Had a bad transformer near
me that caught on fire.

5745. Re: Loop antenna success story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 18:03:26 UTC
From: W3CQH <hsgorden@comcast.net>
Message-ID: <usednWVNsuZTgvTVnZ2dnUVZ_rDinZ2d@comcast.com>
Source record: 24567
Body handling: HTML body converted to readable text

wrote in message
news:f3828fae-1149-4f8e-bc10-defbd8140db6@j22g2000hsf.googlegroups.com...
On Jun 30, 1:05 pm, Bert Hyman wrote:
> mico...@sbcglobal.net (Michael) wrote
> innews:TV7ak.176850$qk1.9829@fe02.news.easynews.com:
>
> > I live in town, three blocks from a failing transformer. At night
> > you can see it arcing continuously. This produces an S8 noise level
> > on my Icom 718. The power company has been completely uncooperative
> > now for 6 months of my complaining.
>
> If that's really the case and you have any sort of record of your
> dealings with the power company, the FCC would like to hear from you.
>
> --
> Bert Hyman | St. Paul, MN | b...@iphouse.com

Better yet, report a potential fire hazard to your local fire
department. You'll get action, and fast. Had a bad transformer near
me that caught on fire.

To get the best results - write a letter to the chairman of the board of the
Electric Company, be sure to send it REGISTERED Return Receipt.

In your letter indicate that since you can't get any service from his
company, (tell them exactly what is happening & that you are a member of the
local RACES/ARES emergency communications group and that you can't
communicate because of the interference), and that If you do not hear from
them with 10 business days that you are going to contact the power
commission of your (county/state) & the FCC and your local congress
people...

The chairman of the board does not like getting those kinds of letters and
usually the CRAP will hit the fan and trickle down very quickly & they
should be calling you to get you out of their hair!

Unless the transformer is actually on fire, most fire depts. won't do any
thing about it - they will just refer you back to the utility.

Best 73's

5746. Re: Loop antenna success story

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 18:03:44 UTC
From: John Smith <assemblywizard@gmail.com>
Message-ID: <g4b761$2n9$1@news.albasani.net>
Source record: 24568

cybrinjn@gmail.com wrote:

> ...
> Better yet, report a potential fire hazard to your local fire
> department. You'll get action, and fast. Had a bad transformer near
> me that caught on fire.

PERFECT!

Infallible logic, legitimate concern and the FDs' responsibility!

Interesting to see if "someone" still does their job(s)!

Warm regards,
JS

5747. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 18:09:00 UTC
From: gsm@mendelson.com
Message-ID: <slrng6i82s.3mv.gsm@cable.mendelson.com>
Source record: 24569

Thierry wrote:
> Not sure, but I heard that in the past that President of Nokia, also ham
> radio, had the project or did it, to control remotely his antenna system
> (not usre that it is using a GSM).

I don't remember his call, I think he was VP of R&D or Engineering,
not the president. He did have a 20m 10 element Yagi. :-)

I don't think it rotated.

Geoff.

--
Geoffrey S. Mendelson, Jerusalem, Israel gsm@mendelson.com N3OWJ/4X1GM

5748. Re: Evolutionistit nolasivat itsensa tiede.fiissa

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 18:38:17 UTC
From: Martti Fuchs <martti@libelle.net>
Message-ID: <80d18fcb-98d6-4c30-b63e-7dbcba45e8d9@dlp1e22a51.pil.t-piadin.net>
Source record: 24570

Nyt on maamme tiedotusmonopoleissa tullut tavaksi ved&#xF;tt&#xF;&#xF; esiin sellaisia tietoja, ett&#xF; riisin- ja viljanhinnan nousu johtuisi siit&#xF;, ett&#xF; niit&#xF; k&#xF;ytet&#xF;&#xF;n el&#xF;inrehuina lihantuotantoon.. .Haloo kuka on n&#xF;hnyt "riisirehua"? Veikkaan ett&#xF; kyseess&#xF; on maailman harvinaisin sbesiaalirehupussukka, jota tuskin kukaan on edes n&#xF;hnyt! Jos toi on jo harvinaista niin metanolibensa riisist&#xF; on varmaan jos mahdollista harvinaisempaa. Eli t&#xF;mm&#xF;iset eiv&#xF;t taatusti ole hinnankorotuksen takana. Vaan USA:n s&#xF;&#xF;nn&#xF;stelyriisitilanne johtuu ydinaavikoitumisen jo kolmena vuona pilaaaman sadon kylm&#xF;st&#xF; faktasta!

Suomen kohdalla esitet&#xF;&#xF;&#xF;n samoja biopolttoainesyit&#xF; my&#xF;s. Mik&#xF; on toki my&#xF;s silkkaa ved&#xF;tyst&#xF;. Jokin aika sitten tosin maahamme suuniteltiin bioetanolitehtaita, joita ei noussut. My&#xF;s esim. viljasta maassamme povattiin varsin kohtalaista biopolttoainetta. Kauraa pidettiin varteenotettavana valmiina biopellettin&#xF;. Ainoa mainittava haitta oli viljan paakkuuntuminen poltinp&#xF;&#xF;h&#xF;n kakkuna, jota piti kuulema puhdistella. Varsin pian v&#xF;hin &#xF;&#xF;nin maahamme tehtiin ehk&#xF; historiamme tarkimmin salattu laki. M&#xF;&#xF;r&#xF;ys joka kielsi KAIKEN viljaenergian polttamisen! Tosiaan koko bioenergiahaaveilut lopetettiin kuin maan nielem&#xF;n&#xF;, vaikkei asian totuutta kerrottu kansalle miss&#xF;&#xF;n. Ydinaavikoitumisen viedess&#xF; -40% sadantakadollaan vuodesta toiseen ruuan p&#xF;yd&#xF;st&#xF;mme ei j&#xF;&#xF;nyt vaihtoehtoa. Mutta reaalia t&#xF;st&#xF; ei maatalouspoliittisesta huijaussyyst&#xF; ikin&#xF; tunnustettu. My&#xF;s ydinvoiman kuivamien ja kasvuhaittojen peltojemme totuus pimitettiin mehil&#xF;iskatojen vastaavan syyn lailla. Mutta sain vaan selville tapani mukaan! Joka tapauksessa h&#xF;mm&#xF;stytt&#xF;v&#xF;&#xF;, ett&#xF; meill&#xF; nyt on lakim&#xF;&#xF;r&#xF;yksi&#xF; joita lis&#xF;kseni tuskin moni on tutusti edes kuullut.(

5749. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 19:06:38 UTC
From: Andrea <fuffa2k5@gmail.com>
Message-ID: <29aak.107875$FR.362865@twister1.libero.it>
Source record: 24571

Dear Dave thanks a lot for your very detailed message.
I will think about it and study a little more how ham rotator systems work.
Another idea is to use a pc controlled control box (in Italy we have a good product by Prosistel) connected to my pc usign a serial wireless extender adapter, but I have to check the range covered by the wireless. I'm at the first floor and the antenna is at the 4th floor.
Thanks again!

Andrea.

"Dave Platt" <dplatt@radagast.org> ha scritto nel messaggio
news:rfblj5-mlo.ln1@radagast.org...
>
> In article <vzS9k.17690$Ca.14375@twister2.libero.it>,
> Andrea <fuffa2k5@gmail.com> wrote:
>
>>Yes, but how I can see the position of my antenna?
>>Maybe I'm missing something, but with the X10 I can move the antenna but I
>>cannot "see" the position.
>
> For a lot of the simpler rotator designs (e.g. most TV antenna rotator
> systems I've seen) there isn't actually any positional feedback at all
> between the rotator and the control box. The connection is entirely
> one-directional (controller to rotator).
>
> With these rotators, the position is deduced, rather than measured.
> The rotator turns at a fairly constant speed when energized in either
> direction, and its rotation is limited by clutch-stops in both
> directions. When it's first installed you rotate it in one direction
> for long enough for it to hit the (e.g.) clockwise stop, then manually
> align the mast so that it's pointing due north (usually) and tighten
> the U-bolts.
>
> Thereafter, when you tell the controller to rotate the antenna, the
> rotator turns the antenna, and a separate motor-gear arrangement turns
> an indicator on the controller - presumably, at the same rate, so that
> the indicator shows you something close to the actual antenna position.
>
> The indicator and the antenna can drift out of alignment over time, so
> it's necessary to resynchronize them occasionally... usually by
> rotating the antenna for long enough that it hits the end-stop (and is
> thus pointing north) and then manually adjusting the indicator
> position on the controller box.
>
> I think that you have two basic choices for your design approach:

>
> - Do a wireless version of this simple arrangement... have your
> wireless controller (X-10 or whatever) turn the rotator motors on
> and off, *and* turn on and off a motor- or logic-driven position
> indicator which deflects at the same angular rate that the rotator
> moves. Occasionally re-synchronize the antenna and indicator.
>
> - Use a rotator which has a true positional readout (e.g. a
> potentiometer which can deliver a variable DC voltage, like the
> Yaesu TailTwister types), plus a bidirectional radio link of some
> sort. You'd need a couple of bits of control information going from
> the controller to the rotator (to run the relays), and some sort of
> analog-proportional coming back down.
>
> The former is probably going to be easier to achieve.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Friends of Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

5750. Re: wireless rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 19:08:06 UTC
From: Andrea <fuffa2k5@gmail.com>
Message-ID: <qaaak.107877$FR.362919@twister1.libero.it>
Source record: 24572

Yes Jerry, you're right.
In Italy it is not very used.... I will try to get some details on the internet.

Thanks.

Andrea.

"Jerry" <jerrymartes@verizon.net> ha scritto nel messaggio
news:rVT9k.125$4a3.60@trnddc04...
>
> Hi Andrea , You can do yourself a favor by learning X-10. The
> technology allows a limitless number of channels. You can, if you want
> to, control the rotation with X-10, and also send positoon back thru your
> AC lines.
>
> Jerry KD6JDJ
>
>
>
>
> "Andrea" <fuffa2k5@gmail.com> wrote in message
> news:vzS9k.17690$Ca.14375@twister2.libero.it...
>> Yes, but how I can see the position of my antenna?
>> Maybe I'm missing something, but with the X10 I can move the antenna but
>> I cannot "see" the position.
>>
>> Andrea.
>>
>> "Jerry" <jerrymartes@verizon.net> ha scritto nel messaggio
>> news:YeQ9k.100$Ae3.45@trnddc05...
>>>
>>> Hi Andrea
>>>
>>> If the power for the rotator is related to the AC system that powers
>>> your house, you dont need "wireless". There is a common connection
>>> already available to you, X-10.
>>>
>>> Jerry KD6JDJ
>>>
>>>
>>> "Andrea" <fuffa2k5@gmail.com> wrote in message
>>> news:YNP9k.107292$FR.361840@twister1.libero.it...
>>>> Thanks for all the comments.
>>>> But the problem is how to get the control signal of the position back

>>>> to the shack.
>>>>
>>>> Andrea.
>>>>
>>>> "Jerry" <jerrymartes@verizon.net> ha scritto nel messaggio
>>>> news:l7P9k.231$bn3.123@trnddc07...
>>>>>
>>>>> "Andrea" <fuffa2k5@gmail.com> wrote in message
>>>>> news:fkJ9k.107115$FR.361657@twister1.libero.it...
>>>>>> Hi guys,
>>>>>> Does enyone know if exist is a wireless rotator?
>>>>>> I cannot run the control cable between the control box and the
>>>>>> rotator.
>>>>>> Any advice is very appreciated.
>>>>>>
>>>>>> Thanks
>>>>>>
>>>>>> Andrea.
>>>>>
>>>>> Hi Andrea
>>>>>
>>>>> Since there is power at the rotator, I assume there are power lines
>>>>> there. I think you can figure a way to rotate thru an X-10 device.
>>>>>
>>>>> Jerry
>>>>>
>>>>
>>>>
>>>
>>>
>>
>>
>
>

5751. Re: Jo 100 000 eronnut kirkosta

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 20:49:52 UTC
From: Manu Nordberg <manu.nordberg@fader.net>
Message-ID: <48577ec3$0$14988$9b536df3@214.95.103.238>
Source record: 24573

Kun katsoo n�it�keskeisimpi� nettilinjo, niin alkuun n�ytt�� silt�, ett� t��ll� palloilee l�hinn� "ruinruinit, muiden mollaajat, ja ostetut ydinlobbarit". Eli suoraan sanottuna yht� tyhj�n kansa pelailevia palloilijoita. Mutta siten huomaa miksi ihmiset t�nne niin mielell��n tulee viisaukasia silti lukemaan?

Jos osut talous-, yhteiskunta- ja poliittiselle sektorille huomaat, miten siel� toimii my�s porukoissa suoranaisia "kassamangneetteja". Olen avoimesti kiitellyt mm Rauno Kankaan miten kristalloisin. ..no hei vaikka "eettist� asennekoulutustyyli��n". Kaveri jos kuka on ollut oiva esimerkki siit� miten nettiammattilaisen tulisi k�ytt�yty�. Aina asiallisena, kaikesta "oskukarstasta" huolimatta tied�t saavasi tukun paikoin jopa el�m�� suurempaa osviittaa ja paikoin jopa nerokasta osviittaa siit� miten maailma makaa kritiikkiin asti. Oivan ja loisteliaan materiaalin saat t��lt� ilmaiseksi, neuvoja on tuohtumaton j�m�k�n asiallinen. Hienoa, juuri t�t� tuhannet t��lt� haluaa.

No tottakai ei finetti tyyli ole j�tt�nyt kylm�ksi, vaan h�nen vision��risyytt��n sitten kopioidaan my�s muutamissa muissa osastoissa, ja hyv� niin. Tietysti kopio on kopio, mutta tusinan verran t��lt� l�ytyy sellaisia kirjoittelijoita, joista heijastuu Raunon oivallinen esimerkkijatkumo. Ja jopa kyky kampittaa my�s Raunoon liittyv�t pakolliset h�irik�ainekset. Joita voidaan mainita yhteisnimill��n, "Oskut, ydinklingonit ja vastaavat". Er�s henkil� jonka sattuneesti haluan ilmoittaa t�ss� on nimimerkki NEO. H�n ei toki ole talous-, poliittis-, yhteiskuntasektoreilla tietysti esikuvansa luokkaa, ei toki. Mutta kampittaa kyll� muutamilla sektoreillaan my�s suvereeneill� erikoisaloillaan. Ja totta kai taitojensa h�ikimi� ns. "ydinklingoneita ja SUPO-sotkijoita on toisinaan niin suuret parvet kintereill��n, ettei rahanjaolla tunnu TVO/Posivalla olevan rajoja h�irikk�sahureittensa palkkaamisiin. Mutta siin� NEO on kyll� kykyis� Raunon rinnalla toki, ett� ammattiviisautta, viile�� asiallisuutta ja ennenkaikkea loputtoman ammattitaitoista materiaalia saamme saavikaupalla k�ytt��mme!

Suuri yleis� nauttii ja nettioperaattorit kiitt�� valtaisien hittim��rien aina vaan jaksaessa yll�tt��. Netti el�� kiistatta vain muutaman t�llaisen "gurun" �lyn neuvokkuudella. Kansanmassat saa mit� haluaa. Ja operaattorien maireat ilmeet kertovat valtaisien suosikkim��rien alati pit�v�n systremit hengiss�. Ennenkaikkea koko t�m� kaikki yhdess� n�kyy aivan k�sitt�m�tt�m�sti kumuloituvine kansan ymm�rryskykykasvuina. Nyt on massoilla kanava k�yt�ss�, jossa ei iso raha pyki. Ei valtiomoinoliitit kuki seinill�. Vaan asiafaktan kiinisaanti on huomattu iloisesti jopa laajasti rajojemme ulkopuolelle asti. Kuten hyvin tied�mme asiallista kritiiki� ei valtiomonopolit salli. Ei SUPO/TVO/kuin edes hallitusmokailijat eduskunnan

helsinkil�is�kyj� my�ten. Nettien palstat pursuaa JUURI t�st�, ett� on maamme ehdottomasti viimeinen vapaamman tiedon periferia sitke�sti. Jopa niin sitke�sti, ett� SUPO/NSA/STUK/ TVO/Posiva/Fortum /GTK ja monet , monet muut uhkailevat aivan h�rskisti tappaa koko kanavan! Heid�n edustamansa valtiorappiollinen m�d�nn�isyys kun ei kansan viisastuessa ja tietoa saadessa en�� totuuksia sied�. Sis�ministeri�n tuhatp�isen poliisisikailukulttuurin uhka on jo pitk��n ollut nettituhoa hautomassa. Saa vaan n�hd� kest��k� systeemimme nimenomaan Suomessa totuuden puhujia?

5752. Re: 40m centre feed dipole, I want to add 80m

Newsgroup: rec.radio.amateur.antenna
Date: 2008-06-30 22:04:14 UTC
From: Mike Kaliski <michael.kaliski@tesco.net>
Message-ID: <bbudnaEZP7QExfTVnZ2dneKdnZydnZ2d@bt.com>
Source record: 24574

"Andy" <dx90@blueyounder.co.uk> wrote in message
news:np5ak.140557$Ek2.23826@newsfe17.ams2...
> Hi all,
>
> I have now tried all sorts of combinations and the best that I have found
> to work best in such a small place is a 40m centre fed dipole, fed direct
> with 40 feet of 50 Ohm RG58 c/u then into a Ugly Balun made of RG58 c/u
> then into RG213 back to the ATU. This is just how it all worked out, come
> the end.
> I then made a couple of 40 meter traps for 80m.
> The 40 meter section of the dipole barely fits the garden with no room to
> spare. The traps and the added lengths of wire are dropped down and tied
> back slightly to keep it away from the mounting pole, It is still kept at
> a right angle to the main part of the antenna.
> I have a 1.1:1 - 1.3:1 on the main frequency that I want to use on 40m and
> 80m without using the ATU.
> It seems to work very well for what it is.
> Thanks all for your help.
>
> 73 Andy
>
>
Thanks for the feedback Andy. It's somewhat rare to find out exactly how a
project turned out on this forum :-)

Regards

Mike G0ULI